A STATISTICAL STUDY OF THE EFFECT OF THE GREAT DEPRESSION ON ELECTIONS: The Weimar Republic, 1930-1933

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The four Reichstag elections in Germany between 1930 and 1933 are the object of this study. A cross-section analysis of 13 regions and a time series analysis show no conclusive impact of unemployment on the vote share of the National Socialist Party. A pooled cross-section/time-series analysis simultaneously considering sociodemographic and economic factors shows, however, that the Nazi party significantly benefitted from higher unemployment. The farmers tended to support the NSDAP while the catholics tended to reject it. The same holds for the totalitarian parties as a whole, the principal one beside the Nazi being the German Communist Party. A Gedankenexperiment suggests that, if unemployment had not risen from 14% in July 1930 to 52% of employed workers in January 1933, the Nazi party would have received 24% instead of 44% of the vote in March 1933.

The role of the Great Depression as a causal factor in the fall of the Weimar Republic has been and still is controversial. Was the rise of the National Socialists and of the other totalitarian parties due to the high rate of unemployment in the years 1930–1933? Would the historical development have been different if the economic crisis had not worsened after 1930? Three views may be found in the scientific literature.[1]

1. Some authors stress the political and institutional difficulties with which the first German democracy was faced. The Weimar Republic was identified with what was felt to be the shameful conditions of the Versailles treaty. Moreover, the Weimar constitution itself had basic shortcomings.[2] The founding fathers of the Federal Republic of Germany considered the constitution to be a very strong factor in the Weimar Republic's fall, so that they introduced quite different institutional provisions into the 1949 con-

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stitution (Grundgesetz) of the Federal Republic, e.g., the indirect election of the chancellor by parliament.

2. Other authors consider the nature of the then existing sociodemographic and religious groups to be the main reason for the Weimar Republic's fall.[3] It is maintained that the Nazi party was strongly supported by the agrarian population, which was heavily hit by the agricultural crisis and by the bourgeois middle class, which had been impoverished by the preceding hyperinflation and which felt that its social position was threatened. The Catholics and workers, on the other hand, resisted the Nazi movement until 1933.[4] The large number of first-time voters in the period 1930–1933 had no clear party identification and therefore became easy prey for the National Socialists.[5]

3. A third group of authors sees the main reason for the fall of the Weimar Republic in the economic depression that took place in the period under study.[6] The economic crisis is considered to have been an extremely important factor if not the only one.

There is little in the scientific literature about the relative importance of these three sets of factors. Historical researchers can claim to have studied each of the aspects mentioned. In order to understand this crucial period in history, it is important to know what the *relative* effect of the various determinants was. This paper endeavors to study the impact of the sociodemographic determinants and of the economic depression on the outcome of the parliamentary elections and to evaluate the relative importance of these factors for the vote shares of the parties, in particular those of the National Socialists separately and the totalitarian parties taken together. Special emphasis will be laid on the role of unemployment. The influence of the Versailles treaty and the specific characteristics of the Weimar constitution cannot be quantitatively studied within the context here considered because these conditions did not vary over the period 1930–1933 and consequently cannot be related to *differences* in vote shares over time and regions. After determining the relative importance of socioeconomic factors and the depression, a *Gedankenexperiment* is performed in order to determine what would *hypothetically* have happened if the economic crisis had not worsened after 1930. This experiment may also be considered as an ex post scenario of possible events.

The quantitative analysis is based on multiple regression combining time series and cross-section analysis. The time series are for the four parliamentary elections that took place in September 1930, July 1932, November 1932, and March 1933. The last election was held with Hitler already chancellor (he entered office January 30, 1933). We include this last election, as it seems that, in March 1933, the Nazis did not practice outright election fraud, although they did use their troops to terrorize the popula-

tion and to intimidate their political opponents with arrests, "protective" custody, and psychological pressure.[7]

The cross-sectional data are grouped according to the 13 regions into which we have divided the German Reich for our examination. Each of these regions served as the statistical unit for reporting unemployment *(Landesarbeitsamtsbezirk)* in the Reich. The 35 voting precincts *(Wahlkreis)* and the Reich's 30 statistical units for sociodemographic data *(Landesbezirk)* have also been grouped together according to these 13 regions. The statistical analysis thus has an adequate data base.[8] The theoretical framework of this study is based on extensive analyses, undertaken by one of the authors, of the effect of economic conditions on the support of governments in representative democracies over the last decades.[9]

Elections in the Weimar Republic have been the subject of various quantitative studies.[10] One of the most important is by Kaltefleiter (1966), who studied the influence of economic conditions on the vote shares of various parties. He proceeded by choosing precincts that were similar in all respects except the one whose influence was to be studied. His analysis is mainly verbal, with no statistical inferences being drawn with the help of correlation or regression techniques. Despite its great merits, Kaltefleiter's work can no longer be considered satisfactory from today's point of view because he did not employ the modern econometric methods now at everybody's disposal. His choice of precincts was not based on objective criteria, and the economic and sociodemographic influences were considered in sequence, not simultaneously.

Another important and more recent contribution is by Shively (1972), who tests the theory of party identification,[11] arguing that the shorter the period of time that someone was able to vote, the more likely it was that he or she would vote for Hitler. Shively's analysis is open to the same criticism as Kaltefleiter's, because he uses the same criteria for choosing the precincts and also compares them by nonreproducible methods. A study closely related to our work is that of Brown (1982) who analyzes the simultaneous influence of occupation (or class), religion, and voter participation on the Nazi vote share in July 1932. In a logit regression analysis he uses cross-sectional data of the Kreise covering the whole area of the Weimar Republic. However, the possible influence of the economic depression (unemployment) on voter decisions is totally ignored. Another study is by Wernette (1976), who explains the *change* in votes for the National Socialists from one election to the next, based on a cross-section study of 1,100 precincts. Wernette introduces a great many (16) explanatory variables in a rather ad hoc manner and without any clear pattern, using a curious mixture of levels and changes in independent variables. The depression is measured by the absolute number of unemployed, not as a percentage

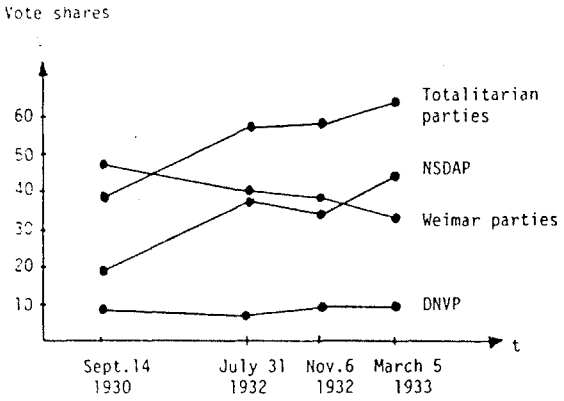

FIG. 1. Vote shares in four elections to the Reichstag, 1930–1933: National Socialists (NSDAP), German National People's party (DNVP), totalitarian parties, and Weimar parties.

share of the working population. The specific functional forms of the test equations are not explained. No theoretical hypotheses are explicitly developed and thereafter tested; the author includes those explanatory variables that give the best fit. In the end, Wernette comes to the conclusion that "the findings show that the benefits of unemployment for the Nazis are limited to the 1930 election. Economic distress gives initial impetus to the growth of a fascist movement. Beyond that point its effects are insignificant." In our *Gedankenexperiment* we will test exactly this conclusion.

THE POLITICAL AND ECONOMIC SITUATION IN THE WEIMAR REPUBLIC, 1930–1933

In this section only an outline of the quantitative discussions is provided. For the background to these, which is indispensible, the reader is referred to the literature cited in note 1. Figure 1 gives the election results for the four elections to the Reichstag (parliament) that took place between 1930 and 1933, showing the vote share of the National Socialist German Workers' party (NSDAP) and the closely related German National People's party (Deutsch-Nationale Volkspartei, DNVP); of all the totalitarian parties (the Communist party [KPD] in addition to the NSDAP and DNVP); and of the "Weimar parties" that supported the Republic, in particular the Center party (Zentrum) and the Social Democratic party (SPD).[12] The figure clearly shows the dramatic increase in the share of votes gained by the National Socialists (from 18.3% in 1930 to 43.9% in 1933). The totalitarian parties together already had a majority of the votes in July 1932 (57.5%), which increased to 64.2% in 1933. The parties supporting the

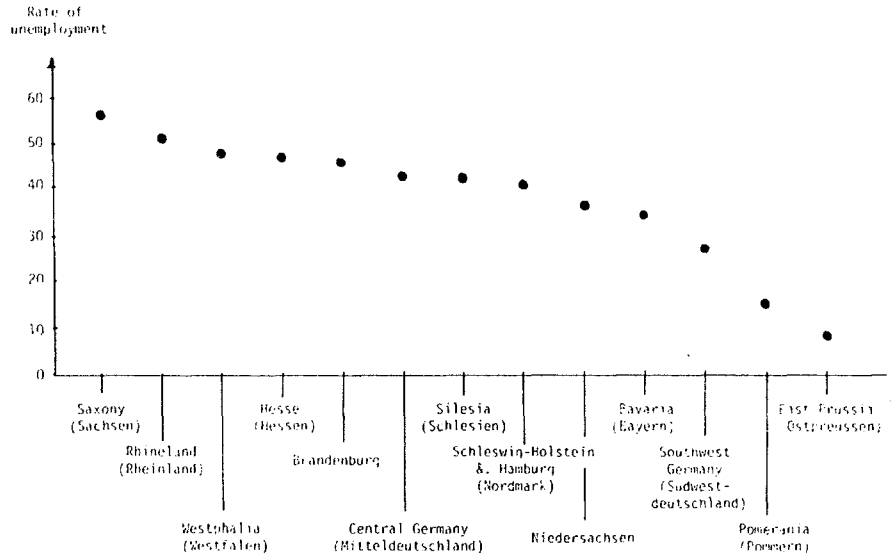

FIG. 2. Rate of unemployment in the various regions of the German Reich, July 1932.

Weimar Republic suffered a vote loss going from almost half of the vote (47.6%) to little more than one-third (34.2%).

The extent of the economic depression may best be captured by the rate of unemployment.[13] The nationwide rates available closest to and preceding the elections show the following development: 14.4% (July 1930), 42.3% (July 1932), 39.6% (October 1932), 52.4% (January 1933). Thus there was a massive increase from 1930 to 1932, then a small drop toward the end of the same year (1932), and a considerable increase again at the beginning of 1933.[14]

There were very large differences in the rates of unemployment in the various regions of the German Reich. Figure 2 shows, for example, that the unemployment rates in July 1932 were 57.3% in Saxony and 51.5% in the Rhineland, but "only" 18.6% in East Prussia and 24.9% in Pomerania. A similar picture holds for the other preelection dates.[15]

DETERMINANTS OF THE ELECTION RESULTS OF THE NATIONAL SOCIALIST PARTY

Cross-sectional Analysis

The most straightforward method for analyzing the influence of the economic depression on the Nazi election results is simply to correlate the vote share received by the NSDAP in the various regions with the corresponding

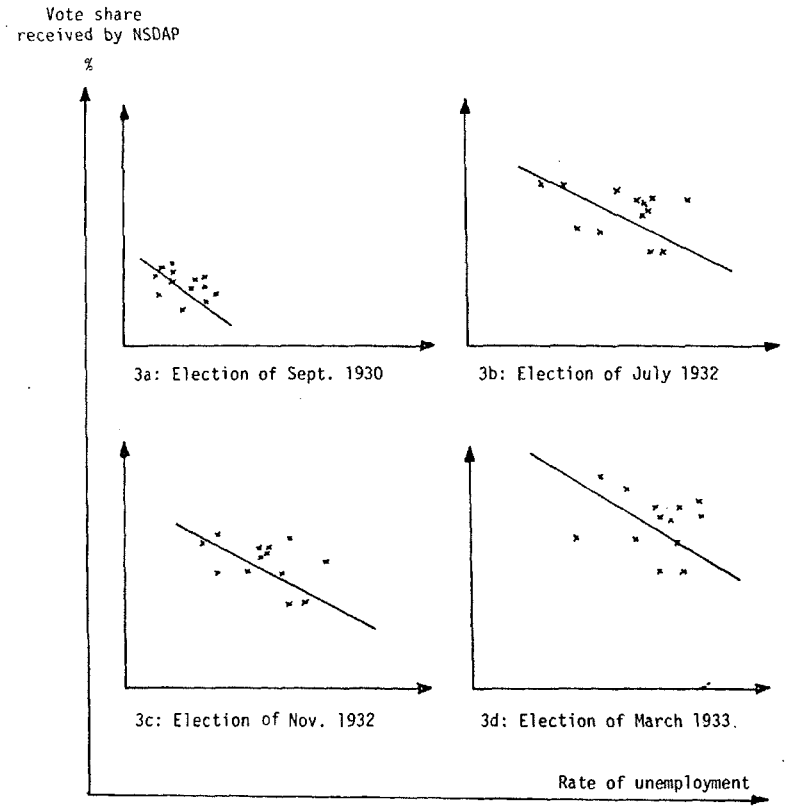

FIG. 3. Correlation between the Nazi vote share and the rate of unemployment in the 13 regions of the German Reich, 1930–1933.

rates of unemployment. Figures 3a–d show the results. A very clear pattern emerges: The higher the rate of unemployment, the *lower* is the percentage share of votes received by the National Socialists. This is contrary to the theoretical expectations and to the results obtained by previous researchers.[16] The major reason, however, for questioning this pattern is that *other* variables which at the same time may also have had an effect on the Nazi vote share are disregarded in such a monocausal approach. In particular, the sociodemographic influences mentioned above must also be taken into account. It is thus necessary to consider simultaneously the influence of unemployment and of the following explanatory variables: the shares of Catholics, farmers, and workers; and the rate of voter participation in each region.[17]

The multiple regression estimates of the determinants of the Nazi vote share using cross-sectional data for the 13 regions for each of the four

Reichstag elections are presented in Table 1. The equations account for over 90% of the variance in the Nazi vote share among the regions in the 1932 and 1933 elections, but for only 68% in the election of 1930. The share of Catholics and of farmers nearly always has a significant effect on the National Socialists' vote share (the *t*-value exceeds 2 in absolute terms). The more Catholics there are in a region, the *fewer* votes the Nazis received; the larger the agrarian population's share, the *larger* the Nazi vote share. The share of workers and the rate of voter participation never significantly affect the NSDAP vote share. The higher the rate of unemployment in a region, the *greater* is the Nazi vote share, but this influence is statistically insignificant in the first two elections.

The analysis using multiple regressions thus comes to a result radically different from the naive simple regression shown in Figures 3a–d. The reason is that—as has been pointed out by some of the previous researchers—sociodemographic factors do in fact play an important role. Table 1 suggests that the shares of Catholics and of farmers have a statistically significant effect on the Nazi election results and that they may not be disregarded. The estimates presented in Table 1 are, however, still unsatisfactory because each equation is based on a small set of observations, and there are obvious shifts between the elections, leading to rather unstable coefficients. It is thus necessary to consider the development over time.

Time Series Analysis

The overall rate of unemployment shows a markedly positive relationship with the Nazi vote share over the period 1930–1933 (Table 2). As there are only four observations available, this relationship cannot be statistically tested. It is therefore necessary to turn to a *combined* (pooled) analysis of cross section and time series data, which increases the number of observations to $4 \times 13 = 52$.

Pooled Cross-sectional/Time Series Analysis

Combining the election results over the regions with their temporal sequence over the period considered presupposes that there was no major shift in the relationship between the dependent and independent variables, i.e., it is assumed that the 52 observations belong to one single pool. This assumption may be checked by using an appropriate test statistic.[18] A satisfactory analysis determining the vote share of the NSDAP requires taking two types of interaction into account.

1. The *different* vote reactions of the various social groups to higher unemployment rates can explicitly be introduced into the explanatory

TABLE 1. Influence of Unemployment, Voter Participation, and Socioeconomic Variables on the Vote Share of the NSDAP: Cross-Section Estimate for the 13 Regions, for Four Reichstag elections

		Sociodemographic determinants					
Election	Constant term	Rate of unemployment (%)	Rate of voter participation (%)	Catholics as share of pop. (%)	Farmers as share of pop. (%)	Workers as share of pop. (%)	Test statistic $\bar{R}^2$
Sept. 1930	12.7	0.08 (0.3)	0.06 (0.2)	-0.08* (-2.8)	0.13 (1.3)	-0.03 (-0.2)	68.2
July 1932	-8.2	0.04 (1.6)	0.02 (0.4)	-0.24* (-6.0)	0.06* (3.8)	0.03 (0.3)	93.7
Nov. 1932	-1.0	0.75* (2.6)	-0.13 (-0.4)	-0.21* (-4.9)	0.70* (4.0)	0.01 (0.1)	90.3
March 1933	58.4	0.28* (2.7)	-0.46 (-1.0)	-0.15* (-6.1)	0.48* (6.5)	0.06 (0.6)	93.9

Note. The figures in parentheses below the estimated parameter values give the t values. A t value greater than 2.4 indicates that the respective coefficient differs from zero with a probability of 95% (statistical significance): these coefficients are marked by asterisks. Degrees of freedom, 7.

TABLE 2. Overall Rate of Employment and Nazi Vote Share: 1930–1933

	June 1930	July 1932	Oct 1932	Jan 1933
Rate of unemployment	14.4%	42.4%	39.6%	52.4%
Nazi vote share	18.3%	37.3%	33.1%	43.9%

variables. In the estimates presented in Table 1, it has been assumed that with higher unemployment, *all* voters show a greater tendency to vote for the NSDAP. It may be hypothesized that the Catholic voters did not behave in this way but rather increased their support for the Weimar parties—in particular the Zentrum—in times of crisis. On the other hand, it seems reasonable to assume that the agrarian population increased its support for the National Socialists as the depression worsened, i.e., as unemployment rose. The differing tendencies to vote for the NSDAP may be captured by multiplying the percentage share of Catholics (CATH) by the rate of unemployment (U) (i.e., CATH × U : 100), and the percentage share of the agrarian population (AGRAR) by the rate of unemployment (i.e., AGRAR × U : 100), for each geographical region. The interaction term CATH × U is theoretically expected to have a negative effect on the Nazi vote share, and the interaction term AGRAR × U a positive effect.

2. An analysis of the development of the vote shares of the National Socialist party and the DNVP—see Figure 1—indicates that the voters tend to switch between these two parties: When one party increased its vote share, the other lost votes, and vice versa. This trade-off of votes is not surprising, for the NSDAP and the DNVP had quite similar programs, and both were strongly nationalist and agitated against the Weimar Republic. They were also allied in the demonstrations against the Young Plan and in the Harzburg Front of 1931 and considered themselves to be ideologically quite close to each other.[19] This trade-off in votes between the two parties requires a *simultaneous* estimate of the dependent variables.

Table 3 presents the simultaneous estimate[20] of the determinants of the vote shares of the NSDAP, the DNVP, and all "other parties." The estimates do not include the share of workers in the population and the voter participation rate, as they proved to have a statistically insignificant effect in the previous estimates in Table 1 as well as in the simultaneous estimation.[21] The three equations explain a high share of the variance in the electoral outcome (the $\bar{R}^2$ is 90.6 for the NSDAP, 91.4 for the other parties, and 48.3 for the DNVP). For the DNVP and the other parties, the F-value suggests that our pooled cross-section/time series approach is viable, while

TABLE 3. Simultaneous Estimate of the Vote Share of the National Socialist Party (NSDAP), the German National People's Party (DNVP), and the Other Parties: Pooled Cross-Section and Time Series Data, Reichstag Elections, 1930–1933

		Influence of socio-demographic factors		Influence of unemployment			Test statistics	
	Constant term	Catholics in pop. (%)	Farmers in pop. (%)	General influence (%)	On Catholics (interaction term) CATH × U/100	On farmers (interaction term) AGRAR × U/100	$\bar{R}^2$	F_c
NSDAP	1.69	-0.01*	0.39*	0.52*	-0.23*	0.61*	90.6	4.1
		(-2.4)	(5.4)	(7.5)	(-2.4)	(3.3)		
DNVP	1.76	-0.17*	0.32*	0.13	0.23*	-0.61*	48.3	0.8
		(-4.4)	(4.6)	(1.9)	(2.4)	(-3.3)		
Other parties	96.56	0.27*	-0.72*	-0.65*			91.4	2.1
		(12.3)	(-15.7)	(-18.1)				

Note. The figures in parentheses below the estimated parameter values give the t values. A t value greater than 2.0 (marked with an asterisk) indicates that the respective coefficient differs from zero with a probability of 95% (statistical significance). An F_c value greater than 2.1 indicates that there is a structural change (95% level). Degrees of freedom, 48/46.

for the NSDAP this is the case only at a higher than 5% probability. The estimates are consistent in the sense that the constants sum to 100% of the vote and the coefficients of the explanatory variables sum to zero. This is because, for example, if the rate of unemployment rises, what one party (or group of parties) wins in terms of the vote share the other *must* lose. The estimates indicate that a rise in the rate of unemployment significantly increases the Nazi vote share. A one percentage point increase in the rate of unemployment increases the vote share of the NSDAP by 0.52 percentage points. The other parties, especially the Weimar parties, lose heavily. When unemployment rises by one percentage point, their vote share drops by 0.65 percentage points. The voters thus turned strongly to the National Socialists over the period 1930–1933 as the depression worsened, and the benefits of unemployment for the Nazis were not limited to the 1930 election, as Wernette maintains. It is interesting to note that the DNVP did not benefit in a statistically significant way from the increase in unemployment, which may be due to the fact that it did not demand expansionary economic policies as did the socialist wing of the NSDAP under the Strasser brothers.[22]

As was theoretically expected, the Catholics tended to vote less for the Nazis and more for the DNVP when unemployment increased. The opposite holds for the agrarian population, which tended to vote increasingly for the NSDAP and less for the DNVP. The estimates also show that—when unemployment is held constant—the Catholics tended not to support the two nationalist parties, while the farmers turned to the NSDAP and the DNVP in about equal amounts. In summary, the Nazis benefited greatly from the economic depression. They had a stronghold in the agrarian population but could not win many votes among the Catholics.

DETERMINANTS OF THE VOTE SHARE OF GROUPS OF PARTIES

The vote shares of the totalitarian, the Weimar, and the "smaller other parties"[23] will be analyzed here. The estimation results are given in Table 4. The interaction terms are not included because they are not significant.[24] The equations explain about 80% of the variance, and all but one of the coefficients are statistically significant. The only exception is that voter participation had no significant effect on the vote share of the Weimar parties. The standardized regression coefficients (β coefficients) showing the contributions of the variables to the change in vote shares are given in brackets below the t-values.

A rise in unemployment significantly increased the vote share of the totalitarian parties; the losers were the Weimar parties and the smaller other parties, each group to about the same extent. Unemployment was,

TABLE 4. Determinants of the Vote Shares of the Totalitarian Parties, the Weimar Parties, and the Other, smaller Parties: Pooled Cross-Section and Time Series Data, Reichstag Elections, 1930–1933

	Explanatory variables					Test statistics	
Vote share of	Constant term	Rate of unemployment (%)	Rate of voter voter participation (%)	Catholics in pop. (%)	Farmers in pop. (%)	R^2	F_s
Totalitarian parties	71.7	0.73*	-0.56*	-0.32*	0.43*	84.5	1.4
		(11.5)	(-2.3)	(-10.0)	(6.7)		
		[0.92]	[-0.28]	[-0.61]	[0.43]		
Weimar parties	34.3	-0.39*	0.24	0.28*	-0.29*	82.2	1.6
		(-8.1)	(1.3)	(11.4)	(-5.9)		
		[-0.69]	[0.11]	[0.74]	[-0.41]		
Other smaller parties	-6.0	-0.34*	0.32*	0.04*	-0.14*	77.2	2.1
		(-11.4)	(2.7)	(2.7)	(-4.6)		
		[-1.11]	[0.27]	[0.20]	[-0.36]		

Note. The figures in parentheses below the estimated parameter values give the t values. A t value greater than 2.0 indicates that the respective coefficient differs from zero with a probability of 95% (statistical significance). The values in brackets below the t values are the standardized regression coefficients (β values). They show the contribution of the respective variable to the change in vote shares. An F_s value greater than 2.1 indicates that there is a structural change (95% level).

according to the standardized regression coefficient, by far the most important contributor to changes in the vote shares of the party groupings. Somewhat surprisingly, a higher voter participation rate tended to harm the totalitarian parties and benefited the smaller other parties. This suggests that the citizens who favored the extremist parties went to the ballot box in any case and that high voter participation meant that the share of moderate people voting increased.[25] The smaller the share of Catholics, and the greater the share of farmers in the population of a given region, the higher is the vote for the totalitarian parties and the lower is the vote for the Weimar parties (also true for the smaller other parties, but to a lesser degree). According to the standardized regression coefficients, the variance in the shares of Catholics in the different regions of the German Reich contributes more to the explanation of the differences in the vote shares than does the variance in the shares of the agrarian population.

A *Gedankenexperiment*

What would have happened to the election outcome if the economic depression had not worsened from 1930 to 1933? Would the Nazis still have been able to increase their vote share enough for Hitler to become a candidate for chancellor? We will try to partially answer these hypothetical questions with the aid of the quantitative estimates developed above.

Between the elections of 1930 and July 1932 the rate of unemployment rose from 14.4% to 42.3%, i.e., by 27.9 percentage points. Taking the estimate given in Table 2, an increase of one percentage point in the rate of unemployment increased the Nazi vote share by about half a percentage point (the coefficient is 0.52) The increase in unemployment from September 1930 to June 1932 thus led to an increase in the vote share of the NSDAP of $0.52 \times 27.9\% = 14.5\%$, *when all other influences are held constant.* Thus if unemployment had stayed at the 1930 level instead of worsening, the National Socialists would have received "only" $37.3\% - 14.5\% = 22.8\%$ of the total vote instead of the 37.3% they actually did receive. The hypothetical vote share of the NSDAP for the other elections may be computed by similar calculations. The result is shown in Table 5, according to which the National Socialists' vote share would always have remained below 25% if the depression had not worsened after 1930. The increase in unemployment, however, resulted in an actual vote share that is 13 to 20 percentage points higher than the hypothetical one that assumes a constant level of unemployment.

Table 6 shows the corresponding calculations for the hypothetical vote shares for the totalitarian parties NSDAP, DNVP, and KPD taken together. With unemployment held constant at the 1930 level, the vote share of the

TABLE 5. Actual and Hypothetical Vote Share (in %) of the National Socialist Party, Assuming that the Rate of Unemployment Remains at its September 1930 Level

Vote share of the NSDAP	Sept 1930	July 1932	Nov 1932	March 1933
Actual	18.3	37.3	33.1	43.9
Influence of increasing unemployment		14.5	13.3	19.8
Hypothetical	18.3	22.8	19.8	24.1

totalitarian parties would barely have reached 40% in November 1932. In reality it was already 57.5% in July 1932 and rose to 64.2% in 1933. These hypothetical calculations based on the statistical estimates of the determinants of election outcomes suggest that the increase in unemployment was a decisive factor for the large share of the vote that was given to the totalitarian parties as a whole, and to the National Socialists in particular. The calculations can, of course, give only a rough picture of what might have happened under the assumption that the rate of unemployment was smaller than the actual one with all other determinants of the electoral process remaining the same. The calculations thus represent a *Gedanken-experiment* and should not be taken for what would have happened under these circumstances. However, the ex post scenario developed here can suggest the magnitudes involved.

CONCLUDING REMARKS

This paper has tried to show that a statistical analysis of a historical period can reveal orders of magnitudes of relationships and can show hypothetical alternative developments of the past. A precondition for a sensible application of such a quantitative analysis is careful historical research of the period studied which identifies the important determinants and concretely shows how these influences worked. Statistical analysis is therefore not a substitute for traditional historical research, but rather builds upon it. It constitutes a (sometimes) useful complement to those areas of historical and political science research for which we have sufficient and reliable data and for which the historical framework has been studied in depth.

Acknowledgement. We are grateful for financial support from the Dräger Stiftung in Munich in preparing this paper.

TABLE 6. Actual and Hypothetical Vote Share (in %) of the Totalitarian Parties, Assuming that the Rate of Unemployment Remains at its September 1930 Level

Vote share of the totalitarian parties	Sept 1930	July 1932	Nov 1932	March 1933
Actual	38.4	57.5	58.5	64.2
Influence of increasing unemployment		20.4	18.7	27.2
Hypothetical	38.4	37.1	39.8	36.5

NOTES

1. See especially Bracher (1964), and Hentschel (1978). The omnibus volume of Gotthard Jaspers (ed., 1968) contains a comprehensive bibliography.
2. For an analysis of the Weimar constitution, see, for example, Hermens (1964, p. 419ff.).
3. In particular Pollock (1944), Striefler (1946), Bracher (1964), Milatz (1966), Vierhaus (1967), Lipset (1960).
4. Brown (1982) shows that workers generally did not support the National Socialists, whereas he finds some evidence in Protestant rural areas, for new voters and the petty burgeoisie in Catholic areas.
5. See Milatz (1966, p. 133) and O'Lessker (1968).
6. For example, Fischer (1968), Kaltefleiter (1966), Helbich (1968), and Borchardt (1979). For general background information on the economy in the Weimar Republic, see Friedrich (1937), Loomis and Beagle (1946), Sanmann (1965), Petzina (1977), and Borchardt (1975, 1979).
7. See, for example, Bracher, Sauer, and Schulz (1962, p. 92) and Milatz (1966, p. 148).
8. Exact details of this procedure are available from the authors upon request.
9. Recent works include Frey (1978, 1983) and Frey and Schneider (1982).
10. E.g., Mellen (1943), Heberle (1945), Lipset (1960), Striefler (1946), Bendix (1952), Bracher (1964), Milatz (1966), and O'Lessker (1968).
11. This theory was developed from studies done in the United States; in particular, see Campell et al. (1960).
12. The Weimar parties consist of the Deutsche Volkspartei (DVP) and the Deutsche Staatspartei (DStP), in addition to the Zentrum and the Social Democrats (SPD).
13. Data for the *rate* of unemployment in this period are only available from the Statistisches Reichsamt for January, April, July, and October, and so there were no data for the exact dates of the elections. We thus used the rates for those dates closest to and before the election for the Reichstag. As unemployment rates for all of the regions are only available from 1930 on, the analysis was limited to the period 1930–1933.
14. According to the data given in the *Statistisches Jahrbuch des Deutschen Reiches* for 1933 (Table 2c, p. 297), the rate of unemployment was 34.3% for the first quarter of 1933, i.e., 18.1 percentage points less than the figure given here. This rate, which is too low, is due to a change in the way the tables were drawn up by the Statistisches Reichsamt. For 1930 to 1932 the unemployed (registered by the labor exchanges) were taken as a share of the *employed* workers, but for 1933 as a share of the *employed, the unemployed, and the*

disabled. This change is not immediately obvious because it is not pointed out explicitly. The rate of unemployment thus has to be reconstructed taking into consideration the footnotes to the various tables. (We are indebted to Knut Borchardt for bringing this to our attention.) This change was obviously introduced by the Reichsamt in order to make the unemployment situation appear better after the Nazis had come to power. It should be noted that specification of an econometric estimation of the NSDAP vote share on the basis of these incorrect data requires the introduction of a dummy variable for the Reichstag election of March 1933 to take the structural change into consideration explicitly. This dummy variable was statistically highly significant and gave the illusion (adjusted for all other influences) of a vote share gain for the NSDAP of approximately 12 percentage points.

15. Data available upon request from the authors.
16. See, e.g., Kaltefleiter (1966), Shively (1972), and Wernette (1976).
17. Detailed data available from the authors upon request.
18. The F-test compares the sum of the squared residuals of the single cross-section estimates with the sum of the squared residuals of the combined time series/cross-sectional model. Because of the number of observations ($n = 52$) and variables ($k = 6$), and F-value of less than 2.09 indicates (with a 95% level of confidence) that there is no structural change.
19. This is at least true for the DNVP from 1930 on under Alfred Hugenberg (see Milatz, 1966, pp. 106 and 146; and Zierer, 1973).
20. The simultaneous estimate with pooled time series/cross-sectional data was done with the GLS estimation procedure of the TSP Program at the University of Zurich.
21. The interaction terms are not included in the estimate for the "other parties" because they were not statistically significant. Also, this would make a simultaneous estimate possible.
22. See in Bombach, Ramser, Timmermann, and Wittmann (1976, pp. 247–260) Gregor Strasser's program for creating employment (excerpt of a speech in the Reichstag from May 10, 1932).
23. The smaller other parties are the Wirtschaftspartei, Deutsche Landvolk, Deutsche Hannoveranische Partei, Christlich-Sozialer Volksdienst, and Deutsche Bauernpartei.
24. The estimate was done with the BMD Program for multiple linear regression.
25. The prevailing view in the literature is that the increase in voter participation because of previously nonvoting groups and first-time voters benefited the extremist parties, and especially the National Socialists (see, for example, Striefler, 1946; Bendix, 1952; Franz, 1957; Hentschel, 1978; and O'Lessker, 1968). The time series seems to confirm this view; but the cross-sectional data show a slightly negative correlation between the vote share of the NSDAP and the voter participation rate (see Lipset, 1960; Loomis and Beagle, 1946; Pollock, 1944). Our own estimates speak for this too.

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THEMATIC MEMORY FOR POLITICS IN CHILDREN

S. J. Thorson and Mary Kay McKeever

This paper reports on an experiment designed to test the way (fourth grade) children cognitively process various kinds of information about politics. Our findings provide evidence that children integrate symbols from their immediate political environment into "themes." These themes may then serve to organize their political knowledge and mediate receipt of new information. We did not find similar evidence of thematic integration for "adult" political symbols. These findings raise questions about the degree to which events in the adult political world will directly affect children's developing orientations toward that world.

Over the past several decades, political scientists have expended considerable effort in attempts to identify what it is that children seem to know about politics.[1] While the results of these efforts have been impressive, most of these studies have focused upon questions of what children know about political symbols such as (in the U.S. context) "mayor," "president," "Republicans," and so on. These symbols are, of course, very much a part of the political world of many adults. Implicitly assumed in these studies has been (1) that these questions are "meaningful" (in the sense intended by the researcher) to the children and (2) that the children's responses to these questions provide clues about the long-term nature of their political orientations.

One might, however, question the degree to which these studies have examined significant components of the political world of most children. For example, Connell (1971) has suggested, and this suggestion derives from a Piagetian view of cognitive development, that a child's orientations toward "adult" political symbols will be shaped by that child's orientation

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