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### **Electoral competition in a multidimensional political arena – parallel moves instead of convergence in policy platforms**

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## **Abstract**

This paper provides a theoretical model of electoral competition in a multidimensional political arena with a heterogeneous electorate and politically active interest groups. 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 and interest groups, attract the policy platforms. The platforms move in parallel instead of towards each other, while the difference in policy platforms is reduced only under certain conditions.

Key words: voters, interest groups, ideology, political parties, convergence

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## 1. Introduction

Since the seminal work of Anthony Downs (1957), the spatial theory of voting plays an exquisite role in the economic analysis of political decision making processes. The vast majority of models following this paradigm predict full or at least partial convergence of policy platforms in the course of party competition. The process of convergence is characterized by three central features. First, the difference between policy platforms is reduced during the electoral competition. Second, the centre of the scale of preferences is the gravitational centre towards which the platforms converge. Third, as the bliss point of the parties are assumed to be positioned on opposite sides of the median voter's position, the policy platforms approach each other by moving in opposite directions.

This paper presents a theoretical model of electoral competition which leads to a fundamentally different pattern of movement in policy platforms. It places two political parties in a multidimensional political arena with a heterogeneous electorate and politically active interest groups. Therein the extreme ends rather than the centre of the policy space attract the policy platforms. Following this attractive force, the platforms move in parallel rather than towards each other. There is no force which regularly reduces the distance between policy platforms in the course of the election race, though it may be reduced under certain conditions. In sum, the pattern of movement in policy platforms suggested by the forthcoming model differs radically from the concept of convergence following the spatial theory of voting. While it may satisfy the first feature of convergence as defined above, the other two features do not apply. The paper starts by giving a short overview on the existing literature on convergence in section 2. In section 3, a theoretical model of the political decision making process is developed. Based on this model, section 4 illustrates the consecutive pattern of movement in policy platforms and discusses the implications.

## 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)<sup>1</sup> 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 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; *Baumgardner*, 1993) or the preferred degree of income redistribution (e.g., *Orr*, 1976; *Roemer*, 1994). A

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<sup>1</sup> This paper refers to the proximity models of the spatial theory of issue voting and excludes the directional models of voting as proposed by Rabinowitz and MacDonald (1989) (see Merrill and Grofman, 1999).

number of models which allow for a multidimensional policy space 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*).

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*). This difference in bliss-points is stabilized by the fact that an individual who wants to start a political career can be expected to choose the party whose ideology comes closest to his own beliefs (e.g., *Niedermayer, 1997*) because this makes it more likely for him to get nominated as candidate for a political post. The role of policy preferences in the utility function of politicians is controversially discussed. Early versions of the Downsian model saw politicians to be a type of entrepreneur who "produces policies" to acquire income, power and prestige. Having no particular affection to their own ideological beliefs, they are ready to offer any kind of policy in the election. Their objective is to maximize votes (e.g., *Chappell and Keech, 1986*). Contrary to that, e.g., *Wittman (1973)* argues that politicians are strongly motivated by the "contents" of politics. Consequently they are reluctant to offer a platform which differs from their bliss-point. Evidence for this reluctance is found in numerous empirical studies (e.g., *Kalt and Zupan, 1984; Kalt and Zupan, 1990; Bronars and Lott, 1997*). Following this second view, politicians or parties will only deviate from their bliss-point as far as necessary to win the election. The parties' objective is to win the election and use the power gained to put through as much of the preferred policy as possible. Vote-maximization is not assumed.

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. In the original Downsian model, the political competition will lead 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., *Grofman, 1995: 180*). One reason for this lack of full convergence proposed by *Wittman (1973)* 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. Bernholz and Breyer (1994: 112 - 113) consider the inner party decision making process in which not only party candidates but all party delegates decide about the policy platform to be a further drag for convergence. 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. The larger this uncertainty, the larger the remaining distance between policy platforms.

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. Plott (1967) points out that in this case, 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.<sup>2</sup> 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, however, 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 will 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.

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<sup>2</sup> Ferejohn, McKelvey and Packel (1984) show that this mixed equilibrium can be expected to exist under normal conditions.

### 3. Agents involved in the political decision making process

The following passages will present a model of party competition which leads to fundamentally different conclusions concerning the pattern of movement in policy platforms. Apart from allowing for a heterogeneous electorate, the model accounts for the influence of interest groups on the political decision making process. Therein the paper stands in tradition of the support-maximization theory of party competition (e.g., *Peltzman*, 1976; *Becker*, 1985; *Plotnick*, 1986, *Baumgardner*, 1993). Other than the corresponding body of literature, however, this paper explicitly follows the spatial theory of voting in stressing the central role of political parties and their policy preferences.

#### 3.1 Political parties

In most democracies, especially in Europe, the political competition is primarily carried out by political parties rather than by individual politicians. In this paper, it is assumed 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. Fig. 1 plots each ideal party programme as one string of positions. For illustrative reasons, the number of issues is restricted to eight; in reality, it can be expected to be larger. The further to the right a position is, the higher the party's preferred intensity of state intervention/activity in this issue. If for instance issue 1 represents environmental standards, party B would prefer stricter standards than party A.

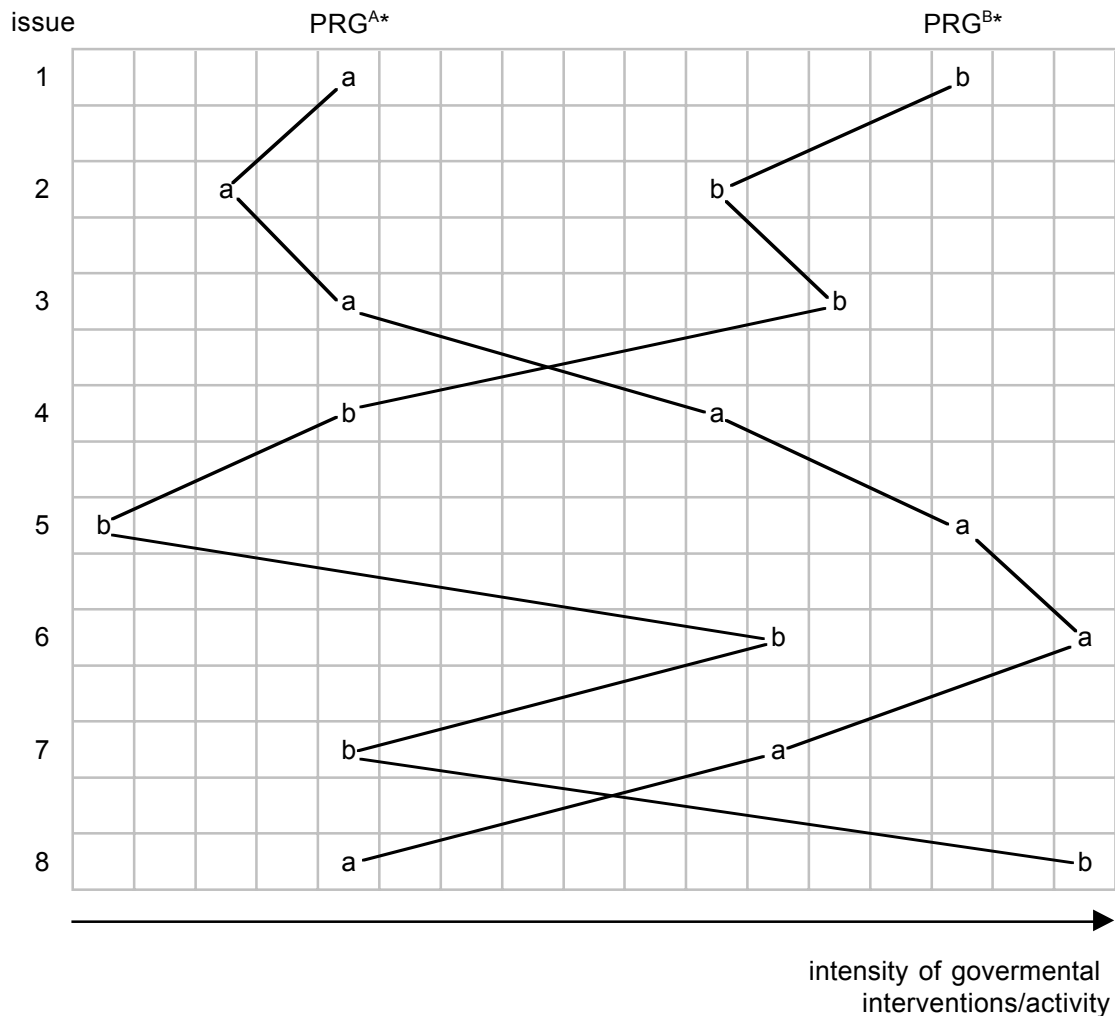
Each party is interpreted as a sort of enterprise which tries to maximize the utility of its members, especially the candidates (e.g., *Galeotti and Bretton*, 1986, *Jones and Hudson*, 1998). As their utility depends largely on their income, prestige and power as a member of parliament or government, 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; *Grossman and Helpman*, 1996). The party that finally wins the election has to stick to the concessions made during the election. Otherwise it would destroy the effectiveness of concessions and thereby give away its



most important instrument in future election races. In this paper, it is assumed that the winning party puts through the party programme  $PRG^P$  it offered on the election day.

**Fig. 1. Ideal party programmes of party A and party B**



Following Wittman (1973), 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

#### 3.2.1 Characteristics, motivation and structure of the voting population

Voters are the first group of addressees of programmatic concessions. In this paper, they 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*, 1998). Following the theory of expressive voting, it is assumed 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; *Brennan and Hamlin*, 1998; *Blais and Young*, 1999). This assumption is distinctly more consistent with the empirical observations than the often stated conviction that rational voters will abstain from voting (*Tullock*, 2000; *Kan and Yang*, 2001).

In addition, this paper does not follow the popular belief according to which voters are rationally uninformed. 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 politically relevant information. Much of this information is, however, 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). In addition, some of the information that an individual needs at work may prove to be politically relevant (e.g., *Frey and Pommerehne*, 1982). Furthermore, there are a number of policy issues, where detailed knowledge of the latter is privately valuable (e.g., *Congleton*, 1991).

In sum, voters can and will collect politically relevant information at zero costs in their every day life or for individual private profit. It can be assumed that this information is sufficient to give every voter an idea of the basic ideological position of the parties he can vote for (*Brennan and Hamlin*, 1998).<sup>3</sup> Those voters who do not have any politically relevant information beyond this are hereafter called uninformed. A substantial number of voters, however, have collected enough politically relevant information to be roughly informed about the parties' positions on major political issues. These voters will be called informed voters.

Uninformed voters can only take the basic ideological position of the parties into account when making their voting decision. If party A's ideological position is closer to their own, they will vote for party A, else they will vote for party B. Some uninformed voters are strongly predisposed in favor of one party while others' preferences are less strong. Following Coughlin et al. (1991), the individual voter  $j$ 's predisposition for a party is expressed by his individual utility 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 (*Grossman and Helpman*, 1996). All uninformed voters can be aggregated to one group of  $n_u$  individuals. Assuming the ideological bias within this group to be uniformly distributed between a left margin  $l_u$  and a right margin  $r_u$ , the number of uninformed voters who vote for party A is given by the following expression:

$$V_u^A = a_u n_u r_u \quad \text{where:} \quad a_u = \frac{1}{r_u - l_u}, \quad l_u \leq 0, r_u \geq 0, r_u > l_u \quad (1)$$

Like uninformed voters, informed voters have an ideological utility bias that influences their voting decision. In addition, however, they use the information about the political programmes they have collected. If  $b_j = 0$ , an informed voter  $j$  will vote for that one party whose

<sup>3</sup> Voters who do not even have enough information to differentiate between the ideological positions of the parties can neither engage in expressive voting, nor can they expect to increase their utility by choosing the party which better serves their aims. Thus they have no incentive to vote and can be expected to abstain from voting.

policy platform, if put into action, provides him with a higher utility (*Coughlin et al.*, 1990). The total utility he draws from voting for party A is given by the following expression:

$$U_j = U_j(PRG^A) - U_j(PRG^B) + b_j \quad (2)$$

His voting decision is thus determined by the sum of the utility differential from policy platforms and his ideological bias. 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 (2) takes on a negative value, voter  $j$  will give his vote to party B.

Though having the same primary arguments in their utility functions – i.e. income, prestige etc. – informed voters will differ in the weights they place on different political issues, depending on their individual preferences and current situation. Therefore the informed voters cannot be aggregated to one group which is internally homogenous with respect to their reaction to the parties' activities. Instead, the informed voters need to be disaggregated into a number of different groups. The utility of some informed voters depends primarily on one issue of the political agenda (*Congleton*, 1991). Informed voters who – following the structure of their utility function – base their voting decision predominantly on a single issue of the political agenda will hereafter be called dominant-issue-voters. All dominant-issue-voters who follow the same dominant issue are aggregated to one group. Numerous groups of dominant-issue-voters can be expected to exist within a society. Apart from these dominant-issue-voters, there are numerous informed voters who do not base their decision primarily on one political issue. Even though there may be gradual differences in the weights they place on different political issues, these voters will hereafter be regarded as one group (*Bischoff*, 2001).

For every single group of informed voters – regardless of whether they are dominant-issue-voters or not – the voting behavior can be modelled in the same way: The ideological bias is assumed to be uniformly distributed within the interval  $[l_i, r_i]$ . Consequently, the number of voters within such a group  $i$  who vote for party A is given by the following expressions (*Denzau and Munger*, 1986: 93):

$$V_i^A = n_i a_i [r_i + U_i(PRG^A) - U_i(PRG^B)] \quad (3)$$

where  $n_i$  = number of voters in group  $i$

$$a_i = \frac{1}{r_i - l_i}, \quad l_i \leq 0, r_i \geq 0, r_i > l_i$$

The greater the utility difference  $U_i(PRG^A) - U_i(PRG^B)$ , the more voters within group  $i$  vote for party A – for a given interval  $[l_i, r_i]$ .

### 3.2.2 Voters as addressees of political parties

#### 3.2.2.1 Voters' response to campaigning

Political parties can expect additional votes from a better image and appearance in public (e.g., *Lott*, 1991). This can be achieved through political campaigning (e.g., *Mueller and Stratmann*, 1994; *Palda and Palda*, 1998). In the model developed here, campaigning

changes the ideological bias of the addressees. The bias increases with campaigning efforts of party A. The consequent increase in  $r_u$  (in (1)) respectively  $r_i$  (in (3)) leads to an increase in the number of votes party A can expect in the election (*Denzau and Munger, 1986; Coughlin et al., 1990*). Campaigning efforts by party B have the opposite effect. All groups of voters – regardless of whether they are informed or uninformed – are susceptible to political campaigns. As there is no rivalry in consuming political campaigns, they are – other things being equal – more productive the more voters they reach.

### 3.2.2.2 The voters' response to programmatic concessions

Political parties can furthermore try to attract additional votes by making programmatic concessions to voters. Their effects will be discussed in detail below. For illustrative reasons, the following passage assumes that only party A makes concessions while party B remains passive. As illustrated above, there are three different types of addressees of concession within the voting population. Uninformed voters will not react to concessions as they do not observe them due to a lack of politically relevant information (e.g., *Congleton, 2001*). Hence concessions in favor of uninformed voters will not produce any gains in votes. Second, party A can make changes to its ideal party programme in those issues that represent a dominant issue for a group of dominant-issue-voters. This increases the latter's utility difference  $U_i(PRG^A) - U_i(PRG^B)$  and thereby leads to additional votes. Next to uninformed voters and dominant-issue-voters, informed non-dominant-issue-voters represent the third group of addressees of party A's programmatic concessions. These voters respond to concession in a similar fashion as dominant-issue-voters do. However, due to the absence of dominant issues, informed non-dominant-issue-voters will draw much lower additional utility from a given concession than dominant-issue-voters. Thus the number of votes party A can attract by making concessions to informed but non-dominant-issue-voters is small.

So far, this section has dealt with the – from the party's point of view – positive aspects of concessions. In most cases, concessions do not only have beneficiaries but at the same time place a burden on other members of society, who have to pay for the concession for instance via higher taxes or consumer prices. Some of the negatively affected informed voters will change their voting decision as a reaction to the concessions by party A because their utility differential  $[U_i(PRG^A) - (U_i(PRG^B))]$  is reduced by this burden (see (3)). They will abstain from voting for party A and instead vote for party B. In sum, concessions in favor of informed voters have two opposite effects. First, they increase the number of votes the corresponding party can expect. These gains are especially high if the addressees are dominant-issue-voters. At the same time, however, concessions expel a number of informed voters from voting for the concession-making party. This paper assumes that concessions addressing informed but non-dominant-issue-voters expel at least as many voters as they attract, while only concessions in favor of dominant-issue-voters will produce net gains in votes.

### 3.3 Interest groups

#### 3.3.1 Characteristics

Interest groups are the third type of agents in the process of political decision making next to voters and political parties. They are founded by individuals who have a common interest. The task of an interest group is to promote the interest of the underlying group of individuals (Olson, 1965: 5-9). Interest groups are assumed to use their means to maximize the gain in utility its members can acquire from influencing the political decision making process. Depending on their common interest, different issues of the political agenda are relevant for different interest groups. By comparing the positions of the two parties on the relevant issue, an interest group can identify the party, whose policy platform supplies its members with a higher utility. While some interest groups favor party A, others find the policy platform of party B more attractive. A rational interest group will support the preferred party in its election campaigns (e.g., Austen-Smith, 1987). This support can take the form of campaign contributions. In addition, interest groups can address the voters directly in their own campaigns (e.g., Jacobsen, 1985; Potters and Sloof, 1996). Like the parties' campaigns, their campaigns aim at convincing voters to vote for the favored party (e.g., Schneider and Naumann, 1982; Strömberg, 2001).

The amount of support party A can get from a certain interest group first depends on the difference in utility its members can get from  $PRG^{A*}$  in comparison  $PRG^{B*}$ . The higher this difference, the larger the degree of ideologically motivated campaign support – other things equal. Referring to Fig. 1, an interest group whose members are especially interested in issue 4 will give less support per member than the group whose interest is connected with issue 5. The amount of ideologically motivated campaign support, however, also depends on the closeness of the political race. An interest group will not give any support to the preferred party if the latter has either no chance of winning or will surely win the election. On the other hand, it can be expected to grant substantial campaign support to the preferred party if the electoral race is very close (e.g., Magee, 2002).

#### 3.3.2 Interest groups as addressees of political parties

Concessions to interest groups lead to additional utility for the interest group members. Provided the political race is not decided yet, both parties can be expected to make concessions in favor of interest groups. Their effects are very similar to those of concessions to dominant-issue-voters. First, a party can make concessions to interest groups that already prefer its current political programme. These concessions lead to an increase in the support granted by the interest groups and hence brings additional votes (e.g., Denzau and Munger, 1986). Second, concessions can address interest groups that favor the other party. In this case, the additional votes result from a decrease in support that the addressed interest groups grant the political opponent. The larger the sum of campaign support party A can attract, the more votes party A can expect – other things being equal.

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

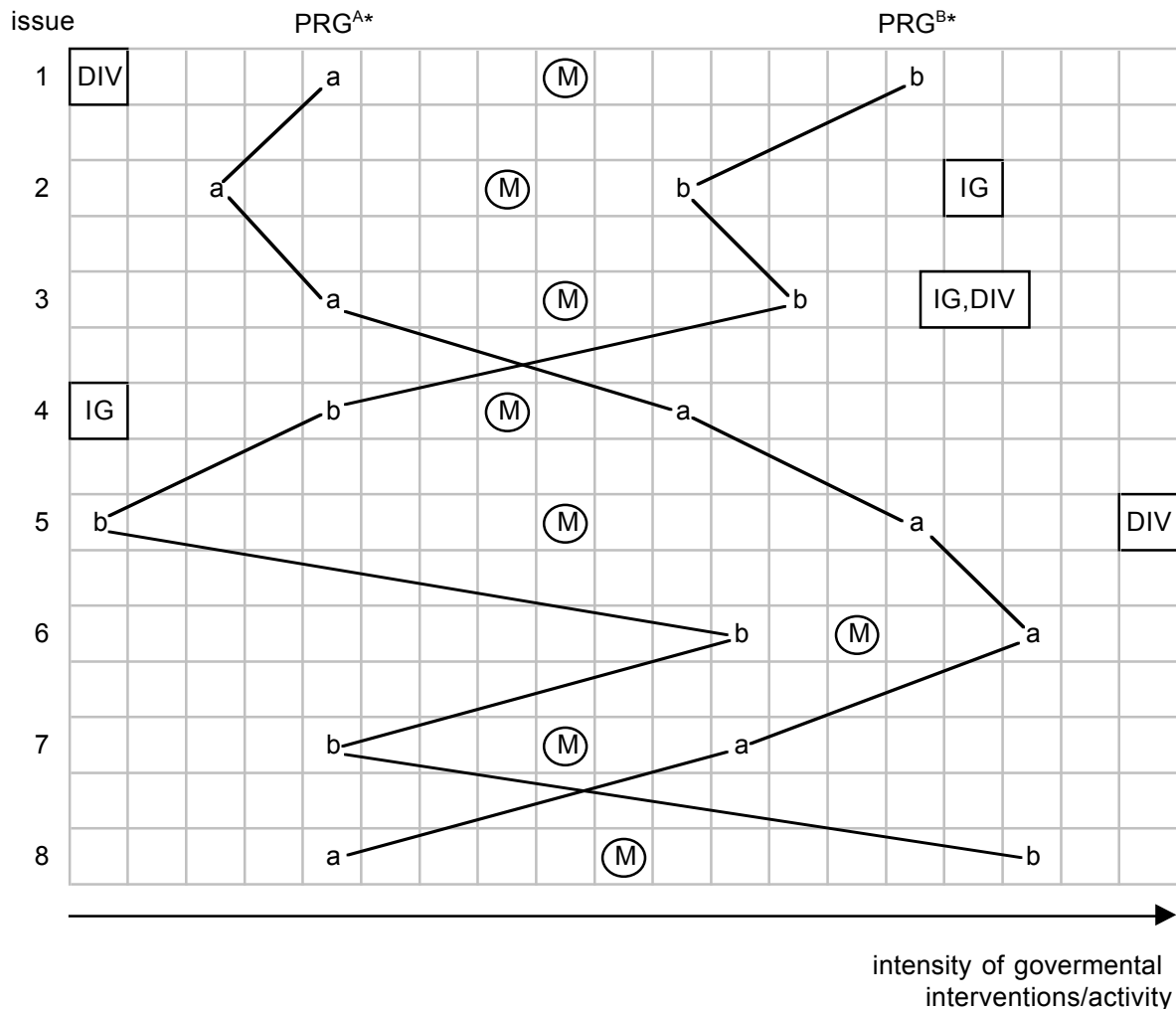
The interaction of voters, interest groups and political parties is best explained when interpreting the political decision making process as a market process. The voters and interest groups demand certain policies and the political parties supply certain policies. In exchange for favourable policies, parties receive votes directly from the addressed voters or through the interest groups' campaign support. As the number of voters and interest groups is very large, the individual voter and interest group takes the price – in this case the policy platforms and concessions – as given. The political parties on the other hand are small in numbers, in the current model there are only two parties competing for power. The political decision making process can thus be characterized as a unilateral duopoly.

As stated in section 3.1, the primary objective of both parties is to win the election. Their instruments are campaigning and programmatic concessions. As any concession causes a loss in utility among party members, each party tries to win the election with as few concessions as possible. In other words, each party wants to minimize the ideological costs of winning the election. These costs are zero if a party manages to reach political power without having to make any concessions. To gain further votes without making concessions, the party can spend its own resources on campaigning and count on interest groups' ideologically motivated campaign support. On the other hand, votes are lost due to campaigning by the opposing party and ideologically motivated campaign support that the latter gets from interest groups. As the financial means of both parties as well as the level of ideologically motivated campaign support are limited, the parties' ability to compete for votes without making concessions is also limited. In the beginning of most real-life election races, neither party can be sure to win the election just by offering its ideal party programme. Consequently, parties can be expected to make concessions. The resulting movement in policy platforms will be analysed in detail in the following passages.

The distribution of votes that arises after all campaigning means and ideologically motivated campaign support is spent will serve as the starting point of the analysis. Beyond this point, both parties can only attract additional votes if they deviate from their ideal party programme by making programmatic concessions. The starting point of party competition is depicted in figure 2. Following the spatial theory of voting, the median positions on all issues are assumed to be located between  $PRG^{A*}$  and  $PRG^{B*}$ . 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. A similar argumentation holds for the interest groups. Many politically active interest groups represent only a very small part of the electorate or society. Large parts do not support, in some cases even oppose their claims. And even encompassing interest groups are regularly formed by those members of society who place a very strong emphasis on the 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 2, only the issues 1 to 5 are occupied by an interest group and/or

group of dominant-issue-voters. The preferred positions are denoted IG respectively DIV. The particular positions are randomly chosen for illustrative reasons and not meant to resemble any real-world pattern.

**Fig. 2. Starting point of party competition**



The presentation of voters' preferences in Figure 2 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 2. Second, as illustrated above, the figure cannot capture interre-

lations 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.

The large parties in modern democracies do not represent one particular constituency of voters but recruit their members from many different parts of society. The binding factor is the common ideology rather than the common socio-economic background. Consequently, dominant-issue-voters and interest groups 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. In other words, farmers demand higher subsidies than the parties are willing to give, teachers demand higher wages and better working conditions, firms demand lower corporate taxes, environmental groups demand stricter environmental regulation and so forth.

#### 4.1 The direction of movement in policy platforms

In the model developed in this paper, a party will grant concessions only to those groups of addressees where the party can expect a net gain in votes in return. Thus concessions must be restricted to interest groups and dominant-issue-voters. Non-dominant-issue-voters – regardless of whether they are informed or uninformed – will not receive any concessions (see section 3.2.2.2). Concessions to interest group which support a group of dominant-issue-voters produce a double dividend. They do not only bring votes among the group of dominant-issue-voters, but at the same time increase the amount of campaign support for the concession-making party or reduce the campaign support for the political opponent. Thus a group of dominant-issue-voters will – other things equal – get higher concessions if it is supported by an interest group.<sup>4</sup>

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<sup>4</sup> This raises the question whether interest groups which do not promote the interest of any dominant-issue-voters will receive any concessions at all. Keeping up the assumption of equal vote productivity of the campaign support of all interest groups, these interest groups should not get any concessions. Following this logic, especially trade associations whose members are mostly firms which do not have the right to vote should not be addressees of the programmatic concessions. This hypothesis is heavily contradicted by real-life observations, where the members of trade associations receive substantial concessions (e.g., *Schneider and Neumann*, 1982, *Potters and Sloof*, 1996). This empirical evidence suggests that these interest groups can compensate for the missing dominant-issue-voters. One possible explanation is the following: Interest groups which promote dominant-issue-voters must use part of their campaign support to inform these voters about the concessions. The other interest groups can concentrate 100 % of their support on influencing large groups of voters. Therefore the average vote-productivity of their concessions is larger (see Section 2.3.2).



**Fig. 3. Programmatic concessions by the first-moving party A**

would like to leave the corresponding positions unchanged. However, the concessions towards dominant-issue-voters and interest groups can be expected to create a budgetary shortage and/or welfare losses. As a consequence, party A is not able to stick to its ideal positions on all other issues. Instead, it has to reduce the intensity of governmental intervention or expenditures in some of these issues. Here,  $PRG^A$  takes on a position to the left of  $PRG^{A*}$  in these issues. Regarding all changes in positions, party A's first move does not lead to convergence. In some cases the platform approaches the median position (i.e. in issue 2, 4 and 6), in other cases it moves away from the latter (i.e. in issue 1, 5 and 8). In issue 3, party A even moves across the median position. Similarly,  $PRG^A$  is sometimes closer (i.e. in issue 2, 3, 4 and 6), sometimes further away from  $PRG^{B*}$  than the ideal  $PRG^{A*}$  (i.e. in issue 1, 5 and 8).<sup>5</sup>

When the turn comes to party B, it faces the same incentives as party A. As depicted in figure 4, party B grants concessions to interest groups and 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. And just like party B, it is forced to reduce the emphasis laid on the other, unoccupied issues.  $PRG^B$  denotes the new policy platform. It approaches the median position and  $PRG^A$  in issues 1, 5 and 8, while moving away from them in issues 2, 3, 4 and 6.

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 only occurs if the party whose initial position is closer to the policy demanded by dominant-issue-voters and interest groups 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 interest group or dominant-issue-voters. If the opposite is true, the policy positions will systematically diverge during party competition. In sum, the pattern of movement in policy platforms derived above does not have any common features with the concept of convergences 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. As uninformed voters and informed non-dominant-issue voters place no respectively a comparatively low emphasis on the single issues, they do not belong to the group of voters a party has to account for when deciding about its policy platform. The relevant group of addressees are the dominant-issue-voters, as only these respond directly to concessions on a certain issue. For each issue, there exists a median (dominant-issue) voter. Without ideological costs and credibility

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<sup>5</sup> In some case, there may be issues where both sides of the scale of preferences are occupied by an interest group and/or dominant-issue-voters. For instance, an environmental group demands stricter while corporate interest groups demand the exact opposite. In this case, parties can react in two ways. First, they can direct concessions to that end of the scale where they net gains in votes are positive; that is identify the stronger group and move in their direction. Second, they can try to split the issue into two issues and satisfy both interests partially. In the chosen example, they may increase the environmental standards to meet the interest of the environmental groups and at the same time make exceptions to the general standards for some key industries. This pattern can e.g. be observed when the German "Ökosteuer" was introduced.

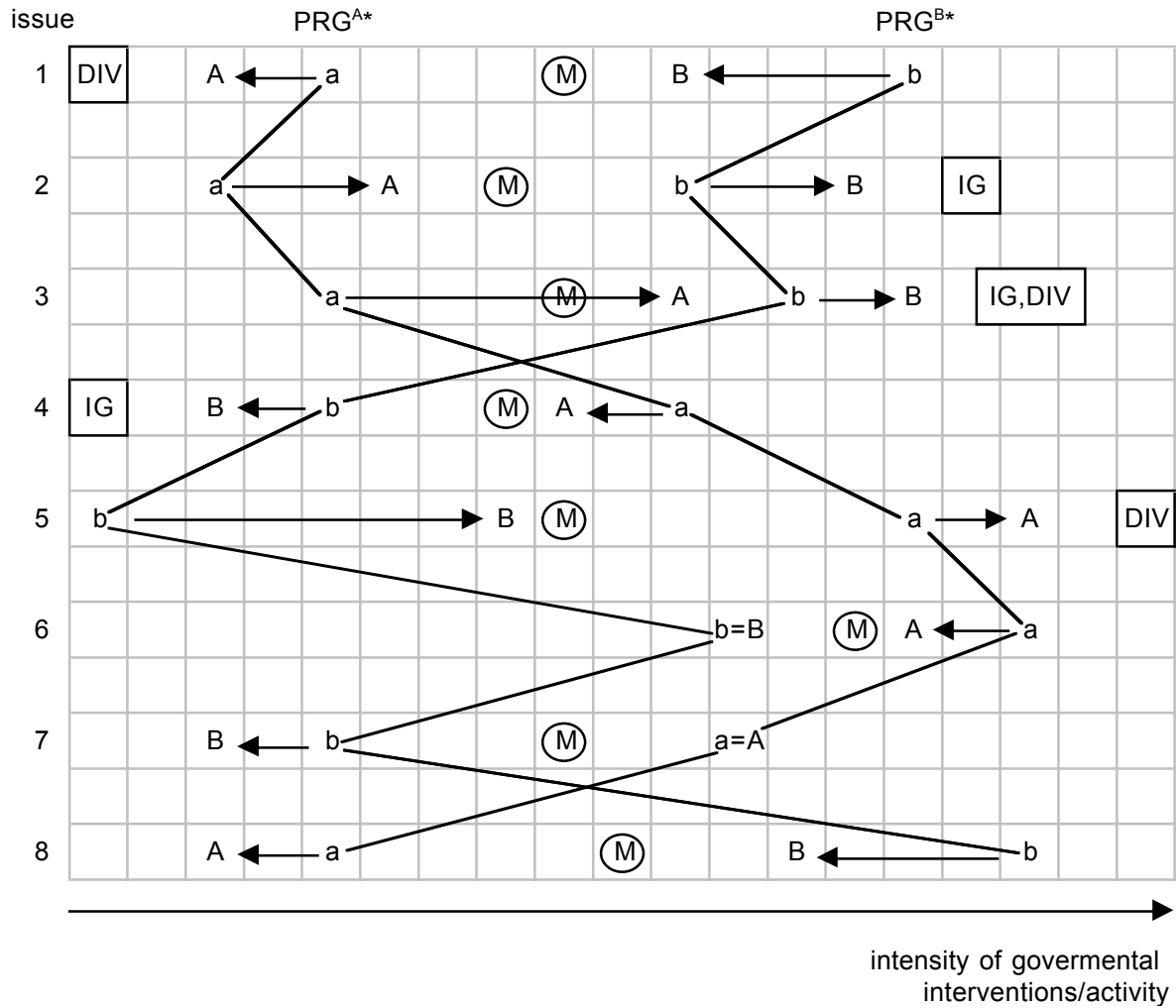
problems, both parties will offer a policy platform  $PRG^A$  respectively  $PRG^B$  which consists of the bliss points of these median voters. Accounting for ideological costs and possible credibility problems, the  $PRG^A$  and  $PRG^B$  will still approach this vector and the party closer to it will 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 erroneous (misleading?) for two reasons.

First, as discussed above, the dominant-issue-voters' positions on their dominant issue cannot be interpreted about bliss points, as 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 an ideological 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 now offers 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.

Second, there are a number of mechanisms which restrict the parties' moving their policy platforms. For once, the lacking credibility 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 informed voters who are not addressed by the concessions, results in diminishing and eventually negative returns in votes from increasing concessions. This will be illustrated in more detail in the following section 2.

**Fig. 4. Concessions by party B as a reaction to party A's concessions**

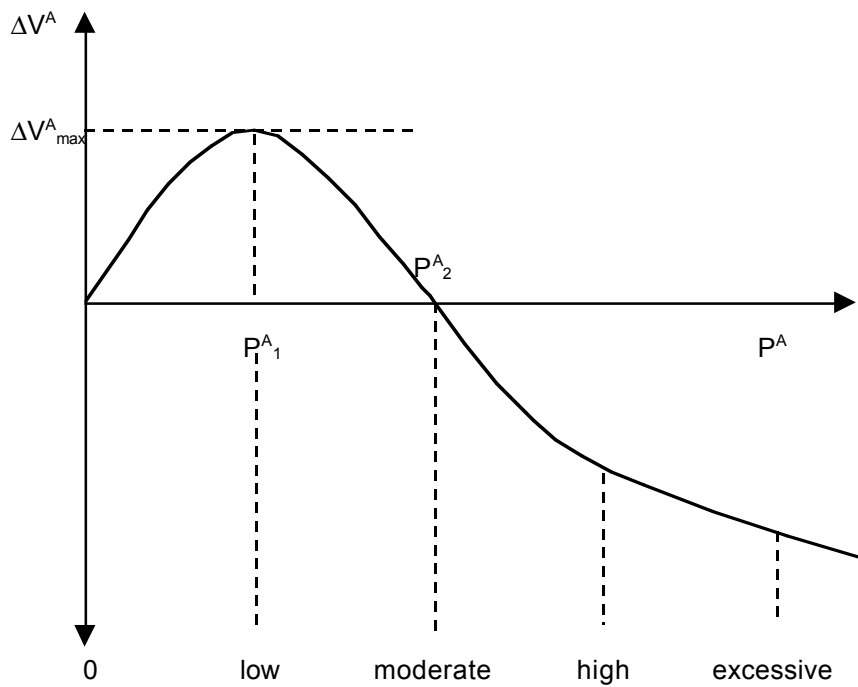


#### 4.2 The magnitude of movement in policy platforms

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, it is necessary to interpret them as a cardinal measure. Hereafter, they will be measured by the total rents granted to the addressees of concessions. The following illustrations take the same starting point as depicted in figure 2, where  $P^A = 0$  and  $P^B = 0$ . Again, assume that party A is the first to move. As shown in section 3.2, its concessions increase the utility differential  $U_i(PRG^A) - U_i(PRG^B)$  and thereby bring additional votes for party A. Following standard theory of utility, the gains in utility can be expected to decline with increasing concessions. Consequently the marginal gains in votes party A can attract from increasing concessions will decline. A similar course of argumentation can be applied to show that concessions in favor of interest groups will suffer from declining marginal gains in votes. Standard theory of utility

simultaneously suggests that concessions produce increasing marginal losses in votes among those informed voters who do not benefit from them. Figure 5 visualizes the relationship between the sum of concessions of party A and the additional votes won  $\Delta V^A$ . Initially, an increase in  $P^A$  attracts more votes. The net gains reach a maximum of  $\Delta V^A_{max}$  at  $P_1^A$ . For values of  $P^A > P_2^A$ , party A ends up with less votes than it had at the starting point. As long as  $P^B = 0$ , party A will at most make concessions worth  $P_1^A$ .

**Fig. 5. Additional votes from party A's concessions for  $P^B = 0$**



If party B is next to move, it can restore the initial distribution of votes or even take the lead lost by granting concessions itself. In order to take the lead again, party A has to make additional concessions. And again, party B can equalize or overtake. 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:<sup>6</sup>

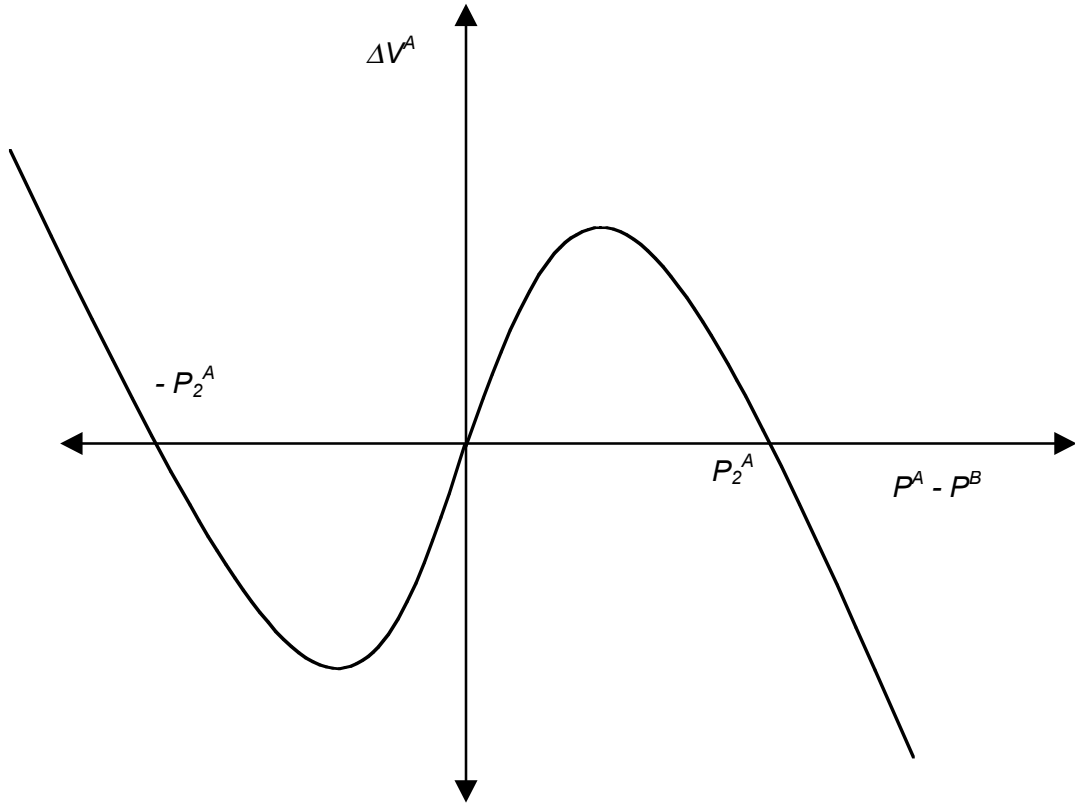
$$\Delta V^A = -\Delta V^B = f(P^A - P^B) \quad P^A, P^B \geq 0 \quad (4)$$

Figure 6 visualizes the relationship between  $\Delta V^A$  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 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

<sup>6</sup> This result holds under the assumption that concessions do not increase the number of abstinent voters in an asymmetric way.

of the election does, 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.

**Fig. 6. Additional votes from party A's concessions for different values of  $P^A - P^B$**



In order to make predictions concerning the level of concessions the parties choose in this constellation, a game-theoretic approach is taken. As neither the sequence nor the number of moves in party competition is predefined, it is impossible to apply a model of sequential moves. Below, the party competition is therefore modelled as a one-shot game of simultaneous moves (e.g., *McKelvey and Ordeshook*, 1976; *Alesina*, 1988). This game has no pure-strategy equilibrium. Instead, rational parties will choose a mix of pure strategies. Given the functional form of (4), the correspondent mix of pure strategies depends on the utility function, especially the severity of policy preferences, of the parties.

Consider the following utility function of party A:

$$U^A = \begin{cases} 1 - c_A P^A, & \text{if } \Delta V^A > 0 \\ d_A - c_A P^A, & \text{if } \Delta V^A = 0 \\ -c_A P^A, & \text{if } \Delta V^A < 0 \end{cases} \quad (5)$$

The parameter  $c_A$  represents the ideological costs suffered per unit concession. A lexicographic utility function demands that  $c_A < d_A/P_{max}^A$ . The parameter  $d_A$  ( $0 < d_A < 1$ ) expresses party A's utility from a situation where  $\Delta V^A = 0$  and the winner of the election race is determined by a random decision of a few indecisive voters. The higher  $d_A$ , the higher the corresponding utility in comparison to party A's utility drawn from a clear victory which stems from

having chosen the superior strategy. If  $d_A = 0.5$ , the party is indifferent between the two situations. In other words, the value of  $d_A$  depends on the valuation of exogenous uncertainty concerning the voters' behavior and endogenous uncertainty concerning the opponent's choice of policy platform. This in turn 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.

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 on the bottom of figure 5. Consequently the payoff matrix can be put up as shown in table 1.

**Tab. 1: Payoff matrix of party A**

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

Provided a Nash-equilibrium exists, it is given if the following conditions are satisfied:

$$\frac{\partial U^A}{\partial s_q^A} = 0, \quad s_q^A \geq 0 \quad \forall q = 0, 1, \dots, 4; \quad \text{and} \quad \sum_{q=0}^4 s_q^A = 1 \quad (6a)$$

$$\frac{\partial U^B}{\partial s_q^B} = 0, \quad s_q^B \geq 0 \quad \forall q = 0, 1, \dots, 4; \quad \text{and} \quad \sum_{q=0}^4 s_q^B = 1 \quad (6b)$$

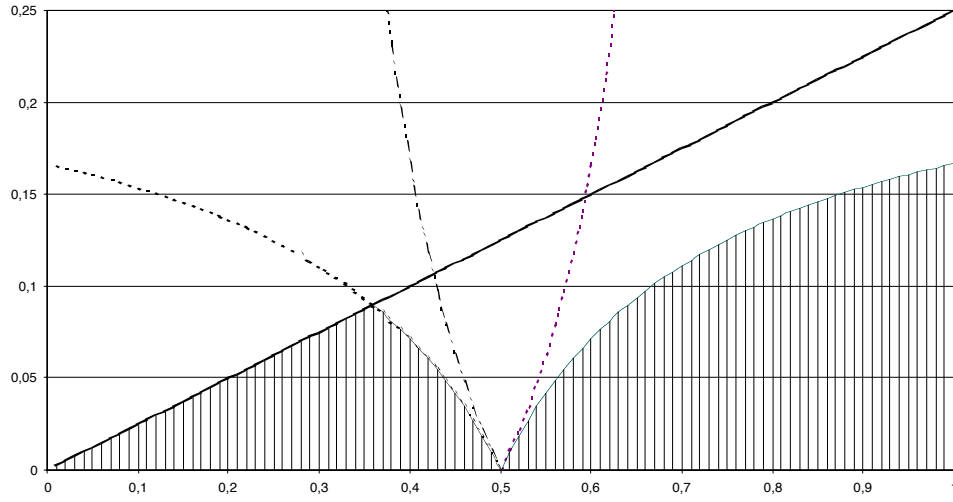
where  $s_q^A$  = share of pure strategy  $q$  in the mix of party A.

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

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, 2000: 66-72).

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 (6b). Thus the optimal mix of party A depends on the parameter values  $c_B$  and  $d_B$  of the political opponent. The fact that  $s_q^A, s_q^B \geq 0 \forall i$  and  $d_A > c_A P_{max}^A = c_A/4$  restricts the combinations of  $d_B$  and  $c_B$  for which a Nash equilibrium exists. In figure 7, the area of valid combinations of the parameter values is marked in grey.

**Fig. 7. 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:

$$s_0^A = 0.5 - s_3^A, \quad s_1^A = 0.5 - s_2^A, \quad s_1^A = s_3^A, \quad s_4^A = 0 \quad (7)$$

For all other cases, the Nash-equilibrium mix of strategies is given by the following expressions:

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

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

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

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

$$s_4^A = 0. \quad (8e)$$



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 ( $q = 0$ ). In the special case where  $c_B = 0$  and  $d_B \neq 0.5$ ,  $s_0^A = s_1^A = s_2^A = s_3^A = 1/4$ .

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  $c_B$  ( $c_A$ ):

$$E[P^A] = \frac{3}{2}c_B - \frac{(c_B)^2}{(2d_B - 1)}, \quad E[P^B] = \frac{3}{2}c_A - \frac{(c_A)^2}{(2d_A - 1)} \quad (9)$$

The expected concessions of party A (B) are higher, the stricter the policy preferences of its political opponent party B (A) are. As the policy preferences of the political opponent become stricter, the extreme strategies (no or high concessions) are chosen less frequently while the frequency of choosing low and moderate concessions increases (see (8a)-(8d)). 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 (1973).

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. Conclusion

The preceding sections presented a theoretical model of the political decision making process in which two parties compete for political power in a multidimensional policy space with a heterogeneous electorate and politically active interest groups. Starting from their ideologically motivated ideal party programme, parties make programmatic concessions to dominant-issue-voters and interest groups in exchange for additional votes. Both parties make concessions to groups of dominant-issue-voters, regardless of which party the majority of voters within this group initially preferred. Similarly, interest groups receive concessions from both parties even though each interest group supports only one of them actively. At the same time, both parties are forced to reduce the intensity of governmental intervention or expenditures on those issues which are not occupied by interest groups or dominant-issue-voters. The programmatic movement towards interest groups and dominant-issue voters as well as the reduced emphasis on other issues imposes costs on all members of society who do not belong to the addressees of concessions. Essentially, party competition therefore causes a

redistribution of rents in favor of those parts of the society which bring additional votes and away from the other parts.

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 has less to offer for dominant-issue-voters and interest groups tries to catch up on (or even overtake) the opponent. The party that 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 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 preferences have no influence on the chosen level of concessions. This result stands in contradiction to the conclusion drawn by e.g. Wittman (1973). In addition, the expected concessions of a party are higher the further away the other party's subjective *ex ante* chance of winning is from a fair 50:50 chance.

Though accounting for a number of major characteristics of the political decision making process, the model presented here still contains a number of simplifications. First, it does not allow for more than two parties unless these form two stable alliances. Second, the dichotomy of informed and uninformed voters is too strict. In reality, many voters will be positioned between these categories, being informed only about parts of the political agenda. Third, the game-theoretical model of party competition does not capture the complexity of real-life election races. By artificially reducing the number of moves in policy platforms, the effects of timing is thus neglected. Moreover, the model assumes that no exogenous factors, such as constitutional rules or budgetary restriction, imposes any stricter limit to the ability of political parties to make concessions. Despite these shortcomings, however, this paper presents a comprehensive and differentiated model of the political decision making process which, in the opinion of the author, may serve as a theoretical basis for future research in this field.

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