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American Journal of Political Science, Vol. 37, No. 2 (May, 1993), 582-609.

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American Journal of Political Science is currently published by Midwest Political Science Association.

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Nonlinear Transformation in a Landslide: Johnson and Goldwater in 1964

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This study investigates mass electoral behavior during the 1964 landslide presidential election in the United States. The aggregate contextual characteristics of such elections of large magnitude and rapid change have not been examined thoroughly in the extant literature on voting. Here, a formal "social systems" model of partisan competition is developed and evaluated with respect to a complete collection of county-level electoral data. The model is a system of two interdependent differential equations that characterize rapid and large-scale aggregate partisan change. It is found that the 1964 landslide election involved a highly complex and contextually conditioned set of aggregate voting behaviors. The masses were guided in their partisan choices by a variety of nonlinear social processes. Fundamental to this analysis is a discussion of whether societies necessarily vote within a state of aggregate political equilibrium during a landslide. I find that in the deep southern states, the process of partisan competition was not completed by the time the election occurred. Evidence is offered that suggests that the electorate in the Deep South did not vote in a state of regional equilibrium. The opposite is true of aggregate voting in areas outside the Deep South. These findings have implications with regard to the meaning of elections during periods of rapid partisan change.

Landslide electoral victories, for a variety of reasons, can be extraordinary political events. Longitudinally, they often have sufficient impact to affect existing voter alignments, but they carry policy implications as well with regard to the victor's ability to pass legislation following a seemingly clear mandate. Interestingly, there have been only a few scholarly attempts to isolate landslides as examples of large-scale electoral change. Notably, Kelley (1983) has made an important analysis of a number of landslides from the level of the individual voter. But there is little known of the aggregate electoral structure of such events. Typically, the voting literature notes that "so-and-so" won with a large margin, without reference to the existence or absence of highly patterned and nonlinear processes of complex social change. But such elections are not everyday events, and their mass structure deserves close examination. Indeed, this analysis demonstrates that landslides can be more than uniform voter swings. Rather, they should be seen as examples of large magnitude, rapid electoral change that are best characterized by potentially complex and contextually conditioned dynamic social processes.¹

¹Thus, this analysis does not characterize landslide elections as structurally different from other elections, although they may indeed be different in this regard. Rather, the focus

This analysis examines the structure of the aggregate mass electorate during the 1964 presidential contest between Lyndon Johnson and Barry Goldwater from such a contextual point of view. The 1964 election was the largest presidential landslide election in the United States in this century (explained more fully below). A model is presented that allows for a comparative examination of a variety of contextually defined structural components to the large-scale voter movements. More specifically, the model draws attention to contextual theories of aggregate partisan change that have been proposed by Huckfeldt (1983), Przeworski and Soares (1971), and Huckfeldt and Sprague (1987, 1988), as well as the influence of local partisan context on party behavior as reported by Beck (1974).

This analysis addresses a number of fundamental questions regarding voting behavior during a landslide. In a landslide, do a certain percentage of voters uniformly distributed throughout large regions of the nation simply switch parties, or are the mass dynamics much more complex? Do some groups of voters simply stop voting while others surge to the polling booths in record numbers? Is there such a thing as an equilibrium state in the aggregate dynamics of a landslide?

Indeed, it is necessary to address the basic question of how an equilibrium is defined within the dynamics of a landslide. What does it mean to say that a society voted in a state of aggregate equilibrium? When little is changing, the concept of an aggregate equilibrium is easy to conceptualize as the relatively constant vote proportions. But when things are shifting quickly, how does one know if the political balance settled down to an equilibrium on election day? Does the nation arrive at a new equilibrium with one smooth transition? Or does the transition of support from one party to another in various areas of the nation follow a nonlinear pattern to a new equilibrium? Or does the election simply bisect a rapidly changing dynamic political process that has not yet arrived at equilibrium? Indeed, do landslide elections really measure the nation's political sensibilities in a state of equilibrium at all? All of this is addressed below.

The question of whether an election measures a society in a state of political equilibrium is especially important here. Common wisdom tells us that elections, in general, measure a nation's political choices while in a state of equilibrium. Recall the common phrase, "The people have spoken." The implication is that some firm decision has been made in an election. But it is odd that polls regularly track the trends in voter support

here is on the description of the highly complex nature of the contextually dependent aggregate electoral topology of one landslide, from which future comparisons may be made to other elections.

during the election, often noting great potential for volatility and rapid change right up to election day. Why *must* election day be fundamentally different from the previous days? Indeed, it may be that its only special character results from the arbitrary coincidence found in the electoral calendar. To offer one example, as the 1976 election approached, many polls revealed that Gerald Ford was gaining popular support. But if the 1976 election had been held two weeks later, would Gerald Ford have defeated Jimmy Carter? What then does an election measure, a nation in equilibrium or a populace in motion?

In a landslide election, these questions become increasingly relevant. During tranquil political times, one could argue that the partisan balance changes little from election to election, and the elections probably reflect the nation's mood in an approximate state of equilibrium. But this cannot be so easily posited during a landslide. If the voter movements are sufficiently large, or the political setting substantially disturbed, it may be that the election simply measures the voters' mood at a point in time. The winner might not be different were the election held a month later, but there would be no guarantee that the partisan totals would be the same. In short, the nation may not be in a state of equilibrium. There is currently no evidence reported in the extant empirical literature on voting that conclusively answers these questions with regard to conditions of large-magnitude electoral change. The current analysis takes aim at them directly.

The 1964 Election

To help put the current investigation into historical perspective, Table 1 contains the level of partisan mobilization for the United States for all presidential elections in this century, from 1900 to 1988. All figures in the table are written as proportions of the total eligible electorate as determined by age (as well as gender before 1920). Vote mobilization measures are used throughout this analysis.

In addition to the mobilization figures for the Democratic and Republican parties, Table 1 contains the difference in mobilization between each party, a baseline estimate of the level of new voter activity (measured as the difference in total mobilization between each election and the previous presidential election), as well as total mobilization for each election. The new voter numbers are included to indicate easily which elections were accompanied by large increases in total voter turnout.

Note that the 1964 election contained the largest difference in partisan turnout of among all of the other elections. It is this observation that is used here to characterize the 1964 election as the "largest" landslide in

Table 1. Presidential Mobilization as Proportions of Total Eligibles, 1900 to 1988

Year	Democratic	Republican	Difference	New Voters	Total
1900	0.302	0.343	-0.041	-0.055 ^a	0.665 ^b
1904	0.218	0.327	-0.109	-0.086	0.579
1908	0.250	0.299	-0.049	0.000	0.579
1912	0.227	0.126	0.101	-0.037	0.542
1916	0.309	0.289	0.020	0.086	0.628
1920	0.149	0.264	-0.115	0.279	0.437
1924	0.127	0.238	-0.111	0.004	0.441
1928	0.212	0.303	-0.090	0.079	0.521
1932	0.302	0.209	0.094	0.006	0.527
1936	0.348	0.209	0.139	0.045	0.572
1940	0.323	0.264	0.059	0.019	0.591
1944	0.285	0.245	0.040	-0.058	0.533
1948	0.254	0.231	0.023	-0.021	0.512
1952	0.272	0.338	-0.066	0.101	0.613
1956	0.249	0.341	-0.092	-0.019	0.594
1960	0.314	0.313	0.001	0.039	0.632
1964	0.379	0.239	0.140	-0.012	0.621
1968	0.260	0.265	-0.004	-0.011	0.610
1972	0.207	0.335	-0.128	0.038	0.552
1976	0.268	0.257	0.011	-0.016	0.536
1980	0.216	0.268	-0.051	-0.009	0.527
1984	0.215	0.311	-0.096	0.002	0.530
1988	0.229	0.268	-0.039	-0.028	0.502

^aThe new voter proportion for 1920 is the change in total voters between 1916 and 1920 divided by the number of eligible voters in 1916. This controls for the expansion in the number of eligible voters in 1920 due to the extension of the franchise to women. Similarly, the new voter proportion for 1972 is the change in total voters between 1968 and 1972 divided by the number of eligible voters in 1968. This is to control for the extension of the franchise to people 18 to 20 years old.

^bThe total proportions include third-party voters.

this century.² In that election, there was a 14% difference in mobilization between the Democratic and the Republican parties. The second largest difference was Roosevelt's landslide win over Landon in 1936. The third largest landslide took place in 1972 when Nixon defeated McGovern.

²See White (1965), Shadegg (1965), and Cosman (1966) for detailed substantive analyses of the 1964 election.

Interestingly, in each of these cases, the domestic setting in the United States was one of significant turmoil: the Depression still gripped the nation in the mid-1930s; the 1960s was a period of intense civil rights activity; and the Vietnam War was shaking the social fabric of this nation in the late 1960s and nearly 1970s. While the reasons may remain unclear, these observations suggest that the simultaneous occurrence of intense domestic turmoil with each of the three largest electoral landslides in this century is not simply a coincidence. Thus, it is not routine politics that drive these elections.

Note, however, that of each of the landslide elections, the 1964 election contained the smallest change in voter turnout, as is evidenced by its relatively small-magnitude new voter estimate. While ecological considerations caution against making firm conclusions with these highly aggregated numbers, it nonetheless appears, on the surface, that some landslides contain substantially more new voter activity than others, and a simple generalization across all landslides in this regard (i.e., whether they are predominantly partisan switching or new voter phenomena) may not be accurate. Nonetheless, other generalizations may yet emerge.

The Specification of Rapid Change

The model developed here is a portrayal of partisan competition. It isomorphically parallels in its algebraic structure many of the potential internal characteristics of an electorate experiencing rapid and large-scale changes in aggregate partisan support. In this sense, the model is a formal representation of the landslide phenomenon. The model is a system of two time-dependent and interconnected differential equations. The two equations model change in the aggregate support of the Democratic and Republican parties, respectively, between two elections. These types of formal models of social systems have been productively exploited in the social scientific literature by Coleman (1964, 1981), Simon (1957), Przeworski and Soares (1971); Przeworski and Sprague (1986), Sprague (1981), Tuma and Hannan (1984), Huckfeldt (1983), Huckfeldt, Kohfeld, and Likens (1982), Huckfeldt and Kohfeld (1989), Brown (1987, 1988, 1991), Gillespie et al. (1977), Ward (1984), and others. Outside of the social sciences, these models have found great use in the field of population biology (in particular, see May 1974). Moreover, the mathematical theory of all such systems is well understood and complete. This is true for both linear and nonlinear systems (see Hirsch and Smale 1974; Mesterton-Gibbons 1989; Kocak 1989; Luenberger 1979).

I begin the development of the model of partisan competition by focusing on three distinct mechanisms by which former supporters of one party would switch to support the other party. Electoral conversion is an

important factor of such change that has been repeatedly raised in the realignment literature (Key 1954, 1955; Sundquist 1983; Erikson and Tedin 1981; Burnham 1970; Ladd and Hadley 1978). The first of these mechanisms, here referenced as the "dominance factor," captures the concept of voter movement being encouraged by the relative dominance of one party over the other. Algebraically, this is an idea that was first specified formally by Leslie (1948), and it is expressed by writing the equation for change in a party's support as a linear function of the ratio of that party's popular support to that of the other party. Substantively, the idea addresses voters' sensitivity to changes in a party's dominance within the local political milieu. In one scenario, such voters would be more inclined to switch parties as they find themselves increasingly outnumbered by others with opposing points of view. However, in certain situations, the reverse could occur, as when political minorities act to isolate themselves from (thereby resisting the pull of) political majorities. Substantively, both such mechanisms have been examined recently by Huckfeldt and Sprague (1987, 1988), and they are closely related to the "breakage effect" examined much earlier by Berelson, Lazarsfeld, and McPhee (1954, 98–101). Moreover, the sociological literature contains repeated reports of such milieu-dominating factors as influencing individual attitudes and behaviors toward conformity with the norms of the broader social environment (see Blau 1977; Blum 1985; Simmel 1955).

Thus, beginning with modeling change in support for the Democratic party, we have

$$dD/dt = q(D/R), \quad (1)$$

where dD/dt is the derivative that specifies change in the Democratic party between two elections, D is the proportion of the eligible electorate that supports the Democratic party, R is the proportion of the electorate that supports the Republican party, and q is a constant and a parameter of the model. Note that, with this specification, change in support for the Democratic party will increase as the local dominance of the Democratic party over the Republican party increases *if the parameter q is positive*.

What would be implied if parameter q is negative when estimated? It is important to understand that other terms are being introduced into the model immediately below that may dominate the recruitment process for the Democratic party. If the parameter q turns out to be negative, then the process of Democratic recruitment would be dominated by these other factors, and the negative relative dominance factor would reflect the process in which political minorities would act to resist the "pull" of the increasing political majorities. The micromechanism by which this would occur has been explored by Huckfeldt and Sprague (1987, 1988).

While substantively the model can account for both positive and negative estimates for the influence of the relative dominance factor, my own expectation is that the other recruitment factors presented below will dominate the recruitment process and that q will be negative, reflecting the resistance of political minorities in lopsided political contexts.

The second mechanism discussed here by which former supporters of one party may switch to support the other party is called the “interactive factor.” Conversions across parties can be initiated through interactions among voters. Democratic voters interacting both directly and indirectly with Republican voters can lead to political change among all voters. For example, under situations in which a Republican voter may be hesitant with regard to his or her vote choice, the behavior of Democratic supporters within the local environment suggests alternative partisan cues that such a voter may follow. For this effect to be substantial, both parties need to be well represented in the environment (such as within competitive areas). Following the previous example, a large interactive effect would require a sufficient number of Republicans available for conversion as well as a sufficient number of Democrats available to offer alternative partisan cues.

This interactive factor is well represented in the political behavioral and the sociological literatures. Within-group conversations have been found to have a clear manipulatory influence on individual attitudes and behaviors (see Molotch and Boden 1985; Berelson, Lazarsfeld, and McPhee 1954; Huckfeldt and Sprague 1987, 1988; MacKuen and Brown 1987). Partisan cues may be transmitted indirectly as well, however. This has been evidenced repeatedly in terms of individual and group biases that result from perceptions of real world facts (e.g., Garfinkel 1967; Gurwitsch 1962, 50–72). Moreover, on the aggregate level, such interactive influences have been found to be of substantial magnitude and crucial to the specification of large-scale voter movements (Beck 1974; Brown 1987, 1988, 1991).

Formally, the interactive factor can be included in the model by rewriting equation (1) as

$$dD/dt = q(D/R) + wDR. \quad (2)$$

The multiplicative term wDR captures the interactive influence between the parties. The phrase DR identifies the probability of interaction between the two partisan populations, whereas the parameter w characterizes the probability of conversion given the interaction.³ Interaction terms

³A random mixing assumption between the two populations is not necessary, although it may be heuristically useful in introducing the model (see Mesterton-Gibbons 1989).

of the type specified above are symmetric in the desirable sense of having the largest numerical value when both Democratic and Republican populations are large. Moreover, such interaction specifications are often encountered in the broad literature on contagion, communication, and diffusion modeling (Coleman 1964; McPhee 1963; Simon 1957; Przeworski and Soares 1971; Sprague 1976; Rapoport 1963, 1983; Huckfeldt 1983; Huckfeldt, Kohfeld, and Likens 1982; Huckfeldt and Kohfeld 1989; Brown 1987, 1988, 1991).

The third mechanism of partisan conversion included here reflects the ability of a party's popular support to grow in simple proportion to its existing level of local popular support. In this sense, voters may be influenced by a party's campaign without regard to interactive or relative-dominance factors. For example, if the Democratic campaign is effective, some voters may support the Democratic party in direct proportion to the level of success that this campaign is having locally. This is the simplest of the three mechanisms discussed above and is included formally in the specification,

$$dD/dt = q(D/R) + wDR + uD, \quad (3)$$

where u is a constant parameter in the model and reflects the growth of Democratic popular support as a proportion of existing levels of Democratic support. The term uD specifies what is here labeled as the "proportional factor" of partisan change. By itself, the proportional factor expresses exponential growth or decay, classically defined.

In a landslide election, the above three factors may not capture the increased speed of partisan change that would be due to changes in the campaign's momentum. That is, it is possible that the entire rate of change in a party's support, as currently expressed in equation (3), may vary in an accelerated fashion as the party's support changes. This is the classic momentum concept, as people jump onto bandwagons, or jump off of sinking ships. Thus, the influence of the parameters q , w , and u on the overall model may proportionately increase (or potentially decrease) as the level of D varies. However, it may be that the variation in influence may be based not only on the level of D but on the magnitude of D squared as well. Squaring the level of Democratic support addresses the concept of momentum as a function of the "bunching" of Democrats. That is, as Democrats interact with other Democrats, as would be the case in situations with increasing numbers of Democratic supporters locally, then their own character as a persuasive group, with regard to other voters, changes. This is related to the idea that a mob is fundamentally different in character than a simple collection of individuals. As the individuals aggregate, the potential for explosive partisan growth accelerates.

ates. For this reason, both of the above influences on the model are referred to as “accelerator factors” and are included in the specification of the model as in equation (4).

$$dD/dt = (1 + jD + yD^2)(q(D/R) + wDR + uD). \quad (4)$$

In equation (4), j and y are constant parameters in the model. In the absence of parameters j and y , the 1 in the first set of parentheses allows for the specification of the model in its unaccelerated form, as in equation (3). The parameter j characterizes the acceleration of a campaign’s momentum as proportional to the current level of Democratic support. The parameter y mediates the acceleration input that results from the level of D squared (i.e., the “bunching” influence).

Two additional inputs are needed in the model to complete the current specification of a landslide election. The first input is that associated with the mobilization of new voters. While Table 1 suggests that new voters may not have played a great role in the 1964 election, their influence cannot, at this point, be ruled out (see esp. arguments by Andersen 1979; Brown 1991; Converse 1975; Campbell et al. 1960; Petrocik 1981). It may be that, in some areas, new voters entered the electorate in large numbers, whereas, in other areas, some groups of voters stopped voting. It is most likely that the influence of new voters will be greatest in areas with many potential new voters, that is, in areas with larger nonvoting populations. This input, proportional to the size of the nonvoting population, is added to the model in equation (5).

$$dD/dt = (1 + jD + yD^2)(q(D/R) + wDR + uD) + vN, \quad (5)$$

where N is the proportion of the eligible population that is not voting, and v is a constant parameter of the model.

The final ingredient to the model is the inclusion of the upper and lower limits to the growth and decay of Democratic popular support. Since D cannot decrease below zero, the model’s behavior must be limited with that lower bound. Similarly, since the Democrats cannot possibly mobilize more than all of the eligible voters, the model must have an upper logistic limit of unity. These two limits are added to the now completed expression of change in Democratic popular support, as in equation (6).

$$dD/dt = [(1 + jD + yD^2)(q(D/R) + wDR + uD) + vN](1 - D)D. \quad (6)$$

In equation (6), all of equation (5) is captured in square brackets and multiplied by the expression $(1 - D)D$. The term $(1 - D)$ captures the

upper bound of unity in typically logistic fashion, whereas the term D specifies the lower bound.

The algebraic representation of change in Republican support is structured in a parallel fashion to that of Democratic change as expressed in equation (6). Thus, change in Republican support is written as

$$\begin{aligned} dR/dt = & [(1 + pR + sR^2)(f(R/D) + aRD + eR) \\ & + gN](1 - R)R. \end{aligned} \quad (7)$$

Here, p , s , f , a , e , and g are constant parameters in the model, and all have interpretations parallel to their Democratic counterparts as found in equation (6). The limits in growth and decay of Republican support are expressed by the multiplicative term $(1 - R)R$, again in a parallel fashion with regard to equation (6).

The complete model of partisan competition under the conditions of a landslide is the combination of equations (6) and (7). Equations (6) and (7) constitute an interdependent system of two differential equations. The system is nonlinear in both states (i.e., the variables D and R) and parameters. The system is entirely symmetrical between both parties. In total, the system is a fully bounded expression of change in Democratic and Republican support as structured by dominance, interactive, and proportional factors, all mediated by acceleration influences due to a campaign's momentum, additionally enhanced by the influence of new voters.

Estimating the System

The data used in this analysis are the complete collection of county-level aggregate electoral returns for all of the approximately 3,000 counties in the United States and are for the years 1960 and 1964. The election returns have been combined with needed census material for all counties in order to obtain the number of eligible voters in each county as defined by age (21 years and older). All partisan data are expressed as proportions of the total number of eligible voters in each county.

Throughout this analysis, the aggregate data are broken down by southern and nonsouthern regions. By "southern" is meant the five Deep South states whose majority populations voted for Goldwater in 1964 (see Asher 1988, 30; Black and Black 1987). These states are Alabama, Georgia, Louisiana, Mississippi, and South Carolina. There are over 400 counties in the Deep South states. Thus, the analyses are conducted separately for both the counties in the Deep South and the counties in the remaining states outside the Deep South. The results are then compared. The breakdown between Deep South and other areas also enhances the interpretability of the results, since the regions are divided

clearly using the objective measure of whether a state was “won” by one party or the other. The breakdown itself is necessary, since, in 1964, there were actually two landslides. The first occurred in areas outside the Deep South in favor of Johnson, and the second occurred in the Deep South in favor of Goldwater. A comparison of the two landslides offers an extraordinary chance to begin to discern, in more general terms, differences in the internal structures of landslides.

Estimating the model expressed as equations (6) and (7) is not trivial (see Judge et al. 1982, 633–63). As is characteristic of all such nonlinear systems of equations, it is only a stroke of luck if the equations can be uncoupled and linearized to allow the use of commonly available regression techniques, and this is usually limited to the simplest of such systems (see Tuma and Hannan 1984; Coleman 1981). In the above system, it is not possible to solve for D and R explicitly. Thus, it is necessary to leave the model in differential equation form and to obtain estimates of the system’s parameters using numerically intensive strategies of definite integration (see Brown 1991 for a detailed description of the estimation procedures).

This investigation requires the use of aggregate-level data.⁴ The available survey data for the period under study are not adequate, by themselves, to answer the questions posed here. Small sample sizes, insufficient variation within regions, and the absence of a panel-type longitudinal component are three reasons, but there are others. The model explored here is specifically written to address contextual interpretations of aggregate voter movements during an electoral landslide. Aggregate data have been used repeatedly in the extant electoral literature to address such matters, and the current analysis pursues a treatment, however, sophisticated, of this same type of data.⁵

Results

The parameter estimates for the entire model are contained in Tables 2 and 3. In each table, the estimated equations are separated by party. Table 2 contains the estimates for the two-equation model with respect to the data for all counties outside the Deep South. Table 3 presents the estimates for all counties in the Deep South. Each table also contains chi-square statistics that test the significance of each estimate against the null hypothesis that the parameter equals zero. This test is

⁴All of the data utilized in this analysis were supplied by the Inter-University Consortium for Political and Social Research. Of course, I alone am responsible for all of the interpretations presented here.

⁵See Brown (1991, chap. 3) for a more generalized discussion of this topic.

Table 2. Parameter Estimates and Simon-Effects for Areas Outside the Deep South

Parameters	Estimates	Chi-Square (<i>df</i> = 1)	Simon-Effects
<i>Republican Model:</i>			
<i>p</i> = momentum proportional	0.4298	47,998	0.00876
<i>s</i> = momentum bunching	1.1671	35,870	0.00751
<i>f</i> = relative dominance	0.2019	511,656	0.02903
<i>a</i> = interactive	0.6374	86,239	0.01197
<i>e</i> = proportional	-2.3071	28,639,381	0.20712
<i>g</i> = new voters	0.3898	320,285	0.02332
<i>Democratic model:</i>			
<i>j</i> = momentum proportional	-0.6798	3,640	0.00262
<i>y</i> = momentum bunching	0.5727	615	0.00107
<i>q</i> = relative dominance	-0.4258	6,870,810	0.11130
<i>w</i> = interactive	0.7370	73,554	0.01139
<i>u</i> = proportional	1.2843	2,332,876	0.06412
<i>v</i> = new voters	1.2536	4,234,042	0.08584
<i>Goodness of fit:</i>			
Republican 0.794			
Democratic 0.861			

made with respect to each estimated parameter's impact on the model's prediction hypersurface (see Brown 1991). The Simon-effects estimate the relative impact of each parameter on the model with respect to the other estimates.⁶

⁶The term "Simon-effects" references early formal investigations of social systems by Herbert A. Simon (1957) in which algebraic structures were specifically tied to aggregate, and thus social, human experience (see also Brown 1988, 1991). The numbers themselves express the absolute value of the change in the model's predicted level of partisan support, measured as a proportion of the eligible electorate, that occurs when a given parameter is set equal to zero as compared with that obtained using its optimized value. The magnitudes of the Simon-effects can be compared across parameters within one partisan model to determine the relative impact of each of the parameters in affecting change in partisan mobilization. The Simon-effects cannot, however, be compared across equations. For example, in Table 2, parameters *p* and *s* represent the two acceleration influences that are caused by the Republican campaign's momentum. (Substantively, one should recall that momentum can be positive or negative, depending on whether a party is increasingly winning or losing support, respectively.) The approximately equal magnitude of the two esti-

Table 3. Parameter Estimates and Simon-Effects for States in the Deep South

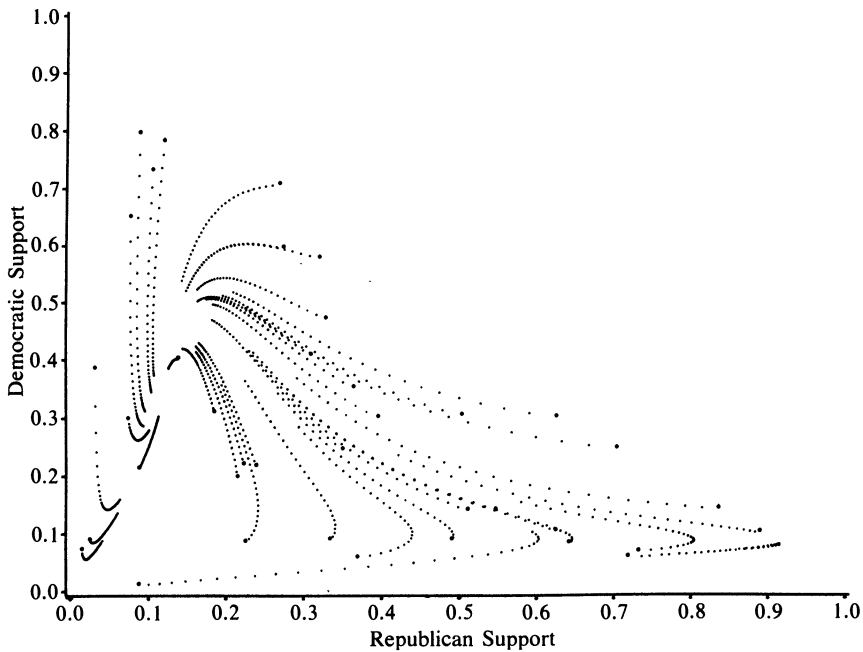
Parameters	Estimates	Chi-Square (<i>df</i> = 1)	Simon-Effects
<i>Republican model:</i>			
<i>p</i> = momentum proportional	0.7951	1,866	0.00608
<i>s</i> = momentum bunching	0.2159	6	0.00034
<i>f</i> = relative dominance	-0.2543	309,069	0.07832
<i>a</i> = interactive	0.0318	1	0.00014
<i>e</i> = proportional	0.5039	9,059	0.01356
<i>g</i> = new voters	1.7074	870,747	0.13540
<i>Democratic model:</i>			
<i>j</i> = momentum proportional	-0.7163	217	0.00163
<i>y</i> = momentum bunching	-0.4019	5	0.00024
<i>q</i> = relative dominance	-0.1153	16,703	0.01511
<i>w</i> = interactive	0.0491	1	0.00015
<i>u</i> = proportional	0.2608	1,389	0.00450
<i>v</i> = new voters	-0.3860	73,969	0.03374
<i>Goodness of fit:</i>			
Republican 0.627			
Democratic 0.206			

In general, the model fits these data very well. With regard to the data for the nonsouthern counties, the model explains near or above 80% of the variance between the years 1960 and 1964. While the model does less well with respect to the data for the southern counties, the fit for change in southern Republican mobilization is nonetheless quite high. The fit with regard to Democratic change is lower, even though it is still substantial.

Lessons drawn from the behavior of the estimated model are best obtained from the graphical analysis that follows. The graphical analysis is comprehensive in utility in drawing behavioral interpretations from the model. Before doing this, however, it is useful to note that all of the

mates for the parameters *p* and *s* suggests that both acceleration influences played relatively equal parts in the Republican loss in 1964. On the other hand, with respect to Democratic voting, the estimate for parameter *j* is more than twice the magnitude of the estimate for parameter *y*, suggesting that the accelerated momentum of the Democratic campaign in areas outside the Deep South was more highly structured by the proportional local strength of Democratic support rather than by the impact of Democratic voters interacting with other Democratic voters (i.e., the bunching effect).

Figure 1. Democratic and Republican Partisan Trade-Offs Using Extended Trajectories for Areas Outside the Deep South



parameters used in the model played a useful role in characterizing these dynamics in areas outside the Deep South (as evidenced from Table 2). However, for areas within the Deep South, some of the parameters are, from a statistical point of view, less well defined. This suggests that the change in southern voting was not as highly patterned as change elsewhere. This supports other research on both the micro and macro levels that suggests that highly institutionalized behavior is more difficult to change.

Figure 1 is a phase portrait of the estimated system using parameter estimates for the nonsouthern region. Republican support is represented on the horizontal axis, and Democratic support is represented on the vertical axis. All support is measured as a proportion of the total eligibles. There are numerous trajectories represented in Figure 1. Each trajectory is created from the estimated system (i.e., both equations 6 and 7), using, for heuristic reasons, random initial conditions. Randomly chosen initial conditions help to demonstrate the great variety of behavior that is cap-

tured by the model.⁷ The initial conditions are represented by the larger dots in the figure. The small-dotted trajectories that lead away from the larger dots represent the change in partisan support for each party as time progresses. Intuitively, the large-dotted initial conditions represent initial levels of support for the Republican and Democratic parties in 1960. In Figure 1, the ends of the small-dotted trajectories do not represent the levels of partisan support in 1964. That is done in a later figure. In Figure 1, the trajectories were allowed to continue far past their "natural pause" in 1964 in order to see more clearly where the trajectories were ultimately headed. The reason for this is explained more fully below.

It is best to begin the interpretation of Figure 1 by noting some of its more general characteristics. Observe that the trajectories in the nonsouthern region follow a swirling pattern that somewhat resembles a vortex. Different things are happening at different places within the vortex. It is important to look at the major areas of change separately.

At low levels of initial Democratic support, there is often a considerable increase in Republican strength combined with little change in Democratic support. This indicates that Republicans gained in some areas outside of the Deep South in which there had been very little Democratic support in 1960. However, in areas with substantial levels of initial Democratic and Republican support, there is a large decrease in subsequent Republican strength combined with a comparable increase in Democratic support. This can be seen by following the diagonal trajectories up and to the left between the levels of .15 and .40 on the horizontal axis and .10 and .45 on the vertical axis. This is, surely, where most of the converting landslide in areas outside of the Deep South occurred. It happened in areas in which both parties had a substantial presence in 1960.

Interestingly, it is also clear from Figure 1 that in areas with a very low initial Republican presence combined with very high Democratic support in 1960, there was a demobilization of some Democratic voters without a comparable increase in Republican support. In such areas, many Democratic voters simply stopped voting. At first glance, this may appear to be a surprising result, given the Democratic characteristic of the lopsided political victory. But, in 1964, there were some previously Democratic counties for which Johnson's new Democratic message was not well received. Yet in many such counties, the voters did not simply switch parties. Apparently, there was not a sufficiently large local Republican presence in these areas to enable these voters to complete the be-

⁷The initial conditions of the actual data are not used in the figure, since there are too many data points to make a clearly readable graph.

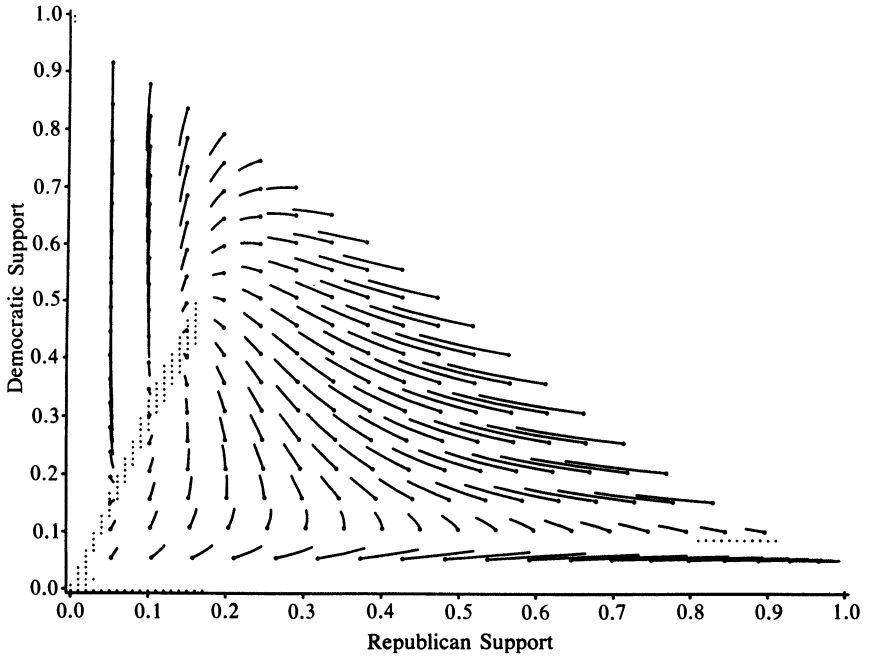
havioral switch to support Goldwater. Some minimum threshold of Republican support was necessary in order to break, more completely, the institutionalized partisan bonds to the Democratic party. Indeed, as was mentioned earlier, a separate analysis of these data (not reported here) found many such counties in the peripheral southern region.

In general, Figure 1 reveals a very complex setting of partisan change for the period beginning in 1960. Some areas demonstrated a Republican gain with little comparable Democratic gain, other areas demonstrated the reverse, whereas many other areas experienced a decline in Republican support combined with an increase in Democratic strength, the latter of which suggests evidence of a Republican to Democratic conversion process. Yet most trajectories seem eventually headed (following a number of turns along the way) for some equilibrium level of support of approximately .37 for the Democrats and perhaps a bit less than .20 for the Republicans. These numbers are, indeed, very close to the total levels of support obtained by both parties outside the South in 1964. That the trajectories seem to be headed in the same direction as the overall means of support is a very good indication that the voting in areas outside the South did indeed achieve some level of regional equilibrium.

It is important to understand that, when aggregate voting is in equilibrium, it should not be expected that all counties have the exact same aggregate partisan balance. There will always be variations in partisan strengths across states and across counties within states. But when the aggregate trajectories point to an ultimate end near the actual vote proportions, it can be said that the movement of the trajectories are following the system's internal guidance of movement around an equilibrium. In the language of dynamics, such an equilibrium is called a "stable attractor." Thus, we have begun to answer one of the questions posed earlier. The above interpretation of Figure 1 suggests that landslides can result within an electorate that votes in a state of overall equilibrium. Later in this analysis, when examining the dynamic behavior of voters living in the Deep South, it will be clear that this is not always the case. But it is best, at this point, to complete the analysis of Figure 1 by supplementing the trajectory information with that of a directional field chart. Such a chart is presented in Figure 2.

In Figure 2, the horizontal and vertical axes are identical to those of Figure 1. The large dots evenly spaced in the figure are initial conditions similar to those in Figure 1, with the exception that they are not randomly chosen. The lines that extend from the dots show the directions that any trajectory passing through that dot would take, which is why the plot is called a "directional field chart." The length of the lines reflect the speed with which the trajectory would travel at that point in the phase space.

Figure 2. Directional Field Diagram for Areas Outside the Deep South, 1960–64



The small dots that have no lines coming from them are something else entirely and are explained below.

One of the most interesting features of the directional field chart presented in Figure 2 relates to the matter of a system equilibrium. The small dots in Figure 2 (i.e., those that do not have directional lines emitting from them) produce a shading in the figure that identifies what is called an equilibrium marsh. An equilibrium marsh is different from an equilibrium point. Often an equilibrium point can be located within an equilibrium marsh, but this is not a requirement. An equilibrium marsh is an area in the phase plane in which the movement among all state variables becomes so slow as to nearly stop. By way of example, this could happen to a trajectory approaching an equilibrium point asymptotically, and very slowly. By the time the trajectory gets very far, the politics of the situation has changed. In our case, the election has come and gone. Thus, an equilibrium marsh is an area in the phase plane of Democratic and Republican competition in which change, for all intents and purposes, ceases. The mathematics of equilibria may indicate that

further change toward a particular equilibrium point is possible, but the reality of the electoral calendar makes this observation irrelevant. Thus, the condition of voting in a state of aggregate equilibrium is defined here as follows:

DEFINITION: A society votes in a state of aggregate equilibrium when both the final termination point of observation trajectories, as determined by the estimated system (i.e., when the trajectories are mathematically extended to the point of ultimate rest), and the actual aggregate vote totals exist within the phase area's equilibrium marsh.

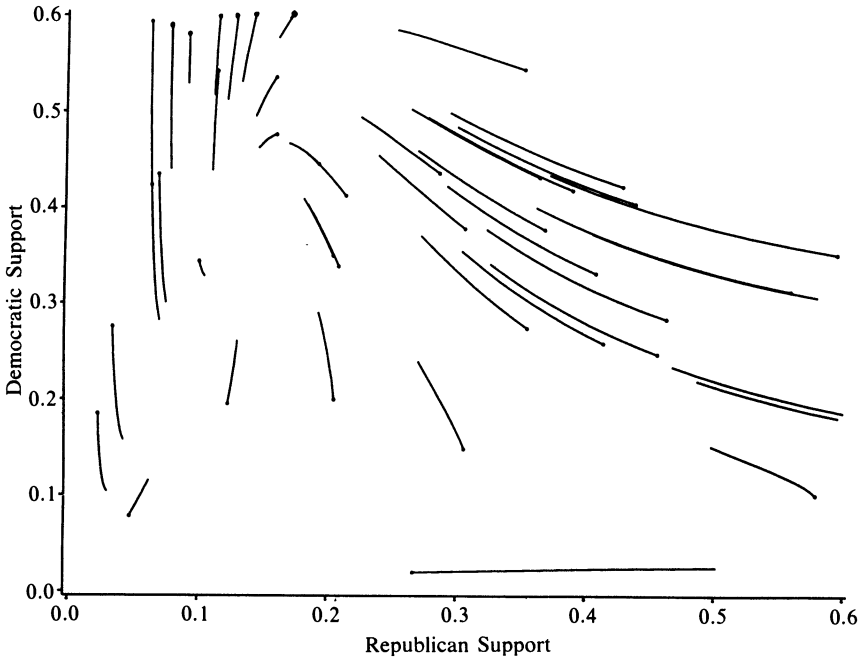
At this point, it is useful to return to the portrayal of trajectories in Figure 1. Note that many of the trajectories terminate in the area that is identified as an equilibrium marsh in Figure 2. This indicates that the trajectories actually do, for all practical purposes, end in equilibrium, where an equilibrium is defined not in terms of a point but as an area of minimal change that contains within it an equilibrium point. This is an important observation because it leads us to ask how close trajectories of real counties get to the area of equilibrium. Recall that the trajectories of Figure 1 are extended beyond that which would be typical for a particular county in order to see more clearly where the trajectories are heading. We need now a realistic portrayal of actual trajectories as bounded by partisan movements that occurred between 1960 and 1964. This is presented in Figure 3.

In Figure 3, the vertical and horizontal axes are identical with those of Figures 1 and 2 with the exception that the ranges of the axes more closely correspond with the ranges of the actual data for Democratic and Republican support. The dots in the figure represent initial conditions for the system, randomly selected and typical of the real data. The trajectories that emit from these dots are the actual length of the trajectories as predicted by the model for the data for areas outside the Deep South.

Note, in Figure 3, that the vortex pattern so clearly evident in Figures 1 and 2 is still present, even if it is less distinctly visible due to the shorter length of the trajectories overall. Notice also that all of the patterns observed earlier with regard to the voter trade-offs between the two parties are still evident. However, the equilibrium characteristics observed in the earlier figures are not so apparent in Figure 3 because the trajectories do not seem to get very close to the equilibrium marsh before the election occurs.

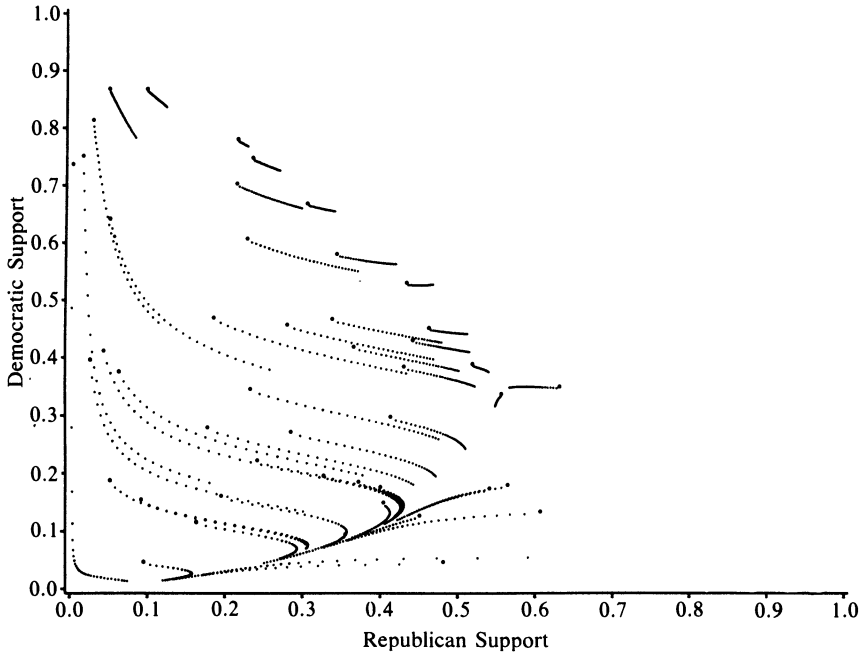
At first glance, it may seem that the election is cutting off the dynamic motion of voter support before equilibrium is achieved. Such an interpretation would lead us to believe that the electorate did not vote in a state of equilibrium and that the election itself merely took a measure

Figure 3. Democratic and Republican Partisan Trade-Offs Using Realistically Bounded Data Ranges and Trajectory Lengths for Areas Outside the Deep South, 1960-64



of partisan support at an arbitrary point in time. But this is not what happened here. As mentioned earlier, it is unrealistic to think that all counties would ever have an equal, or even approximately equal, level of partisan balance. What is important, however, is that movement among so many counties does follow an identifiable pattern that contains an equilibrium marsh within which the actual mean vote proportions for the entire region are located. This is the requirement for a statement that suggests that an electorate's vote is a choice in equilibrium. It is not that all areas have equal partisan balances, but that the electorate, as a whole, has an identifiable center of balance, and that this center is very close to the actual outcome of the election. For even if, in an unrealistic and entirely hypothetical situation, the election were to be postponed until all areas had an equivalent partisan balance (i.e., until all trajectories ended within the equilibrium marsh), the outcome of the election would be no different.

Figure 4. Democratic and Republican Partisan Trade-Offs Using Extended Trajectories for Areas in the Deep South

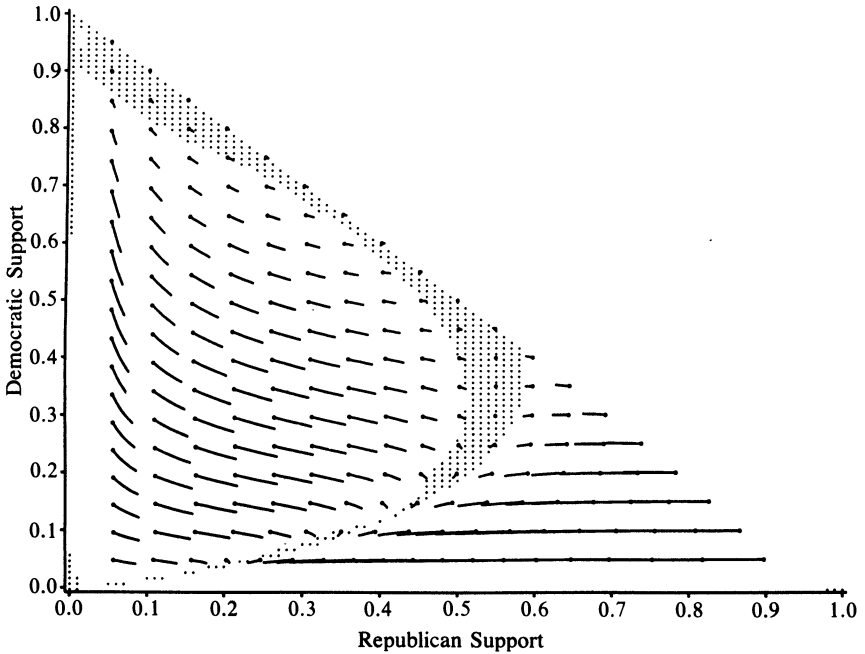


But the landslide that occurred in areas outside the Deep South was much different than that which occurred in the Deep South. Figure 4 is a phase portrait for the Deep South showing extended trajectories. These trajectories are computed in exactly the same manner as was done for areas outside the Deep South in Figure 1.

One of the most dominant characteristics of Figure 4 is the loss of Democratic support in combination with a dramatic increase in Republican support. In particular, this occurred in areas with high or moderate initial levels of Democratic support combined with moderate levels of initial Republican support. That is where the largest elements of the conversion landslide occurred in the Deep South. Moreover, it is important to emphasize that there was *no* systematic movement in favor of increased support for the Democratic party anywhere in the Deep South. This is evidenced by the downward headings of all of the trajectories in Figure 4, however wandering those downward paths may be.

Figure 5 helps guide our understanding of the location of the areas

Figure 5. Directional Field Diagram for Areas in the Deep South, 1960–64



of partisan stability within the estimated system for the Deep South. Figure 5 is a directional field chart for the Deep South, identical in construction to Figure 2 which was for areas outside the Deep South. As with Figure 2, the equilibrium marsh area in Figure 5 is represented by the dotted (i.e., shaded) area.

Note that the equilibrium marsh area in Figure 5 has a curved shape and is quite extensive. The directional field pointers (i.e., the larger dots with lines extending from them) suggest that a stable equilibrium attractor does, indeed, exist at very low levels of Democratic support with moderate levels of Republican support. Another attractor (this time unstable, a virtual separatrix) exists at Democratic levels of support near 0.40 and Republican levels of support near 0.55. The appearance of this latter type of unstable attractor is not uncommon with models of this sort. Its appearance reflects the system's ability to discern faint subtleties in the dynamic characteristics of these data. But the substantive importance of such an attractor with regard to the stability characteristics of the overall system is dependent upon its proximity to the realistic ranges of the data.

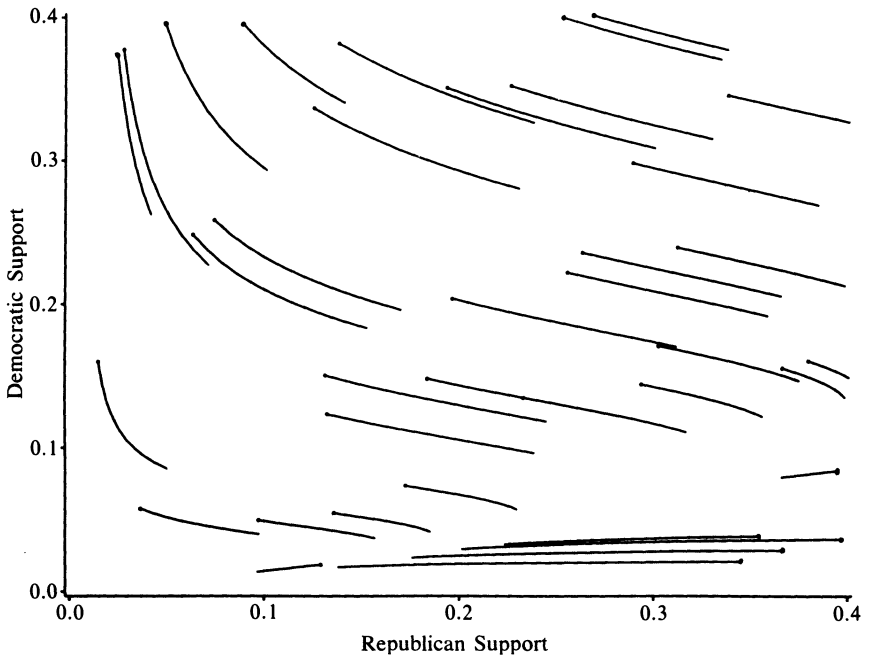
In this case (as demonstrated in the next figure), this attractor has a very minimal effect on the actual trajectories for counties in the Deep South and thus is of no consequence here.

The most interesting lesson to be drawn from Figure 5 is that the actual proportions of support for the Democratic and Republican parties in 1964 are not contained within, nor are they near, the equilibrium marsh. For the Deep South, Democratic mobilization dropped from 0.17 in 1960 to 0.13 in 1964. Republican mobilization in the Deep South increased during that same period from 0.11 to 0.22. That these 1964 levels of partisan support do not correspond to areas near the system's equilibrium marsh indicates that the electorate in the Deep South was not voting in equilibrium in 1964. Indeed, this helps confirm our earlier suspicion with regard to partisan change and the Democratic party. In 1964, the Democratic party was a party in transition. A great deal of electoral institutionalization in favor of the Democratic party was eroded in 1964. But the entire Democratic house did not collapse in that election. In particular, certainly the departure of white southern supporters from the Democratic party continued well after 1964. The election itself, perhaps a watershed in directing the flow of the shifting partisan tides, was nonetheless only one step along a longer road of change. Indeed, this point confirms similar observations made elsewhere regarding the realignment character of the 1960s and 1970s in the Deep South (Black and Black 1987).

Where else did the Republicans gain the remainder of their support in 1964 if not entirely from the ranks of former Democrats? In Figure 6, a Republican dependence on new voters in the Deep South is clearly evidenced. Figure 6 is a phase portrait for the estimated system with regard to the Deep South. The trajectories are *not* extended beyond the 1964 election. Moreover, ranges of the axes reflect the realistic ranges of the mobilization data for both parties. Figure 6 for the Deep South is comparable to Figure 3 for other areas.

In Figure 6, note that the dominant movement of the trajectories, however nonlinear, is down and to the right. This represents a decrease in Democratic support and an increase in Republican support. However, note that in areas with more than minimal levels of initial Republican support in 1960, the rightward movement of the trajectories more than overshadows the downward movement. This suggests that, in such areas, the Republicans were gaining many more voters than the Democrats were losing. These voters were new voters, undoubtedly white, attracted by the new Republican message, and disenchanted by the relatively liberal Democratic campaign. However, note also, again in Figure 6, that in areas with minimal levels of Republican support, Democratic support

Figure 6. Democratic and Republican Partisan Trade-Offs Using Realistically Bounded Data Ranges and Trajectory Lengths for Areas in the Deep South, 1960-64



decreased without a substantial increase in Republican mobilization. In summary, the above observations clearly suggest that the 1964 election was characterized by a substantial demobilization of former Democratic supporters combined with some switching of voters from the Democratic party to the Republican party as well as a large turnout of new voters for the Republicans. The complexity and magnitude of these voter movements has not yet been thoroughly reported in the extant relevant electoral literature and, in general, is new to our historical knowledge of the Deep South.

Remarks

The single and most important result from these analyses is that aggregate voter movements within the context of large magnitude and rapid electoral change can be extremely complex. Landslides are not simple matters of one candidate winning by a large margin. A signifi-

cant rearranging of much of the electoral landscape can occur in such elections.

In terms of the components of the estimated system investigated here, the results of this study suggest that the masses were, in part, guided in their partisan choices in the 1964 landslide election by the local dominance of one party relative to the other. They were also affected by interactive influences between supporters of the different parties as well as the simple proportional strengths of the parties. Moreover, acceleration factors related to the momentum of the campaign also influenced the mass dynamics of this landslide. These factors are contextual in structure and significantly affect the speed by which the dominance, interactive, and proportional factors mentioned above act to mediate the aggregate voter shifts.

This analysis also finds that new voters played a substantial role in the 1964 landslide. In particular, new voters aided Republican mobilization efforts in the Deep South. However, again in the Deep South, the Democratic party experienced a substantial degree of demobilization that was not associated only with a Democratic to Republican conversion process. This occurred primarily in areas in which high levels of Democratic support in 1960 were accompanied by very low initial levels of Republican mobilization. This suggests, although it does not confirm, that a contextually conditioned threshold mechanism of partisan conversion operates that requires some initial level of opposition party presence in order to initiate the conversion process. Interestingly, this idea finds an intellectual correspondence with arguments related to neighborhood change offered by Schelling (1978).

Landslide elections are not always elections in equilibrium. The analysis of the system's equilibrium behavior with regard to the 1964 election suggests that voting in areas outside the South was in equilibrium. The actual voting outcome for this area is contained within the estimated system's area of stability. But the 1964 election affected the Deep South differently. The Deep South was not in equilibrium when its voters went to the polls in 1964. The region was in the midst of a major electoral reorientation, only part of which was completed by the time the election took place. Both Democratic and Republican voting in the Deep South was just beginning to put on entirely new electoral faces. But the changes continued after 1964, and the 1964 election was merely one stop, however important, on a longer path of electoral evolution. This does not imply that voting in areas outside the South should have remained unchanged after 1964. Politics always changes as societies evolve and face new challenges. But for areas outside the South, the 1964 election was a true point of rest, a moment of stability in partisan choice, an arrival at a collective

equilibrium. Yet the evidence offered here suggests that the electorate in the Deep South had not resolved the electoral dilemma posed by Goldwater and Johnson in 1964 to the degree that occurred in the other areas. Simply stated, when the election occurred, voters in the Deep South ran out of time before they, as a region, were able to arrive at a new internal systemic balance.

Again, one of the most interesting aspects of these findings is that the voter movements can be so violently complex and so regionally varied on a systemic level once the shifting begins. This reinforces the concept that the social fabric of a polity is highly complex, with each layer of society affecting other layers. This addresses the contextually dependent nature of electorates, and reaffirms an understanding of politics as socially, not just individually, defined.

Manuscript received 16 January 1992

Final manuscript received 3 June 1992

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