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Ivo Bischoff

Party competition in a heterogeneous electorate – the role of dominant-issue-voters

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Prof. Dr. Armin Bohnet
Volkswirtschaftslehre IV
Licher Straße 66
35394 Gießen
☎ 0641 99 22100

Prof. Dr. Wolfgang Scherf
Volkswirtschaftslehre II
Licher Straße 74
35394 Gießen
☎ 0641 99 22080

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Party competition in a heterogeneous electorate the role of dominant-issue voters

Abstract

This paper provides a theoretical model of party competition in a heterogeneous electorate. The latter consists of numerous groups of dominant-issue-voters who base their voting decision primarily on one issue of the political agenda. Parties follow a lexicographic objective function, aiming to gain power at minimum programmatic concessions. The emerging pattern of movement in policy platforms is fundamentally different to the concept of convergence proposed by the spatial theory of voting. Rather than the centre of the scale of policy preference, its extreme ends, occupied by dominant-issue-voters, attract the policy platforms. The difference in policy platforms is not reduced. The conclusions are found to be compatible with some major empirical findings of the Manifesto Research Group.

Key words: voters, incomplete information, political parties, convergence

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1. Introduction

In their voting decision in representative democracies, voters have to decide on numerous issues at the same time. The decisions made thereby have considerable influence on the voters' utility, though the extent to which the decision on a certain policy issue affects a voter's utility will differ across voters, depending on their individual situation. Different groups of voters can therefore be expected to emphasize on different parts of the political agenda when deciding which party to vote for. Congleton (1991) provides a model of the political decision making process which accounts for the heterogeneity in the electorate's preferences by introducing the notion of single-issue-voting. This paper will pick up his basic idea and develop another model of party competition in a heterogeneous electorate. The model presented below differs from the approach taken by Congleton (1991) in two distinct features. First, the paper draws on the literature on party competition (especially, Denzau and Munger, 1986; Coughlin et al., 1990) to provide a richer model of party behavior. In particular, it accounts for the fact that parties have policy preferences (e.g., Wittman, 1983; Kalt and Zupan, 1984). Second this paper argues that voters who base their voting decision predominantly on one issue regularly have policy preferences which are at the extreme ends of the scale of preferences rather than in its centre. As a consequence, the emerging pattern of movement in policy platforms does not resemble the convergence as proposed by the spatial theory of voting. Instead, the platforms follow the attractive forces of the dominant-issue voters and move in parallel rather than towards the centre as well as towards each other. Consequently, there is no mechanism which regularly reduces the distance between policy platforms in the course of the election race.

The paper starts by giving a brief overview on the existing literature on policy convergence in section 2. Section 3 introduces political parties and voters as major agents of the political decision making process. The notion of dominant-issue-voters is introduced. Section 4 illustrates the consecutive pattern of movement in policy platforms that will emerge when political parties compete for the majority of votes before section 5 relates the major findings of the model to the empirical observations in party competition.

2. Policy convergence in the spatial theory of voting– a review of literature

Though differing in the assumptions concerning e.g. the objective function of political parties or the composition and behavior of the electorate, all models following the spatial theory of voting have a number of common features (e.g., Enelow and Hinich, 1984; Merrill and Grofman, 1999).¹ When modelling the political decision making process, they assign the central role to the political parties. In general, two parties following different ideologies or representing the interests of different constituencies of voters (e.g., Roemer, 1994) are assumed to compete for political power. In most models, the policy space is assumed to have only one

¹ This paper refers to the proximity models of the spatial theory of issue voting and excludes the directional models of voting (see Merrill and Grofman, 1999).

dimension. This can either be the classical ideological left-wing / right wing scale. Alternatively, the scale can depict the preferred amount of a certain publicly provided good (e.g., Inman, 1978) or the preferred degree of income redistribution (e.g., Orr, 1976; Roemer, 1994).

Due to differences in ideology and policy preferences, the voters' bliss points will be dispersed across this political scale. The parties' bliss points are positioned in distinct distance to the median position of the relevant electorate. In addition, they are assumed to be on opposite sides of the median position (e.g., Enelow and Hinich, 1984: 8-14). The starting point of their competition is marked by the situation in which both parties offer policy platforms in accordance with their bliss points. Regardless of their assumed objective function, both parties serve their own objective by offering policy platforms which are closer to the median voter's position than their own bliss point. The policy platforms will thus converge in the course of the election race. The process of convergence is characterized by three central features. First, the difference between policy platforms is reduced. Second, the centre of the scale of preferences is the gravitational centre towards which the platforms converge. Third, the policy platforms approach each other by moving in opposite directions.

In the original Downsian model, the political competition leads both parties to offer identical platforms which reflect the median voter's bliss point. A number of authors of later articles have adopted the basic mechanism of the Downsian model but extended it in a number of ways which made it more compatible with the lack of full convergence observed in real life party competition (e.g., Budge and Robertson, 1987). One reason for this lack of full convergence proposed by Wittman (1983) and others is that the policy preferences of politicians are too strong to make full convergence rational *ex ante*. Alesina (1988) adds that parties with strong policy preferences may lack credibility when offering policy platforms which deviate too far from their bliss points. Palfrey (1984) points out that parties which move too far to the centre are threatened by new parties entering the political arena on their extreme ends. This threatening market entrance restricts the parties in their movement to the median voter's position. Roemer (1994) argues that uncertainty about the distribution of voters' preferences may restrict the political parties in moving their policy platforms to the centre of the political scale.

Within the spatial theory of voting, only a small number of models analyses the policy-formulating process in a two- or even multidimensional policy space. Some of these models simultaneously assume that the voters' position on the different scales are a monotonous function of their individual income. Thereby the multidimensional scale of preferences on different policy issues is *de facto* reduced to the single dimension of individual income. The multidimensional median position is held by the voter with the median income. He respectively his positions on the different issues will exert the attractive force on the parties' policy platforms (e.g., Inman, 1978; Persson and Tabellini, 2002: 96-97). The result of convergence continues to apply.

Plott (1967) was the first to analyse party competition in a truly multidimensional issue space. He shows that policy platforms will only converge to one particular median platform if a number of very specific conditions apply. Basically, the voters' bliss points must be arranged

symmetrically around this single median bliss point in the hyperspace of policy combinations. In this case, policy platforms can be expected to move towards the (multidimensional) median voter's position. The difference in policy platform is reduced. Assuming that the bliss points of both parties are located on opposite sides of the median position, the policy platforms will move towards each other, thereby reducing the distance between them. Hence convergence as described for the one-dimensional case also applies to the electoral competition in a multidimensional policy space.

If the symmetry condition stated by Plott (1967) is violated, policy platforms do not converge to a single position in the policy space. Instead, the equilibrium demands both parties to choose a mixed strategy out of a set of policy platforms. Dependent on the distribution of voters' preferences, this set of policy platforms takes on a different size and dispersion (e.g., McKelvey, 1976; Ferejohn, McKelvey and Packel, 1984). If the distribution of preferences is reasonably close to being symmetric – which Ferejohn, McKelvey and Packel (1984) argue can be assumed for real life electorates – the set will be concentrated near a “generalized median” (see also McKelvey and Ordeshook, 1976). Due to the difference in ideology, the parties' bliss points are located on opposite side of this “generalized median”. If they are furthermore located outside the set of possible policy platforms to choose from, the movement in policy platforms again shows central features of convergence in the above-defined sense. The platforms move towards the centre of the policy space and thereby towards each other. Consequently the distance between them is reduced. If, however, the set of possible policy platforms comprises the parties' bliss points, the election race does not cause convergence, nor does any other predictable pattern of movement in policy platforms emerge.

3. Agents involved in the political decision making process

3.1 Political parties

In most democracies, especially in Europe, the political competition is primarily carried out by political parties rather than by individual candidates. This paper assumes that only two parties A and B - differing in their basic ideology - compete for power. As the policy-space is assumed to be multidimensional, the ideological positions of the party members manifest in the so-called ideal party programme PRG^{A*} respectively PRG^{B*} rather than in a single bliss-point. This ideal party programme can be thought of as a vector of length L , where L denotes the total number of issues on the political agenda. Each element of the vector represents the party members' aggregated position on one particular issue. As the political parties differ ideologically, they can be expected to have different positions on most issues.

Each party is interpreted as a sort of enterprise which tries to maximize the utility of its members, especially the candidates (e.g., Galeotti and Bretton, 1986; Jones and Hudson, 1997). As their utility depends largely on their income, prestige and power as a member of parliament or government, the primary party objective is to achieve political posts for as many of its candidates as possible. The number of available posts is especially large if the party wins the election and is allowed to fill positions in the government and top bureaucracy. Hence it

can be assumed that the primary objective of a political party is to win the election by attracting the majority of votes.

In the competition for this majority of votes, it is in most cases necessary for a political party to offer a policy platform PRG^P that deviates from PRG^{P*} in different positions (Coughlin et al., 1990). The changes that a party makes to PRG^{P*} during the election are hereafter called (programmatic) concessions (Denzau and Munger, 1986). In this paper, it is assumed that the winning party puts through the party programme PRG^P it offered on the election day. Otherwise it would destroy the effectiveness of concessions and thereby give away its most important instrument in future election races. Empirical results suggest that this assumption is tenable (e.g., Rallings, 1987).

Following Wittman (1983) and Kalt and Zupan (1984), parties are assumed to have strong policy preferences. Therefore the more concessions a party makes to win the election, the lower its members' utility once in power. The fact that a party can only put through any of its own positions if it wins the election constitutes a clear hierarchy of objectives. The objective function is thus lexicographic with the primary objective to win the election and the secondary one to minimize concessions.

3.2 Voters

In this paper, voters are assumed to be rational individuals who try to maximize their utility in general as when voting (e.g., Fain and Dworkin, 1993; Jones and Hudson, 1997). Following the empirical evidence, it is reasonable to assume that the vast majority of voters draws a positive utility from the act of voting, even though they know that their vote will not tip the scales (e.g., Weck-Hannemann, 1995; Kan and Yang, 2001). Each voter is assumed to have a predisposition to vote for one of the parties. This predisposition is independent of their policy platforms in concrete form. Instead, it may account for differences in perceived valence of parties to solve the major problems ahead (e.g., Ansolabehere and Snyder, 2000) or result from the fact that the voter prefers one party's basic ideology (e.g., Coughlin et al., 1990). Following Coughlin et al. (1990), the individual voter j 's predisposition for a party is expressed by his individual voting bias b_j . If $b_j > 0$, the vote goes to party A, for values of $b_j < 0$, voter j votes for party B. The larger $|b_j|$, the stronger the voter's predisposition.

Next to the individual voting bias, the policy platforms of the parties determine the voting decisions. If $b_j = 0$, voter j will vote for that one party whose policy platform, if put into action, provides him with a higher expected utility (Coughlin et al., 1990). The total utility he draws from voting for party A is given by the following expression:

$$U_j = U_j(PRG^A) - U_j(PRG^B) + b_j \quad (1)$$

A positive value indicates that voter j can expect an increase in utility if party A wins the election. Hence he will vote for this party. If expression (1) takes on a negative value, voter j will give his vote to party B.

Due to the minute effect the individual vote has on the outcome of an election, rational voters do not spend any resources solely to collect information for voting purposes. Much of the

politically relevant information is, nevertheless, collected on the side while engaging in other activities (Fiorina, 1996). Politically relevant information from newspapers, radio and TV, for instance, is usually obtained while consuming these media for reasons of entertainment or leisure (Rudzio, 1996; Strömberg, 2001). However, this information conveys only limited and unsystematic knowledge about the detailed policies proposed by the competing parties. It determines the individual voting bias, but it is not sufficient to calculate the utility differential $U_i(PRG^A) - U_i(PRG^B)$ and hence make an informed vote.

Making an informed vote requires detailed information about the parties' policy platforms. Many voters acquire detailed knowledge about some policy issues at work. This will usually be restricted to those parts of the policy platforms which affect the specific industry or profession. Civil servants, for instance, will acquire detailed information about the parties' plans on their field of activity (e.g., Frey and Pommerehne, 1982), while e.g. farmers can be assumed to be well-informed about agricultural policy plans. Furthermore, voters collect detailed information about certain policy issues when this is privately valuable (e.g., Congleton, 2001). Depending on the individual voter's situation, this information may concern child-care programmes, housing subsidies etc.

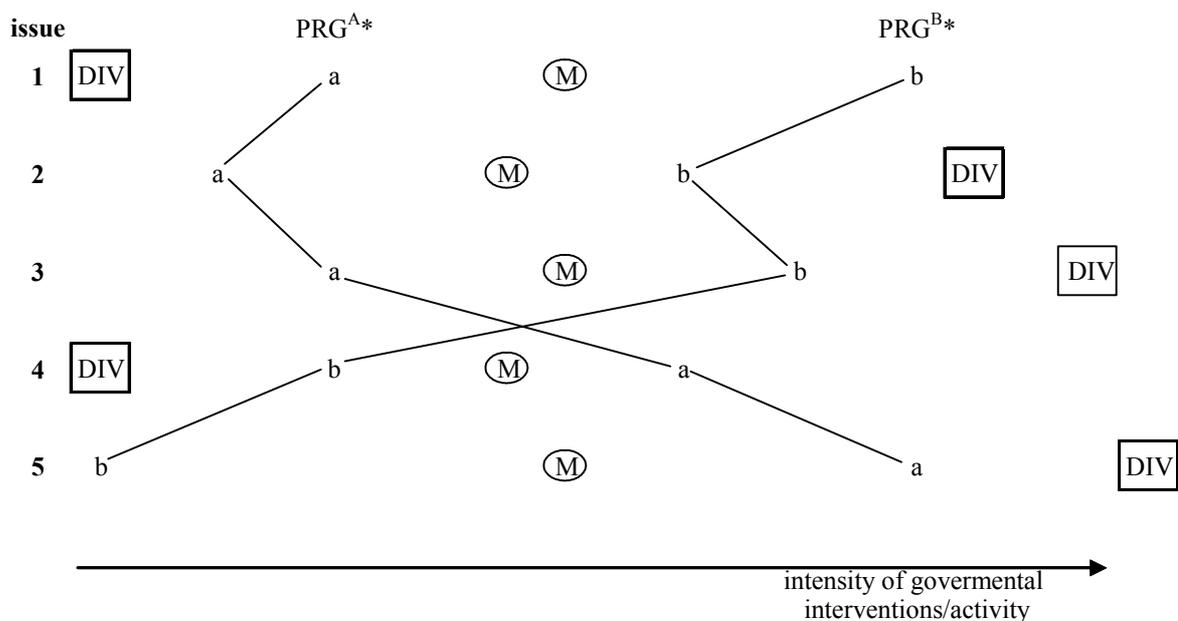
In sum, different groups of voters can be expected to have different fields of policies in which their knowledge is detailed enough to judge the parties on policy platform grounds. These fields can be expected to have a notable impact on their individual utility. At the same time, their knowledge about the other fields of policy is incomplete. They may know some crude general indicator like the current overall tax burden, but their knowledge about the parties' exact positions on reforming taxation is too limited to calculate the resulting changes in tax burden and utility in detail. Thus when making their voting decision, these voters will consider their voting bias plus the observed utility differential from those few issues of the political agenda on which their knowledge allows an informed vote. This paper follows Congleton (1991) in assuming that each voter regards only one issue when making his voting decision. The limitation to one issue may first follow from the above-mentioned limits in detailed information or the fact that the issue is by far the most important among the politically determined arguments of the voter's utility function. Second, a voter who has more than one important issue can reduce the costs of decision making by basing his voting-decision predominantly on the most important issue. This behavior is regularly reported for human decision making in other fields (e.g., Tversky, 1969; Gigerenzer et al., 1999). All so-called dominant-issue-voters who follow the same dominant issue are aggregated to one group. A heterogeneous electorate as assumed in this paper consists of numerous groups of dominant-issue-voters having different dominant issues to base their voting decision on. Some of these groups will centre around a common profession or industry, while others may base their voting decision on governmental policies concerning e.g. environmental, child-care, defence or religious issues.²

² It is possible that a number of voters do not have sufficient information to make an informed vote. These will vote by their voting bias (e.g., Coughlin et al., 1990). The existence of these uninformed voters does, however, not change the basic results of this paper and will thus be ignored hereafter.

4. Party competition and the pattern of movement in policy platforms

The following analysis takes the same starting point as the spatial theory of voting. Therein, both parties offer their ideal party programmes. It is assumed that the resulting distribution of votes is close. Consequently both parties have to make concessions in order to win the election respectively to avoid losing it. The starting point of party competition is depicted in figure 1. Following empirical evidence, it is unreasonable to assume that one party will demand a low intensity of governmental activity on all issues while the other one always prefers a high intensity. Instead, parties emphasize different policy issues, each preferring a high intensity of government activity on some issues (e.g., Budge and Robertson, 1987). Following the spatial theory of voting, the median positions (denoted by the circled "M") on all issues are assumed to be located between PRG^{A*} and PRG^{B*} .³ Due to the importance of the dominant issue for the dominant-issue-voters, the latter will prefer a policy which places a higher emphasis on their particular dominant issue than the average member of society. In other words, dominant-issue-voters will regularly inhabit the radical ends rather than the centre of the scale of policy preferences on their dominant issue. Therefore, the demanded policy will not represent the median position of the entire voting population but serve the more "radical" members of society. In figure 1, the preferred positions of dominant-issue-voters are denoted DIV. For the following analyses, it is important to understand that the particular positions of the dominant-issue-voters, political parties and the median position of the electorate in figure 1 are randomly chosen for illustrative reasons and are not meant to resemble any real-world pattern.

Figure 1. Starting point of party competition



³ This assumption may not hold for all issues in real world politics. It is, however, very useful for the purpose of this paper, in which the author tries to show that the movement in policy platforms does not follow the concept of convergence but rather takes the form of parallel moves.

The presentation of voters' preferences in figure 1 differs from the one used in the spatial theory of voting. It does not present the bliss points in multidimensional space and thus does not explicitly show the interrelations between the dimensions in policy space which result e.g. from the necessity to balance the state budget. A voter's position only represents the preferred policy in the particular issue. The aggregated distribution of preferences can be interpreted as a result of an opinion poll on this policy issue. Consequently, the median position on one issue simply represents the median intensity of governmental intervention demanded in this particular issue.

For two reasons, it is impossible to read the distribution of votes from this figure. First, the ideological bias which is different for each voter co-determines the voting decision but cannot be accounted for in figure 1. Second, as illustrated above, the figure cannot capture interrelations in the particular issue. This makes it impossible to calculate the net gains in utility a certain voter expects from the party programmes as a whole. In this respect, the relationship between the median position and the parties' positions does not contain any information concerning the net gain of the voter in the median position on this issue. For the dominant-issue-voters, on the other hand, the relevant information is contained. The latter will prefer the party whose position is closer to its own. This does, however, still not mean that all voters who consider the relevant issue dominant will vote for this party, because the voting bias can outweigh the utility differential from the policy platforms.

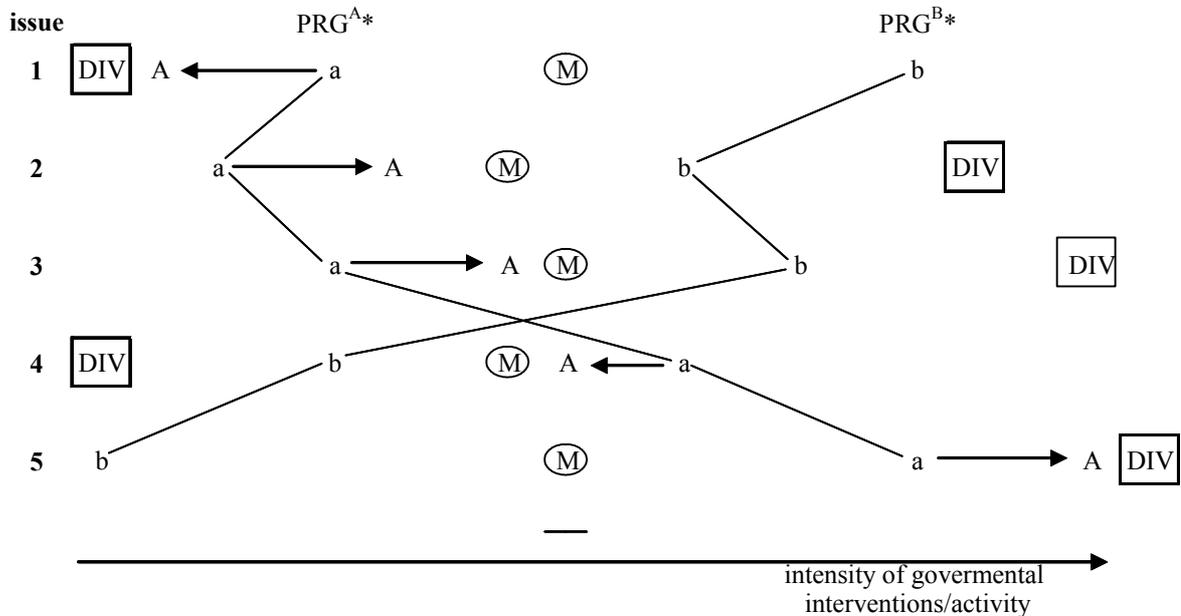
The large parties in modern democracies do not represent one particular constituency of voters but recruit their members from many different parts of society. Consequently, dominant-issue-voters can be expected to demand policies which are more radical than the policies proposed in PRG^{A*} and PRG^{B*} - perceived from the point of view of the median voter. For instance, farmers demand higher subsidies than the parties are willing to give, teachers demand higher wages and better working conditions, young families demand better and cheaper child-care facilities and so forth.

4.1 The direction of movement in policy platforms

Taking the starting point depicted in figure 1, assume for illustrative reasons that party competition can be described as a sequential game in which party A is the first to move. It can make changes to its ideal party programme in those issues that represent a dominant issue for a group of dominant-issue-voters. In figure 2, its new policy platform PRG^A is denoted by large "A"s. The positions all issues 1 to 5 are changed in favor of interest dominant-issue-voters. In the case of issue 1 and 5, the addressed group of dominant-issue-voters prefers PRG^{A*} over PRG^{B*} . The move towards DIV in this position increases the difference between the positions of the two parties and makes party A even more preferable than it already was for those voters who consider the corresponding issue dominant. This increases the utility difference $U_i(PRG^A) - U_i(PRG^B)$ of these voters and results in additional votes for party A. In issue 2 to 4, the initial utility difference $U_i(PRG^{A*}) - U_i(PRG^{B*})$ is negative, because party A offers a position less preferable for the addressees than that of party B. By making concessions, party A can, however, reduce the difference between their two positions and gain further votes. Regarding all changes in positions, party A's first move does not lead to conver-

gence. In some cases the platform approaches the median position (i.e. in issue 2 to 4), in other cases it moves away from the latter (i.e. in issue 1 and 5). Similarly, PRG^A is sometimes closer (i.e. in issue 2, 3 and 4), sometimes further away from PRG^{B*} than the ideal PRG^{A*} (i.e. in issue 1 and 5).

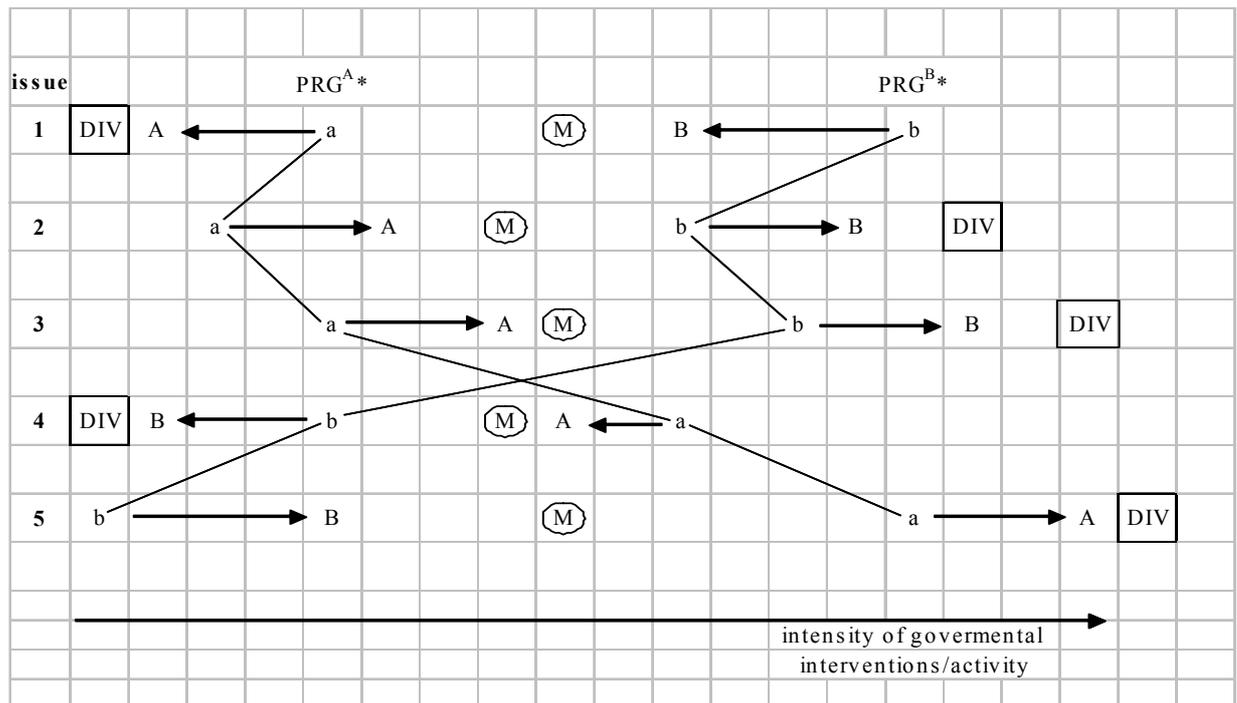
Figure 2. Programmatic concessions by the first-moving party A



When the turn comes to party B, it faces the same incentives as party A. As depicted in figure 3, party B grants concessions to dominant-issue-voters to win the lost votes back and possibly attract further votes beyond those initial losses. Consequently party B will shift its positions on issue 1 to 5 in the same direction than party A did before. The adjusted policy platform PRG^B is denoted by large "B"s. It approaches the median position and PRG^A in issues 1 and 5, while moving away from them in issues 2, 3 and 4.⁴

⁴ In reality, there may be some issues which are not occupied by dominant-issue-voters. Thus it is not beneficiary for the parties to make concessions on these issues. The concessions towards dominant-issue-voters can be expected to create a budgetary shortage and/or welfare losses which in turn forces the parties to reduce the intensity of governmental intervention or expenditures in some of these issues. This causes additional losses in utility among party members.

Figure 3. Programmatic concessions by party B



When comparing the distance between the policy platforms before ($PRG^{A*} - PRG^{B*}$) and after the two moves ($PRG^A - PRG^B$), no systematic reduction can be observed. In some issues, the positions are closer, in others they are further away from each other than at the starting point of the election race. Systematic convergence in the sense of a reduction in distance between policy platforms only occurs if the party whose initial position is closer to the policy demanded by dominant-issue-voters (i.e. party A in issues 1 and 5 and party B in issues 2 to 4) moves less far than the other party. This implies that the first-named party can attract less votes per unit concession in this issue than the party whose initial position was less favourable from the point of view of the addressed dominant-issue-voters. To give an example, convergence can be expected if conservative parties can gain more votes from making concessions in welfare issues than social democratic parties can. If the opposite is true, the policy positions will systematically diverge during party competition. Section 5 will show that divergence in policy platforms is more in line with the empirical evidence than convergence. In sum, the pattern of movement in policy platforms derived above does not have any common features with the concept of convergence as defined above.

Now one might argue that the model is still essentially a spatial model of voting, the difference being that the relevant median voter is defined differently. Instead of an overall median of all voters as depicted by the circled "M", the relevant median position is given by the median dominant-issue voter for each issue. Without ideological costs and credibility problems, both parties will offer a policy platform PRG^A respectively PRG^B which consists of the bliss points of these median voters. Accounting for ideological costs and possible credibility problems, the PRG^A and PRG^B will still approach this vector and the party closer to it will win the election. Thereby the model leads to essentially the same conclusions as the spatial theory of voting does. In my view, this course of argumentation is misleading for two reasons.

First, as discussed above, the dominant-issue-voters' positions on their dominant issue cannot be interpreted as bliss points, because these are only meaningfully defined over all policy issues simultaneously. Instead, they have to be viewed to be the intensity of political intervention which they consider appropriate/adequate for the isolated issue. In the initial situation, PRG^{A*} and PRG^{B*} state a position which is either too low or too high from the point of view of dominant-issue-voters. Graphically, they are located at the same end of the addressees' preferred intensity. By moving their policy platforms closer to the demanded intensity of a dominant-issue-voter, each party can increase the probability of acquiring the latter's vote. On average, the move towards the addressees' preferred intensity will bring additional votes among these voters. Now assume that both parties continue to move their policy platforms. As long as the leading party has not passed the preferred intensity of the first dominant-issue-voter, it will – other things equal – receive more votes than its opponent. But what happens now if it passes the first voter's intensity and proceeds until its position is further away from the first voter's preferred intensity than the position of its opponent? If the voter's preferred intensity is interpreted to be a bliss point, it would vote for opponent. In the present model, however, the voters who are offered an intensity of governmental intervention which points in the right direction and even exceeds the intensity they consider appropriate/adequate does not necessarily punish the corresponding party by voting for its opponent. This can be expected only if the extreme position offered by the leading party causes the voter a net loss in utility. For most concessions, this seems unreasonable. This can be illustrated using the example of a number of farmers forming a group of dominant-issue voters who demand a certain degree of subsidization of their products. A farmer who considers a 10 per cent subsidy adequate and has a voting bias of zero can be expected to prefer party A if this offers a 4 per cent subsidy while party B only offers 2 per cent. If party A comes to offer 12 per cent while party B only offers 9 per cent, this voter will still be better off if party A's policy platform is put into action and thus vote accordingly, even though the distance to the demanded 10 per cent would lead him to vote for party B when following the spatial logic.

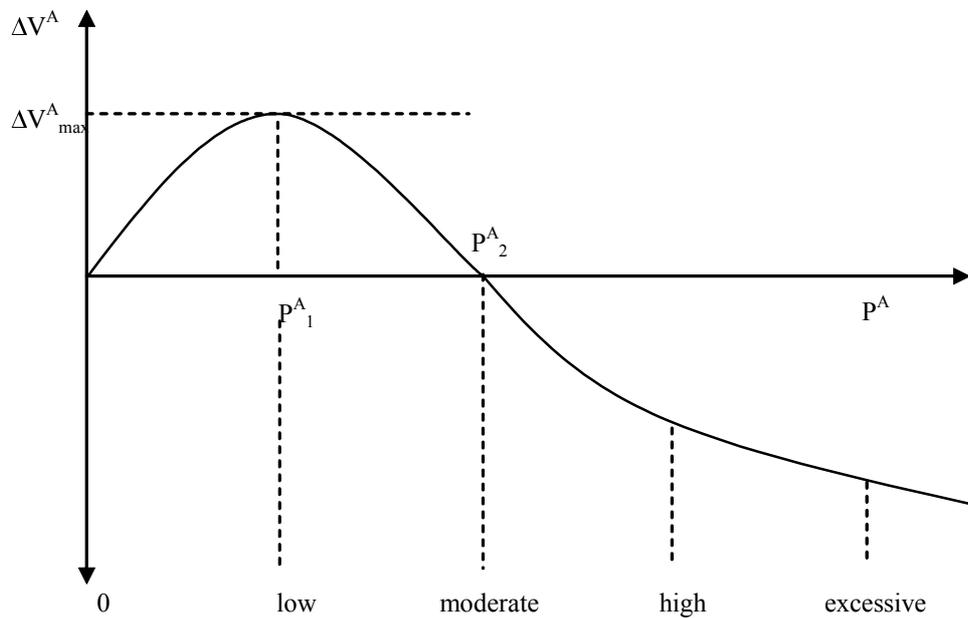
Second, there are a number of mechanisms which restrict the parties' moving their policy platforms and thus make it unlikely that the policy platforms pass the positions of a notable number of dominant-issue-voters. For once, the lacking credibility (e.g., Alesina, 1988) and the resistance of the party delegates not suggested for a political post which both prevent full convergence in the spatial theory of voting apply here as well. In addition, the reaction of those groups of voters who are not addressed by the particular concessions results in diminishing and eventually negative returns in votes from increasing concessions. This will be illustrated in more detail in the section 4.2.

4.2 The magnitude of movement in policy platforms

Having identified the pattern of movement in policy platforms, it is now necessary to turn to the magnitude of this movement, i.e. the level of concessions. Let P^A (P^B) denote the total sum of concessions made by party A (B) across all issues occupied by dominant-issue-voters. In order to be able to aggregate concessions made in different policy fields, they will hereafter be measured by the total rents granted to the addressees of concessions. Taking

the starting point as depicted in figure 1, where $P^A = 0$ and $P^B = 0$, each party can gain additional votes by making programmatic concessions. The paper follows standard theory of utility in assuming that the marginal gains in utility and thus in votes each party can attract from increasing concessions will decline. Simultaneously, concessions produce increasing marginal losses in votes among those groups of voters who do not benefit from them but have to carry the burden via higher taxes or consumer prices. Thus either party can win only a limited number of votes by making concessions. Excessive concessions can lead to net losses in votes. Figure 4 visualizes the relationship between the sum of concessions of party A and the additional votes won ΔV^A .

Figure 4. Additional votes from party A's concessions for $P^B = 0$

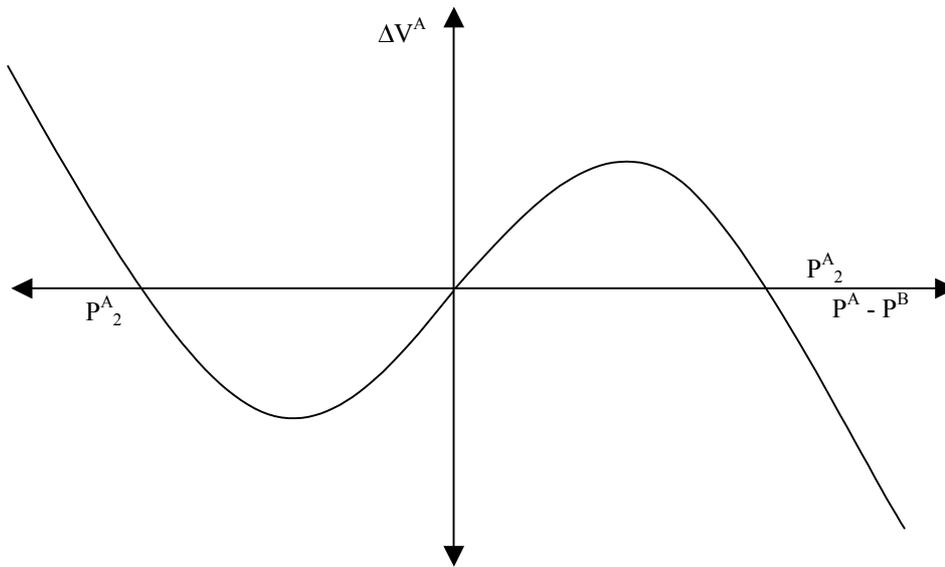


Assuming that both parties' concessions have the same vote productivity, the votes won or lost depend on the difference in the level of concessions ($P^A - P^B$) made but not on their absolute level:

$$\Delta V^A = -\Delta V^B = f(P^A - P^B) \quad P^A, P^B \geq 0 \quad (2)$$

Figure 5 visualizes the relationship between ΔV^A and $(P^A - P^B)$. It shows that party A can win additional votes if it offers moderately more concessions than party B ($P^A - P^B < P_2^A$). Alternatively, it can win votes by offering considerably less concessions than party B ($P^A - P_2^A < P^B$) provided the latter chooses a very high level of concessions ($P^B > P_2^A$). Assuming a close distribution of votes at the starting point of the political competition, party A can expect to win the election if $\Delta V^A > 0$ and lose the election if $\Delta V^A < 0$. In the case of $\Delta V^A = 0$, the final winner of the election is not predetermined by the parties' activities but depends on the electoral decision of a few indecisive voters. From the parties' viewpoint, this is a lottery.

Figure 5. Additional votes from party A's concessions for different values of $P^A - P^B$



Consider the following utility function of party A:

$$U^A = \begin{cases} 1 - c_A P^A, & \text{if } \Delta V^A > 0 \\ d_A - c_A P^A, & \text{if } \Delta V^A = 0 \\ -c_A P^A, & \text{if } \Delta V^A < 0 \end{cases} \quad (3)$$

The parameter c_A represents the ideological costs suffered by the party members per unit concession. A lexicographic utility function demands that $c_A < d_A/\max(P^A)$. The parameter d_A ($0 < d_A < 1$) expresses party A's utility from a situation where $\Delta V^A = 0$. The higher d_A , the higher the utility drawn from a victory by chance in comparison to the utility drawn from a clear victory which stems from having chosen the superior strategy. If $d_A = 0.5$, party A is indifferent between the two situations. The value of d_A depends on the subjective ex ante probability by which party A expects to win the election. A value of $d_A > 0.5$ can be expected, if party A is convinced that its chances of winning the election are less than 0.5 and thus a draw is considered a success. If, however, party A estimates its ex ante chance of winning to be larger than 0.5, a value of $d_A < 0.5$ can be expected. A draw is valued more like a defeat.

In order to make predictions concerning the level of concessions the parties choose in this constellation, party competition is modelled as a one-shot game of simultaneous moves (e.g., McKelvey and Ordeshook, 1976; Alesina, 1988). For $c_A, c_B = 0$, party competition is a constant-sum-game and thus has no pure-strategy equilibrium. The latter conclusion holds for all values $c_A, c_B > 0$. Rational parties will choose a mix of pure strategies. As the derivation of a mixed equilibrium requires a discrete strategy space, the following passage restricts the eligible pure strategies for both parties to five different levels of concessions ($q = 0, 1, 2, 3, 4$) named at the bottom of figure 5. The payoff matrix can be put up as shown in table 1.

Table 1. Payoff matrix of party A

		P^A				
		0	1 (low)	2 (moderate)	3 (high)	4 (excessive)
P^B	0	d_A, d_B	$1-c_A, 0$	d_A-2c_A, d_B	$-3c_A, 1$	$-4c_A, 1$
	1 (low)	$0, 1-c_B$	d_A-c_A, d_B-c_B	$1-2c_A, -c_B$	d_A-3c_A, d_B-c_B	$-4c_A, 1-c_B$
	2 (moderate)	d_A, d_B-2c_B	$-c_A, 1-2c_B$	d_A-2c_A, d_B-2c_B	$1-3c_A, -2c_B$	d_A-4c_A, d_B-2c_B
	3 (high)	$1, -3c_B$	d_A-c_A, d_B-3c_B	$-2c_A, 1-3c_B$	d_A-3c_A, d_B-3c_B	$1-4c_A, -3c_B$
	4 (excessive)	$1, -4c_B$	$1-c_A, -4c_B$	d_A-2c_A, d_B-4c_B	$-3c_A, 1-4c_B$	d_A-4c_A, d_B-4c_B

Taking the strategy mix of the other party as given, each party will try to maximize the expected utility by choosing an adequate strategy mix. This strategy mix has to satisfy the following conditions:

$$\frac{\partial U^A}{\partial s_q^A} = 0, \quad s_q^A \geq 0 \quad \forall q = 0, 1, \dots, 4; \quad \text{and} \quad \sum_{q=0}^4 s_q^A = 1 \quad (4a)$$

$$\frac{\partial U^B}{\partial s_q^B} = 0, \quad s_q^B \geq 0 \quad \forall q = 0, 1, \dots, 4; \quad \text{and} \quad \sum_{q=0}^4 s_q^B = 1 \quad (4b)$$

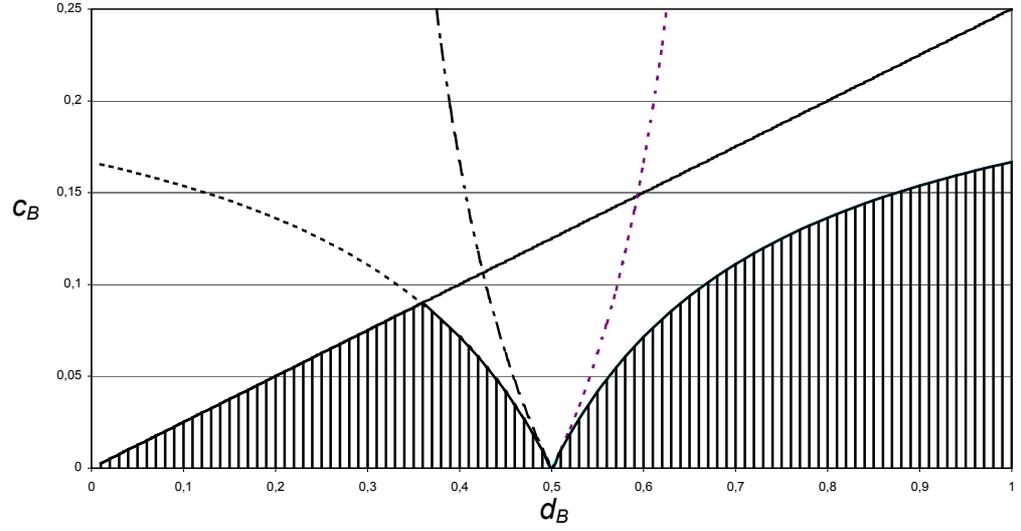
where s_q^A = share of pure strategy q in the mix of party A.

s_q^B = share of pure strategy q in the mix of party B.

If there exists a combination of $S^A = \{s_0^A, s_1^A, s_2^A, s_3^A, s_4^A\}$ and $S^B = \{s_0^B, s_1^B, s_2^B, s_3^B, s_4^B\}$ for which all these conditions are satisfied simultaneously, this represents a Nash-equilibrium. Setting up the system of equations necessary to resolve this problem reveals that the marginal utility of one party does not depend on its own mix of strategies but solely on the strategy-mix of the opponent. Therefore neither party can directly maximize its own utility by choosing a particular mix of strategies but has to choose a mix which makes it impossible for the political opponent to take advantage of it (e.g., McKelvey and Ordeshook, 1976; Holler and Illing, 2003: 67-73).

The method of choosing the optimal mix of pure strategies is the same for both parties. The following illustrations will demonstrate it from the point of view of party A. Party A takes on the perspective of party B and tries to find the mix of s_q^A which satisfies the set of conditions in (4b). Thus the optimal mix of party A depends on the parameter values c_B and d_B of the political opponent. The fact that $s_q^A, s_q^B \geq 0 \quad \forall i$ and $d_A > c_A \max(P^A) = c_A/4$ restricts the combinations of d_B and c_B for which a Nash equilibrium exists. In figure 6, the area of valid combinations of parameter values is marked in grey.

Figure 6. Valid area of Nash-equilibrium for different values of c_B , d_B



For the special case where $d_B = 0.5$ and $c_B = 0$, there is no unique Nash equilibrium for the strategy-mix of party A. Instead party A is indifferent towards all combinations which satisfy the following conditions:

$$s_0^A = 0.5 - s_3^A, \quad s_1^A = 0.5 - s_2^A, \quad s_1^A = s_3^A, \quad s_4^A = 0 \quad (5)$$

If $c_B = 0$ and $d_B \neq 0.5$, $s_0^A = s_1^A = s_2^A = s_3^A = 1/4$. In the case of positive policy preferences ($c_B > 0$), the Nash-equilibrial mix of strategies is given by the following expressions:

$$s_0^A = \frac{-(1 - 2d_B - 2c_B + 8c_B d_B)}{4(-1 + 2d_B)}, \quad (6a)$$

$$s_1^A = \frac{-(1 - 2d_B + 2c_B - 8c_B d_B)}{4(-1 + 2d_B)}, \quad (6b)$$

$$s_2^A = \frac{-(1 - 2d_B + 6c_B - 8c_B d_B)}{4(-1 + 2d_B)}, \quad (6c)$$

$$s_3^A = \frac{-(1 - 2d_B - 6c_B + 8c_B d_B)}{4(-1 + 2d_B)}, \quad (6d)$$

$$s_4^A = 0. \quad (6e)$$

Regardless of the parameter settings, both parties can be expected to abstain from making excessive concessions ($q = 4$), because this strategy is dominated by making no concessions ($q = 0$).

Returning to the original questions, the expected total sum of concessions party A (B) makes in the competition for political power depends on d_B (d_A) and the severity of policy preference of party B (A) expressed by the parameter c_B (c_A):

$$E[P^A] = \sum_{q=0}^4 q \cdot s_q^A = \frac{3}{2}c_B - \frac{(c_B)^2}{(2d_B - 1)}, \quad E[P^B] = \sum_{q=0}^4 q \cdot s_q^B = \frac{3}{2}c_A - \frac{(c_A)^2}{(2d_A - 1)} \quad (7)$$

Differentiating these expressions with respect to c_B resp. c_A yields the following result:

$$\frac{\partial P^A}{\partial c_B} = \frac{3}{2} - \frac{c_B}{(d_B - 0.5)}, \quad \frac{\partial P^B}{\partial c_A} = \frac{3}{2} - \frac{c_A}{(d_A - 0.5)} \quad (8)$$

For all values of d_B , $d_A < 0.5$, both terms of these derivatives are positive and thus P^A and P^B are positive functions of c_B respectively c_A . If d_B , $d_A < 0.5$, the second term becomes negative. Within the boundaries described in figure 6, however, it never overcompensates the first term and thus the derivatives remains positive. Therefore, whenever a Nash-equilibrium exists, the expected concessions of party A (B) are higher, the stricter the policy preferences of its political opponent party B (A) are. At the same time, the own policy preferences have no influence on the expected level of concessions a party makes during the election race. This conclusion stands in sharp contrast to the result of e.g. Wittman (1983).⁵

In the case of positive policy preferences, the larger d_B is, the higher the expected concessions of party A if $d_B > 0.5$, while the opposite is true if $d_B < 0.5$. Party A will thus make more concessions, the more confident party B is of winning the election or the more unlikely a victory is from the party B's point of view. Put differently, the expected concessions of party A increase as the absolute differences of $|d_B - 0.5|$ rises. Thus the further away party B's subjective ex ante chance of winning is from a fair 50:50 chance, the more concessions party A can be expected to make. It is important to note that this difference in ex ante chance of winning does not result from an uneven distribution of votes at the starting point of the political competition. Instead, it may e.g. result from differences in the perceived competence of the campaigning teams or fluctuations in opinion polls.

5. Relationship to empirical research

This section turns to the question as to what extent the empirical literature contains evidence which support the theoretical considerations presented above, in particular the notion of parallel moves in policy platforms. The central problem in this task is that it is empirically impossible to observe the starting point of party competition as modelled in economic theory. This consists of the parties' bliss points or the PRG^{A*} respectively PRG^{B*} as depicted in figure 1 together with the corresponding initial distribution of votes. The political programmes available for investigation, however, represent the policy platforms including concessions. Conse-

⁵ In order to test for robustness, a number of different numerical specifications of the model have been analysed. Allowing for values of P^A , $P^B > 4$ does not change the result as these are dominated by pure strategies granting less concessions. Thus, changes in equilibria can only be expected for games with a different partitioning of the area of $0 \leq P^A, P^B \leq 4$ in the above game. When doubling the number of pure strategies by allowing for steps of ΔP^A , $\Delta P^B = 0.5$, the expression for the equilibril strategy mix gets too complicated to produce conclusive derivatives. By pre-specifying the value for d_A , d_B , interpretable results can be obtained. Like in the specification described in the main text, the first derivative of P^A (P^B) with respect to c_B (c_A) is a negative linear function of c_B (c_A) with a positive constant term. This constant term ensures that the derivative stays positive for all tested values of $0.1 \leq d_A, d_B \leq 0.9$. Thus the main conclusions stated above are supported. Analogous results are also obtained if the high and excessive conclusions are not allowed for ($0 \leq P^A, P^B \leq 2$). Finally, an asymmetric strategy space is analysed where a draw can only be reached if $P^A = P^B$, because the parties cannot choose the level of concessions described by P_2^A in Figure 4. For all combinations where $P^A \neq P^B$, there is a clear winner. The above results hold for this scenario. Although these results do not provide a final proof for the conclusions above, they indicate that the conclusions drawn from the special numerically specified payoff matrix can be generalized.

quently, all conclusions concerning the pattern of movement in policy platforms have to be drawn indirectly. An indirect course of argumentation is also used to relate the empirical literature to the pattern of movement in policy platforms derived in section 4. The argumentation below draws on systematic studies by the Manifesto Research Group (MRG). The MRG has documented the policy platforms of all major parties in 19 democracies over several decades (e.g., Budge et al., 1987).

The research by the MRG shows that the policy platforms in the observed countries and time periods remain distinctly different from those of their domestic competitors. Furthermore, the distance has not reduced systematically over time (e.g., Budge and Robertson, 1987; Adams, 2001). A distinct feature of party competition is the fact that parties seldom take direct confrontation by stressing the same particular issue in their party programmes and campaigns. Most of the time, they “talk past each other”, meaning that they address different groups of voters. Therein, each party tends to choose the issue where its position is perceived to be stronger and/or which is in line with its basic ideology. Pledges, i.e. promises to change the intensity of governmental intervention on certain issues, are allocated accordingly (e.g., Budge and Robertson, 1987).

Expressing this pattern in terms of figure 1, party A will restrict its concessions to issue 1 and 5, while party B will change its positions on issue 2, 3 and 4. Thus, the policy platforms will diverge. In the logic of the model above, this pattern of movement can be explained in two ways. First, the party with the less attractive position does not expect any gains in votes from catching up on the position of the political opponent, because the resulting concessions lack credibility (e.g., Alesina, 1988). Second, the corresponding concessions would collide with the ideological conviction of party members and thus cause extremely high ideological costs.⁶

Based on empirical data of the MRG, Budge (1994) analyses how political parties change their position in consecutive elections. Instead of analysing different fields of politics, he traces the positions on the aggregated leftwing-rightwing scale. Budge finds evidence that parties alter their positions only within their own ideological area. Within this range, the largest share of parties analysed alternate in the direction of movement from one election to the next, thus showing no systematic shift in positions. A substantial number of parties do, however, make systematic shifts if these are attracting additional votes. They take two consecutive shifts in the same direction, if the first shift has led to an increase in votes. This observation suggests that political parties are not willing to leave “big bills on the sidewalk”, that is to stay put in positions where they know a shift – within the own ideological sphere – will bring additional votes. Transferred to the multidimensional political arena, this result supports the notion of parallel moves in policy platforms, provided they do not lack credibility or cause extensive ideological costs. In the view of the author, the race of German Christian Democrats and Social Democrats in trying to outscore each other in promising to pay higher transfers to families and especially to improve child-care facilities constitutes an example of such

⁶ In some cases, there may be issues where both sides of the scale of preferences are occupied by dominant-issue-voters. In this case, both parties can be expected to direct concessions to that end of the scale where their net gains in votes are positive; that is identify the stronger group and move in its direction. If the stronger group is different for the two parties, they will make divergent concessions.

parallel moves. The concessions made aim at young and especially high-skilled couples who want to have a family but have to incur high opportunity costs when raising children (e.g., Bischoff, 2002). Apart from income taxation, the quality of child care facilities is the most important of the politically determined arguments of their utility function. As their voting bias tends to be small in absolute size, both parties can gain votes among these voters. At the same time, both parties have only moderate ideological costs when addressing these voters.

Another argument in support of the notion of parallel moves is the following: While the theoretical models take the ideal party programmes as starting points, real-life party competition refers to the status quo when formulating its policy platforms and pledges (e.g., Merrill and Grofman, 1999: 130-143). Assuming that the electorate is subject to an endowment effect (e.g., Kahneman et al., 1991) with respect to public services and privileges, taking existing services and privileges back will be very unpopular among voters. Thus, the status quo is determined by the pledges of numerous past governments. Merely by respecting the pledges the political opponent put through in the past, any party *de facto* shifts his position towards that of dominant-issue-voters which are normally only addressed by the political opponent. These shifts have much higher credibility than additional concessions to these groups. Consequently, they can credibly reduce the utility differential and thus win votes among the dominant-issue-voters, which could not have been won if the party would have had to promise the same policies in new concessions. At the same time, the ideological costs of keeping a policy measure introduced by a predecessor government can be expected to be lower than newly introducing the same measure for the first time.

6. Conclusion

The preceding sections presented a theoretical model of the political decision making process in which two parties compete for the majority of votes in a heterogeneous electorate consisting of different groups of so-called dominant-issue-voters. Due to differences in their individual situation in life, the different groups will be informed about different parts of the parties' policy platforms. Those parts on which they have detailed knowledge are of strong importance to them. Consequently they base their voting decision primarily on the policies proposed in these fields of policy. Compared to the overall electorate, dominant-issue-voters will furthermore prefer an intensity of governmental activity which lies at the extreme end of the scale of preferences rather than in the centre. In the course of party competition, both parties make programmatic concessions to dominant-issue-voters in various issues in order to acquire additional votes.

The total level of concessions made during the election race cannot be determined *ex ante* because the Nash-equilibrium requires both parties to play a mixed strategy. Towards this end, the model developed here is similar to the multidimensional models following the spatial theory of voting. The expected level of concessions can be expressed as a function of certain party characteristics, in particular, their policy preferences. The stricter the policy preferences of the political opponent, the higher the expected level of concessions chosen by a party. At the same time, the party's own intensity of policy preferences have no influence on the chosen level of concessions. This result stands in contradiction to the conclusion drawn by e.g. Wittman (1983).

When comparing the pattern of movement in policy platforms emerging in the above model to the concept of convergence predicted by the spatial theory of voting, fundamental differences are revealed. First, the policy platforms are not attracted by a central position on the scale of policy preferences but by positions at its ends. Second, both parties shift their policy platforms in the same direction rather than towards each other. For every political issue, the party whose initial policy platform is less attractive for dominant-issue-voters tries to catch up on the opponent. The party which offers the more favourable position intends to increase or at least maintain the initial difference in policy platforms. And therefore, third, there are no forces which systematically reduce the distance between policy platforms finally offered in the election to a level below the initial difference between the ideologically motivated ideal party programmes.

The empirical evidence on the development in policy platforms compiled by the Manifesto Research Group supports the conclusions drawn from the theoretical model in parts. While no convergence in policy platforms is observed, parties are found to primarily address those groups of dominant-issue-voters who are already favored by their original position. A lack of credibility as well as excessive ideological costs may restrict the concessions to other dominant-issue-voters. In the logic of this model, policy platforms can thus be expected to even diverge. At the same time, occasional observations and theoretical considerations suggest that parallel moves in policy platforms can be expected under certain conditions. In the view of the author, it would be very interesting to use the rich empirical data base compiled by the Manifesto Research Group to test the empirical tenability of the notion of parallel moves as put forth in this paper.

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