Carving Voters Out

Redistricting's Influence on Political Information, Turnout, and Voting Behavior

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This article examines how the splitting of counties into multiple congressional districts affects citizens' abilities to recall House candidates, turnout, roll off their congressional vote, and cast straight-ticket ballots. We demonstrate that while voters living in the "short end of the split" are less likely to recall their House candidates, they do behave similarly at the ballot box to voters drawn into districts containing their natural community of interest. Our results suggest the Supreme Court's traditional focus on population equality across congressional districts might be more appropriately administered in concert with respect for natural communities of interest such as counties.

**Keywords:** American politics; elections; voting behavior

Why do people vote? What is more, how do legal, institutional, and political measures affect the races that people vote in and the candidates for whom citizens select to represent them on Election Day? Barrels of scholarly ink have been spilled bringing evidence to bear on these central questions of democracy (see Blais 2006 for a review; see Wolfinger and Rosenstone 1980 and Downs 1957 for seminal analyses in American politics). The substantial amount of work addressing these issues typically focuses on individual-level factors, like race (Canon 1999) and gender (Timpone 1998), or institutional factors, such as voting registration laws (Wolfinger and Rosenstone 1980) and the type of electoral system in question (Downs 1957). More recently, scholars are exploring how one particular factor, constitutionally mandated reapportionment and redistricting, affects these important issues (McDonald 2007; Mann and Cain 2005; Lublin 1997). Still, systematic examinations of redistricting's role in voting tend to focus on (1) electoral outcomes, that is, who wins: incumbents, men, women, or racial/ethnic minorities; and (2) partisan effects: the size of the margin that parties win by after reapportionment.

Too often ignored, in our view, are the potential effects that redistricting has on the voters themselves especially in terms of voter information, turnout, and behavior (for a notable exception, see Niemi, Powell, and Bicknell 1986). While concerns about whether uninformed voters wreak havoc on democracies have long animated political science research from Berelson, Lazarsfeld, and McPhee (1954) to Lupia and McCubbins (1998), they just have not focused on redistricting. We believe that one way to usefully improve our understanding of factors explaining both who votes and whom people vote for is to synthesize factors influenced by redistricting with issues concerning the acquisition of political information. In this article, we seek to explain how redistricting affects candidate recall, voter turnout, roll-off, and split-ticket voting in U.S. House elections. We assert that the most relevant aspect of redistricting that can help us gain purchase on these questions centers on the degree to which a congressional district's boundaries respect what are known in legal circles as natural communities of interest.

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In particular, we argue that when the redistricting process carves up natural communities into multiple congressional districts, voters in the portion of the natural community of interest that has been redrawn into a different congressional district than the majority of their neighbors are at a distinct informational disadvantage when it comes to learning about their representatives in Congress and, importantly, any challengers to the incumbent's seat. What is more, this potential informational asymmetry may lead these less informed voters to know less about their representative, stay home on Election Day, show up but beg off their congressional vote, or be increasingly likely to rely on partisan heuristics and cast a straight-ticket ballot.

On the one hand, if voters on the short end of the split—so to speak—do vote less, roll off more, or engage in higher levels of straight-ticket voting, some may take comfort in the idea that voters are behaving responsibly, since they are choosing to avoid making a choice when they know very little information about who is on the voters' electoral menu (see Hayes and McKee n.d.). On the other hand, if voters in districts that are not a part of their natural community of interest do turn out, do not roll off, and cast split-ticket ballots more often than voters in districts containing their natural community of interest, the very fear expressed by the authors of Voting over five decades ago increases in relevance: that democracy is not sustainable if uninformed voters nudge electoral outcomes in the direction of demagogues. Ultimately, our theoretical expectations and empirical analyses provide mixed evidence, suggesting on the one hand that placing voters in districts outside of their natural community of interest results in significant informational disadvantages that exacerbate political inequality while demonstrating on the other hand that voters living in the short end of the split show no significant differences in their activities at the ballot box.

This article proceeds as follows: First, we explain how natural communities of interest have become a central focus in recent rounds of redistricting; second, we develop our hypotheses regarding redistricting's influence on political participation and behavior; third, we explain our research methods, which rely on Geographic Information System (GIS) techniques merged with the American National Election Studies' (ANES) restricted data sets (which provide us more detailed measures of precisely where voters live); fourth, we report the results of the empirical tests of our hypotheses; and finally, we discuss the implications of our results with respect to the literature examining political participation, behavior, and representation, respectively.

**Redistricting: A Focus on Natural Communities of Interest**

The major purpose of redistricting is to provide fair and an equal representation, and the lion’s share of political science research has addressed this concern with questions regarding either partisan (Glazer, Grofman, and Robbins 1987; Swain, Borrelli, and Reed 1998; Shotts 2001; Cox and Katz 1999) or racial (Canon 1999; Lublin and Voss 2000; Epstein and O’Halloran 1999; Petrocik and Desposato 1998; Hill 1995) outcomes. Two key obstacles in achieving fair and equal representation have been the underrepresentation of racial minorities and partisan fights over control of drawing the district lines.

While the courts established population equality and the absence of racial discrimination as two key criteria on which to judge the constitutionality of congressional district plans, throughout these cases they also established the use of nonconstitutional criteria when evaluating district plans (see Persily 2005 and Canon 2005 for excellent reviews of judicial involvement). Three nonconstitutional rules are commonly referred to as the communities-of-interest standard. These criteria focus on three main issues: (1) compactness and contiguity, (2) preservation of county and municipal boundaries, and (3) preservation of communities of interest. Our focus is on the second and third of these criteria.

While the rules are similar, they also have very distinct differences when it comes to applying the communities-of-interest standard to redistricting plans. Perhaps the most common and concrete of these is the "compact and contiguous" rule. Originally designed as a constraint on partisan gerrymandering, the use of contiguous districts is now universally accepted in redistricting. Of the nonconstitutional court guidelines, political scientists have studied the compactness of districts in attempts to determine fair and nonbiased gerrymandering plans, how compactness relates to partisan and racial gerrymandering (Vickrey 1961; Ostdieck 1995; Niemi and Deegan 1978), and in one case, whether compactness affects turnout (Engstrom 2005). These studies usually focus on geometric and mathematical principles in studying compactness while overlooking the courts' guideline of natural communities of interest (Reock 1961; Neimi et al. 1990). While these compactness studies offer insight into the methods of drawing districts and
their final shapes, they ignore what is in our view the more fundamental issue: how districts adhere to communities of interest.

For some judicial guidance about what constitutes a natural community of interest, we can turn to the Carstens v. Lamm (1982) decision. In Carstens, communities of interest are “distinctive units which share common concerns with respect to one or more identifiable features such as geography, demography, ethnicity, culture, socio-economic status, or trade” (Carstens v. Lamm 543). Carstens also proclaims that “county and municipal boundaries should remain undivided whenever possible, because the sense of community derived from established governmental units tends to foster effective representation” (Carstens v. Lamm 543). Of course, counties do not necessarily coincide with other common views of communities of interest, including ethnic and racial neighborhoods; topographical defining features, such as rivers or mountains; and socioeconomic homogeneity (Butler and Cain 1992).

On balance, past decisions stress upholding natural communities of interest in whatever form they take, but distinctly recognize the importance of local political boundaries. To wit, county boundaries should be considered as a fundamental aspect of the redistricting process, as communities are usually defined in terms of local government boundaries (Butler and Cain 1992). With their prominent place in the communities-of-interest literature, we focus on county boundaries as a way to measure how well congressional districting adheres to the communities-of-interest guideline. In terms of the redistricting process, these boundaries are tangible and meaningful to politicians drawing the district lines. According to the National Association of Counties,

The election process begins and ends at the county level. County governments are empowered by state law to handle all local, state and national elections. County governments register new voters, institute primary elections, publicize Election Day procedures, mail election information to voters, select voting devices, establish polling sites and as the nation is learning, certify voting accuracy. (http://www.naco.org/counties/index.cfm)

As such, we equate natural communities of interest with county boundaries and examine the extent to which congressional districts in the 1990 and 2000 redistricting processes either ignored or adhered to these and consequences for the splitting of these county boundaries.

**Hypotheses: Why and How Might Natural Communities of Interest Matter?**

What difference does it make if congressional districts split communities? We contend that divided communities should have a direct bearing on what citizens know about their representatives and their congressperson’s electoral challengers and their likelihood to participate in the political process through the act of voting. We argue that voters in split communities are more likely to receive less information about their congressional election, or House member in general, than voters in counties that are entirely in one congressional district. In other words, these voters may be carved out of the community and forgotten by their representatives.

The major area of concern for constituents living in the short end of a split community is their ability to learn about their congressional candidates from the media. Schaffner (2001) shows that local coverage of members of Congress impacts the knowledge voters have about politics. Clarke and Evans (1983) find that the more coverage given to a congressional campaign, the more information ANES respondents had about the candidates. In other words, media coverage can provide voters with valuable information that they can use to make decisions about whom to vote for on Election Day. However, some constituents may process information about the wrong incumbent or race if they hear about it only from the media, the candidates themselves, or their friends and neighbors in the district that makes up the majority of the county and not the district into which the constituents have been drawn.

Perhaps most importantly, Vinson (1997) and Clarke and Evans (1983) find that local reporters tend to favor covering their local representative over the entire body of Congress. This is important as it means that local reporters working in Washington are more interested in what the local members of Congress are doing than they are worried about what is getting national attention. As a result, coverage of local members of Congress is critical for citizens if they are to be able to hold their representatives accountable. While we might expect members of Congress to receive coverage from their local newspapers, this coverage is not equal. Schaffner (2001) and Schaffner and Sellers (2003) show that district configuration in relation to media markets and state boundaries influences the amount of coverage members receive. What is crucial here is the fact that congressional districts split counties while media markets do not.
As such, voters who live in the small end of a split county can be expected to see, hear, and read less news about their own representative in Washington. This leads to our first hypothesis.

**Hypothesis 1:** Citizens redistricted outside of their community of interest will be less likely to recall the name of their congressperson or challenger than citizens who have been drawn into a district with the majority of their community of interest.

What is more, as Engstrom (2005) has shown, the ability to recall the name of one’s congressperson significantly affects the likelihood of voting altogether. Thus, our second hypothesis relates to voter turnout.

**Hypothesis 2:** Citizens redistricted outside of their community of interest will be less likely to turn out to vote than citizens who have been drawn into a district with the majority of their community of interest.

Of course, many citizens will be drawn to the polls for top-of-the-ticket races, or by their own sheer sense of democratic duty. Once again, drawing citizens outside of their communities of interest may result in voters’ showing up, but abstaining from voting in their House race rather than make an uninformed decision about candidates with whom they are not at all familiar (see Wattenberg, McAllister, and Salvanto 2000).

**Hypothesis 3:** Citizens redistricted outside of their community of interest will be more likely to roll off their congressional vote than citizens who have been drawn into a district with the majority of their community of interest.

At the same time, some voters may not want to leave blank the portion of the ballot dealing with their representative in the U.S. House of Representatives. What should we expect these voters to use to help guide their choice? The primary heuristic for voting is partisan identification. According to Erikson and Wright (2005, 79), “This identification provides voters with a standing decision to vote for their favored party—unless information from the current campaign gives them reason to temporarily defect with their vote.”

**Hypothesis 4:** Citizens redistricted outside of their community of interest will be more likely to vote a straight ticket (with the top-of-the-ticket and House votes) than citizens who have been drawn into a district with the majority of their community of interest.

Given previously established factors that affect split-ticket voting, such as voters’ wanting “balance” (Fiorina 1996; Lacy and Paolino 1998) or that voters simply have different expectations of congressmembers than they do for the president (Jacobson 1990), and given suggestions that partisan gerrymandering may be a cause of divided government, we believe that hypothesis 4, while worthy of analysis, is our least likely expectation.

**Research Design: Measuring Natural Communities of Interest**

If the way in which redistricting affects natural communities of interest is indeed central to issues of political participation and behavior, it is crucial to measure these areas as precisely as possible. Indeed, if the politicians, nonpartisan commissions, or judges doing the map design put next-door neighbors into two different congressional districts, not only must we be able to determine which voter is in which district, we must be able to determine which voter is surrounded by a greater share of his or her natural community of interest. To do this, we rely on GIS technology and the ANES restricted data set (Sapiro, Rosenstone, and the National Election Studies 2004). Unlike the data the ANES makes available at the Interuniversity Consortium for Political and Social Research, the restricted data set takes note of the respondents’ county and their zip code.

Our primary variables of interest are geographic in nature and related to how various political and geographic boundaries overlap. The key geographic relationship is whether or not a congressional district splits county boundaries and the extent of those splits. In our view, for those people who live in split counties, the constituents living in the part of the county with a greater overlap of the congressional district should have advantages over someone who lives in the split with less district–county overlap.

To measure our district–county dyad, we develop an overlap variable. Using ArcMap, we overlay congressional district maps from the 104th to 108th Congresses with county boundaries and then calculate the area of the union for each dyad. To get our overlap score, we divide the union area by the county’s total area (dyad area/total area of the county). This gives us district data from 1994 to 2002. We have data from two redistricting cycles that
also accounts for mid-decade changes during the 1990s. Throughout 1990s, each Congress saw several states undergo generally minor and, in some instances, substantial court-ordered mid-decade district changes.

Our measure is different from Engstrom’s (2005). Engstrom measures the congruity of congressional districts to county boundaries. So, his variable, to the best of our knowledge, has one value for each congressional district. This puts the focus on the congressional district. We focus on the district-county dyad level. We calculate an overlap measure between the district and county. Each district-county dyad has a separate score. If a county is completely within one district, it receives a score of 1. As values decrease (to approaching zero), the score indicates a smaller overlap between the district and county.

Figure 1 illustrates this measure with an example from the 2002 districts in Kentucky. Here our focus is on Jefferson County, which is split between districts 2 and 3. Congressional district 3 is completely within Jefferson County’s boundaries (overlap score of 1), while district 2 barely sneaks into two small pockets in the southern end of the county (overlap score of 0.047). The rest of the second district covers the eastern and southern Louisville suburbs and moves along the Ohio River and then south almost to the Tennessee border. The district includes the third- and fourth-largest cities in the state (Owensboro and Bowling Green) and includes nineteen full counties and two partial counties (including Jefferson). While residents in over 95 percent of Jefferson County make up the entire third district, the citizens living in the remaining 5 percent of the county live in the second district, with its population centers in the western part of the state.

It is important to note that since the ANES reports both the county and the congressional district of the respondent, we know precisely which (for example) Jefferson County respondents are in the second district and which are in the third. Thus, our dyad measure takes precise, explicit account for the degree of overlap between the county and congressional district, as it is merged with the relevant ANES data concerning county and congressional district of residence and allows us to use more information beyond a dummy variable for whether or not a respondent is split from his or her main community of interest.8

We argue those constituents from Jefferson County who live in the second district are less likely to receive
the same attention from candidates and their representative and will thus have a harder time finding out information from the media as those in the third district. For starters, second-district candidates are more likely to focus their time in the population centers of Bowling Green and Owensboro (both in separate media markets), and the media in the Louisville market will have more incentive to cover the third district since it covers most of the area.

But is the Jefferson County situation common? Indeed, just over 70 percent of the counties are completely within one congressional district. This is not surprising since over 95 percent of the counties in the United States have a population less than six hundred thousand (reasonably close to the size of a congressional district) and do not need to be split to reach population equality. Overall, the average district-county dyad is 84 percent, with a standard deviation of 0.297. The prevalence of split counties throughout the country is common enough to warrant investigation if there are ramifications for voters.

Given previous findings by Schaffner (2001), Schaffner and Sellers (2003), and Engstrom (2005) for the importance of congressional district and media market overlap, we need to account for this relationship in our analysis. While this adds another layer of geographic complexity to our analysis, it also accounts for an important way voters receive information. Therefore, we control for this relationship in our analysis.

Since media markets overlap perfectly with county boundaries, we use a measure similar to Engstrom’s (2005) to determine the overlap between media markets and congressional districts. A congressional district that overlaps perfectly with a media market should provide better information to its constituents rather than one that is split into multiple markets or a media market with multiple congressional districts. In the analysis, we calculate the overlap score in the same manner as district-county dyad overlap. Higher scores indicate a greater level of overlap between a district and media market.

Aside from the variables of most interest to us, we control for a variety of factors that may affect candidate recall, voter turnout, split-ticket voting, and roll-off. As described in the appendix, these controls include the usual suspects for studies of individual voting behavior, with variables such as income, age, education, race, partisan strength, political knowledge and activity, and gender. We also include a measure for how long a respondent has lived in the community to control for whether or not individuals new to an area are less likely to have information about their particular House race.

We also control for important district-level variables, such as open-seat races, unopposed seats, and the amount of money spent in a congressional race. Finally, we include several other district and/or geographic controls that may be important components for understanding the influence of district geography on voter participation and information. The first is the urbanism of the county. Urban counties with populations over the ideal district size cannot completely overlap with a district and therefore will have more splits. We also account for whether or not a district is suburban, leaving rural or small-town areas as the base category. We also control for the region in which the country is located. Our dummy variable controls for New England states because counties are not as fundamental of political units in most New England states compared to the rest of the country.

## Analysis

To analyze our hypotheses, we merged our GIS-based geographic variables with the ANES cumulative file for the years 1994 to 2002. In this section, we will introduce our dependent variable for each model, proceed with the analysis, and then place our findings into a broader context.

Table 1 reports the coefficients, standard errors, and other relevant information for our models predicting whether ANES respondents recall their House candidates from 1994 to 2000. Model 1 examines whether respondents said they could recall their House candidates. Our dependent variable is a dummy variable based on respondents’ self-reported recall. As we expected, the district–county overlap has a positive effect on recall of House candidates. As the overlap increases, citizens are more likely to be able to recall the candidates for their districts’ House seat. The district–media market overlap’s coefficient is also positive and significant. This suggests that when it comes to candidate recall, both county of residence and media market are important influences on people’s ability to recall House candidates.

In addition to our major variables of interest, the individual-level control variables are statistically significant with coefficients signed in predictable directions, as older, better educated, wealthier, more partisan individuals who both know the majority party in Congress and discuss politics on a regular basis are more likely to recall their House candidates. Additionally, total campaign expenditures and years in community are also positive and significant.
Model 2 accounts for the ability of respondents to actually name their candidates, rather than just claim to be able to recall them. Here, we use a relaxed definition of recall by coding the variable as 1 if the respondent was able to provide at least one name correctly. Individuals receive a zero if they could not provide any correct names. Once again, both district-county overlap and district-media market overlap have a significant, positive effect. Our control variables have the same influence (in terms of statistical significance and the direction of the coefficients) as in the model in the left-hand column of Table 1. The one exception is that unopposed reached statistical significance with a negatively signed coefficient.

Of course, what is of interest is how much district-county and district-media market overlap affects candidate recall. Figure 2 reports the predicted probabilities and 95 percent confidence intervals for candidate recall given the percentage of district-county overlap and district-media market overlap. As the overlap increases on both geographic features, ANES respondents are more likely to recall their House candidates. What is especially striking is the importance of political knowledge. Figure 2 suggests that both district-county and district-media market overlap play a crucial role in political inequality as mediated by political knowledge. Indeed, those who live in the short end of either split and are not aware of which party has the majority in Congress are the least likely to recall their House candidates. For self-reported recall, we see about a 10 percent increase across the range of district-county overlap for those who know the majority and about a 7 percent increase for those who do not know the majority. Across the district-media market overlap, we see even bigger differences, with about an 18 percent increase for those who know the majority and a 15 percent increase for those who do not know the majority.

In terms of actually recalling a candidate’s name, Figure 3 shows similar effects for both groups. Across the range of district-county overlap, we see a 12 percent increase in the ability to name correctly a candidate for those who know the majority and a 6 percent increase for those who do not know the majority. In terms of the district-media market overlap, the increases are 24 percent for those who know
the majority and 16 percent for those who do not. These are substantial differences based simply on one’s own political geography.

Judging from Figures 2 and 3, it appears that the media market is the more influential in affecting candidate recall than county-district overlap. However, a careful examination of the figures shows that both geographic variables have a similar influence until the 50 percent district overlap mark is reached; at this point, the slope increase is more dramatic for the media market variable. It is important to note most respondents do not live in areas with a district-media market overlap of greater than 0.50. The mean district-media market overlap is only 0.24 with a standard deviation of 0.23, whereas, the district-county overlap mean is 0.68 with a standard deviation of 0.35. Practically, most respondents live in areas where the influence of these geographic features is similar. Statistically, media markets may have a slightly greater influence on candidate recall, but practically, both the county and the media market splits are similar in their explanatory power.

Table 2 reports the coefficients, standard errors, and other relevant information for models testing our hypotheses with respect to voting behavior. In models 3 through 5, whether measuring determinants of turnout, roll-off, or straight-ticket voting, neither district-county nor district-media market overlap has a statistically significant affect on voting behavior. The usual suspects of individual-level factors are significant in these models of voter behavior. We do find that how long one has lived in his or her community affects voting behavior (years in community). The longer a voter has lived in his or her current community, the more likely he or she is to vote and the less likely to roll off and vote straight ticket. In conjunction with our earlier findings, this suggests individuals with greater community stability not only have
Figure 3
Predicted Probabilities of Correct Candidate Recall by Dyad Overlap

Dyad Overlap

Know Majority
Do Not Know Majority
95% Confidence Interval

more information about their candidates but also are more likely to participate at the voting booth.

While our main independent variables of interest do not reach statistical significance, other recent studies show redistricting does affect voting behavior. As noted earlier, Engstrom (2005) found that district–media market overlap affects turnout, though we do not find evidence of that when controlling for district–county overlap as well. Hayes and McKee (n.d.) find that when people are drawn into a new district, roll-off increases in the next House elections. We suggest this is an area that needs more examination for a fuller understanding of the influence of redistricting and communities of interest on voting behavior.

Discussion

Theoretical and empirical investigations focusing on both whether and how people vote tend to examine citizens’ socioeconomic status, race, gender, partisan affiliation, and ideological orientations. When attention is turned to Congress, campaign spending, the power of incumbency, and the type of race in question are often added to the mix. Too often ignored, in our view, is how the cartographers of redistricting draw some voters out of their natural community of interest, the county in which they live, and into a district of strangers. Our analysis suggests that voters living in a small sliver of a county that has been carved into more than one congressional district are different from voters who have a congressperson representing the lion’s share of the voters’ natural community of interest.

First, and most importantly, our results suggest that voters on the short end of the district–county split are less likely to recall the candidates in their House race than those living in the long end of the split. Of course, natural communities of interest besides the county matter as well. Our analysis shows slightly a stronger influence for media market when examining candidate recall.
Table 2
Determinants of Voting Behavior

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Model 3: Turnout</th>
<th>Model 4: Roll-off</th>
<th>Model 5: Straight-ticket Voting</th>
</tr>
</thead>
<tbody>
<tr>
<td>District-county overlap</td>
<td>-0.059 (0.1301)</td>
<td>-0.663 (0.4675)</td>
<td>-0.433 (0.4605)</td>
</tr>
<tr>
<td>Media market-district overlap</td>
<td>0.2150 (0.2684)</td>
<td>-0.426 (0.6909)</td>
<td>0.2657 (0.6170)</td>
</tr>
<tr>
<td>Urban a</td>
<td>0.0252 (0.3189)</td>
<td>0.4938 (0.2640)</td>
<td></td>
</tr>
<tr>
<td>Suburban b</td>
<td>0.3254 (0.2639)</td>
<td>0.1645 (0.2726)</td>
<td></td>
</tr>
<tr>
<td>Region</td>
<td>0.0874 (0.1746)</td>
<td>0.0765 (0.2947)</td>
<td>-0.347 (0.2192)</td>
</tr>
<tr>
<td>Years in community</td>
<td>0.3976 (0.0378)**</td>
<td>-0.415 (0.1608)**</td>
<td>-0.368 (0.1189)**</td>
</tr>
<tr>
<td>Open seat</td>
<td>-0.014 (0.1282)</td>
<td>-0.451 (0.5922)</td>
<td>0.5018 (0.3071)</td>
</tr>
<tr>
<td>Unopposed</td>
<td>-0.006 (0.1220)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total campaign expenditures (log)</td>
<td>0.0894 (0.0551)</td>
<td>-0.087 (0.1720)</td>
<td>0.0332 (0.1325)</td>
</tr>
<tr>
<td>Age</td>
<td>0.0355 (0.0023)**</td>
<td>-0.031 (0.0078)**</td>
<td>0.0024 (0.0052)</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.002 (0.0768)</td>
<td>0.4241 (0.2231)</td>
<td>0.3044 (0.1898)</td>
</tr>
<tr>
<td>Race</td>
<td>0.0209 (0.0993)</td>
<td>-0.212 (0.2980)</td>
<td>-0.371 (0.2534)</td>
</tr>
<tr>
<td>Income</td>
<td>0.2887 (0.0384)**</td>
<td>-0.256 (0.1346)</td>
<td>0.0527 (0.0864)</td>
</tr>
<tr>
<td>Education</td>
<td>0.3413 (0.0275)**</td>
<td>-0.183 (0.0783)*</td>
<td>-0.129 (0.0630)*</td>
</tr>
<tr>
<td>Partisan strength</td>
<td>0.3655 (0.0333)**</td>
<td>-0.178 (0.0863)*</td>
<td>0.5923 (0.0829)**</td>
</tr>
<tr>
<td>Knowledge</td>
<td>0.7668 (0.0821)**</td>
<td>-0.093 (0.3066)</td>
<td>0.1029 (0.2004)</td>
</tr>
<tr>
<td>Discuss politics</td>
<td>0.7796 (0.0720)**</td>
<td>-0.484 (0.2207)*</td>
<td>0.0710 (0.2021)</td>
</tr>
<tr>
<td>Recall House candidates</td>
<td></td>
<td>-1.18 (0.2191)**</td>
<td>-0.004 (0.2576)</td>
</tr>
<tr>
<td>1996</td>
<td>0.9353 (0.0800)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>-0.237 (0.1779)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>1.212 (0.1146)**</td>
<td>0.2023 (0.3450)</td>
<td>0.0881 (0.1982)</td>
</tr>
<tr>
<td>2002</td>
<td>0.1928 (0.1835)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-6.64 (0.7717)**</td>
<td>3.621 (2.457)</td>
<td>1.060 (1.845)</td>
</tr>
<tr>
<td>N</td>
<td>6,828</td>
<td>1,407</td>
<td>1,187</td>
</tr>
<tr>
<td>Pseudo $R^2$</td>
<td>0.24</td>
<td>0.17</td>
<td>0.08</td>
</tr>
</tbody>
</table>

a. Rural or small town is the base category.
*p < .05, **p < .01, ***p < .001.

Particularly important is the consistent demonstration that political knowledge consistently mediates our findings with respect to district-county and district-media market overlap. The more sophisticated the voter, the more likely she or he is to overcome the cartographic and informational disadvantages of living in the short end of the district split. Thus, less sophisticated voters are differentially negatively affected by living in the part of a county or media market that is drawn into a district outside those voters' natural communities of interest.

Indeed, these findings leave us a bit ambivalent as to their meaning with respect to the health of democracy in America. On the one hand, it is pleasing that voters in split communities turn out to vote at statistically equivalent rates as those not in split communities. On the other hand, the fact that voters on the short end of the split do not significantly roll off more than voters represented by a legislator within the voters' community of interest suggests that voters are willing to cast a ballot with extremely limited information. Potentially troubling is the possibility that voters on the short end of the split are not more reliant on a partisan heuristic (as hinted at by our straight/split-ticket voting analysis), which ought to be most useful to them in situations where they have limited information. What these voters use to make their congressional voting decision remains fodder for future research. Even so, political knowledge is a key mediator of the conditions under which the splitting of natural communities of interest matters, suggesting that those with less political knowledge experience the troubling consequences of this redistricting outcome more than those who know something about politics in the United States.

While we have chosen to follow conventional definitions of communities of interest and focus on the county here, our analysis opens the door to investigations seeking to uncover how other, finer-grained communities of interest may affect voter knowledge of House candidates, turnout, and behavior. We do not pretend that counties are the only, or even always the most relevant, political community of interest for a citizen. Indeed, a congressional boundary that slices off a small piece of a suburb or an urban area, locating those residents in a more rural district,
could have even more substantial affects on voter knowledge, turnout, and behavior. Defining communities of interest to include pockets of racially or ethnically homogeneous neighborhoods could shed further light on the politically relevant reach of particular communities of interest. Furthermore, since it is possible that citizens could be drawn into a district that removes them from one community of interest but leaves them in another (i.e., the county is split, but their neighborhood remains intact), analyses such as these could help us to understand the conditions under which one community of interest is more politically relevant than another.

Turning our attention to the redistricting process, we echo the two decades-old sentiments of Niemi, Powell, and Bicknell (1986, 187) that protecting communities of interest and particularly county boundaries "merits more attention than the Supreme Court has heretofore given it." It is important to point out our statistically and substantively significant findings for county boundaries even with a control for media markets. While media markets are a viable community of interest, we argue a focus on county boundaries is more appropriate for legal and geographic purposes, and they provide the voters with the easiest way to recognize and gain information about their districts.

Returning to our sample congressional districts in Jefferson County, Kentucky, our findings suggest that equal population may not always lead to the "best" representation. The constituents carved out of Jefferson County and into district 2 for "one person-one vote" purposes are clearly at informational and representational disadvantages. The Supreme Court's adherence to absolute population equality for congressional districts is worthy of being reconsidered in light of our analyses. Allowances for some small deviation from the population standard similar to what the Court has done with respect to state legislative redistricting may help diminish the chance that some voters will be forgotten in redistricting's wake. Connecting our work with recent evidence that upholding county boundaries is an effective protection against the negative effects of gerrymandering in state legislative redistricting (Winburn 2008), we suggest that the Supreme Court reconsider protecting communities of interest in concert with the principle of one person—one vote when drawing districting boundaries.

Of course, if the Supreme Court took our advice, the implementation thereof would be tricky, to say the least. After all, one person—one vote is fair in the sense that it is reducible to one consideration: treat all votes equally. We suggest that in addition to fairness, the Court ought to consider ways in which to make the goal of one person—one vote more effective. Since voters in the short end of the split clearly have an informational deficit compared to other voters, one person—one vote is fair, but ineffective. Given Carstens v. Lamm's directive regarding effective representation, instructing redistricting bodies across the states to consider protecting counties when possible and other, smaller (but perhaps more consequential) communities of interest could make the Court's goal of fair and effective representation more likely.

### Appendix

#### List of Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidate recall</td>
<td>1 = R said they could recall any candidates, 0 = if not</td>
</tr>
<tr>
<td>Correct candidate recall</td>
<td>1 = R correctly recalled any candidate, 0 = if not</td>
</tr>
<tr>
<td>Vote turnout</td>
<td>1 = R voted, 0 = if not</td>
</tr>
<tr>
<td>Roll-off</td>
<td>1 = R rolled off, 0 = if not</td>
</tr>
<tr>
<td>Straight-ticket vote</td>
<td>1 = R voted straight ticket, 0 = if not</td>
</tr>
<tr>
<td>District-county overlap</td>
<td>Percentage score from 0 to 1</td>
</tr>
<tr>
<td>District-media market overlap</td>
<td>Percentage score from 0 to 1</td>
</tr>
<tr>
<td>Urban area</td>
<td>1 = urban area, 0 = if not</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ANES Cumulative File Variable Category or Data Source</th>
<th>Mean or Modal Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCF0972</td>
<td>1</td>
</tr>
<tr>
<td>VCF0976</td>
<td>2</td>
</tr>
<tr>
<td>VCF0702</td>
<td>3</td>
</tr>
<tr>
<td>Created from VCF0706 and VCF0735</td>
<td>.24</td>
</tr>
<tr>
<td>VCF0709</td>
<td>.68</td>
</tr>
<tr>
<td>Created from union areas in ArcMap</td>
<td>.24</td>
</tr>
<tr>
<td>Created from union areas in ArcMap</td>
<td>0</td>
</tr>
</tbody>
</table>

(continued)
### Appendix (continued)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coding</th>
<th>Model(s)</th>
<th>ANES Cumulative File Variable Category or Data Source</th>
<th>Mean or Modal Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suburban area&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1 = suburbs, 0 = if not</td>
<td>1, 2, 4, 5</td>
<td>Created from VCF0111</td>
<td>0</td>
</tr>
<tr>
<td>Region</td>
<td>1 = northeast census region, 0 = if not</td>
<td>1–5</td>
<td>VCF0112</td>
<td>0</td>
</tr>
<tr>
<td>Years in community</td>
<td>0 = one year or less, 1 = two to five years, 2 = more than five years, 3 = all of life</td>
<td>1–5</td>
<td>VCF0001</td>
<td>2</td>
</tr>
<tr>
<td>Open seat</td>
<td>1 = open seat, 0 = incumbent running</td>
<td>1, 2, 3</td>
<td>VCF0903</td>
<td>0</td>
</tr>
<tr>
<td>Unopposed</td>
<td>1 = one major party candidate, 0 = two major party candidates</td>
<td>1, 2, 3</td>
<td>VCF0905</td>
<td>0</td>
</tr>
<tr>
<td>Total campaign expenditures</td>
<td>Log of total campaign expenditures (all candidates)</td>
<td>1–5</td>
<td>Federal Election Commission candidate summary files</td>
<td>13.59</td>
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<tr>
<td>Age</td>
<td>Respondent's age</td>
<td>1–5</td>
<td>VCF0101</td>
<td>47.27</td>
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<tr>
<td>Gender</td>
<td>1 = male, 0 = female</td>
<td>1–5</td>
<td>VCF0104</td>
<td>0</td>
</tr>
<tr>
<td>Race</td>
<td>1 = white, 0 = minority</td>
<td>1–5</td>
<td>VCF0106</td>
<td>1</td>
</tr>
<tr>
<td>Income</td>
<td>0 = 0 to 16th percentile, 1 = 17th to 33rd percentile, 2 = 34th to 67th percentile, 3 = 68th to 95th percentile, 4 = 96th to 100th percentile</td>
<td>1–5</td>
<td>VCF0114</td>
<td>2</td>
</tr>
<tr>
<td>Education</td>
<td>0 = &lt; 8th grade; 1 = 9th–12th grade, no diploma; 2 = HS diploma or GED; 3 = HS or GED plus nonacademic training; 4 = some college; 5 = BA; 6 = &gt; BA</td>
<td>1–5</td>
<td>VCF0140a</td>
<td>2</td>
</tr>
<tr>
<td>Partisan strength</td>
<td>0 = independent or apolitical, 1 = leaning independent, 2 = weak partisan, 3 = strong partisan</td>
<td>1–5</td>
<td>VCF0305</td>
<td>2</td>
</tr>
<tr>
<td>Political knowledge</td>
<td>1 = know congressional majority, 0 = if not</td>
<td>1–5</td>
<td>VCF0729</td>
<td>1</td>
</tr>
<tr>
<td>Discuss politics</td>
<td>1 = discuss politics, 0 = if not</td>
<td>1–5</td>
<td>VCF0731</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: ANES = American National Election Studies; R = respondent; HS = high school; GED = general equivalency diploma. 
<sup>a</sup> = Rural or small town is the base category. Additionally, the 2002 ANES survey does not provide the urban/rural/suburban data.

### Notes

1. Though see Engstrom (2005) for what we believe to be the first word on the matter.
2. We define roll-off as the abstention from voting in a voter's race for the House of Representatives after having already cast a presidential, gubernatorial, or senatorial vote at the top of the ticket.
3. We make no distinction between redistricting that splits natural communities of interest for reasons of partisan and/or racial gerrymandering or because the community of interest is home to more than the number of people allowed to be in a congressional district (in order to adhere to the "one person–one vote" principle).
4. Hayes and McKee (n.d.) use American National Election Studies (ANES) panel data and data in successive rounds of redistricting in Texas to show that voters did not fall prey to this fear. They focused on voters drawn into districts with a new incumbent, rather than voters who are drawn out of their natural community of interest, which may or may not have been the last district in which the voter lived.
5. However, media markets do not split counties.
8. We ran each of our models using a dummy variable for individuals split from their community of interest and found our results did not change.
9. In this analysis, we do not differentiate between county splits made for purposes of population, gerrymandering, or other reasons.
10. We considered additional geographic variables as well. Perhaps most important is the amount of area a county makes up within a district. This would be the county–district dyad (percentage...
of dyad area/area of the congressional district). If a congressional district includes two counties and one of them covers 90 percent of the district, it would make sense the residents in that county receive more attention and receive more information than those in the other county. We also have measures for the total districts in a county, total counties in a district, media markets in a district, and districts in a media market. We also examined county population and whether a respondent lived in a county above the ideal district size. Not surprisingly, there are high levels of multicollinearity between these variables; therefore, we include only our primary variables of interest, the district–county overlap and district–media market overlap, in our analysis. Additionally, the substantive results did not change when including these additional variables.

11. The appendix provides the details on our coding protocol.

12. We also ran the models with an interaction variable between the district–county overlap and the district–media market overlap. Since the substantive results did not change, we include the models without the interaction for the more straightforward interpretation. Unfortunately, the 2002 ANES did not ask many of the same questions as the previous years and is therefore excluded from most of the analysis.

13. The appendix also supplies more information on the dependent variables.

14. We also ran all of the models with a variable for the years since the district underwent a geographic change. We do not include this variable in the analysis due to multicollinearity with the year dummies variable. Once again, we did not see a significant difference in the results using the year-change variable. We include the year dummies since the year-change variable essentially captured the year dummy effect and was censored since our data did not extend before 1994. This limited our ability to evaluate the districts that did not change any during the 1992 redistricting cycle.

15. See Duff et al. (2007) for a recent review of the literature highlighting the problems with the ANES’s measure for voter turnout and how an improved turnout question diminishes the problem of overreporting turnout by about 8 percentage points.

References


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