

THE DYNAMICS OF EUROPEAN PARTY SYSTEMS: CHANGING PATTERNS OF ELECTORAL VOLATILITY

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ABSTRACT

In recent years it has become increasingly difficult to maintain that the European party systems are stable and that they reflect the societal cleavage structures of the past. One developmental aspect of the party systems is singled out for description and analysis in this paper. It is argued that European party systems in terms of electoral volatility, i.e. rates of net change in the electorates, are drifting away from each other. Some of the party systems which have traditionally been considered volatile, apparently are becoming less so, while some other systems are taking on the character of highly volatile party systems. A simple set of hypotheses, based upon the notion of party space, is proposed in order to account for the variation observed. The data lend support to the hypothesis that electoral volatility is a function of the format of the party system and of short-term changes in that format.

1. The Problem

During the 1960s it was a widely held view among political scientists that European party systems were inherently stable structures which – with a few exceptions – reflected the societal cleavage structures of the past (Lipset and Rokkan, 1967: 50). This view was even bolstered with strong empirical evidence pertaining to the party system at the level of the electorate. Thus Rose and Urwin were able to conclude that

... the electoral strength of most parties in Western nations since the war had changed very little from election to election, from decade to decade, or within the lifespan of a generation ... (Rose and Urwin, 1970: 295).

Recent European political history has produced some rather unexpected events which make it somewhat difficult to reconcile this

theoretical view with the political realities. Thus the number of competing parties has increased considerably in some of the Northern European countries over the last few years, and the distribution of electoral strength in several countries has changed in unpredictable ways. The relationship between voters and parties has apparently undergone an alteration, in some countries detectable as a tendency towards decreasing party identification; in some as a tendency towards an increased frequency of unconventional political behavior; and in a few cases as an outright defection of large portions of the electorate from older parties to new parties which are neither classifiable as traditional mass parties, nor as "catch-all" parties in the sense of the late O. Kirchheimer (Kirchheimer, 1966).

These are developments which are by now clearly visible. They seem to indicate that even if party systems may still reflect the traditional cleavage structure in the society, the significant exceptions that Rokkan and Lipset were talking about are no longer few, but constitute a larger and growing part of all European party systems.

We want to know if these phenomena of change which are visible primarily, but not solely, in the Northern European countries represent fundamental transformations of the party systems, or if they are better interpreted as mere fluctuations, temporary deviations from an otherwise stable pattern? Do they fit into a pattern, or are they just some atypical events with no connection with the past history of these societies or with the development going on in other countries in Europe? Are party systems in Europe converging, becoming more uniform, or are they diverging through the 1970s? Is it possible to speak about distinct periods of stability and change, and, if so, are these periods country-specific, or do they apply to larger parts of the European polities? Are fluctuations randomly distributed across time and countries, or do they make up trends of increasing and decreasing rates of change?

Phrased this way we are dealing with a very broad problem with a great many facets. When we want to map and understand the extent and the direction of party system change in Europe, the first problem we encounter is one of delimitation of the problem, the narrowing down of a broad question to a manageable problem. This delimitation goes as follows.

The concept of *party system change* is not a simple and straightforward one. We may learn that a party system is a "system of interaction resulting from inter-party competition" (Sartori, 1976: 44). But such interaction and competition can be observed at different levels, or – to put it in other terms – this system can itself be interpreted as consisting of various subsystems. A concise mapping of party system change

would have to cover the levels of parliament and government, the level of the party as an organization, and the level of the electorate. Party system change can be defined as *the total set of changes in patterns of interaction and competition at these three levels as well as between them*.

It is not possible to encompass all these dimensions at this stage. I have deliberately chosen to concentrate attention on the level of the electorate. This analysis is thus based upon the assumption that "election results are important to politicians and to political scientists" (Rose and Urwin, 1970: 288). One may also say that even if elections are far from always being decisive events, they are still the best available vantage point for a study of change, because change will either be a result of elections, or elections will register any change which may occur in the party system.

At the electoral level, as well as on other levels, the party system may be described in terms of various theoretical concepts. Party systems differ with regard to polarization, fragmentation, institutionalization, etc.

As long as a party system can be considered a system of "parts", we may, however, from time to time find it useful to return to the simplest definition of *party system format*. The format of the electoral party system can be described in terms of the number of parties contesting the elections, and the distribution of electoral strength among these parties.

Given the central role of elections in the process of party system change, it is relevant – and we hope not over-ambitious – to examine the evolving patterns of format change in Europe, i.e. changes in the number of parties, and in the relative distribution of electoral strength among the competing parties. The phenomenon which we are singling out for analysis is *electoral volatility*, by which will be meant *the net change within the electoral party system resulting from individual vote transfers* (Ascher and Tarrow, 1975: 480–81).

Even a concept as simple as this is not without its problems. Traditionally political scientists have been very much preoccupied with the number of parties, because this number was considered important for the mechanics of the party system. Since the late 1960s it has become customary to describe the format in terms of number of parties as well as distribution of party strength. Many attempts have been made to provide single number quantitative indices of format which would make it possible to compare party systems and to describe intra-system changes. These measures like Rae's *index of fractionalization* (Rae, 1967) have mostly been locational or static measures for which reason alone they are not optimal for a study of the dynamic properties of party systems (Pedersen, 1978).

If we want to concentrate attention on ongoing format change, we therefore have to devise measures of change that will discriminate among systems; which will reflect similarities and differences between diachronic patterns; and which are fairly easy to interpret in a theoretically meaningful way. These requirements can be met by using one or another kind of summary measure of *rate of change* in the party system. Several such measures have been proposed and applied recently (Rose and Urwin, 1970; Przeworski, 1975; Ascher and Tarrow, 1975). In this paper we will use a measure of electoral volatility which is derived in the following manner:

Let $p_{i,t}$ stand for the percentage of the vote, which was obtained by party i at election t . Then the change in the strength of i since the previous election will be:

$$\Delta p_{i,t} = p_{i,t} - p_{i,t-1}$$

and if we do not consider sign differences we have the following relation for the party system:

$$\text{Total Net Change (TNC}_t) = \sum_{i=1}^n |\Delta p_{i,t}|$$

$$0 \leq \text{TNC}_t \leq 200$$

where n stands for the total number of parties competing in the two elections.

Remembering that the net gains for winning parties numerically are equal to the net losses of the parties that were defeated in the election, one may also wish to use another indicator which is slightly easier to calculate and to interpret, namely:

$$\text{Volatility (V}_t) = 1/2 \times \text{TNC}_t$$

$$0 \leq V_t \leq 100$$

V_t is simply the cumulated gains for all winning parties in the party system, or – if the symmetrical interpretation is preferred – the numerical value of the cumulated losses for all losing parties. Its range of variation has a straightforward explanation, and it can be expressed in terms of percentage [1].

A description of the European systems in terms of volatility will at least give a partial answer to the broader questions about change and stability in European party systems. It may thus lead to an identification of what are the typical and what are the deviant patterns of development.

Even a task as simple as the one which has been outlined here, meets with problems with regard to data collection and data analysis. Although official election results are readily available and that even in standardized form [2], an analysis of volatility is no straightforward task, because of the fluidity of the party system.

Between 1945 and 1977 a total of 127 elections were held in the 13 European nations that are included in this study. Considering that some of the countries are known for their fairly stable and small number of parties, it is telling that a conservative estimate of the number of electorally active parties goes as high as 165 parties which means an average number of parties of 13. If very small parties which entered only one election, and which just faded away without leaving any traces, were also counted, the number of European parties since the Second World War would probably approach the 200-mark.

A serious problem for the analysis springs from the occurrence of party splinterings and party mergers of various kinds. In some countries parties do not split, nor do parties merge; in other European countries such phenomena are part of the working of the party system. A further complication arises from the fact that mergers may range from situations, where two or more parties in their entirety combine in a party under a new label, to situations, in which parties in a single election are pooling their strength by means of an electoral alliance, without creating any new organizational arrangements. In some cases splits and mergers coincide, when segments of parties break away and form new parties. The occurrence of such events makes it very difficult to compare electoral volatility over time in at least some of the European nations, most notably France and Italy.

These problems of comparability across time and across countries can be overcome to a certain extent, but they cannot be entirely eradicated [3].

The analysis will include 13 European party systems. Eight of the EEC-countries will be covered, plus Austria, Switzerland, Norway, Sweden, and Finland. The time span will be approx. 1948–1977. The reason for starting the analysis at $t = 1948$, and thus only including the 103 election periods which are located between 1948 and 1977, is to be found in the highly irregular character of the elections immediately after the Second World War. In these elections a relatively large number of temporary or ad hoc organizations were contesting the elections. In many countries the outcome of the first post-war election was highly atypical for the country; factors which had little to do with the normal mechanics of the party system, but rather with specific events relating to the war, were still operating. Thus 1948, the year when the second

round of elections after the war really started, seems to be a natural starting point for a mapping of patterns of change and persistence.

The analysis will proceed in three steps. First, national patterns of volatility will be examined for stability, fluctuations, and possible trends.

This analysis will lead to some preliminary conclusions about similarities and differences among the thirteen countries which constitute the universe (section 2 below). Second, the unit of analysis will be changed from the individual party system to the individual election in order to identify those European elections, in which volatility has been especially high or especially low (section 3 below). Finally, an attempt will be made to account for these patterns of cross-nation, cross-time volatility by means of a very simple model of the relationship between individual vote transfers and electoral volatility (sections 4 and 5 below).

2. National Patterns of Volatility

The measure of volatility tells to what extent party strength is being reallocated from one election to the next between losing and winning parties. An examination of national patterns will thus indicate, if the relative positions of parties are fairly constant, or if they fluctuate in ways which may eventually reflect basic electoral realignments. The extent of volatility may differ across countries as well as over time; differences may be of a random character or they may be subject to change according to certain political regularities. A first task for any analysis is to look for such regularities.

If the measure of volatility is applied to data from the thirteen countries, a picture is obtained which in the light of earlier analyses contains expected as well as not so familiar features (see Fig. 1).

That France comes out as the country in which average electoral volatility is the highest will probably not surprise many; nor will the fact that the post-war politics of Austria and Switzerland have been characterized by negligible volatility. All those, who are familiar with the long-term trend in the German electorate since 1949, will not be surprised to find that the average net gains/losses in the German system amount to approximately 10% per election. On the other hand it was probably not expected by many that the Nordic countries differ widely in this respect, nor that Denmark scores second-highest among the thirteen nations, nor that the European party systems on the whole differ considerably with regard to volatility.

Such observations may conceal a lot. An average may not be typical

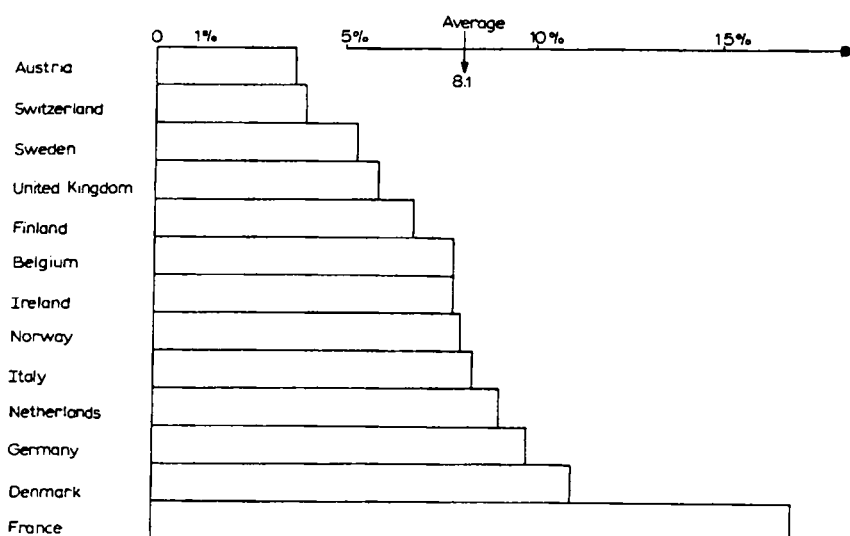


Fig. 1. The volatility of European party systems 1948–77: average net gains for winning parties in elections.

for the diachronic pattern, but may for instance reflect the occurrence of one or a few highly atypical elections. In order to pass judgments on volatility, we will therefore as a natural next step examine the dispersion of observations around their respective national means. In Fig. 2 this has been done by means of a plot of the relationship between means and their corresponding standard deviations. This plot affirms that Austria, Switzerland, and also Sweden are nations, in which the relative strength of parties has hardly changed from one election to the next. It further identifies a group of six other nations, United Kingdom, Finland, Belgium, Ireland, Italy, and the Netherlands, with a somewhat higher average volatility and a uniform pattern of dispersion.

One intriguing finding appears in the plot next. The two big nations, Germany and France, and the two smaller nations, Denmark and Norway, apparently come out as fairly alike in their statistical patterns: a relatively high average volatility is combined with a high degree of fluctuation around that mean.

The interpretation of these findings is far from simple. A great many diachronic patterns of volatility might produce such means and standard deviations. But Fig. 2 provides a clue for further examination, because it shows in clear statistical terms that at least two “families” of party systems exist, viz. a group of party systems with a relatively stable distribution of party strength, and a group of systems, in which volatility has been changing considerably over time.

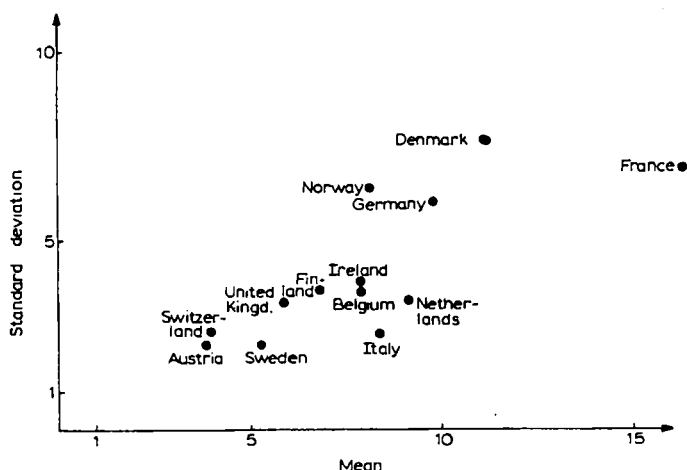


Fig. 2. The relationship between national mean volatility and the dispersion around the mean.

In passing it is tempting to mention that these two clusters of party systems do not have any affinity with the way in which students of party systems and democratic political systems traditionally classify European countries. The two clusters transcend the classifications of Almond (immobilist versus working multiparty systems); of Duverger and Neumann (classification according to number of parties); of Lijphart (centrifugal, centripetal, consociational and depoliticized democracy); and of Sartori (moderate versus polarized pluralism etc.). Such a discrepancy may be of no theoretical importance; it may, however, also imply that the usefulness of these classifications is restricted and even decreasing over time [4].

A step towards further clarification can be taken by introducing the time variable, i.e. by changing the perspective from an examination of the range of fluctuations to an examination of the diachronic patterns of volatility. In Table I the two groups of party systems have been sorted by means of a crude periodization.

At once a clear pattern of change and stability emerges from the data. The group of party systems with a high level of volatility and high standard deviations clearly falls into two distinct subgroups: the German and the French party system, in which volatility has decreased over time considerably, especially at the beginning of the period, and the Norwegian and the Danish party system, in which exactly the opposite trend is visible, i.e. where volatility has tended to increase, especially in the last part of the period. But it is also important to note that the party systems in the other group also tend to fall

TABLE I

The Volatility of European Party Systems 1948-77: Average Net Gains Compared Across Time and Countries

Country	Period			National average	No. of election periods
	1948-59	1960-69	1970-77		
Switzerland	1,9%	3,7%	6,4%	4,0%	6
Austria	4,1%	3,9%	3,1%	3,7%	8
United Kingdom	4,4%	5,2%	7,9%	5,9%	8
Finland	4,4%	6,9%	9,1%	6,8%	8
Sweden	4,8%	4,3%	6,6%	5,2%	9
Netherlands	6,3%	7,9%	12,7%	9,1%	8
Belgium	7,9%	10,3%	5,5%	7,9%	9
Italy	10,3%	8,0%	6,8%	8,4%	6
Ireland	10,9%	6,8%	5,0%	7,9%	8
Norway	3,4%	5,2%	17,1%	8,1%	7
Denmark	5,5%	8,9%	18,7%	11,0%	12
Germany	15,2%	9,5%	4,9%	9,8%	7
France	21,8%	11,9%	10,6%	16,8%	7
Period average	7,8%	7,3%	9,2%	8,1%	
No. of election periods	36	34	33		103

into two subgroups: in Austria, Belgium, Ireland, and Italy volatility has tended to diminish over time, while it has increased in Switzerland, the United Kingdom, Finland, Sweden, and the Netherlands.

This finding suggests a new way of classifying European party systems according to their trends of volatility: the data apparently falls into three, or maybe even four, fairly distinct groups or "families" of party systems.

This idea can be pursued further by adding a new dimension to the search for order. If it holds true that the thirteen party systems differ with regard to their secular trends, then an obvious next step in the mapping operation consists in examining the data for trends and for statistical linearity. The question becomes then if volatility tends to increase or decrease in a linear way, or if the apparently orderly picture in Table I reflects more complicated developmental patterns, e.g. patterns in which decades or other temporal sequences play an ordering role? Table II gives the answer.

This set of regression equations and correlation coefficients tells a clear story. Party systems in Europe do indeed differ with regard to the level of volatility, and with regard to the direction of change in volatility. The overall tendency towards a relatively stable pattern which comes out if data from all nations are artificially aggregated, disappears

TABLE II

National Trends of Electoral Volatility. Countries Rank-ordered According to Slope of Regression Line

Country	Regression equation	Pearson's r
Norway	$V_t = -2,08 + 0,60t$	$r = 0,805$
Denmark	$V_t = 1,92 + 0,57t$	$r = 0,689$
Netherlands	$V_t = 3,53 + 0,33t$	$r = 0,832$
Switzerland	$V_t = -1,27 + 0,30t$	$r = 0,821$
Finland	$V_t = 3,01 + 0,24t$	$r = 0,570$
United Kingdom	$V_t = 3,48 + 0,15t$	$r = 0,327$
Sweden	$V_t = 3,56 + 0,10t$	$r = 0,370$
Austria	$V_t = 4,87 - 0,07t$	$r = -0,244$
Belgium	$V_t = 10,09 - 0,13t$	$r = -0,340$
Italy	$V_t = 11,66 - 0,19t$	$r = -0,670$
Ireland	$V_t = 11,11 - 0,23t$	$r = -0,630$
Germany	$V_t = 20,22 - 0,62t$	$r = -0,856$
France	$V_t = 25,87 - 0,70t$	$r = -0,784$
All nations	$V_t = 7,31 + 0,05t$	$r = 0,070$

Explanatory note: regression equations have been calculated after setting t = actual election year - 1948. The V_t -values can thus be interpreted as the predicted gains (in %) per year for winning parties.

and is replaced by an array of widely differing trend lines. The data suggests a classification with three classes, differentiated from each other by means of the rate of change, i.e. the slope of the regression line.

The two small Scandinavian countries, Norway and Denmark, evidently stand distinctively apart from most other European countries in terms of volatility patterns, and so do the two major nations, France and Germany. In both cases the regression analysis also supports the impression which could be had from a visual inspection of period averages (Table I), namely that the trends for these four countries fit very well with a linear model.

This is probably as far as a purely statistical manipulation of the national pattern data can and should take us [5]. What has emerged is a classification of European party systems into three distinct groups according to their diachronic patterns of electoral volatility. This classification can form the point of departure for a great many speculations and questions. Some such questions will be raised below in section 4.

3. A Classification of European Elections

From what was said in the previous section it follows, that high-volatility elections as well as low-volatility elections are not randomly scattered across time and nations. It may be useful to identify various types of elections across Europe. By means of such a mapping we get not only a picture of the occurrence of these events which are often dramatic, but also a more simple, and yet informative summary of the national patterns.

The 103 elections which were held between 1948 and 1977, are not normally distributed around the European mean of 8.1% volatility. Fig. 3 shows that the distribution is highly skewed, with 64 elections below the mean and 39 elections above. A few elections stand out because of their extraordinary degree of volatility. This is true of the 1973-election in Denmark, when the number of parties in the system doubled; of some of the French elections in the 1950s; and of the German election in 1953, when the CDU won its biggest victory in the post-war period.

The very shape of the distribution leads us to draw some distinctions, based upon pure statistical reasoning. Thus the elections in what is approximately the lowest quartile stand somewhat apart from those in the two middle quartiles, and these again form a cluster distinct from that formed by the elections in the highest quartile.

The map of European elections that can be drawn by means of this tripartite classification is presented in Fig. 4.

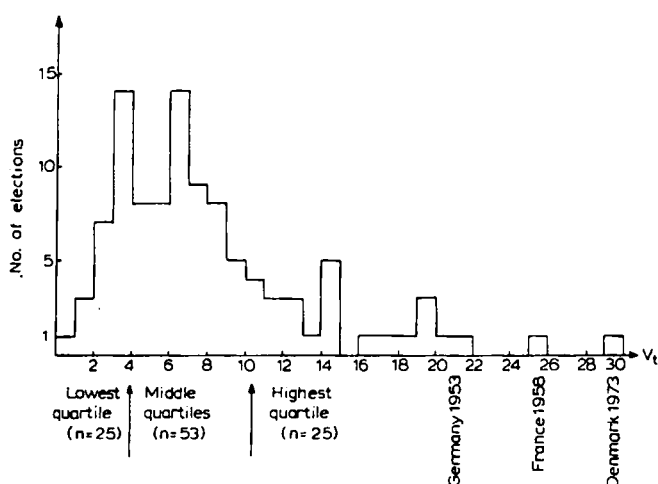
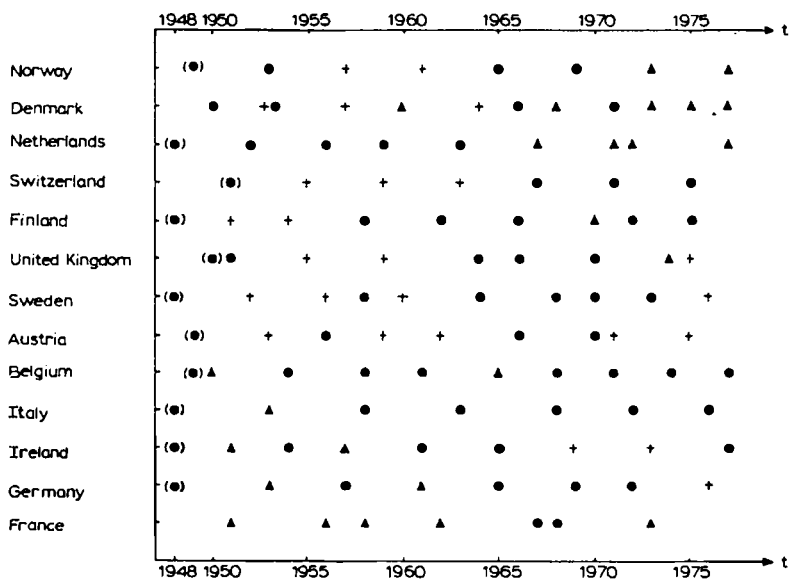


Fig. 3. The frequency distribution for the variable electoral volatility (V_t).



Explanatory note: ▲ = Highest quartile; ● = Middle quartiles; + = Lowest quartile

Fig. 4. European elections: classified according to extent of volatility.

This figure recapitulates some of the findings which were reported in the previous section, but it also adds some new features. Thus we see, first, that some countries, viz. Switzerland, Sweden, and Austria, have never in the post-war period experienced high-volatility elections. Second, one notes that some countries on the contrary never experienced low-volatility elections. This holds true not only for France, but for Italy, Belgium, and the Netherlands as well. Third, we note that the European countries differ considerably in the sense, that in some of them high-volatility elections are to a considerable extent a thing of the past — of the 1950s — while such elections are very much a 1970s phenomenon in some other countries. Finally, a comparison of decades indicates a general European trend towards relatively more high-volatility elections and relatively fewer low-volatility elections, with the 1960s being the decade in which these two types of elections were relatively limited.

4. Towards an Explanation of Electoral Volatility

As late as 1970 it was possible and also valid to argue that

... the first priority of social scientists concerned with the development of parties and party systems since 1945 is to explain the *absence* of change in a far

from static period in political history. (Rose and Urwin, 1970: 295; *italics in the original*).

In the light of the preceding pages we are entitled, even forced, to qualify this statement. At the end of the 1970s the first priority is to understand, why some party systems still appear to be stable, while other systems have been undergoing a transformation, or at least have gone through a period of considerable instability. Even if electoral volatility is only one among several indicators of persistence/change, it is a sufficiently important indicator to warrant this statement. So, how do we account for the widely differing levels of volatility and the equally differing trends of volatility which have been found?

The obvious goal in any comparative analysis is to account in causal terms for the observed patterns in an accurate, general, and parsimonious way (Przeworski and Teune, 1970: 20 ff.). A good theory of electoral volatility should thus explain as much of the observed variation as possible, and do so by means of a minimal number of factors common to the party systems under inspection.

In the case of the thirteen European volatility patterns constituting the *explanandum* in this analysis, this requirement can be interpreted as a search for an explanatory model which treats the concepts of "nation" and "national history" as residua of variables, that may contribute to an explanation, but which should only be considered, if or when variables of a general, non-nation-specific nature fail to account for the variation.

Where and how should one search for promising general explanatory factors? Before plunging into abstract speculation it might be advisable to make a few additional observations. If we consider the array of party systems which have been rank-ordered according to their volatility pattern in Table II it is noteworthy, that the average number of parties contesting the elections in the 13 nations varies somewhat. Thus the average number of electoral options is relatively high in some of the countries which are located at the top of the rank-order (e.g. Denmark, the Netherlands) and it is low in the middle of the array (e.g. in Austria and Sweden). The pattern is far from consistent, however, as we also find a high average number of parties in Italy for instance, and a low average in Ireland. Second observation: the number of parties which have contested elections, tends to vary over time in each country, but this variation is of different magnitude. Thus one finds considerable variation in countries at the top of the rank-order, like Norway, Denmark, and the Netherlands, but also in Germany and Belgium which are located at the lower end of the rank-order. Countries, in which the

number of parties has been fairly constant over time, are generally placed around the middle (e.g. Switzerland, United Kingdom, Sweden, and Austria).

These observations do not constitute a "proof" that there is a relationship between changes in the volatility, and changes in the number of parties in a given system. But they suggest that the simple numerical factor may be a factor of importance. It may be worthwhile to pursue this idea that the very format of the party system and changes in that format are determining the electoral volatility in the system. In order to do so, one has to conceptualize or at least sketch a causal linkage between party system format and volatility.

We may take our point of departure in the observation that electoral volatility is a system level property. But volatility is a product of events, of vote transfers that take place at the level of the individual voters. Consequently an attempt to establish a hypothetical linkage between party system format and electoral volatility is tantamount to hypothesizing a linkage between the number of options open to the individual voter, and the voters' propensities to transfer votes between parties. From assumptions about the behavior of the individual voter we may build up theorems about the probabilities of vote transfers. By means of additional assumptions about the relationships between changes at the individual and the aggregate level we may next derive hypotheses about the linkage between party system format, format change, and electoral volatility.

The first assumption to be made is that *the individual voter at a given time tends to perceive the party system as a space, in which parties are allocated according to one or several criteria*. This space may be unidimensional or multidimensional, and the perceived image of the party system may be more or less complete and more or less sophisticated. This is an assumption familiar to all students of party systems and electoral behavior. In order to avoid the very many and hotly debated problems which are involved, the assumption is made as simple as possible (but see e.g. Sartori, 1976; Budge et al., 1976; Budge and Farlie, 1977, 1978).

Second, it is assumed that *the propensities of the individual voter towards parties are determined by the voter's self-perceived relative position in this space*. This assumption can be specified to mean, that the individual voter will tend to choose the party option which is perceived to be nearest to his own position, and that the probability of a vote transfer to other parties is determined by the perceived distances to these parties; the more "alien" a party is perceived to be, the less the probability that the voter will vote for that party. This again is a famil-

iar assumption which will not be discussed.

Third, it will be assumed that *all perceived spaces are bounded, and that they do not vary in "size" across time and across party systems*. This assumption about space inelasticity is quite common in the literature, although seldom stated explicitly. Its realism is in doubt (Sartori, 1976: 343).

Fourth, we will assume that *all voters will cast their vote for a party*, i.e. never abstain from voting. In other words it is assumed, that the options available to the voter are restricted to a choice among parties which have a perceived spatial location. On the other hand the choice is neither restricted to the biggest parties, nor to so-called "relevant" parties. Each party competing in the election campaign constitutes an option for the voter and should be counted as such.

The realism or the lack of realism of these assumptions is not without importance, but when the goal is to build a model and not to describe real-life voting, we are allowed at least for a little while to disregard these complications. "Theoretical models should be tested primarily by the accuracy of the predictions, rather than by the reality of their assumptions" (Downs, 1957: 21).

Where will this take us? We are able to derive at least two theorems from these assumptions:

Theorem 1: the greater the number of parties located within the boundaries of the space, the less the average perceived distance between parties, and the higher the probability that the average voter will transfer his vote from one party to another party. We may thus speak about an effect upon the number of floating voters, derived from the *format* itself. The four assumptions do not allow a more precise formulation than the one given here. It simply says that if two party systems are compared, one with n parties, and other with q parties, where $n < q$, then one would expect, *ceteris paribus*, that the average probabilities of vote transfers would differ: $P_n < P_q$.

Theorem 2: if the parameters of the party system space change from one election to another i.e. the structure of options changes, so will the probability that the average voter will transfer his vote from one party to another. The most interesting parameter in this connection is the number of parties, but one may also think of the relative position of parties within the space, and if assumption 3 is not made, one may even consider space elasticity a parameter.

This second theorem can be specified with regard to the numerical parameter. Thus we may speak about a special effect in the case of an increasing number of parties participating in the electoral competition. Independent of the spatial position of the new option, its inclusion in

the space will influence the propensities of those voters, whose own position is not far removed from the position of the party, and the result will be that *the average probability of vote transfers will increase, ceteris paribus*.

There is also a special effect of decreases in the number of parties. If a party for one reason or another disappears from the space, this will affect those voters, whose own position is identical with, or not far removed from the position of the disappearing party, and the result will be that *the average probability of vote transfers will increase, ceteris paribus*.

These hypotheses in principle lend themselves to a test on the basis of individual level data. Here their primary function is, however, to make it possible to form hypotheses at the aggregate level of the electorate. In order to do so, one has to add a fifth assumption, the realism of which again is in doubt, namely that the *higher the amount of individual vote transfers in a given party system, the higher the electoral volatility will tend to be* [6].

If this assumption is made, we are allowed to translate the theorems into two testable hypotheses which read:

Hypothesis 1: the greater number of parties contesting elections, the higher the electoral volatility, ceteris paribus.

Hypothesis 2: if the number of competing parties changes between elections, i.e. increases or decreases, electoral volatility will tend to increase, ceteris paribus.

We will use the terms *format effect* and *format change effect* about these two tendencies.

In more formal terms the model of electoral volatility can be stated as follows: electoral volatility in a given party system p at a given election t can be interpreted as a function of the number of parties in the system; of changes in that number since the previous election; and of a third variable standing for a residuum of variables which influence electoral volatility, but which have either not yet been considered, or have been held constant by means of the assumptions made.

Thus the model can be written as:

$$V_{p,t} = f(N_t, |\Delta N_{t-(t-1)}|, r)$$

Again and again the *ceteris paribus* character of the argument has been stressed. A great many factors are known to influence the voter's decision, and furthermore there is no a priori reason to expect these factors to influence the electoral decision in a uniform way across

countries and across time. The model does not specify the relative weight of the three sets of factors. It only suggests that under certain specified conditions one should expect the numerical factor to influence the electoral volatility in the party system in two different ways which can be separated from each other, although they cannot be weighted.

Consequently we are not able to test the model in a rigorous fashion. What we can do, however, is to explore to what extent a format effect and a format change effect can be found. If such effects can be traced in the data, this will give some credibility to the model, but more important it may help to reinstate the simple numerical factor as a central factor in party systems research. The eventual discovery of a format effect and a format change effect will further the understanding of the conditions under which competing parties should be treated as "relevant" parties.

5. The Model and the Facts

Tests are difficult to perform in comparative politics for the simple and well-known reason, that the number of cases is often too small to allow the utilization of powerful statistics. In this case the number of election periods is only 103. The preceding analysis of national patterns has furthermore demonstrated that these patterns differ considerably with regard to level of volatility as well as direction of change. Under such circumstances it is not advisable to use regression analysis for testing purposes for a number of reasons [7].

Suppose we were interested in testing the simple bivariate hypothesis that volatility is a function of the number of parties contesting the election. If the test is carried out at the aggregate level of a combined set of national patterns of volatility by means of regression analysis, we are in this case combining "samples" with widely differing levels and diachronic patterns. In such a case regression analysis may be quite misleading, as even a perfect fit with a linear model at the national level may disappear entirely, when national patterns are combined. If instead the test of the bivariate hypothesis is carried out at the level of the individual party system, the number of cases will tend to be rather small, and in no case higher than twelve. Under such testing conditions there is also a danger of misleading findings, and that for several reasons. First, it is well known that the probability of obtaining high correlation coefficients tends to increase, *ceteris paribus*, when the number of observations diminishes. Second, atypical sets of values may contribute

excessively to the value of the regression equation. Third, and most relevant in this case, if a test is carried out at the level of the individual party system, some of the national cases will be characterized by a very modest variation in the independent variable. In several of the European systems under inspection the number of parties competing in the elections has been fairly constant over time. In such cases one will obtain low correlation coefficients, even if the hypothesis is valid.

As these statistical problems tend to be even more serious, if the test concerns a multivariate hypothesis, we will only perform a preliminary test of the format effect hypothesis by means of regression techniques. In Fig. 5 the results are presented. Only those national cases have been considered in which the range of variation in the number of competing parties exceeds three; by means of this precaution at least one of the above mentioned problems is dealt with.

The findings give partial support to the hypothesis about a format effect in the sense that at least in those four countries, where the number of parties as well as electoral volatility vary, a clear linear relationship exists. A considerable part of the variance is accounted for by the numerical factor. This relationship is basically the same in countries

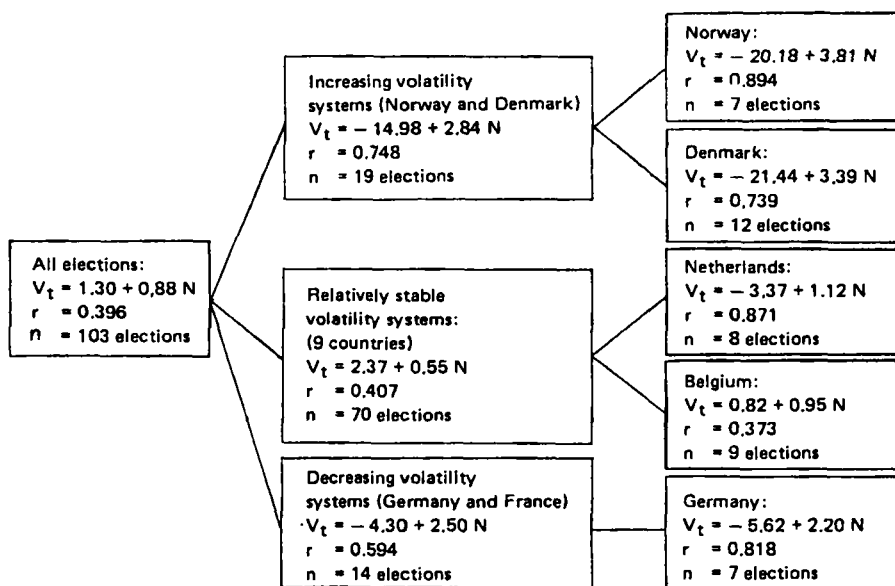


Fig. 5. The relationship between electoral volatility V_t and the number of parties contesting the election (N). Regression analysis on the total set and subsets of elections.

with different types of diachronic patterns of volatility – as it also should be if the hypothesis is generally valid across countries. The low degree of fit with a linear model in the combined sets of resp. thirteen and nine systems, as well as in the Belgian case should not unduly worry us at this stage, considering the methodological caveats [8].

In order to circumvent some of the statistical problems we will study the fit of the hypotheses by means of simpler methods. We will start by examining the bivariate hypothesis $V_t = f(N_t)$. This hypothesis will be tested at the combined set of national patterns, as well as on the three categories of party systems which were identified earlier (see Table III). Next, the hypothesis $V_t = f(\Delta N)$ will be examined in a similar way, again using crude categories instead of interval scales (see Table IV). Finally the combined hypothesis $V_t = f(N_t, \Delta N)$ will be tested at the European level (see Table V).

As the tables are mostly self-explanatory, we will only summarize the findings in the briefest of terms. First, it is clearly demonstrated in Table III that a clear and positive relationship exists between party system format and electoral volatility: the higher the number of parties contesting the elections, the higher the electoral volatility. This relationship is found to hold true, irrespective of the character of the diachronic pattern. The result thus partly repeats, partly corroborates the results of the regression analysis. Second, in Table IV we find a clear positive relationship between changes in the number of competing parties and volatility. Increases as well as decreases in the number of parties lead to high volatility. In this case the relationship is found to

TABLE III

The Relationship Between Electoral Volatility and the Number of Parties Contesting the Election. Average Volatility within Different Types of Party Systems and Elections

No. of parties	Increasing volatility (Norway and Denmark)	Relatively stable (9 countries)	Decreasing volatility (Germany and France)	All party systems	No. of elections
$N < 5$	–	5,0	(5,8)	5,1	(21)
$6 < N < 7$	5,5	6,3	13,6	7,6	(31)
$8 < N < 9$	8,6	6,1	(15,1)	8,0	(27)
$N > 10$	14,9	9,0	(21,3)	11,3	(24)
All elections	9,9	6,5	12,9	8,1	
No. of elections	(19)	(70)	(14)		(103)

Explanatory note: () denotes that the number of observations is less than 5.

TABLE IV

The Relationship Between Electoral Volatility and Changes in the Number of Parties Contesting the Election. Average Volatility within Different Types of Party Systems and Elections

Character of change	Increasing volatility (Norway and Denmark)	Relatively stable volatility (9 countries)	Decreasing volatility (Germany and France)	All party systems	No. of elections
$N_t > N_{t-1}$	12,7	7,6	(13,9)	10,2	(35)
$N_t = N_{t-1}$	4,6	5,7	12,6	6,3	(47)
$N_t < N_{t-1}$	(11,8)	7,6	8,7	8,4	(21)
All elections	9,9	6,5	12,9	8,1	
No. of elections	(19)	(70)	(14)		(103)

Explanatory note: () denotes that number of observations is less than 5.

hold true across all systems, as well as in systems with increasing, resp. stable volatility patterns.

The two independent variables do not vary totally independently of each other. In order to establish that a format effect as well as a format change effect exist, we have to study, how these factors affect volatility jointly, as well as separately. As we will intuitively, as well as from an inspection of marginal distributions in Tables III and IV, expect that the format effect is the strongest of the two postulated effects, we will first test the multivariate hypothesis controlling the format change effect for the influence of the format itself. The findings in Table V do not disappoint us; on the contrary it is demonstrated that a fairly strong format effect is complemented by a format change effect [9].

TABLE V

The Relationship Between Electoral Volatility and Changes in the Number of Parties Contesting the Election. Controlled for Number of Parties. Average volatility for all Party Systems

Character of change	$N \leq 5$	$6 < N \leq 7$	$8 \leq N \leq 9$	$N > 10$	All party systems	No. of elections
$N_t > N_{t-1}$	(4,8)	9,3	9,0	12,2	10,2	(35)
$N_t = N_{t-1}$	4,1	7,0	7,4	8,0	6,3	(47)
$N_t < N_{t-1}$	8,1	7,9	6,6	12,0	8,4	(21)
All elections	5,1	7,6	8,0	11,3	8,1	
No. of elections	21	31	27	24		(103)

Explanatory note: () denotes that the number of observations is less than 5.

Given the widely differing national patterns of volatility, the reader may still doubt the validity of the hypotheses at the level of the individual party systems. We will therefore study the fit of the model in each of the thirteen systems, and do it in such a way that the effect of nation-specific factors is partially controlled.

What makes it difficult to analyze comparatively the national patterns is the wide variation in numbers of parties contesting the election in the various countries and the small number of cases. In order to circumvent these problems we will standardize the format variable by transforming it into a dichotomous variable using the national means \bar{N} as cutting point, and by creating a dichotomous format change variable. Thus we get the following typology of party systems (and elections):

	$N_t = N_{t-1}$	$N_t \neq N_{t-1}$
$N_t < \bar{N}$	I	II
$N_t > \bar{N}$	III	IV

The model which has been developed predicts two related effects on electoral volatility. Thus we will expect increasing average volatility as we move from the upper cells to the lower cells (the format effect); from the left hand side to the right hand side (format change effect), and from the upper left to the lower right corner in the matrix (the combined effect), i.e.

$$\bar{V}_{t,I+II} < \bar{V}_{t,III+IV} \quad (1)$$

$$\bar{V}_{t,I+III} < \bar{V}_{t,II+IV} \quad (2)$$

$$\bar{V}_{t,I} < \bar{V}_{t,IV} \quad (3)$$

The model itself does not allow us to establish more precise predictions. Remembering, however, that the aggregate findings presented above indicate that the format effect is stronger than the format change effect, we may tentatively add a fourth, somewhat specified, prediction based upon the assumption that the former effect is considerably stronger than the latter, i.e.

$$\bar{V}_{t,I} < \bar{V}_{t,II} < \bar{V}_{t,III} < \bar{V}_{t,IV} \quad (4)$$

The performance of the model can be evaluated in terms of the success of the predictions. The findings are presented in Table VI which reports the average volatility values within the four categories, and in

TABLE VI

Average Volatility within Categories

Country	I $N_t < \bar{N}$ $N_t = N_{t-1}$	II $N_t < \bar{N}$ $N_t \neq N_{t-1}$	III $N_t > \bar{N}$ $N_t = N_{t-1}$	IV $N_t > \bar{N}$ $N_t > N_{t-1}$
Norway	4,8 (4)	3,5 (1)	— (0)	17,1 (2)
Denmark	4,2 (2)	8,6 (4)	— (0)	15,0 (5)
Netherlands	— (0)	6,9 (5)	12,2 (1)	12,9 (2)
Switzerland	1,5 (1)	1,4 (1)	5,0 (3)	5,8 (1)
Finland	— (0)	4,4 (3)	9,0 (3)	7,1 (2)
United Kingdom	5,4 (6)	— (0)	2,9 (1)	14,8 (1)
Sweden	4,3 (4)	— (0)	6,6 (4)	4,3 (1)
Austria	3,3 (7)	— (0)	— (0)	6,2 (1)
Belgium	8,9 (2)	6,8 (3)	— (0)	8,3 (4)
Italy	12,8 (1)	7,3 (3)	— (0)	7,8 (2)
Ireland	6,7 (1)	5,3 (3)	7,6 (2)	12,8 (2)
Germany	3,8 (1)	6,8 (2)	— (0)	12,8 (4)
France	13,4 (3)	6,8 (1)	19,2 (1)	22,8 (2)
All countries	5,7 (32)	6,4 (26)	7,9 (15)	12,1 (29)

Explanatory note: numbers in parentheses indicate the actual number of cases within each category.

TABLE VII

Truth Table for National Predictions

Prediction Country	(1) Format effect	(2) Format change effect	(3) Combined effect	(4) Specified prediction
Norway	T	T	T	(T)
Denmark	T	T	T	T
Netherlands	T	F	n.a.	T
Switzerland	T	T	T	(T)
Finland	T	F	n.a.	(T)
United Kingdom	T	T	T	F
Sweden	T	F	F	F
Austria	T	T	T	T
Belgium	T	F	F	F
Italy	F	F	F	F
Ireland	T	T	T	(T)
Germany	T	T	T	T
France	T	T	T	(T)
All countries	T	T	T	T

Explanatory note: T indicates that the prediction is upheld by the data; F that it is falsified; (T) in column (4) indicates that the prediction is upheld for 2/3 or more of the total number of possible inequalities, but not for all of them; n.a. means 'non applicable'.

Table VII which is a truth table derived from the contents of Table VI.

The findings are at the same time satisfactory and puzzling. The data lend considerable support to the format effect hypothesis, as they indicate the existence of a format effect in all countries apart from Italy. Somewhat weaker support is given to the format change hypothesis, and to the combined effect hypothesis. In a majority of countries the format effect furthermore seems to be considerably stronger than the format change effect – this at least is suggested by the values in the fourth column of the truth table.

The puzzling aspect is the discrepancy between the very clear support obtained at the aggregate level for the hypotheses, and the equally conspicuous deviations found in the case of for instance. Italy, Sweden, and Belgium. Upon closer inspection the puzzle does, however, resolve itself. Remembering the methodological caveats which opened this section and that the countries in the truth table are arranged according to the diachronic pattern of electoral volatility, cf. Table II, and that the magnitude of format change upon which the dichotomous variable has been based differs considerably across party systems, we immediately get a clue. The hypotheses are supported in those party systems in which volatility has either increased or decreased the most, and they obtain their minimum support in party systems characterized by a relatively stable pattern of volatility. This suggests the following interpretation: the party system format and changes in that format are two among several factors which determine the amount of electoral volatility in the system; the format tends to determine the overall level of volatility, while format change of course is an important factor only in some party systems, i.e. those in which a considerable change in the number of competing parties takes place. If no change or only very marginal format changes take place, then other – and in this analysis residual – factors may wash out the effect entirely.

One should never try to save a hypothesis for its own sake, but in this case the method used to test the hypothesis at the level of the individual party systems is too crude to warrant a rejection, considering the clear support obtained at higher levels of aggregation, as well as in a majority of the thirteen nations.

Therefore the findings reported in Tables VI–VII are suggestive, but they are not conclusive for the party systems located in the middle of the array.

6. Conclusion

In this paper it has been suggested that there is a need for a continuing discussion of prevalent conceptions of European party systems. These party systems in many cases apparently have developed in ways which have not been predicted and could not be predicted. Such a discussion will require better descriptions of actual developmental patterns.

One developmental aspect of the European party systems has been singled out for description and analysis here. We have mapped the diachronic patterns of electoral volatility, and have found these patterns to vary, if not considerably, then enough to warrant further scrutiny. Some of the party systems which have traditionally been considered volatile, apparently are becoming less so, while some other systems which have hitherto been classified as stable, are now moving relatively and are taking on the character of highly volatile party systems. In this particular respect one is no longer permitted to conclude that the party systems of today are the same as the party systems of the 1960s, not to speak of the 1920s.

We have next advanced a very simple set of hypotheses which purport to account for the variation observed. The data lend support to the hypothesis, that electoral volatility is a function of the party system format and short-term changes in that format. This hypothesis at least goes a long way to explain, why some European party systems which have often been described as being stable and persistent, have in reality changed in various directions with regard to volatility.

This is not a conclusive finding. The model as well as the test need refinement. The relationship is, however, strong enough to warrant further study. By pursuing the ideas presented here one may gain a better understanding of how and why "low or high numbers are indicative of structural configurations that do contain mechanical predispositions and do harbor systemic propensities" (Sartori, 1976: 316).

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Notes

- 1 In Przeworski (1975) the identical indicator is called "institutionalization". This term is unfortunate in so far as it presupposes a certain theoretical perspective, and eventually also a value judgment. "Electoral volatility" is a more neutral term.
- 2 Mackie and Rose (1974) is the best and most accurate collection of aggregate electoral data available. It is updated on an annual basis in the *European Journal of Political Research*.
- 3 All data were initially taken from Mackie and Rose (1974), and updated from various sources. It was, however, soon discovered that this data collection was not optimal for an analytic purpose such as the one pursued here. Thus it was necessary to revise the Norwegian, the Italian, and the French data. The procedures as well as the resulting national data sets have been discussed with national experts.
- 4 Classifications and typologies should be evaluated on the basis of their ability to discriminate among systems with regard to important theoretical as well as practical characteristics. First and foremost they should be useful for the prediction of future states of the systems. If electoral volatility is considered an important dynamic property of party systems, and if the developmental hypotheses which are built into existing classifications, do not get support from empirical data, this ought to have consequences for the evaluation.
- 5 For some research purposes it may be convenient to map the diachronic patterns by means of the election period as time unit. If this is done, neither the rank-order, nor the signs of the slope parameter will change.
- 6 Curiously enough the validity of this assumption has never been tested on empirical materials from multiparty systems. But see e.g. the discussions of floating voters and the floating vote in Daudt (1961).
- 7 For a good and not too technical discussion of the problems concerning the use of regression techniques when the number of cases is small and/or subsets of data differ with regard to means etc., see Edwards (1976: 54-61).
- 8 It may be added that the sign of the parameter b (slope) is positive in all cases, and that the sign of the parameter a (intercept) is negative in nine out of thirteen cases.
- 9 It should be noted that the format change effect is not given support in party systems with eight or nine parties.

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