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# Party registration choices as a function of the geographic distribution of partisanship: a model of ‘hidden partisanship’ and an illustrative test

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## Abstract

The Public Choice literature has identified conditions in which voters in multi-candidate contests would have an incentive to vote strategically rather than vote for the most preferred candidate or candidates. In the US, where party registration and party primaries play a critical role in the electoral process—especially in states with closed primaries—the existence of multiple layers of elections across constituencies can induce strategic falsification of party registration that is tied to the geographic distribution of electoral strength. Following V. O. Key, we should expect that a long history of one party dominance in local elections should encourage voters to register in the party whose elections are most determinative of electoral choices, even if that is not the party with which they most identify. However, in many states, while politics may be dominated by one party locally, there may be real two-party competition for at least some offices at the state level and for the presidency.

We use a ‘natural experiment’ to view the link between party registration and voting for president and obscure judicial offices in order to test the hypothesis that, for whichever party is the minority party in the local unit, party registration will understate the voting support in presidential or other statewide elections, where that party’s candidates have a realistic chance to win. In the modern South this hypothesis can be shown to imply that the relationship between Republican party registration and vote shares for Republican candidates for president or statewide office ought to be *curvilinear*. To test this and other related hypotheses, we examine data on political units (e.g. counties) with considerable variation in party registration and concomitant variation in the extent of one-party dominance of local politics by looking at county level data from North Carolina for the presidential elections and obscure judicial elections in 1984 and 1996. As hypothesized, for the North Carolina data the relationship between party registration and voting can best be fit by a quadratic function, but the strength of the quadratic term is much less for the 1996 data, reflecting the increase in Republican

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registration and the success of local GOP candidates in the 1990s. © 1999 Elsevier Science Ltd. All rights reserved.

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## Introduction

Voters may not always choose to vote for the candidate they most prefer due to strategic considerations. Rational strategies may also explain why some voters may choose to vote in a given party's primary even though they then plan on voting against that party's candidates for office in the general election. In the United States, in states with open primaries, it is well known that not all those who vote in a given party primary are party loyalists. In an open primary, voters from another party may 'raid' the other party to help select a candidate who has a higher probability of being defeated in the general election. If outcomes in the general election are mostly a foregone conclusion, they may choose to influence the outcome of the other party's primary by voting for the candidate in it who is from their perspective, the 'least bad'.

Many states, however, have closed primaries, and we might not expect such strategic incentives to apply with the same force in situations where there is a cost to be born in changing party registration and where the circumstances under which it might be rational to do so may not be known until quite close to the actual election. Indeed, we know that in states with closed primaries, voters do not frequently shift their party registration, and that the higher the level of party registration for a given party, the higher the level of support for that party's candidates. Yet, following V. O. Key (1949), we should also expect that even in states with closed primaries, a long history of one-party dominance in local elections should encourage voters to register in the party whose elections are more likely to be determinative of electoral victory, even if they identify with the opposite party and generally support its candidates.

The purpose of this paper is to attempt to ascertain whether such strategic misrepresentation of party preferences still takes place in the South. To do so, we make use of a natural experiment. In some states in the South, while politics has been dominated by a given party locally, there has, nonetheless, been real two-party competition at the state level. By examining data on political units (e.g. counties) in one such state, North Carolina—a state with considerable variation in party registration and concomitant variation in the extent of one-party dominance of local politics—we can develop and test hypotheses about the extent to which we should observe strategic party registration at the county level.

## Theory

The discussion of our theory begins with a general hypothesis:

**Hypothesis 1.** *In states that are politically competitive in terms of competition for president or other state-wide office, but that have localities (e.g. counties) that are almost entirely under one-party control, party registration will understate the voting support in statewide elections for whichever party is the minority party in the local unit.*

In other words, *ceteris paribus*: in overwhelmingly Democratic areas Republican support for the Republican candidate for president or other state-wide office should be greater than Republican registration (since we expect that ‘hidden’ Republicans are to be found among Democratic registrants), while in overwhelmingly Republican areas Republican support should be less than Republican registration (since we expect that ‘hidden’ Democrats are to be found among Republican registrants).

More specifically, we may posit a curvilinear contextual ecological relationship between Republican party registration in political subunits and the vote shares for Republican candidates for state-wide office in those units which implies that:

**Hypothesis 2.** *In states that are politically competitive in terms of competition for state-wide office, but that have localities (e.g. counties) that are almost entirely under one-party control, the expected relationship between party support and party registration ought to be quadratic rather than linear.*

To derive this hypothesis, we use a model of contextual effects (see Boudon (1963)) that has been used for purposes of electoral analysis by a number of authors, including Sprague (1976), Miller (1977), Grofman (1987), Kohfield and Sprague (1995), Grofman (1995), Grofman and Handley (1995) and Owen and Grofman (1997), but has never—as far as we are aware—been used to test a strategic model of party registration choices.

We posit that the factors that affect choice of party registration are correlated with party voting strength. For a particularly simple form of context effect, we arrive at a quadratic model of the link between party registration and party voting support instead of a linear model.

Let

$R$  = the proportion of Republican registrants in some given ecological unit such as a county<sup>1</sup>;

$D$  = the proportion of Democratic and unaffiliated (i.e. not Republican registrants) in some given ecological unit such as a county<sup>2</sup>;

<sup>1</sup> We omit a county specific subscript for ease of notation.

<sup>2</sup> We omit a county specific subscript for ease of notation. Unaffiliated registration has been growing, but is still relatively small and largely constant across counties. Hereafter,  $D$  or Democratic registration will stand for “not Republican” registration.

$P_R$  = the proportion of the vote received by the Republican candidate;

$P_D$  = the proportion of the vote received by the Democratic candidate;

$P_{RR}$  = the proportion of Republican registrants who support the Republican candidate; and

$P_{DR}$  = the proportion of Democratic registrants who support the Republican candidate.

Simplifying by assuming that all candidates are either Democrats or Republicans, we posit *linear contextual effects* of the form:

$$P_{RR} = a_1(1 - R) + c_1 \quad (1a)$$

$$P_{DR} = a_2(1 - R) + c_2 \quad (1b)$$

Here we are positing that the extent of Republican support for Republican candidates is contingent on the partisan composition of the ecological unit (e.g. county). It is apparent from these expressions that the greater the absolute value of the parameters  $a_1$  and  $a_2$  relative to  $c_1$  and  $c_2$ , the greater the contextual effect. However the values of the parameters in Eq. (1a) and (1b) must be such that both  $P_{DR}$  or  $P_{RR}$  must remain in the interval [0,1] for all values of  $R$  in that interval.

The context effect may, in principle, work in one of two directions: for example, either support for the Republican candidate among Democratic registrants could increase with percentage of Democratic registration ( $a_2 > 0$ ) or it could decrease ( $a_2 < 0$ ).

Following V. O. Key (1949), however, we may posit that some Republican-leaning voters who live in areas that are locally under Democratic control are likely to register to vote in the Democratic Party primary, and similarly, some Democratic-leaning voters who live in areas that are locally under Republican control are likely to register to vote in the Republican Party primary. This would lead us to expect that  $a_2 > 0$  and  $a_1 > 0$ .

On the other hand, there is another type of contextual effect also operative such that the areas of the state that are the most Democratic are also those with the highest proportion of black voters. Since black voters are very unlikely to vote Republican, this type of contextual effect would lead us to expect that  $a_2 < 0$ . Since, for a state like North Carolina, we would anticipate that the latter effect would outweigh in importance the former effect, on balance, we posit that  $a_2 < 0$ .

For the electorate as a whole we have the following ‘bookkeeping’ identity (probably first stated by Leo Goodman (1953)):

$$P_R = P_{RR}R + P_{DR}(1 - R) \quad (2)$$

In other words, the proportion of the electorate that votes for the Republican candidate equals the proportion of Republican registrants who vote for the Republican

candidate multiplied by the proportion of members of the electorate who are Republican registrants plus the proportion of other registrants who vote for the Republican candidate multiplied by the proportion of members of the electorate who are other registrants<sup>3</sup>.

By rearranging terms, we may rewrite Eq. (2) as a linear equation in  $R$ :

$$P_R = (P_{RR} - P_{DR})R + P_{DR} \quad (2')$$

Substituting in the values of  $P_{RR}$  and  $P_{DR}$  from Eq. (1a) and (1b) into Eq. (2), we obtain:

$$P_R = (a_1(1 - R) + c_1)R + (a_2(1 - R) + c_2)(1 - R) \quad (3)$$

$$\begin{aligned} P_R &= (a_1 + c_1)R - a_1R^2 + (a_2 + c_2) - a_2R - (a_2 + c_2)R + a_2R^2 \quad (3') \\ &= (a_2 - a_1)R^2 + (a_1 + c_1 - 2a_2 - c_2)R + (a_2 + c_2) \end{aligned}$$

Now we obtain a quadratic rather than a linear relationship between  $P_R$  and  $R$ . Thus, if there are linear context effects as given in Eq. (1a) and (1b), then the vote for the Republican candidate in units with given registration characteristics can be estimated from an ecological regression across local units of government as a quadratic (rather than a linear) function of the proportion of Republican registrants in the electorate in that unit<sup>4</sup>:

$$P_R = CR^2 + BR + A. \quad (4)$$

When we empirically fit a quadratic relationship to the data on registration and party support at the county level we may check to see whether this hypothesis is supported by determining whether the quadratic term is statistically significant. However, while it is necessary to establish that a quadratic relationship improves predicted fit, what we really wish to test are the hypotheses that:

$$a_2 < 0$$

(a context effect posited to exist because the most heavily Democratic areas are going to be disproportionately black in population and black Democrats will have lower crossover for Republican candidates than white Democrats); and that:

$$a_1 > 0$$

(a context effect posited to exist because heavily Republican areas will have 'concealed' Democrats among the Republican registrants).

<sup>3</sup> Here we omit the consideration of differential turnout among Democratic and Republican registrants. A two-equation modification of Goodman's standard ecological regression technique has been proposed to deal with the differential turnout among subgroups of voters, but we omit discussion of that further level of complexity here (see however, Loewen and Grofman (1990)).

<sup>4</sup> While Eq. (2) is a tautology (see, however, <sup>3</sup>), it applies only to the electorate as a whole. The 'trick' of ecological regression is to posit that the same relationship holds approximately across all ecological units.

Unfortunately the information that can be derived from a quadratic relationship usually does not permit a direct test of these two inequalities. We cannot directly solve for the values of the parameters  $a_1$ ,  $a_2$ ,  $c_1$  and  $c_2$  of our hypothesized contextual model because four parameters cannot be recovered from the three fitted coefficients of the quadratic regression given in Eq. (3)<sup>5</sup>. Moreover, the mere fact that  $C$  is negative does not tell us either that  $a_1$  is positive (since  $a_2$  is posited to be negative and it may be larger in absolute value than  $a_1$ ), or that  $a_2$  is negative (since  $a_1$  is posited to be positive and it may be larger in absolute value than  $a_2$ ). However, we do know that  $C = a_2 - a_1$ . Thus, if  $a_2 < 0$  and also  $C < -1$ , then it must be the case that  $a_1 > 0$ , since we know that, by assumption, the absolute values of both  $a_1$  and  $a_2$  are located in the open interval between 0 and 1.

In summary, while there is a way in which we can directly test whether  $a_1$  is positive if we assume  $a_2$  to be negative, even under this simplifying assumption our test is likely to be inconclusive, since it will only be conclusive when  $C < -1$ . In like manner, even if we expect  $a_1$  to be positive, we cannot be sure as to whether or not  $a_2$  is negative except when  $C < -1$ .

Several other important implications, however, follow directly from our assumptions about  $a_1$  and  $a_2$  and can be tested. For North Carolina in recent decades, we have posited that  $a_2 < 0$  and that  $a_1 > 0$ , therefore the value for the quadratic coefficient,  $C$ , in Eq. (4) must be negative, since Eq. (3') gives that coefficient as  $a_2 - a_1$ , which must be negative if  $a_2 < 0$  and  $a_1 > 0$ .

Thus, for North Carolina data aggregated to the county level, we hypothesize:

**Hypothesis 3.** *The quadratic ecological relationship between party support and party registration estimated at the county level should have a negative coefficient on the quadratic term<sup>6</sup>.*

Furthermore, since, for the North Carolina data  $a_2$  and  $a_1$  are posited to be of opposite signs, given the constraints on the parameters in Eq. (1a) and (1b) that keep

<sup>5</sup> The relevant set of linear equations is underdetermined. However, if we make the further simplifying assumption that a context effect is present for only one of the groups, e.g. if Democratic registrants may be assumed to have a constant probability of supporting a Republican candidate of choice in a state-wide contest (i.e. if we assume that  $a_2 = 0$ ), then we can solve for the remaining parameters. Under the assumption that  $a_2 = 0$

$$P_R = -a_1 R^2 + (a_1 + c_1 - c_2)R + c_2$$

and we may solve for the remaining coefficients of interest  $a_1$ ,  $c_1$  and  $c_2$  from the coefficients of the fitted quadratic as:

$$a_1 = C$$

$$c_1 = B - C + A$$

$$c_2 = A$$

<sup>6</sup> If the coefficient of  $C$  is positive rather than negative, this would argue for a very strong registration choice effect based on partisan context.

those functions within the (0,1) interval, as  $R$  increases we must eventually hit values of  $R$  for which  $P_R$  is less than  $R$ , i.e.<sup>7</sup>

**Hypothesis 4.** *As  $R$  increases, there will exist some level of  $R$  such that, for values of  $R$  greater than that level, the quadratic ecological relationship between party support and party registration estimated at the county level give rise to a relationship in which  $P_R$  is projected to be less than  $R$ , i.e. in which the proportion of votes received by Republican candidates is less than the proportion of Republican registrants.*

When we empirically fit a quadratic relationship to the data on registration and party support at the county level, we may check to see whether each of the three specific hypotheses (2, 3 and 4) are realized. As noted previously, the statistical significance of the quadratic term provides one direct test of Hypothesis 2. The sign of the quadratic term is, of course, directly observable from the fitted quadratic regression, and this provides our test of Hypothesis 3.

As for a test of Hypothesis 4, after some simple algebra (dividing Eq. (4) through by  $R$  and rearranging terms), we learn that the minimum value of  $R$  for which  $P_R$  is projected to be less than  $R$  can be found by solving for the appropriate root<sup>8</sup> of the quadratic given by

$$CR^2 + (B - 1)R + A \quad (5)$$

Thus, by solving for the root(s) of Eq. (5) that lie in the [0,1] range we can see whether Hypothesis 4 is supported.

We would expect changes in these context effects as party competition is altered at either the state or local levels. In the South, for example, the Republican Party has become more competitive for state legislative and local office, culminating in substantial G.O.P. victories across the South in 1994. This change in party fortunes should produce increased Republican voter registration as hidden Republicans come out of the closet. These gains, therefore, will come disproportionately in areas where Republican registration was most depressed. Thus we hypothesize:

**Hypothesis 5.** *The quadratic term of the ecological relationship between party support and party registration estimated at the county level should be smaller in 1996 than it was in 1984 in the Southern states.*

This hypothesis is easily tested by comparing the value of the quadratic term and its  $t$ -value for elections in both of these years.

<sup>7</sup> Technically, it is possible that there is only one value of  $R$  for which this is true, namely  $R = 1$ , but such a 'corner solution' should almost never occur with real data given the nature of the context effects we have posited. If  $R = 1$  then the value of the function in Eq. (4) is  $c_2$ , but we know from Eq. (1b) that  $c_2$  must be less than 1 if  $a_2$  is nonzero.

<sup>8</sup> Since the coefficient on the quadratic term is posited to be negative, when we use the standard formula to solve for the roots, the denominator of that formula will be positive and we will thus be looking for values that will give us a negative numerator. See example discussed below.



### Illustrative data analysis

We look at county level data from North Carolina, a state with closed primaries<sup>9</sup>, whose 100 counties ranged in party registration in 1984 from 95% Democratic to 25% Democratic and in 1995 from 92% Democratic to 13% Democratic. While most counties are still Democratic in voter registration, the extent of Democratic control changed greatly in the period from 1984 to 1996. At the local level in 1984 one party or the other—usually the Democrats—was almost always in firm control. Nonetheless, in 1984, the state was competitive for the Presidency and some (but not all) state-wide offices. In 1984 Democrats could claim 70% of the registered voters, and the Republicans could claim only 25% (4% were unaffiliated). By 1996 the Democrats had slipped to only 54% registration and both Republican (34%) and unaffiliated (12%) registration had increased. In 1994, as elsewhere in the South, the Republicans took many local and state legislative offices that they had not held for a century. For example, in that year the Republicans took control of the lower house of the North Carolina General Assembly, and held that control in 1996.

We shall look at votes at the county level for president in 1984 and 1996. For illustrative comparison purposes we also look at votes in those same years for state-wide judicial elections, bottom of the ticket races where we expect the contextual effects we have posited to be even more visible than for the office of president.

We turn to regression analysis to test these hypotheses. We would anticipate that the relationship between party registration and party vote share is going to be less clear when we use top of the ticket elections than when we look at low visibility races, since factors other than party line voting become more important for high visibility offices<sup>10</sup>. Nonetheless, when we look at the link in 1984 between Republican registration percentage and vote for president using county level data in North Carolina, despite the goodness of a linear fit with an  $r^2$  of 0.60, we still find a statistically significant quadratic effect, with an adjusted  $r^2$  of 0.62 as shown in Table 1.

As per Hypothesis 3, the sign on the quadratic term is negative. The implication of this regression is that Republican share of the Presidential vote would be 45% in a county where there were no Republican registrants and 71% in a county where all the registrants were Republican. The function shown above reaches its maximum in a county where Republican registration share is 74%. In such a county, the Republican presidential candidate is projected to get just below 75% of the vote. As per Hypoth-

<sup>9</sup> In the 1980s the Republican Party opened its primary to unaffiliated voters, and the Democrats later followed their example. This, in part, accounts for the three-fold increase in unaffiliated registration from 1984 to 1996, but does not change the basic nature of the system from a closed to an open primary.

<sup>10</sup> Also, in North Carolina we know the effects of black population on presidential voting (Grofman and Handley, 1994) and such effects may remain even after we introduce a squared registration term to capture the effect of 'concealed' partisanship. We check for this possibility below.



Table 1  
Regression formula showing hidden Republicans in four state-wide elections

Office and year	Republican registration term ( <i>t</i> value)	Quadratic term G.O.P. registration squared ( <i>t</i> value)	Constant ( <i>t</i> value)	<i>r</i> squared
1984 President	0.81 (6.42)	−0.55 (−2.53)	+45 (28.65)	0.62
1984 Superior Court #24	1.47 (15.63)	−1.01 (−6.69)	+15 (11.66)	0.88
1996 President	1.05 (8.64)	−0.006 (−3.31 <sup>a</sup> )	+25 (12.66)	0.79
1996 Appeals Court	1.27 (14.93)	−0.007 (−6.00)	+15 (10.55)	0.92

<sup>a</sup> All of the *t* values in this table are statistically significant at the 0.00009 level, except this one, which is statistically significant at the 0.0013 level.

esis 4, for counties with *R* values above a certain level (roughly 75%)<sup>11</sup>, the Republican share of the vote is actually projected to be less than the Republican share of the registrants.

We should emphasize that even the most heavily Republican counties in North Carolina only had a roughly 75% Republican registration in 1984. Thus, empirically we will find it almost impossible to directly detect Republican registration overstating Republican vote share in the most heavily Republican counties for the simple reason that in the most heavily Republican counties that actually exist in the state, we expect that Republican vote share will be virtually identical to Republican share of registrants. However, if our assumption of curvilinearity is correct, in counties that are less than 74% Republican in registration, the Republican candidate is going to be doing considerably better than Republican registration figures would lead us to expect. For example, in a county that was 30% Republican in registration we should expect a 64% Republican vote share for president. Thus, Republican vote share would be more than twice Republican share of registrants.

Superior Court was a bottom of the ticket state-wide office in North Carolina in 1984 that exhibits nearly straight party line voting. Looking at the Superior Court election for position #24 (one of the few contested Superior Court seats in 1984), we find a linear fit of Republican vote share on Republican registration accounting for 85% of the variance. Nonetheless, for that office, despite the goodness of the linear fit, as per Hypothesis 2, we still find the expected curvilinearity, with the quadratic term significant at the < 0.0001 level (see Table 1), and an adjusted *r*<sup>2</sup> value of 0.88.

As per Hypothesis 3, the sign on the quadratic term is negative. The implication of the regression is that Republican share of the 1984 Superior Court vote would

<sup>11</sup> To find the desired value we use the well-known formula

$$(-b \pm \sqrt{(b^2 - 4ac)})/2a$$

plugging in the values from Table 1.

(on average) be 15% in a county where there were no Republican registrants<sup>12</sup> and 61% in a county where all the registrants were Republican. However, the function shown above reaches its maximum not where  $R = 1$ , but rather in a county where Republican registration share is 73%. In such a county, the Republican judicial candidate is projected to get 69% of the vote. As per Hypothesis 4, for counties with  $R$  values above a certain level (roughly 68%)<sup>13</sup>, the Republican share of the vote is estimated to be less than the Republican share of the registrants.

Note that there is far lower projected defection from Democratic ranks for the office of Superior Court judge (15% as compared to 45%) than for the president. Nonetheless, in both instances, the magnitude of the defection is subjected to a context effect<sup>14</sup>. In a county that was 30% Republican in registration we should expect a 50% Republican vote share for Superior Court judge. Thus, Republican vote share would be 1.67 times Republican share of registrants.

Because of the substantial changes in registration and Republican candidate success that occurred between 1984 and 1996, we would expect that the value of the quadratic term would be substantially less for our analysis of elections in 1996, as predicted by Hypothesis 5. Table 1 confirms this hypothesis.

In a county with no Republican registration the Republican candidate for president in 1996 would be expected to receive 25% of the vote, while in a county which was totally Republican in registration the G.O.P. presidential candidate would receive 70% of the vote. The Republican vote for president would reach its maximum of 71% in a county with about 90% Republican registration, which is close to the level of Republican registration in a couple of isolated mountain counties. The quadratic term ( $-0.006$ ) is statistically significant, but had become extremely weak by 1996. Republican registration is quite strongly related to the vote for president in 1996, with an adjusted  $r^2$  value of 0.77. The quadratic effect increases the adjusted  $r^2$  to 0.79, which is about the same increase in goodness of fit which we found in the presidential vote in 1984. The increased competitiveness of Republican candidates for local office throughout the state seems to have driven hidden Republicans to the surface but not decreased the number of hidden Democrats in these mountain bastions of Republicanism. This is to be expected in a state where Republicans are gaining strength in all regions.

A similar pattern can be seen in the judicial election in 1996 (Table 1). There

<sup>12</sup> We emphasize that this applies only on average. In particular, virtually all 'hidden' Republicans are white. A county with almost no Republican registration that was overwhelmingly black would not have such a high level of crossover voting for Republican candidates.

<sup>13</sup> To find the desired value we use the well-known formula

$$(-b \pm \sqrt{b^2 - 4ac})/2a$$

plugging in the values from Table 1.

<sup>14</sup> Of course, given the relatively minuscule improvement in explained variance obtained from shifting from linear to quadratic regression, and the problem that the quadratic regression represents only an approximation to some presumed true nonlinear model, whose exact nature we cannot precisely identify, for most empirical modeling (e.g. the linkage of registration to projected partisan outcomes) we would normally use linear methods.

were no one-on-one elections for Superior Court in 1996, but the race for an Associate Justice seat on the Appeals Court is a reasonable substitute. The candidates were both obscure and received no attention from the media. Neither candidate had an active campaign. The quadratic term for the regression equation ( $-0.007$ ) for the judicial election in 1996 is statistically significant and in the predicted direction, but weak. The Republican candidate for judge could be expected to get about 15% of the vote in a county that is totally Democratic in registration, but only 72% in a county which was totally Republican. The maximum vote for the Republican candidate would be 73%, which would be present in a county with about 90% Republican registration. The link between Republican registration and Republican vote is strong (adjusted  $r^2 = 0.88$ ), but the introduction of the quadratic term increases the adjusted  $r^2$  to 0.92. In other words, the equation for the judicial office—which exhibits something close to a straight-line party vote—is quite similar to the pattern for the vote for president in 1996.

It is useful to check to see if incorporating black registration as a control variable significantly changes our results. Black registration proportion (data on which is available in North Carolina at the county level) should be related to the level of hidden partisanship in the county, since whites registered as Democrats in heavily Democratic areas are far more likely to identify with the Republican Party than is true for blacks in such areas. However, for none of the four elections examined here is black registration a statistically significant predictor variable for Republican vote share when we enter it into a regression containing both Republican registration share and the square of that registration term.

## Discussion

Hypotheses 2–5 were strongly confirmed with North Carolina data. This in turn confirms our general hypothesis (Hypothesis 1).

If one mentions rational choice theory and V. O. Key in the same breath, what comes to mind is *The Rational Electorate* (Key, 1966) published in 1966, 3 years after Key's death. Long before Downs' *An Economic Theory of Democracy* was published (Downs, 1957), V. O. Key was propounding hypotheses about electoral politics, parties, and interest groups that fall squarely in the rational choice mode and in which political geography is central. Here we have drawn on Key's insights into the incentives for strategic registration to show that 'hidden partisanship' does exist and its magnitude is a function of the geographic distribution of partisan voting strength. For many voters, party registration is simply a strategic decision based on the pattern of local politics and not a statement of political preference at all.

This research shows the power of what we have called 'context effects'. The local political culture acts on individual preferences in predictable ways.

The dramatic change in the electoral fortunes of the Republican Party in the South since the 1960s has changed the nature of the relationship between party registration and party voting. Although the quadratic terms are still statistically significant in the regression equations for our 1996 data, they are very weak. This does not simply

mean that there are more Republicans than previously, a trivial conclusion. It means that the increase in Republican registration has come disproportionately from places where Republican registration was weakest. The relationship of party registration to party voting has become more linear in the competitive South of the 1990s.

Hidden partisanship can be a sign of a transitional stage. In the South it occurred because this region was in a state of flux from total dominance by the Democratic Party to the competitive situation that exists today. Republicans became competitive first at the top of the ticket ('Presidential Republicanism') and their ability to compete spread down to lower levels of the ballot over a period of 46 years. During this period—roughly 1948 to 1994—the phenomenon of hidden partisanship could be found. We would also expect to find hidden registration in other regions of the county where there are closed primary elections and dominant local parties. For example, we would expect to find hidden Democrats in parts of the great plains traditionally dominated by Republicans.

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## References

- Boudon, R., 1963. Propriétés individuelle et propriétés collective: une problème d'analyse écologique. *Revue Française de Sociologie* 7, 275–299.
- Downs, A., 1957. *An Economic Theory of Democracy*. Harper, New York.
- Grofman, B., 1987. Models of voting. In: Long, S. (Ed.), *Micropolitics Annual*. JAI Press, Greenwich, CT, pp. 31–61.
- Grofman B., 1995. New methods of valid ecological inference. In: Eagles, M. (Ed.), *Spatial and Contextual Models in Political Research*. Taylor and Francis, London.
- Grofman, B., Handley, L., 1994. Black office holding in southern state legislatures and congressional delegations. In: Davidson, C., Grofman, B. (Ed.), *Quiet Revolution in the South: The Impact of the Voting Rights Act, 1965–1990*. Princeton University Press, Princeton, NJ.
- Grofman, B., Handley, L., 1995. Racial context, the 1968 Wallace vote, and Southern presidential dealignment: evidence from North Carolina and elsewhere. In: Eagles, M. (Ed.), *Spatial and Contextual Models in Political Research*. Taylor and Francis, London, pp. 151–162.
- Key, V.O., 1949. *Southern Politics*. Vintage, New York.
- Key, V.O., 1966. *The Responsible Electorate: Rationality in Presidential Voting 1936–1960*. Belknap Press of Harvard University Press, Cambridge, MA.
- Kohfield, C.W., Sprague, J., 1995. Racial context and voting behavior in one-party urban systems. *Political Geography* 14 (6/7), 543–570.
- Loewen, J.W., Grofman, B., 1990. Comment: recent developments in methods used in voting rights litigation. *Urban Lawyer* 21 (3), 589–604.

- Miller, W.L., 1977. *Electoral Dynamics in Britain since 1918*. MacMillan Press Ltd, London.
- Owen, G., Grofman, B., 1997. Estimating the likelihood of fallacious ecological inference: linear ecological regression in the presence of context effects. *Political Geography* 16 (8), 675–690.
- Sprague, J., 1976. Estimating a Boudon type contextual model: some practical and theoretical problems of measurement. *Political Methodology* 3 (3), 333–354.