Voter Mobilization and Party Competition in a Volatile Electorate

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VOTER MOBILIZATION AND PARTY COMPETITION IN A VOLATILE ELECTORATE*

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Following a model suggested by McPhee and Smith, the institutionalization of voting behavior is analyzed as a repetitive learning process. Using the Weimar Republic as an example, volatile partisan attachments among groups of supporters of the more ideologically "moderate" political parties are examined. A formal model comprised of a system of four interdependent differential equations is used to characterize the aggregate voter shifts over time of various groups in the population. The results show that a large wave of new voters disrupted emerging electoral patterns in 1930. In the subsequent realigning election of July 1932, electoral support for non-Catholic "moderate" parties was transferred to the extreme rightist parties, notably the Nazis.

This study examines political instability in the Weimar Republic, and specifically the decline of moderate parties in a society experiencing short-term and large increases in political participation in a context of weak electoral institutionalization. Electoral institutionalization in a democracy must be linked to two processes: (1) voter acceptance of an explicit democratic mechanism, for example, periodic elections and a democratic republic, and (2) the development of long-term partisan attachments for much of the electorate.[1] These processes must be tied to gradual changes in political participation if the polity is to remain stable and unimpaired by revolutionary threats to the government. In the later period of the short-lived Weimar Republic, a large influx of new voters seemed to deliver a participatory jolt to the process of institutionalizing electoral behavior. Also, some partially institutionalized voters became highly volatile in their political behavior and switched their votes en masse from one party to another in a relatively short period of time. This resulted in the virtual elimination of three major ideologically "moderate" political parties, which had been newly founded in the Weimar period and thus differed from other political parties that had long electoral histories.

[1] The term *institutionalization* is used as in work by Huntington (1968) and Przeworski (1975). Dahl (1971), Nordlinger (1968), and Rustow (1967) are among others who have contributed to an understanding of the process of institutionalizing electoral behavior.

The present analysis views electoral instability as inherently tied to competition among political parties with widely divergent ideological persuasions for both existing voters and potential new voters. The idea of linking rapid increases in electoral mobilization to political instability was developed primarily by Samuel P. Huntington (1965, 1968, 1971) and applied later with reference to the Weimar Republic by Shively (1972) and Przeworski (1975). Newly mobilized voters, lacking established patterns of voting behavior, may differ significantly from the already institutionalized voters in their approach to electoral processes. They can be mobilized with the aid of strong domestic forces to become immediately concerned with the political structure of their nation. In the case of Weimar, the economic collapse of the world's major economies, an easily roused domestic hostility to a government that appeared incapable of standing up to pressures from other European powers, and an effort on the part of the Nazis between 1928 and 1932 to mobilize previously nonvoting rural farmers (Hamilton 1982, pp. 364–71) were sufficient to spark the nonmobilized into becoming mobilized quite rapidly. Since, in the general case, newly mobilized participants either drop out of the political process quickly, thus causing further destabilization at a later date (Przeworski 1975), or remain volatile in their voting preferences until some established behavior pattern has time to emerge, the consequences of rapid mobilization can be long-term and, if sufficiently large, gravely threatening to the existing political order.

Electoral instability resulting from rapid mobilization can have an effect on the voting preferences of weakly institutionalized voters. This is true especially where large masses of voters have been engaged in the political process for only a short period. These voters have not

yet established a habit of voting for a certain party or, indeed, a particular ideological viewpoint. The theory of learning habitual behavior in a political context is derived from an explicit model of learning that was presented elegantly by McPhee and Smith (1962, p. 129) and then expanded and explored by Sprague (1982). The process of political learning posited in this model begins with a voter (or a potential new voter) receiving a political stimulus (or set of stimuli) from interpersonal interaction, the media, a campaign, or some combination of sources. The person's response to this stimulus is subsequently modified or conditioned by reactions from the person's local social environment, reflecting the influence of friends, workmates, neighbors, and so forth. In a society where patterns of political behavior are well established, the individual's milieu acts as a constant or stabilizing force on the individual's political behavior as mediated through reactions to responses to stimuli. In an environment where institutionalization is weak, volatility in the environment adds to the volatility of an individual's response to political stimuli. Thus, much depends on the *probability* of receiving a clear and consistent reaction to any particular stimulus.

The sociological literature dealing with the group effects of verbal communication on individual attitudes and behavior is well developed. Berelson, Lazarsfeld, and McPhee's (1954) now classic analysis of the social determinants of voting established clear interpretive guidelines on the role of friends and workmates in influencing an individual's voting choice. Recent research has further refined an understanding of the manipulatory effects of within-group conversations (Molotch and Boden 1985). Group biases in the perception of real world facts have been documented repeatedly (Garfinkel 1967; Gurwitsch 1962, pp. 50–72; Berelson, et al. 1954, pp. 77–87). Moreover, we observe the crucial connection between an individual's broader environment and the consequent influence on individual behavior as mediated through the individual's local milieu (Blau 1977; Blum 1985; Simmel 1955). This literature suggests that a heterogeneous social environment encourages intergroup social interactions. When the society experiences variation in social groupings, the norms and attitudes of the many groups mix through processes of information exchange and assimilation of reality perceptions.

Thus, the larger environment affects the information content of their more local milieux. A socially complex environment produces cross-cutting informational biases. When the heterogeneity of the environment changes, so do the biases in that environment, and so should the

behavior of individuals whose perceptions of reality depend on their reading of that environment.

The processes described above serve as the theoretical justification for the modeling strategy pursued later in this analysis. Immediately following is a more detailed description of the electoral setting of the Weimar period. First the problem of identifying the nature of electoral competition during the Weimar period is explicated by simple descriptive statistics that address the question, "When did the new voters enter the electorate and where did they go?" Second, a model of the electoral struggle is proposed and explored. Finally, the realignment period is examined and important groups that shifted their votes en masse from one party to another are identified. The realignment resulted in the elimination of three major parties.

BACKGROUND

Table 1 presents aggregate electoral results for eight major political parties of the Weimar period. The ideologically moderate non-Catholic parties are the German People's Party (DVP), the German Democratic Party (DDP, later renamed the State Party), and the *Wirtschaftspartei* (Business Party). These three parties were all newly founded during the Weimar Republic. The Center Party, also ideologically moderate, was predominantly Catholic and had a long history in German politics. The present analysis refers to these moderate parties collectively as "centrist." They generally supported the newly established republican form of government. The rightist parties—the German National People's Party (DNVP) and the Nazi Party (NSDAP)—generally sought to dismantle the Republic. The Nazi Party was new to the German electorate; the DNVP was a renamed version of the Conservative Party, which represented conservative interests in the Empire. The leftists were the Social Democratic Party (SPD), the Communist Party, and, in the early elections, the Independent Social Democratic Party (not included in Table 1 because it played no role in Weimar after 1924). The Social Democrats generally supported the Republic whereas the Communists and the Independent Socialists favored a revolutionary Marxist government.

Data in Table 1 differ from similar data presented by Lipset (1981, p. 139), Hamilton (1982, p. 476), and others in that electoral results of the parties are presented as proportions of the total population rather than as proportions of the total vote. Thus, we have a measure of mobilization rather than a measure of vote share. Where waves of new voters enter the

Table 1. Votes as a Proportion of Total Population Weimar Republic, 1920–33

	June 6, 1920	April 15, 1924	July 11, 1924	May 20, 1928	Sept. 14, 1930	July 31, 1932	Nov. 11, 1932	March 5, 1933
DNVP	0.072	0.098	0.105	0.070	0.039	0.035	0.047	
DDP	0.039	0.028	0.032	0.024	0.021	0.006	0.005	0.005
DVP	0.066	0.045	0.052	0.043	0.025	0.007	0.011	0.007
Center	0.067	0.066	0.070	0.075	0.083	0.093	0.085	0.088
SPD	0.103	0.102	0.133	0.146	0.137	0.127	0.116	0.115
Communist	0.010	0.063	0.046	0.052	0.074	0.085	0.096	0.078
Business			0.017	0.022	0.022	0.002	0.002	
NSDAP				0.013	0.102	0.220	0.188	0.277
Total population	57,329,831	59,225,521	59,161,718	62,101,058	62,439,847	62,439,852	62,439,852	62,439,852
Total votes	27,125,913	29,406,035	30,302,918	30,550,891	34,972,330	36,896,925	35,484,422	39,358,963
New votes		2,280,122	896,883	247,973	4,421,439	1,924,595	−1,412,503	3,874,541
Proportion new votes		0.038	0.015	0.004	0.071	0.031	−0.023	0.062

Note: DNVP: German National People's Party; DDP: German Democratic Party; DVP: German People's Party; Center: (Catholic) Center Party; SPD: Social Democratic Party; Business: *Wirtschaftspartei.*

political process, a measure of mobilization can be more useful in determining the level of party "electoral power." For example, if participation is increasing, it is possible for a party to maintain the same numerical level of support throughout the population but to lose some of its share of the vote. This problem is unraveled by using the mobilization measure.

The data in Table 1 point to the loss of voter support for the ideologically moderate non-Catholic parties between 1928 and 1932 and the huge influx of voters into the political process in 1930 and in July 1932. The non-Catholic moderate parties lost most of their support between 1930 and July 1932. The only partial deviation from this lies with the DVP, which lost substantial support between 1928 and 1930. Yet, it was between 1928 and 1930 that the Nazis gained their first foothold in the Weimar electorate, and 1930 is the year that witnessed the largest increase in new voter mobilization. But the literature on the period is conflicting on this point. Lipset (1981, pp. 148–51), Schnaiberg (1969), and Shively (1972, p. 1216) argue that the Nazis did not gain most of their electoral support from new voters in the 1930 election but that initial Nazi support came from voters shifting from the moderate parties to the Nazi Party. According to this argument, new

voters helped the Nazis most in the July 1932 election and the 1933 election. Lipset suggests that new voters can only be mobilized to support a party that already exists with substantial electoral support. On the opposite side, Karl O'Lessker (1968) argues that the Nazis did manage to get their initial support from new voters.

A further aggregation of the results in Table 1 is presented in Table 2. The parties are grouped under the ideological labels rightist, centrist, and leftist. The overall electoral support from the ideological center did not diminish significantly until after 1930. Moreover, the support for the leftist-oriented parties remained approximately constant throughout the later period (the leftist totals include the Independent Socialists through 1924). However, rightist parties almost doubled their electoral support in 1930, and almost again in 1932. While these data do not constitute "proof" of the direction of partisan trade-offs during the Weimar period, they do suggest that the source of the Nazis' electoral support in 1930 was new voters and not, as much of the literature on the Nazi vote has argued, voters who previously supported the centrist parties. The mathematical representation that follows provides more direct evidence supporting this finding.

Table 2. Aggregated Votes as a Proportion of Total Population

	1920	April 1924	July 1924	1928	1930	July 1932	Nov. 1932	1933
Rightist	0.07	0.10	0.11	0.08	0.14	0.25	0.23	0.27
Centrist	0.17	0.14	0.17	0.16	0.15	0.11	0.10	0.10
Leftist	0.19	0.17	0.18	0.20	0.20	0.21	0.21	0.19
New Voters		0.038	0.015	0.004	0.071	0.031	−0.023	0.062

A MODEL OF PARTY COMPETITION AND ELECTORAL MOBILIZATION

This analysis uses a time-dependent ecological structure of the type commonly used to model population fluctuations among competing species within a biological ecosystem. This type of model has been described in the social scientific literature by Coleman (1964, 1981), Simon (1957), Tuma and Hannan (1984), Przeworski and Soares (1971), and others, and has proved useful in modeling competitive arms races between nations (Gillespie, Zinnes, Schrodt, Tahim, and Rubinson 1977; Huckfeldt, Kohfeld, and Likens 1982).[2] The model of party competition and electoral mobilization presented here applies to four groups: the rightists R, the centrists C, the leftists L, and the nonvoters N. Mathematical statements must correspond to a notion of party competition, and thus must be tightly interconnected. We propose four mathematical statements that simultaneously describe change in voter support for each group as a function of levels of support for all of the groups at any particular time t.

$$dR/dt = F_1(R,C,L,N)$$
$$dC/dt = F_2(R,C,L,N)$$
$$dL/dt = F_3(R,C,L,N)$$
$$dN/dt = F_4(R,C,L,N).$$

We begin by developing the functional form describing change in electoral support for the rightist parties. Consider a voter who supports one of the centrist parties and interacts with a supporter of one of the rightist parties. The interaction, based on conveying, evaluating, and responding to information and nuances, could result in a shift in the voter's support to one of the rightist parties. This would be typical of voter shifts that occurred in the 1930 election as suggested by Lipset and others. The probability of this outcome is proportional to the joint probability of a rightist meeting a centrist within a given milieu.[3] If we use proportions of the population that support the rightists and centrists

within a given aggregate unit as approximating the separate probabilities, we can express the change in rightist support as

$$dR/dt = fRC,   \text{(1)}$$

where R is the proportion of the population within a given aggregate unit that supports the rightist parties, C is the proportion of the population that supports the centrist parties, and f is a parameter of the model.

There is another way that rightists might gain support through interactions with nonrightists. As the rightists interact with nonvoters, it is possible that these interactions will produce new rightist supporters. Thus, we must include within our model the understanding that the rightists can mobilize previous nonvoters to support the rightist cause.

$$dR/dt = fRC + mRN,   \text{(2)}$$

where m is a parameter of the model and N is the proportion of the population that is nonvoting.

It is possible that an interaction between a leftist supporter and a rightist supporter could result in a defection from the rightist ranks. This would not seem to be a likely occurrence for the elections in 1930 or July 1932. If anything, perhaps the reverse is true and the leftist defects to the rightist ranks for these elections. However, after the July 1932 election, there was a growing sense of unease among the German electorate regarding the intentions of the Nazis (Gay 1968, p. 162). Thus, such right-to-left defections could have played a part in the weakening of the electoral support for the Nazis in November 1932. The expression for the change in rightist support over time can now read

$$dR/dt = fRC - bLR + mRN,   \text{(3)}$$

where b is a parameter of the model and L is the proportion of the population that supports the leftist parties.

Finally, it is important to separate in the model the idea that rightist parties increase their electoral support from personal interactions on the one hand and general contagion based on political momentum on the other, say, as sparked by media coverage. That is, it may be that the rightists gained in electoral strength to some extent independent of rightist and nonrightist interactions. This type of noninteractive growth may be included in the model by the addition of a constant term. Thus, we have

$$dR/dt = fRC - bLR + mRN + v   \text{(4)}$$

or, for clarity of expression,

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[2] A thorough introduction to these models as employed in population biology can be found in May (1974).

[3] Technically, the assignment of such a probability suggests the employment of a random mixing assumption among all voters and nonvoters, an unlikely condition with respect to an individual's larger social environment. Nonetheless, literature, noted earlier, has reported repeated evidence indicating that social norms characteristic of the larger environment (reflecting the degree of heterogeneity of that environment) do permeate through to the individual's local milieu. Thus, the probability assigned here can be viewed as reflecting the likelihood of receiving information cues originating from that larger environment as perceived from within smaller social groupings.

$$dR/dt = R(fC - bL + mN) + v, \quad (5)$$

where v is a parameter of the model and the constant element of the derivative. The terms within parentheses capture intergroup aggregate shifts to and from the rightists as portrayed with probabilistic interpretations of social interactions.

The construction of the model describing change in electoral support for the centrist parties proceeds in a similar fashion. The Catholic Center Party increased its overall vote between 1928 and July 1932 (Table 1). Thus, it is likely that the Center Party mobilized support from some of the Catholic nonvoters. All of the other centrist parties lost votes during the period. Thus, overall centrist support could have increased in some areas as a result of interactions between Center Party supporters and previous nonvoters but decreased in other areas where rightists and leftists were interacting with centrists and causing defections from the centrist parties. All of this can be captured in the statement

$$dC/dt = C(sN - fR - aL), \quad (6)$$

where s, f, and a are parameters of the model. The parameter f occurs both in the model for change in rightist support over time and in the model for change in the centrist support over time. This, of course, preserves the accounting population compatibility of both models and has implications for parameter estimation procedures.

Support for the non-Catholic centrist parties virtually disappeared between 1930 and July 1932. To include in the model the possibility that there was a national disenchantment with these parties that caused defections that were not mediated through personal interactions between centrists and noncentrists, a constant term is included in the derivative. Thus, the model for change in electoral support for the centrist parties can be expressed as

$$dC/dt = C(sN - fR - aL) + k, \quad (7)$$

where k is a parameter of the model and a constant element in the derivative.

Modeling change in the leftist parties is somewhat problematic. Between 1928 and 1932 the SPD generally lost support while the Communists gained. However, the overall level of leftist support was remarkably stable as can be seen by a comparison of Tables 1 and 2. It appears that there were voter shifts between the leftist parties but few shifts from leftist to nonleftist parties. Nonetheless, a model that captures some of the possible leftist to nonleftist

(or vice versa) shifts might reasonably be expressed as

$$dL/dt = L(aC + qN + bR) + j, \quad (8)$$

where a, q, b, and j are parameters of the model. The parameters a, q, and b reflect gains in leftist support resulting from interactions between leftists and centrists, previous nonvoters, and rightists, respectively. The parameter j is a constant term comparable to the other constant terms described earlier.

Change in the ranks of the nonvoters is of particular interest in any study of institutionalized electoral behavior. If Huntington and Przeworski are correct, it is massive change in the aggregate strength of this block of the nonmobilized that results in political instability. Notions of how the ranks of the nonvoters may have decreased because of mobiliztion efforts by rightist, centrist, and leftist supporters were included in the above mathematical statements. However, it is also possible for the ranks of the nonvoters to change due to the momentum of a national trend energized by the media or sedated by boredom and indifference. It is assumed that the electoral behavior of newly mobilized political participants can be quite volatile. In a crisis they can, perhaps, be mobilized in large numbers with relative ease. In the absence of a crisis, however, boredom and apathy can return as the primary motivators leading them to become nonvoters once again. Thus, we have nonvoters reacting to national crises (as well as the absence of crises) and the mobilization efforts of existing voters. These ideas may be captured in the form

$$dN/dt = w - N(mR + qL + sC), \quad (9)$$

where m, q, and s are parameters of the model, which have all occurred elsewhere. The parameter w reflects change in the ranks of the nonvoters due to noninteractive national trends.

The four models expressed in equations (5), (7), (8), and (9) can now be presented as one interdependent system constituting a formal representation of multiparty and nonvoter population dynamics. The equations are nonlinear and reflect ideas of highly interactive partisan populations. The system is a general model with complete symmetry in its tracing of aggregate shifts from any one population to another. As it stands, the model can be used to evaluate the dynamics of the four populations for an entire country. However, the nature of the competition within the country is likely to be quite varied and dependent on local social conditions. Thus, it would be useful to condition the model with information about that environment. For example, we may wish to examine the population

dynamics of areas that are urban, or Protestant, or both urban and Protestant, or to explore the nature of partisan competition in areas that have high concentrations of workers, farmers, or small business owners. In sum, it is desirable to condition the values of the parameters to reflect additional social information. This can be accomplished directly by writing each parameter in the form

$$a_0 + a_1 X, \qquad (10)$$

thus making each parameter a linear function of X (the social variable). (Note that in the case in which $X = 0$, the original model is recovered.) The social variable can be an interactive variable if more than one social characteristic conditions the model simultaneously, for example, the case of Protestant urban areas with high levels of petty bourgeoisie. The entire system now can be written as

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\begin{aligned}
dR/dt =\ & R[(f_0 + f_1 X)\ C - (b_0 + b_1 X)\ L \\
& + (m_0 + m_1 X)\ N] \\
& + (v_0 + v_1 X) \qquad (11) \\
dC/dt =\ & C[(s_0 + s_1 X)\ N - (f_0 + f_1 X)\ R \\
& - (a_0 + a_1 X)\ L] \\
& + (k_0 + k_1 X) \qquad (12) \\
dL/dt =\ & L[(a_0 + a_1 X)\ C + (q_0 + q_1 X)\ N \\
& + (b_0 + b_1 X)\ R] \\
& + (j_0 + j_1 X) \qquad (13) \\
dN/dt =\ & (w_0 + w_1 X) - N\ [(m_0 + m_1 X)\ R \\
& + (q_0 + q_1 X)\ L \\
& + (s_0 + s_1 X)\ C]. \qquad (14)
\end{aligned}
$$

ESTIMATING THE SYSTEM

The techniques for evaluating the stability of the system are well established (see May 1974). All such techniques require, of course, that all parameter values be obtained first. The estimation of the above parameters is a nontrivial problem that cannot be solved by regression techniques. First, there is no way to solve for R, C, L, or N explicitly. Thus, we are left with the problem of estimating four models that must remain in derivative form. Linearizing techniques for less complex models have been suggested by Coleman (1981) and Tuma and Hannah (1984). However, such techniques require the uncoupling of the equations and are pursued to recover known statistical properties of the estimators. Several useful techniques, often used to solve practical engineering problems, employ iterative approximations to definite integration.[4] The techniques, as they are used here, are described in the Appendix A.

The data in this analysis are for the approximately one thousand *Kreise* in all of Germany in the Weimar period.[5] *Kreise* are comparable to U.S. electoral districts, but census information (such as religion and occupation) is also collected at the level of the *Kreise* in Germany.

The voting variables are all measured as proportions of the population that support the rightists, centrists, leftists, or are nonvoters. Supporters for the smaller parties (invariably a small proportion of the total vote) are not included. The period examined spans from 1928 to July 1932, from the genesis of the Nazi electoral movement to the time before the Nazi seizure of power. Each period between elections is examined separately. Thus, we estimate the dynamics of the electoral system from May 1928 to September 1930, then again from September 1930 to July 1932.

The social data are also measured as proportions of the total population within each *Kreis*. However, the proportions are transformed by standardizing each of the social variables to have a zero mean and a standard deviation of one. This transformation encourages the intuitively appealing interpretation of these data as measures of the social "atmosphere," acknowledging the notion that small changes in proportions for particular populations can signal large changes in the informational biases of the social milieu. The social variables used are religion (proportion of the population that is Protestant or Catholic), urbanization (a population density measure is used: a low value signifies a rural condition, a high value, a more urban environment), and occupation. Previous analyses of the Weimar period have indicated that these social variables are valuable in characterizing many conditioning aspects of the Weimar political environment (Hamilton 1982; Brown 1982). The first occupational variable is the proportion of the population operating farms (thus estimating the size of the peasantry). The second occupational variable is a measure of the size of the petty bourgeoisie, specifically, the proportion of the population engaged in trade and transportation.

The dependent variables are the electoral strengths of each of the groups (rightist, centrist, leftist, and nonvoter) over time. The models are evaluated in terms of their ability to explain a change in voter support for, say, the rightists

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[4] For a lucid discussion of such techniques, see Hamming (1971).

[5] The voting and religious data used here were provided by the Inter-University Consortium for Social and Political Research. Of course, this organization bears no responsibility for any errors of interpretation of these data that may have occurred here.

between 1928 and 1930 for each *Kreis*. All cases are weighted for each *Kreis* by population.

Finally, trajectories are generated for each *Kreis* based on the built-in expectations about aggregate shifts in partisan voting behavior on a national level. However, the local competitions are not all identical. Variations in each local competition act as noise surrounding the overall national dynamic. In those elections in which there is a strong and distinct national dynamic to the partisan competition, the model should explain a good deal of the variation between elections, that is, the fit should be high. In those elections in which the national dynamic is not distinct, the model should encounter mostly local noise, and thus the fit should be low. In short, these models measure change; when there is insufficient change, there is basically no systematic variation to be explained.

Since survey data has never been available for the Weimar period, all major studies of this period have relied on aggregate-level data. This study employs an unusual treatment of the same kind of data. The analysis rests on the *assumption* that group behavior is a consequence of normative pressures on individuals, and an effort has been made to point to a literature that reports persuasive evidence supporting this assumption. The specification of the model reflects such an understanding by way of expectations in the direction of changes in aggregate group memberships. This is entirely consistent with much of the relevant methodological literature in which model estimations using aggregate-level data show no bias if the model specification parallels the individual-level processes (Irwin and Lichtman 1976; Sprague 1976).[6] Nonetheless, while insights on the individual level can lead to aggregate-level expectations, the results of this analysis cannot be used to confirm the existence of the individual-level influences (the basic ecological fallacy problem). Such results, however, can suggest that the expectations were correctly perceived, adding weight to the theoretical characterization of the aggregate social processes.

RESULTS

The results of estimating the models are found in Table 3, which contains parameter estimates corresponding to each period. The fits of the models to the data are also displayed. The

chi-square statistics test the statistical significance of each parameter in terms of its impact on the model-generated prediction hypersurface from which the fits are derived; they are explained more thoroughly in Appendix A. It is difficult to extract substantive interpretations from the parameter estimates as they are presented in the table. Substantive interpretations are more easily obtained using the graphic analysis presented below. However, some initial results may be gathered from an examination of the fits presented in Table 3.

The results of the unconditioned estimations indicate that the models for the rightist parties and nonvoters explain a considerable amount of the variation that occurred within the two groups between the years 1928 and 1930. The model for the centrist and leftist parties generally do not do quite as well. The somewhat lower fits for the centrist and the leftist parties are not unexpected, however. Centrist and leftist support varied only slightly between 1928 and 1930 on the national level. The models for these two groups thus encounter relatively less of a national dynamic and relatively more local variations to that dynamic.

The middle period, 1930 to July 1932, is quite different. Again, the model for change in rightist support seems to explain a large amount of the variation between elections. However, the model for the nonvoters does less well, and the model for the centrists does quite well. These results suggest that it is with the rightist and the centrist parties that there is substantial dynamic movement at this time on the national level.

The phase diagrams presented below show change (i.e., aggregate vote trade-offs) over time for the pairs rightists and centrists, rightists and nonvoters, and centrists and nonvoters. Figure 1 is a phase diagram for the period 1928 to July 1932, a period spanning three elections. Each curve in the figure represents the simultaneous trajectory over time for two populations, the rightists and the centrists. Furthermore each curve is labeled in its beginning, middle, and end with regard to time corresponding to the electoral events. The curves in Figure 1 begin at 1928 and move leftward and upward to July 1932. Thus, the figure represents three quantities. The horizontal axis represents the proportion of the population voting centrist during the period from 1928 to July 1932. The vertical axis represents the proportion of the population voting rightist during the same time period. In a sense, phase planes have a third axis, time, which "rises" up off the paper from the lower left corner. Phase planes act to "crush" the time axis back down onto the paper. The diagram displays the estimated trajectories (occurring simultaneously) of partisan mobilization trade-offs. For example, following the "national

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[6] See also Hannan and Burstein (1974) for a discussion of some of the potentials for bias using grouped data. For the other side of the coin, see Kramer (1983) for an analysis of the problems of drawing inferences of dynamic social processes from individual-level data.

Table 3. Parameter Estimates

Parameters	Estimates	Chi Square (DF = 3)	Model	Fit
1928–30: Nonconditioned				
f	1.45868	391405	Rightists	0.59
b	−0.44050	81000	Centrists	0.48
m	0.72322	106780	Leftists	0.47
a	0.28199	42158	Nonvoters	0.77
q	0.44000	95227		
s	1.09083	451484		
w	0.00868	23303		
v	0.01394	118654		
k	−0.00899	27637		
j	0.00088	218		
1930–32, July: Nonconditioned				
f	1.48763	726405	Rightists	0.71
b	−0.49272	220756	Centrists	0.68
m	0.76713	216350	Leftists	0.14
a	0.33433	40414	Nonvoters	0.19
q	0.18719	13345		
s	0.78504	121303		
w	0.02303	189574		
v	0.02495	219097		
k	−0.01693	113143		
j	0.00703	12837		
1928–30: Conditioned by Religion (Proportion Protestant)[a]				
f	0.20670	12.44	Rightists	0.59
b	0.03489	98.06	Centrists	0.55
m	−0.04249	32.48	Leftists	0.48
a	−0.02664	0.43	Nonvoters	0.77
q	−0.00848	2.11		
s	−0.08193	260.18		
w	−0.00084	1.73		
v	0.00034	0.13		
k	−0.00254	4.06		
j	0.00057	0.18		
1930–32, July: Conditioned by Religion (Proportion Protestant)[a]				
f	0.48566	4662.87	Rightists	0.75
b	0.03596	191.99	Centrists	0.82
m	0.31368	2034.36	Leftists	0.15
a	0.05285	28.83	Nonvoters	0.26
q	−0.08939	137.24		
s	0.03706	86.05		
w	−0.00216	8.84		
v	0.00132	3.29		
k	−0.00320	11.85		
j	0.00016	0.02		
1928–30: Conditioned by Protestant Urban Petty Bourgeoisie				
f	0.03226	39.47	Rightists	0.59
b	−0.00314	2.13	Centrists	0.49
m	−0.01249	6.29	Leftists	0.49
a	0.01649	46.36	Nonvoters	0.77
q	−0.06874	767.88		
s	−0.05190	53.10		
w	0.00000	0.00		
v	0.00002	0.03		
k	−0.00039	3.82		
j	−0.00005	0.05		
1928–30: Conditioned by Catholic Urban Petty Bourgeoisie				
f	−0.02342	30.63	Rightists	0.58
b	−0.06953	300.55	Centrists	0.48
m	−0.00855	1.89	Leftists	0.49
a	0.03096	198.76	Nonvoters	0.77
q	−0.01559	29.00		
s	0.00619	5.25		
w	−0.00002	0.02		
v	0.00001	0.01		
k	0.00010	0.38		
j	0.00028	2.31		

Table 3. *Continued*

Parameters	Estimates	Chi Square (DF = 3)	Model	Fit
1928–30: Conditioned by Protestant Rural Peasant				
f	−0.00971	3.17	Rightists	0.60
b	0.07313	283.72	Centrists	0.50
m	−0.18511	130.32	Leftists	0.48
a	−0.10245	1532.61	Nonvoters	0.77
q	0.10643	615.14		
s	−0.14653	1327.97		
w	−0.00067	7.06		
v	−0.00026	3.59		
k	−0.00115	28.24		
j	−0.00061	6.58		
1928–30: Conditioned by Catholic Rural Peasant				
f	−0.15181	287.30	Rightists	0.59
b	0.08284	866.40	Centrists	0.53
m	0.00726	1.81	Leftists	0.48
a	−0.02240	38.79	Nonvoters	0.77
q	−0.02790	78.14		
s	0.04566	1.55		
w	0.00095	16.85		
v	−0.00052	9.39		
k	0.00199	62.72		
j	−0.00098	14.60		
1930–32. July: Conditioned by Protestant Urban Petty Bourgeoisie				
f	0.07326	143.03	Rightists	0.71
b	0.01131	56.34	Centrists	0.72
m	−0.09122	564.46	Leftists	0.15
a	0.07056	375.06	Nonvoters	0.23
q	−0.07017	706.67		
s	−0.05165	11.87		
w	0.00021	1.61		
v	−0.00009	0.27		
k	−0.00055	8.26		
j	−0.00006	0.08		
1930–1932, July: Conditioned by Catholic Urban Petty Bourgeoisie				
f	−0.07547	628.88	Rightists	0.73
b	−0.00643	6.07	Centrists	0.68
m	−0.15418	1150.95	Leftists	0.15
a	0.04423	370.50	Nonvoters	0.25
q	−0.04250	190.10		
s	0.00866	5.86		
w	0.00053	10.72		
v	−0.00039	5.59		
k	0.00018	1.23		
j	0.00021	1.23		
1930–32, July: Conditioned by Protestant Rural Peasant				
f	0.11100	786.61	Rightists	0.75
b	0.00776	7.33	Centrists	0.68
m	0.31915	1131.89	Leftists	0.15
a	−0.05396	313.59	Nonvoters	0.33
q	0.08440	389.28		
s	0.10629	505.30		
w	−0.00106	30.28		
v	0.00092	20.83		
k	−0.00025	1.53		
j	−0.00023	0.89		
1930–32, July: Conditioned by Catholic Rural Peasant				
f	−0.32628	497.47	Rightists	0.71
b	−0.04823	610.10	Centrists	0.74
m	−0.12451	761.10	Leftists	0.15
a	−0.15001	686.78	Nonvoters	0.22
q	0.21351	3339.85		
s	−0.09012	47.66		
w	0.00284	172.22		
v	−0.00084	14.81		
k	0.00364	215.03		
j	−0.00114	18.23		

[a] The estimates conditioned for proportion Catholic are the negative of the above estimates.
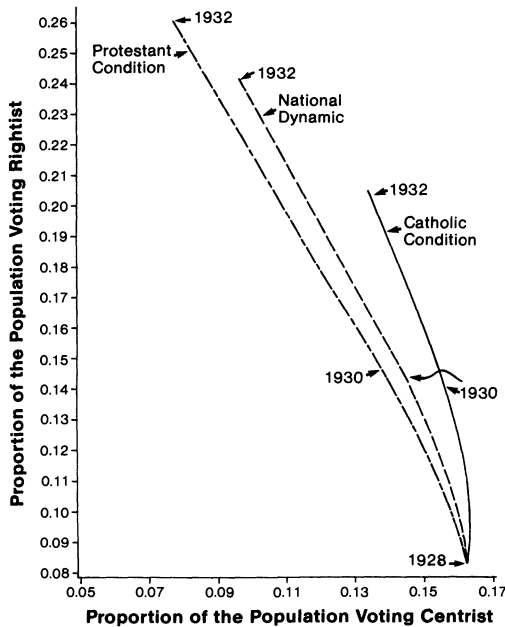
Fig. 1. Rightists—Centrists—Religion

dynamic'' trajectory from the lower right-hand corner to the upper section of the figure indicates that (1) the centrist population declined approximately 5 percentage points between 1928 and 1932 and (2) the rightist population gained nearly 20 percentage points during the same period. This trajectory shows how the two groups shifted their aggregate voter allotments between the two time points, in a fashion, as the battle progressed month by month. Moreover, all of this is done while controlling for the overall increase in turnout since all of the measures are mobilization measures rather than vote share measures.

A useful procedure for interpreting the phase diagrams is to observe which curves seem to cut diagonally across the plane and which appear to run horizontally or vertically. If a curve runs horizontally or vertically, one of the variables is not moving with the other variable. This suggests little correlation between changes in the two variables. If the line runs diagonally across the picture, the relation between changes in the variables is quite high. For example, the curve for the rightists and the centrists within a Protestant condition produces a dramatic diagonal in both electoral periods. The same curve for the Catholic condition is relatively more vertical. The interpretation is clear: the rightists picked up more of their support in 1930 and in July 1932 from previous centrist supporters in Protestant areas than in Catholic areas. Note, however, that in Protestant areas, most of the

centrist-to-rightist vote shift occurred after the 1930 election, as can be seen by the relatively larger magnitude diagonal movement of the Protestant condition trajectory after 1930. The curve labeled ''national dynamic'' represents the trajectory for the two partisan populations for the nation as a whole, that is, without conditioning the model for religious environment. The initial 1928 values used for all three curves are the national proportions presented in Table 2.

The pairwise trajectories for the rightist and the nonvoting populations are displayed in Figure 2. Again, the curves representing a Protestant condition, a Catholic condition, and the national dynamic are presented. All three curves cross after 1930. Moreover, while all of the curves cut dramatic diagonals across the figure between 1928 and 1930, after 1930 there is virtually no diagonal movement in Catholic areas. These curves indicate that in 1930 the rightists picked up large amounts of previous nonvoter support in all areas, but following the 1930 election, additional new voter support was limited to the Protestant areas. In Catholic areas, new voters made their largest electoral impact in 1930.

Figure 3 displays results that begin to address the problem of identifying partisan population migrations by relevant occupational categories. The conditioning variable used in the model is the linear function of the interaction term: (religious condition) · (level of urbanization) · (level of farming population). Thus, the curves (except for that labeled ''national dynamic,'' which is displayed for reference purposes)
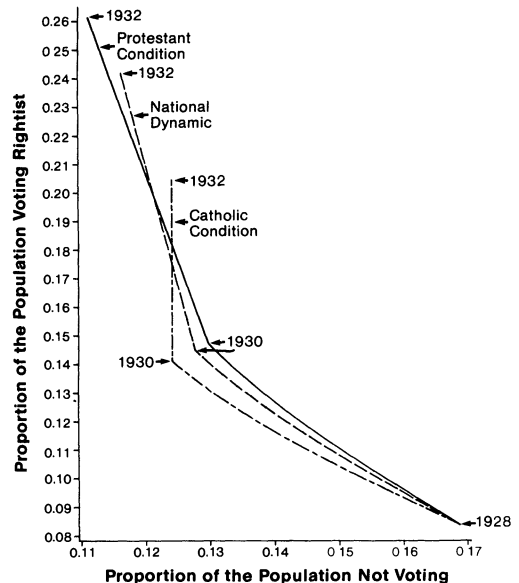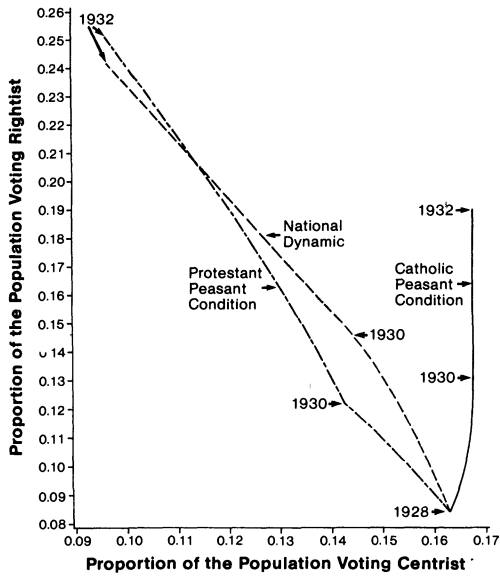

Fig. 2. Rightists—Nonvoters—Religion

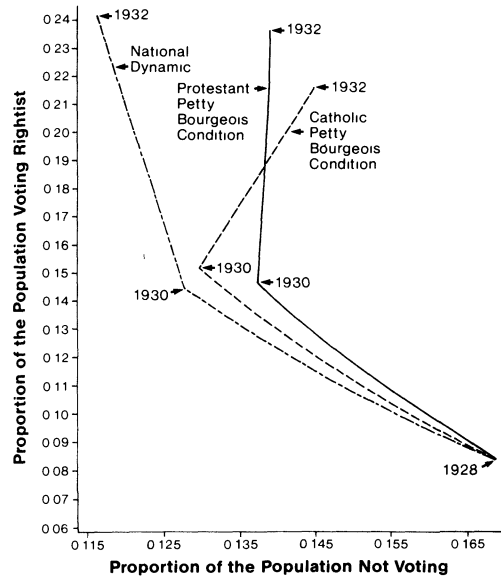Fig. 3. Rightists—Centrists—Religion—Peasantry

Fig. 4. Rightists—Nonvoters—Religion—Petty Bourgeoisie

represent aggregate partisan shifts among populations that are totally rural and heavily peasant.

The trajectories displayed in Figure 3 suggest that there were important partisan shifts to the rightists among the Protestant peasant centrist populations in both electoral periods (with a much larger gain for the rightists after 1930). However, among the Catholic peasants (who already were institutionalized supporters of the Catholic Center Party), there were no such population shifts to the right. This result suggests that partisan habits among the Catholic peasantry were more resistant to change than those of the Protestant peasantry. However, among those Protestant peasants who had only tentatively established partisan habits for relatively newly formed non-Catholic centrist parties, the appeal from the ideological right appears quite strong.

Fundamental to much of the literature on the Nazi vote is the role played by the petty bourgeoisie. Figure 4 displays the phase plane trajectories of the partisan competitions in urban Catholic and Protestant areas with high levels of petty bourgeoisie. The trajectories suggest that in both Catholic and Protestant petty bourgeois urban areas, decreases in the nonvoter population correspond to increases in the rightist population between 1928 and 1930. It seems that the ideological right gained during this period from the new voter petty bourgeois populations in both Catholic and Protestant areas. However, the voter trade-offs between the nonvoter petty bourgeoisie and the rightists change crucially following the 1930 election. Between 1930 and July 1932, there is no

apparent movement from the Protestant petty bourgeois nonvoter ranks to the rightists (as reflected in the near vertical post-1930 trajectory in Figure 4). However, the comparable Catholic trajectory marks a dramatic change in direction after 1930. Indeed, these results suggest that between 1930 and July, 1932, the rightists lost previously acquired Catholic petty bourgeois new voter support as these voters returned to their former nonvoting habits. (This does not imply that the Catholic petty bourgeoisie failed to support the Nazis in 1932. However, apparently the Nazis could not hold on to all of the new voter support that had previously come from this group.)

The trajectories presented in Figure 5, which presents a summary of the foregoing arguments, are not conditioned by social data. The trajectory for the centrists and rightists is presented with that for the nonvoters and rightists. The trajectory for the nonvoters and the rightists has a steeper slope than that of the trajectory for the centrists and the rightists until 1930. After 1930 the situation reverses and the trajectory for the centrists and the rightists has the steeper slope. These results clearly suggest that the rightists gained at first predominantly from the ranks of the newly mobilized voters. Subsequent to this disturbance to the existing equilibria of the electoral system, a large-scale realignment occurred in which centrist supporters (especially among those not supporting the Catholic Center party) switched their partisan preferences to the right. The important point to be made here is that the influx of new voters came first and the realignment followed. This is
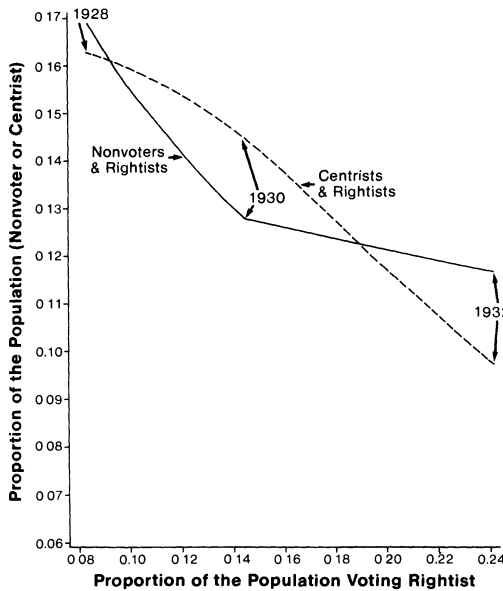
Fig. 5. Rightists—Centrists—Nonvoters, 1928–32

precisely opposite the arguments made by many scholars of the Weimar period (see Childers 1983, pp. 140–42, for a discussion of the scholarly debate). However, given the aggregate structure of the vote as depicted in Tables 1 and 2, the conclusions drawn here seem to be well founded. Apparently, the massive influx of newly mobilized voters destabilized the developing structure of the partisan competitions in 1930. Subsequent to this shock to the system, a massive realignment occurred, primarily from the ideological center to the ideological right. Moreover, supporters of parties with long electoral histories previous to the Weimar period, for example, the SPD, the Communist Party, and the Center Party, seemed to be relatively immune to this realignment volatility. An expected result in light of work on political immunization by McPhee and Ferguson (1962), this pattern is a consequence of long-term socialization yielding stable partisan attachments.

IMPLICATIONS

This analysis has focused on the idea that rapid mobilization of previous nonvoters within an electorate can precipitate a period of electoral instability. The theoretical ideas are based on a notion of learning political behavior within a conditioning social environment. Political behavior, in this case voting, becomes institutionalized into identifiable patterns when the learning of this behavior is repeated over time. In a situation of rapid electoral mobilization, previ-

ous electoral patterns are disrupted, making possible a subsequent realignment of partisan affiliations.

This analysis of Germany during the period of the Weimar Republic showed that new voters could be mobilized to support a party that had no substantial electoral strength before 1930. This finding must force a reassessment of Lipset's claim that previously nonmobilized elements of a population can be mobilized to support an extremist party only if the party has already achieved substantial electoral success (Lipset 1981, p. 150). Apparently, the political behavior of the previously nonmobilized sections of a population can be highly unpredictable when they are rapidly mobilized.

Rapid mobilization within an electorate can be followed by a major partisan realignment, as occurred during the Weimar years. The institutionalization of the voting process proceeded more thoroughly in the Weimar Republic for some groups than for others. Some social groups that had established patterns of voting over the longest period of time were more resistant to electoral change. The results presented here suggest that learning political behavior within a generally stable political environment is an incremental process that needs a sufficient amount of time to become institutionalized. If the time is too short, or if the context in which the process is occurring is disrupted, the learning is lost together with the socializing effects of existing partisan attachments.

APPENDIX A

In broad terms, the iterative estimations are done by using the existing strength of each group of parties (e.g., rightists) for the first election as an initial condition for each Kreis. Parameter values are (for the first attempt) guessed using likely values (many initial guesses are attempted). Trajectories for the strength of each group (rightists, centrists, leftists, and nonvoters) are then calculated for each Kreis. These trajectories are computed using an Euler approximation of the form

$$RNEXT = R + h*(dR/dt),$$

as in the case of rightist support. Here, h is a small number used to iterate values of R (see Hamming 1971, p. 221–46).

After a trajectory is projected for each Kreis ($h = 0.01$ and the number of iterations is 100), a fit is computed to see how much of the variation between elections is accounted for by the model. The measure of fit is

$$FIT = 1 - (RSS/TSS),$$

where *RSS* represents the residual sums of squares between the predicted value for the next election and the actual value for the election, and *TSS* represents the sums of squares for the total difference between elections. This is done for each group (rightist, centrist, leftist, and nonvoters).

The values of each of the parameters are then disturbed one at a time. New fits are computed and the partial derivatives of the fit surface for each parameter are then evaluated using the approximation

(change in fit/change in parameter).

The values of the parameters are then moved iteratively according to the recipe

$$BNEXT = B + z*(P),$$

where B is the vector of parameter values, P is the vector of partials for fit surface, and z is some small number used to produce incremental change in the parameter space.

A fit is computed after each iterative movement in the parameter space. This is done until the fit ceases to improve between iterations. At that point the partials are recomputed and movement through the parameter space continues. The whole procedure stops when the partials of the fit surface indicate that a maximum in the surface has been reached.

As in all nonsmooth problems of this nature, there is no guarantee that the parameter values ultimately chosen are indeed the ones that correspond to a global maximum to the surface fitted. The usual safeguard of varying the initial parameter values has been used here.

The chi square statistics for each parameter test the significance of each estimate in terms of its impact on the predicted values of the model. Thus, an estimate that has a low chi square value has little impact on the model, and the null hypothesis (i.e., where the parameter is assumed to equal zero) cannot be rejected. The chi square statistics are calculated by computing two sets of predicted populations for the four models (corresponding to the rightists, centrists, leftists, and nonvoters), one setting each parameter to its estimated optimal value, and the other setting each parameter (one at a time) to zero. The chi square statistics are based on the differences between these two population sets.

(Readers who would like a free annotated machine-readable copy of the iterative program used for the above estimations should send requests via BITNET to the author at the following address: POLSCB at EMUVM1.

Requests should include a BITNET address to which the program is to be sent.)

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