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Analysing Electoral Competition A Latent Structure Approach

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Introduction

Elections are one of the most important institutions in representative democracies for allocating power among political parties. The quest for political power is thus to a considerable extent defined by the pursuit of votes. This is often referred to as electoral competition.¹ The notion of competition implies, however, that the outcome of an election is not deterministically pre-ordained by extra-political forces such as voters' social background, religion, ethnic or linguistic background, etc. Stated differently, the notion of competition implies that voters —or at least some of them— see more than just a single party as a potential recipient of their vote and that their votes can sensibly be construed as choices.² Much electoral research focuses —sometimes implicitly— on questions of electoral competition, and in particular on its structure: who competes with whom? Knowledge of this structure is valued for various reasons. It is of practical value for parties' and politicians' electoral strategies. It is an important basis for identifying the motivational bases of voters' choices, for interpreting electoral change, and for understanding the actual functioning of electoral democracy.

In this paper we analyse electoral competition in the member states of the European Union. In the process of doing so we discuss the merits of different approaches, of various kinds of empirical information and of ways of analysis. We argue that an adequate empirical description and comparative analysis of electoral competition requires specific data —information on electoral utilities— and specific analytical procedures —a form of latent structure analysis usually referred to as unfolding. We apply such methods to data from the European Election Study 2004, and compare the major results across the political systems of the EU.

Approaches in the study of electoral competition

One of the most common approaches to the study of electoral competition is deductive in character. Parties with similarities in their political stances are considered to be

¹ Other forms of competition for power are not primarily located in the electoral process, but in processes such as government formation, agenda-setting, issue definition, etc.

² Without this, elections would still allocate power, but then they would not effectively be contested, so that the electoral process would be reduced to a kind of census with no or little voter choice involved.

competing for the votes of those citizens that are assumed to be attracted to those stances. Left-wing parties, for example, are seen as competing for the votes of left-wing voters, parties that emphasize green concerns as competing for the votes of those voters who share these concerns, etc. Equally, parties that derive their votes from what seems to be the same group of voters —e.g., urbanites, or the elderly, or those opposed to nuclear energy, etc.— are considered to be competing for those voters. This approach thus starts with assumptions about the structure of electoral competition and deduces from there which specific groups of voters are subject to the rivalling appeals of the specific parties involved. These assumptions are usually based on empirical observations of the behaviour of voters or parties. Yet, this approach and the validity of its findings are extremely vulnerable. Parties that have similar stances in some respects may differ in important other ways, in terms of other policies, style, competency of its leadership, etc. And these may be more important for voters than was assumed by the analyst. Likewise, any seemingly homogeneous group of voters looks less homogeneous once additional characteristics are considered. In short, these approaches assume the adequacy of the existing knowledge of the characteristics of voters and parties that matter in electoral competition and choice. This is a tall order in view of the fact that even the most elaborate and sophisticated models of voters' preferences and choices rarely perform better than some 40 to 50 percent explained variance or correctly predicted cases.

Inductive approaches require no assumptions about the characteristics of voters and parties that generate party competition. Competition is to be inferred from empirical observations, and subsequently to be analysed in order to discover its structure. Here, the most important question is about the empirical information to be used for this purpose. Competition cannot be observed directly. As indicated above, actual competition exists only to the extent that voters see more than just a single party as a potential recipient of their vote. This cannot be observed directly from election results, but requires voter surveys. From such surveys party competition is usually inferred in one of the following ways. First, we can look at actual party choice as reported by respondents. Choice does not reveal competition, but changes in choice do. Voting for different parties in different elections is seen as indicative of competition.³ Cross tabulations of party choice at t_1 and t_2 (turnover tables) provide the empirical basis for describing and analysing party competition. In spite of its straightforward logic and popularity, this basis of inferring party competition has a number of drawbacks. It assumes that the choice situations that are compared are identical (or sufficiently similar) to infer from different choice that a person was subject to the appeal from competing parties. But parties do change over time, in policy positions, in leadership, in their record of performance and so on. Moreover, changes in the party system (new parties, party splits or mergers, disappearance of parties) also threaten the inferential logic of this approach. An additional problem with this procedure is that it does not allow inferences about party competition among first-time voters or among people who did not turn out in either of the elections that are being compared. Finally, this procedure yields only a dichotomy between stable voters (who are regarded as not subject to competition) and vote switchers (who are). Yet, it seems unlikely that all stable voters are beyond effective party competition. Some of the people

³ For the present discussion it is irrelevant whether information about behavior in previous elections is derived from panels or from recall questions, although the latter are obviously more vulnerable to memory problems and selective adaptation of memory to current preferences.

who would repeatedly find themselves mentally torn between two choices may turn out to be stable in their actual choices, without this indicating the absence of competition.⁴

A second way to infer party competition from voter survey data is based on questions about voter hesitation. In addition to the ubiquitous questions about actual choice, surveys sometimes contain questions that probe in one way or another whether or not the respondent has considered to support a different party than the one actually chosen, or that explicitly ask what his or her second choice of party would have been. Such questions have the great advantage that they pertain to a single choice situation (in contrast to comparing actual behaviour in different choice contexts). Moreover, this way of inferring party competition does not exclude first-time voters or non-voters. Yet, it also has its limitations. Questions concerning second choice do not indicate how attractive the second choice was in comparison to the first choice. If it was very attractive, then competition was intense, if it was not very attractive at all (yet second-best from all options on offer), then not much competition was involved. The ‘did hesitate’ kinds of questions lack an interpersonal comparability in the threshold for an affirmative answer. Both kinds of questions, finally, usually restrict the empirical view on party competition to only two parties, implicitly assuming that parties further down in voter preferences can be ignored.

The third way of assessing party competition from voter survey data uses questions that probe the attractiveness of each of a series of parties. Most well known in this respect are so-called sympathy or feeling-thermometer questions, which were used by Rabinowitz et al. in their directional model of party competition (Rabinowitz and MacDonald 1989; Macdonald et al. 1991). Parties that a respondent rates highly are then considered as the ones that effectively compete for his/her vote. These kinds of questions share the advantage of hesitation and second-choice questions that they relate to a single choice context (in contrast to the comparison of choice in different elections). Moreover, they allow a full view of all parties that were included in the survey question. Their major disadvantage is that the criterion to evaluate parties —sympathy, or unspecified feelings between ‘warm’ and ‘cold’— is not anchored in the specific task that a voter encounters in the voting booth. Sympathy is likely to be strongly related to electoral preference, but it is neither a necessary nor a sufficient condition for actual choice. The empirical literature about voter behaviour abounds with examples of all kinds of ‘strategic’ or ‘tactical’ considerations that demonstrate that elections involve more than a mere popularity contest.⁵ This problem can be remedied, however, by reformulating the question in such a way that it relates more closely to electoral choice and to the utility that voters would derive from voting for each of a series of parties.⁶ Because our analysis will make use of such electoral utility data, we will discuss them in somewhat more detail in the next section.

⁴ One fourth of those who would resolve such repeated dilemmas by the flip of a coin would turn out to be stable voters, yet clearly not beyond competition.

⁵ REFS

⁶ The concept of utility is used here in the Downsian meaning of the term (cf Downs 1957).

Inferring electoral competition between parties from voters' electoral utilities⁷

Electoral utilities can be observed by standard survey methods. This involves asking respondents to report on a scale the utility they would derive from voting for each party in turn. The major problem, however, is that the terms utility cannot be assumed to have an unambiguous meaning for respondents, let alone the meaning desired by the analyst. Citizens think and talk about voting more often in terms of party choice than in terms of utility. Consequently, survey questions intended to measure utility may be best cast in terms of choice in order to be comprehensible to respondents. To have such questions pertain to utilities and not to choice (in the academic meaning of the word), they have to free the respondent from familiar restrictions that apply to the real act of voting (often the restriction that one can vote for only one of the parties), and that do not apply to utilities.⁸ In the early 1980s van der Eijk and Niemöller experimented with projections into an undefined future to accomplish this (van der Eijk & Niemöller 1984). They settled on a formulation that has been used in an increasing number of studies: all Dutch Parliamentary Election Studies since 1982 (7 studies in total at the time of writing), the European Election Studies of 1989, 1994, 1999 and 2004, and a growing number of (national) election studies including those in Britain, Ireland, Spain, and Germany. In the European Election Study 2004 this question was formulated as follows:⁹

We have a number of parties in <country> each of which would like to get your vote. How probable is it that you will ever vote for the following parties? Please specify your views on a 10-point-scale where 1 means "not at all probable" and 10 means "very probable". If you think of <party 1>: what mark out of ten best describes how probable it is that you will ever vote for <party 1>?[CONTINUE FOR ALL OTHER PARTIES ON LIST]

As voters are not expected to have prognostic powers, the responses are deemed to express their current electoral utilities. This interpretation is supported by extensive validating analyses that have been reported at various places.¹⁰ Among other things, these analyses also demonstrated that the responses to this question differ in significant ways from the responses to the 'feeling thermometer' question referred to above, and that they provide a superior basis for analysing electoral competition between parties.

Analysing the structure of electoral competition

⁷ This section is an abbreviated version of part of the text by van der Eijk et al. (forthcoming). That text also elaborates the conceptual framework of the interrelated notions of utility, preference and choice.

⁸ Cardinality of utility should be reflected in non-ipsativity of observations (i.e., the number of observations equals the degrees of freedom). Probabilities are obviously ipsative, owing to the fact that they sum to a fixed total (i.e., df is smaller than the number of parties).

⁹ Minor variations in question wording seem not to affect this question's validity (see next section on validation) as long as two conditions are fulfilled. First, the 'ever' has to be left unspecified, and not related to a specific upcoming or recent election or to a given time period. Second, the responses for each of the parties should in no way constrain each other, a high score for one party should not require that lower scores be given to other ones, and the scores should not be required to have a constant sum or anything like that.

¹⁰ Cf. Tillie 1995; van der Eijk, Franklin & Oppenhuis 1996; van der Eijk et al. forthcoming.

Voters' electoral utilities, as observed by means of the survey question discussed above, provide a fertile basis for analysing party competition for votes. They show for each individual voter which of the parties are in competition for his or her vote. If only a single party is given a high score, there is not much competition. If several parties have been given high scores, they are all competing for the vote of that individual voter. Aggregating this information in various ways results in descriptive analyses of party competition. When focusing on the relationships between parties this description consists of displaying, in tabular or graphic form, the extent to which the electoral potentials of the parties overlap. These potentials are the segments of the electorate that are sufficiently strongly attracted to a party to be considered to be within its competitive reach. As some of the voters in this segment would also derive a high utility from voting for other parties, these electoral potentials of various parties overlap, and these overlaps indicate which parties vie for the support of the same voters. This descriptive analysis takes the form of a table that displays for each party the magnitude of its electoral potential and the extent to which this potential is shared with each of the other parties. Table 1 illustrates such an analysis for Ireland. Useful as these analyses are, they lead to subsequent questions, particularly with respect to the structure of electoral competition, which cannot easily be answered by mere visual inspection of the results such as those from Table 1.

Table 1 – Electoral competition in Ireland as indicated by overlapping electoral potentials of political parties

	FF	FG	Gr	Lab	PD	SF	Ind	
Electoral Potential	44	45	33	38	27	25	49	support (%)
Unique	10	7	1	2	1	3	4	support (%)
Overlap FF	100	48	49	47	71	45	49	(% of party in column)
Overlap FG	49	100	63	65	69	45	54	(% of party in column)
Overlap Gr	35	45	100	61	56	48	52	(% of party in column)
Overlap Lab	39	54	71	100	62	51	53	(% of party in column)
Overlap PD	42	40	46	44	100	29	37	(% of party in column)
Overlap SF	25	25	37	34	28	100	36	(% of party in column)
Overlap Ind	52	57	77	69	67	68	100	(% of party in column)

Data: EES2004. n=1154

When considering the electoral potentials of the various parties, and the overlaps between them, the question arises in what terms this entire pattern of competitive relations can be characterised and understood. It is, of course, possible that all parties compete with all other ones to an equal degree. In that case, all overlaps would only be a function of the sizes of the potentials of the various parties. Such an amorphous situation would exist if the utility that voting for each of the parties would yield would be derived from characteristics that are unique and uncorrelated. This would be the case if the utility that voters would derive from parties would derive, for example, for one party only from its religious platform, for a second one only from its stewardship of the economy, and for

a third one only from the charisma of its leader. Voters' utilities for these parties will depend on their own religiosity, on the extent to which they consider the economy to be important, and on their infatuation with the third party's leader, and they will display overlap, yet in a non-structured way. Knowledge of a voter's utility for one of the parties would not help in predicting their utilities for other parties. A quite different situation would exist when a single underlying principle were to account for the utilities that voters would derive from voting for each of the parties. That would yield a specific structure of unequal overlaps between parties. Yet other possibilities of structure can be thought of: different subsets of parties, each of which having its own structure, but being unrelated to each other, or structures deriving from a more than a single underlying principle, etc.

To move beyond a mere descriptive analysis of electoral competition, two different routes can, in principle, be taken. One consists of analysing the pattern of overlapping electoral potentials, in which the parties are the units of analysis by means of some method of analysis. The second route involves analysing the overlapping utilities at the level of individual respondents. Although the first of these routes seems to be the most straightforward one for analysing competitive patterns between parties, it is nevertheless not the route to be recommended. It would involve the application of a method that can handle the asymmetry in the square table of overlapping electoral potentials¹¹ with the aim of obtaining a representation of the parties vis-à-vis each other, much in the same way as is common in multi-dimensional scaling methods. The major problem with this approach is that it is very vulnerable to unwarranted aggregation artefacts, as has been demonstrated in a by now classic article by Jones (1974).¹² This route of analysis would be very well suited if the individual-level data would only reflect (apart from random error) characteristics of parties. Such a situation could conceivably exist in the case of different data (e.g., perceptions of parties' locations on a well-understood descriptive dimension). But it is unlikely that the data that we analyse here can be regarded in such a way. The response to party utility questions cannot be expected to be identical (except for error) across individuals (in which case aggregating them would be a sensible route to go). It seems more likely that the response to these questions reflects characteristics of individuals (their political preferences for ideologies, policies, etc.) as well as characteristics of parties (their political positions, etc.). In that case any aggregation of the individual responses to a form that only reflects parties will be inadequate as a basis for analysing the underlying relationships between parties, let alone the relationships between parties and respondents. *Connaisseurs* will appreciate that this argument is of course nothing else but a reiteration of Clyde Coombs' (1964) distinctions between data-types, each of which requires its own methods of analysis in order to avoid artefacts. For these reasons, we will travel the second of the routes sketched above, and analyse the competitive relations between parties from an analysis that starts at the level of individual responses.

¹¹ It would seem tempting at this point to avoid this complication by computing from individual level data a symmetrical measure such as a correlation coefficient. This would, however, only exacerbate the problem of aggregation artefacts mentioned in the main text.

¹² Others have also demonstrated the artefactual nature of analysis results deriving from incorrect choice of methods. Van Schuur (19??) demonstrated, for example, that factor analysing preferential choice data usually leads to multiple-factor solutions even when the data have been artificially constructed in an exclusively unidimensional fashion.

Latent structure analysis of electoral utility data

As argued above, we expect the responses to our electoral utility data to be determined by the joint (and interactive) effect of characteristics of respondents and characteristics of parties. Such data are often referred to as preference data or preferential choice data (cf Coombs 1964). The general class of appropriate methods to analyse such data is known as unfolding methods and parallelogram analysis. For reasons that have not to be elaborated here, the repertoire of well-behaved algorithms for such analyses is quite limited. One of the most flexible methods that can be used is the unfolding algorithm developed by Van Schuur (19??), known as multiple uni-dimensional unfolding, or MUDFOLD. This method starts from the hypothesis (which can be refuted by the analysis) that parties and voters are both located in the same space, and that the response (the degree of utility that a voter would derive from voting for a party) is an inverse function of the distance between a voter and a party in that space. The analytical task is now to derive a spatial configuration of parties and voters that is compatible with the observed responses. For a set of parties, this can only feasibly be done for uni-dimensional spatial representations. This is, of course, a severe limitation because there is no *a priori* reason to assume that the latent structure that gives rise to observed patterns of electoral competition will always be uni-dimensional. Consequently, application of this method does not guarantee that a single representation can be obtained that encompasses all parties. But this very fact does enhance the value of whatever positive findings are achieved. This is not a method (such as, e.g., factor analysis) that cannot fail but to produce some kind of outcome and as a consequence, any positive outcome is a strong one.

MUDFOLD analyses the individual-level responses to a series of stimuli (in our case: parties for which electoral utility questions have been asked). The analysis can proceed in two fashions: in an inductive search mode and in a hypothesis-testing mode. The SEARCH mode starts with the entire pool of parties and assesses which of these can be adequately represented in a uni-dimensional space. There is no guarantee that all parties will 'fit' in such a straightjacket, and if not all do, then the search mode tries to find as many as possible of the parties that can be represented uni-dimensionally, to proceed with assessing whether any additional uni-dimensional structures can be detected in the remaining items (hence the term multiple uni-dimensional). In the TEST mode, the analyst specifies a uni-dimensional configuration—which consists of an ordered series of parties—upon which the algorithm assesses how well that configuration and the empirical data fit to one another. This obviously requires a set of measures of goodness-of-fit and other diagnostics to assess whether the assumptions of the analysis model are not violated. These measures are also used in the SEARCH mode to determine which (sub)sets of stimuli can be adequately represented. The main measure of fit is a so-called homogeneity coefficient H , that can be used to express the 'scalability' of a set of items, and also to express how well a single item fits vis-à-vis the other items in a scale (H_i). Commonly, a value of 0.30 is regarded as the lowest acceptable level of scalability, with $0.30 < H < 0.40$ indicating a weak scale, $0.40 < H < 0.50$ a medium scale and $H \leq 0.50$ a strong scale.

If a set of parties is found to be scalable —that is that it can be represented in a one dimensional way such that it adequately reflects the individual-level patterns of utilities for those parties— the scale reflects an underlying (latent) trait on which parties and voters are located in such a way that the distances between parties and voters on that trait is adequately reflected in the observed patterns of utilities. The next step involves the interpretation of such scales, which, in a similar way as in all other forms of analyses that yield latent traits (or dimensions, or factors) requires the analyst’s contextual knowledge.

A full example — the case of Denmark

In the Danish questionnaire of EES2004 the electoral utility question was asked for 6 political parties:

- 1 Social Democratic Party
- 2 Radical Liberals
- 3 Conservative Peoples Party
- 4 Socialist Peoples Party
- 5 Danish Peoples Party
- 6 Liberal Party

When subjecting the responses to these questions to a MUDFOLD analysis, the algorithm yields from its default specifications a single scale, reported in Table 2.

Table 2 — Unfolding analysis of Danish Parties

	H(I)
VAR4 Soc. People Pty.	0.74
VAR1 Soc. Dem. Pty.	0.56
VAR2 Radic. Lib.	0.60
VAR3 Cons. People Pty.	0.63
VAR6 Liberal Pty.	0.63
VAR5 Danish People Pty	0.57

NR. OF RESP. : 1317
H-SCALE : 0.62

Table 2 gives rise to a number of conclusions. First, all 6 parties fit very well in a single uni-dimensional framework. The coefficient of scalability H reaches a value of 0.62, which indicates a very strong scale. Moreover, we see that all individual parties fit very well in this scale (all $H_i > 0.50$). . As indicated above, such a result is far from trivial, and it indicates that a single underlying dimension organises the utilities of voters for parties. Because electoral competition between parties is evidenced by overlapping utilities, Table 2 indicates that electoral competition is structured along a single dimension. In order to grasp the meaning of this dimension, we have to interpret what the ordering of the parties indicates, and, if possible, test this interpretation on the basis of additional data. At first sight, the ordering of the parties appears to reflect the left/right ordering, with the Socialist peoples Party as the most outspoken left-wing party of this set of 6 parties, and the Danish Peoples party as the most extremist on the right side of the

spectrum. This interpretation can be tested in a number of ways. The first way of validation is to inspect respondent's perceptions of the left/right position of parties. Looking at these (not reproduced here) we find that the ordering of the items in the scale coincides perfectly with the perceptions of the respondents.¹³ A further test of this interpretation can be made by using the test-option of the MUDFOLD program. Rather than inductively assessing the ordering of the parties on a uni-dimensional scale, we can test whether an ordering specified by the analyst also yields an acceptable scale. We can specify a series of different orderings by leaving the scale as is, except for a single pair of parties that is switched in order. If the scale in Table 2 indeed expresses a left/right dimension, then we would expect that the H-coefficient of the scale would drop when parties are shifted out of their 'proper' position, and that the drop in H will increase with the left/right distance between these two parties. Moreover, as the other 4 parties remain in their 'correct' (if the left/right interpretation is justified) we would expect that the H_i coefficients of the parties that were switched would decline more than the H_i coefficients of the parties that remain in their original position. Performing these validating tests (not separately reported here) yields indeed these outcomes, reason for us to interpret the scale as reflecting a left/right dimension as perceived by voters.

In a further probe into the meaning of the latent structure of electoral competition in Denmark we also used the TEST option to assess how well a different perspective on the Danish parties would help to understand how they compete with each others for votes. Respondents were asked to indicate their perceptions of each of these parties on a pro/anti European integration dimension. We ordered the parties on this basis and tested how well that ordering could account for the electoral utilities provided by the respondents. The results are reported in Table 3

Table 3 — Test of Unfolding of Danish Parties on Pro/Anti European Integration Dimension

	H(I)
VAR5 Danish People Pty	-0.07
VAR4 Soc. People Pty.	0.44
VAR1 Soc. Dem. Pty.	0.45
VAR2 Radic. Lib.	0.47
VAR3 Cons. People Pty.	0.44
VAR6 Liberal Pty.	0.36

NR. OF RESP. :	1317
H-SCALE :	0.37

From Table 3 we learn not only that the scale structure is much weaker than in Table 2, but also that the Danish Peoples Party particularly fits very poorly in relation to the other parties. Deleting this party leaves the remaining parties in a strong scale that perfectly reflects—for those 5 parties—their left/right ordering. This indicates that these remaining 5 parties are identically ordered) in the voters' perceptions) on the left/right

¹³ We summarised perceptions of party positions on a dimension by means of the interpolated median of those perceptions (see also van der Eijk 20??).

and the pro/anti European integration dimension. The findings from Tables 2 and 3 indicate that the most general interpretation of the underlying structure of Danish electoral competition is along left/right lines, and that an interpretation in terms of positions vis-à-vis European integration does not fit (or, for 5 out of the 6 parties, is indistinguishable from the left/right interpretation).

Comparative analyses

Analysing the electoral utility data from each of the EU member states for which we have this information in 2004 involves a similar procedure as described in some detail for Denmark. To arrive at a comparative perspective that allows one to see similarities or differences between countries requires a form of reporting that summarizes the main results into a format that is easily reviewed. We therefore refrain in this section from all kinds of details and will report in a tabular form the following information for each of the countries:

- The number of parties for which electoral utilities were asked
- The number of parties that can be fitted in a single scale by the algorithm in its SEARCH mode, and the H-coefficient of that scale. If not all items fit in an inductively constructed scale, we also report the H for a scale in which we forced the remaining items in as good as possible.
- The H-coefficient of a scale that is specified on the basis of voters' perceived left/right positions of political parties. If this specification is identical to the inductively constructed scale this will be indicated. If not, the difference in H-coefficients indicates the extent to which the inductively constructed scale can or cannot be interpreted in left/right terms.

Table 4 — Overview of unfolding results, explanation of entries in main text

	# of parties	# pties in induct.scale	H of induct.scale	H of induct. Scale+rest	H of L/R scale	H of Eur Int. scale
Austria	5	0			0.53	0.24
Belgium						
Britain	4	4	0.44	idem	idem	
Cyprus	4	0	0		0.73	0.68
Czech Rep.	5	5	0.53	idem	idem	0.26
Denmark	6	6	0.62	idem	idem	0.37
Estonia	9	9	0.62	idem	0.51	
Finland	8					
France						
Germany	6	4	0.64		0.47	0.35
Greece	5	0			0.37	
Hungary	6	6	0.74	idem	idem	
Ireland	7	6	0.48	idem	idem	
Italy	14	12	0.70	0.68	0.68	
Latvia	7	7	0.65	idem	0.63	
Lithuania						
Luxembourg						
Netherlands	9	9	0.62	idem	0.45	0.28
North. Irel.						

Poland	9	9	0.49	idem	0.33	
Portugal	6	5	0.72		0.44	
Slovakia						
Slovenia						
Spain	6					
Sweden						