

Chapter 2

The Evolution of Models of Party Competition

2.1 Introduction

This chapter describes the development within the field of spatial theory for analyzing party competition. I chose a historical approach, following the major developments within the area of spatial modeling to present the separate assumptions and components of the model in the order as they were introduced in the literature. The starting point is the standard Hotelling-Downs model (Downs 1957a; Hotelling 1929) and many of that model's assumptions are adapted in the model that is presented later on. The most important extension to the Downsian model was the introduction of a valence term, as conceptualized by Stokes (1963), which will be described in detail in the second section of this chapter. As we move on to the more recent research on spatial modeling, contributions span a wider range, from specifications of the valence term over the separability of preferences in multidimensional policy spaces to modeling activist influence on parties' policy positions. Given the richness of the literature, only those contributions will be considered, that are relevant with respect to the development of our model.

2.2 The Hotelling-Downs Model

The idea of considering party competition in spatial terms was introduced by Hotelling (1929). He applied the logic of spatial distances between customers and a shop along a street to more abstract preferences of buyers on attributes of a product. Assuming that buyers rather go to the shop that is located closer to their home, preferring shorter walks, he asked for the optimal shop locations on an exemplary street if both shop owners want to maximize their number of customers. If the potential customers' homes are distributed uniformly along the street, Hotelling shows that in equilibrium, the two shops will be located next to each other halfway

on the street. Similar to the location of buyers' homes along the street and the position where the shops are located, he assumed that consumer preferences can be described in spatial terms as being distributed along a dimension. For example, consumers hold preferences on attributes of a product, e.g. about the sourness of cider. Each buyer has a most preferred position on this abstract dimension of sweetness to sourness of a cider, just as their homes are located somewhere along the exemplary street. Accordingly, they prefer ciders with a degree of sourness that is closer to their ideal point on this abstract dimension, just as they prefer a shop that is located at a shorter walk from their home. The model predicts that competing sellers are going to offer very similar ciders that differ only slightly in their degree of sourness. More specifically, they will tend to offer ciders with that degree of sourness that is preferred by the median client so that it is compatible with the taste of as many buyers as possible in order to maximize sales. Hotelling already envisaged this model to be applicable to political competition as shown in this passage:

The competition for votes between the Republican and Democratic parties does not lead to a clear drawing of issues, an adoption of two strongly contrasted positions between which the voter may choose. Instead, each party strives to make its platform as much like the other's as possible. Any radical departure would lose many votes [...]. Real differences, if they ever exist, fade gradually with time though the issue may be as important as ever. (Hotelling 1929, p. 54f)

Except for this rather anecdotal observation, whose validity might be questioned from today's perspective, the economist Hotelling did not become more explicit on political competition. The next appearance of a spatial model in the area of political science was in Duncan Black's (1948) analysis of equilibrium points in committee voting. This paper takes up the idea of voters having single-peaked preferences in a policy space, yet it does not analyze the competition on the supply side of policy proposals as Hotelling's original paper suggested. This idea was only picked up about another 10 years later by himself (Black 1985, first published in 1958) and by Anthony Downs (1957a,b).

In his seminal work *An Economic Theory of Democracy* Downs set up a framework in which voters act rational and parties seek to win periodic elections in a democratic plurality system. The governing party is assumed to act with "unlimited freedom of action" (Downs 1957a, p. 12), at least economically in terms of taxes and spendings or privatization and nationalization. Downs asks for the most efficient way for a rational party to win the election in this setting. His main focus was to present an approach that explains government decision-making and the reasons why governments actually provide social welfare without relying on normative reasons (Downs 1957b, pp. 135–136). The model he developed constituted the origin of a large strand of research that followed in this tradition.

Some of Downs' assumptions should be discussed in more details here, since they are relevant for the model presented later in the book, while others will be explicitly weakened or questioned. First, in Downs' words, "Each political party is a team of men who seek office solely in order to enjoy the income, prestige, and power that go with running the governing apparatus" (Downs 1957b, p. 137).

This clearly indicates that candidates and parties are assumed to be purely office-seeking and have no policy motivation. The assumption is weakened by many works that followed by assuming e.g. additional utility gains by policy-motivation of candidates (e.g. Roemer 1997, 2001; Smirnov and Fowler 2007; Wittman 1977). Yet, a large share of literature relies on the original assumption of Downs and thus agrees with the definition of office-seeking parties.

The next major assumption of the model is rationality of all actors. At least for parties this was already implicitly stated in the assumption of office-motivation, and he explicitly assumes rationality for voters as well. For voters, this means, again in the words of Downs, that “each of them views elections strictly as means of selecting the government most beneficial to him. Each citizen estimates the utility income from government action he expects each party would provide him if it were in power in the forthcoming election period [...]” (Downs 1957b, p. 138). Acknowledging that decision processes may be much more complex than this simple assumption implies, Downs compares his assumption of rational voters to the economists’ *homo economicus*, by calling the average citizen a *homo politicus* (Downs 1957a, p. 7). Furthermore, in order to “render it politically meaningful”, Downs assumes single-peaked preferences of voters (Downs 1957b, p. 142), which furthermore requires that voters agree on a common dimension of the policy space on which policy proposals can be ordered such that individual policy preferences are unimodal.

Downs’ furthermore assumes there to be imperfect information, both on the side of the voters and the parties. This is a quite realistic assumption, since assuming the opposite would imply that e.g. every voter could perfectly calculate the benefits she would receive from the policies each party would pay her, which is impossible. Even if some voters are quite well informed about politics, there will always be citizens that care less about politics and would not pay the costs to get informed. There may also be citizens who are not sure what the most beneficial policy would be for their situation, even if they knew about each parties’ policy offer, just because they are lacking e.g. the economical knowledge. On the other hand, assuming perfect information on the side of the party would imply that they know about the preferences of each and every citizen, which is a quite impossible scenario in large scale elections. Furthermore, this would imply that parties knew about the median voter’s positions, which would allow them to always pick this superior position in the first place.

Uncertainty is thus not only a realistic assumption, it is also a necessary assumption to ensure the model of party competition to work in an environment with rational parties and voters. Downs (1957a) discusses the implications of this assumption at length and argues that the emergence of ideology is a consequence of uncertainty. On the side of the voters, if parties’ policies correlate with ideology, then ideology is an efficient means to vote rationally without having to be informed about all the exact policy offers concerning all possible issues. Parties, on the other hand, are happy to accommodate this demand by inventing ideologies and proposing policies that are in line with the ideological standpoint chosen. However, there are some restrictions to party ideologies, since the voters’ uncertainty also demands for credible and trustworthy parties that ensure them planning reliability. Thus,

“once a party has placed its ideology ‘on the market’, it cannot suddenly abandon or radically alter that ideology without convincing the voters that it is unreliable” (Downs 1957b, p. 142). This explicitly precludes leapfrogging of party positions on the ideological scale as a profitable party strategy, since voters would not repeatedly vote for unreliable parties in periodic elections.

In Downs’ model, political decision-making respectively the supply of parties’ policies depends on the expected voting behavior of voters and the policy supply of the other parties. From the above mentioned assumptions we can briefly summarize the setup in which the formal game of policy trading for votes takes place. Every voter receives an utility income from the different government actions the competing parties advertise to implement via their policy standpoints. Furthermore, voters’ ideal points and parties’ standpoints are assumed to be located on an ideological left-right-scale, which correlates with parties’ concrete policies on different issues. The voter’s ideal point on this scale is the point that provides her with maximal utility and utility decreases to both sides due to single-peaked preference profiles. Being a rational actor, she then votes for the party whose actions she expects to pay her the highest utility income. Hence, she votes for the party whose position is closest to her own. Parties can adjust their positions on the scale, but they cannot undertake dramatic ideological shifts or leapfrogging, since this implies credibility losses.

In this setup, Downs asks for the optimal behavior of parties in terms of vote maximization. To evaluate party strategies, he defines a ‘political equilibrium’ as a situation in which no party has an incentive to move its ideological position given the positions of the other parties and no new party can successfully enter the political arena (Downs 1957b, p. 145). The existence and configuration of such equilibrium points depends on the one hand on the electoral system (proportional representation or plurality), and on the other hand on the distribution of voters’ ideological standpoints.

In plurality systems, Downs hypothesizes that there will be only two parties in equilibrium, because “small parties tend to combine until two giants are left” (Downs 1957b, p. 145) in order to maximize their chances of getting into office. Furthermore the model predicts that those two parties’ ideological standpoints will move towards the center of the electoral distribution, converging at the median voter’s position. This is in line with the result of Hotelling’s (1929) and Black’s (1948, 1985) work and became known as the *median voter theorem*. By introducing the possibility of voter abstention in case of alienation due to too large distances between voters and parties, Downs shows that the model only predicts convergence of both parties’ positions if the voters’ ideal points are approximately normally distributed. However, if the voters’ distribution is polarized and voters may abstain due to alienation, the two parties may maximize their political support at diverging ideological positions. In systems with proportional representation, Downs hypothesizes that the only limit to the number of parties is the number of seats that are to be filled. The exact number of parties may vary between societies and different points in time since it depends on the empirical distribution of voter ideal points. According to Downs at each mode of the voters’ ideal point distribution a

new party may form and this process continues “[...] until the distribution of voters is ‘saturated’ - until there is not enough ideological ‘room’ between existing parties to support others significantly different from them” (Downs 1957b, p. 145), yet a formal proof of this supposition is still lacking.

Thus, the predictions of the Downsian model concerning the number and location of parties on an ideological dimension are more differentiated than Hotelling’s (1929) model suggested. Only in the case of a plurality system with an approximately normally distributed electorate in terms of ideological ideal points, the model predicts an equilibrium configuration in which only two parties exist, and their ideological positions converge at the center of the electoral distribution. In case of proportional systems and/or polarized electorates, the number as well as the position of parties in equilibrium depends on the empirical shape of the electorate’s ideal point distribution (if we allow for voter abstention). Downs’ work had large impact on subsequent research in party politics. The model became the standard baseline model for various lines of research analyzing political competition. Of course the prediction of convergence of party positions towards the median voter in a two-party system provoked many proposals for modifications in order to make the model fit empirical observations of diverging party positions. E.g., scholars departed from the assumption of deterministic voting and instead modeled vote decision as being probabilistically linked to the function of their preferences to yield it more realistic and find analytical solutions for equilibria in multidimensional policy spaces (for example Enelow and Hinich 1989; Hinich 1977; Lin et al. 1999). Hinich showed that the introduction of such a stochastic component alters the equilibrium configuration from the median to the mean, which became known as the *mean voter theorem* (Hinich 1977). A summary of how changes in other original assumptions of Downs can lead to the prediction of diverging equilibria is given by Grofman (2004). In the following, one of the most influential extensions to the standard model is presented, namely the introduction of a non-policy related valence term.

2.3 Models Including Valence

Only a few years after the publication of Downs (1957a,b), Donald Stokes published a major critique on the Hotelling-Downs model (Stokes 1963). He very well acknowledged the valuable contribution of the model, however, he asked for a review of the original axioms, namely the axioms of unidimensionality, fixed-structure, ordered dimensions and common reference. His critique was thus focused on the type of dimensions that span the policy space as well as on the question whether there exists a common policy space for voters and parties in the first place.

Although the questioning of the axiom of a common policy space is reasonable, it caused less debate than the other points of his critique. The main argument of Stokes against a common policy space is that voter behavior might not depend on the true position of a party along an ideological dimension, but rather on the position where the electorate *perceives* the party to be located (Stokes 1963, p. 375). Research on

the link between parties' true policy positions and the electorates' perception of those became a relevant topic within the literature on party competition and voting behavior (e.g. Adams et al. 2011; Merrill et al. 2001; van der Brug 1999), but also in the area of scaling methods (Aldrich and McKelvey 1977; Hare et al. 2015). Yet the assumption of a common policy space prevails within the literature on spatial party competition, and the link between true and perceived positions is rather seen as a measurement problem. This perspective is also chosen here, and thus a detailed discussion of the topic is delayed to the empirical part of the book.

Stokes' furthermore criticized the assumptions concerning the number and structure of policy dimensions. He claims that political conflict may not always be reducible to one single dimension. In many countries, he argues, party support does not only depend on positions along a socio-economic or class-based dimension, but there is additionally a salient religious or ethnic dimension of conflict, on which parties and voters take standpoints that are not correlated to the positions on the socio-economic dimension, as for example in France (Stokes 1963, p. 370f.). As a consequence of recognizing that there may be more than one single dimension to span the policy space, Stokes questions whether there is a stable time-invariant structure of the dimensions. Since Downs assumed the policy space to be one-dimensional in the first place, his model does not provide answers on how to model the structure of a multidimensional space.

Even more important than that, and this is what Stokes' critique became most known for, is that he questioned the order of the sets of alternatives along one dimension. For the dimension to be meaningfully interpreted in spatial terms, there need to be at least two distinct policy proposals, where the voter can take any position to either side of or in between those proposals. Yet he argues that "many of the issues that agitate our politics do not involve even a shriveled set of two alternatives of government actions" (Stokes 1963, p. 372). As an example, he mentions the issue of corruption in US politics that was salient at that time due to some events within the Democratic party, but the example easily generalizes to different nations and contexts. Neither the Republicans nor the Democrats promoted the standpoint of being in favor of corruption. Rather, parties as well as voters take identical standpoints at one end of the scale, being against corruption and demanding virtue in government. The logic of the spatial model is not going to work on this dimension.

Therefore, Stokes claimed that we need to differentiate between *position* issues and *valence* issues. Position issues are those that provide for a variety of different standpoints the voter can hold and parties can propose. This description corresponds to the kind of dimensions Downs and Hotelling had in mind when specifying their models of spatial competition, as they implicitly assumed that parties as well as voters are distributed along an ordered set of alternatives that define the dimension. Valence issues, on the other, are "those that merely involve the linking of the parties with some condition that is positively or negatively valued by the electorate" (Stokes 1963, p. 373). As in the example of the corruption issue, competition is not about proposing different standpoints regarding corruption, e.g. different degrees of being in favor of or against corruption. For valence issues, competition is rather

about strategically choosing and promoting dimensions that the own party is very positively connected with or the opposing party is very negatively connected with among the electorate, as was the case with the Democrats and corruption at that time.

In a later publication, Stokes was more concrete by painting a more differentiated picture of the content of valence (Stokes 1992). According to that, the content of valence is first of all shaped by the valuation of different goals or states of the world by the electorate (Stokes 1992, p. 147). Having a good economy might always be one of the most important goals, but other goals' priority might change over time, e.g. internal order or a healthy environment. Second and third, valence politics consists of qualities of parties or leaders and symbols of success and failure (Stokes 1992, p. 147). With their specific content and structure, valence issues do not fit the standard Downsian model. Therefore Stokes suggested that the spatial model should be reformulated in order to account for those two distinct types of dimensions by treating "as explicit variables the cognitive phenomena that the prevailing model removes from the discussion by assumption" (Stokes 1963, p. 376).

Subsequent research in the field responded to that suggestion by presenting spatial models that combine a valence term with spatial distance in the utility functions of the voters. In that line of research (Grosseclose 2001) presented a model that additively combined a valence term with spatial distance in the voters' utility function. He showed that if one candidate has a valence advantage over the other in a two party competition game, the Downsian equilibrium outcome at the median policy position does not apply. Instead, the lower valence candidate moves away from the center, whereas the candidate with the valence advantage adopts a more moderate position than the opposition candidate. This is in line with empirical work on policy positions of legislators in the U.S. (Ansolabehere et al. 2001; Fiorina 1973). Grosseclose further shows that those moves also occur if candidates are solely motivated by policy reasons and not office-seeking as in the standard Downsian model. This result is quite surprising, since intuition would rather let us assume that a valence advantage would make it easier for a policy-driven candidate to successfully pursue her preferred policy. At the same time, Ansolabehere and Snyder (2000) analyzed the spatial model including valence for two party competition, but in contrast to Grosseclose (2001) they extend the model to a policy space with more than one dimension. They show that equilibria exist in such a setting and that they lie within the yolk of the policy space, which is geometrically speaking the smallest circle or ball that is tangent to all median lines or hyperplanes in the policy space (McKelvey 1986). Their results further show that the higher valence party will locate at a more central position than the lower valence party also in a multidimensional policy space.

Another major contribution to the theory of spatial modeling including valence was made by Norman Schofield. He formulates a model that combines the probabilistic spatial model of Lin et al. (1999) with an exogenous valence term motivated to present a model that accounts for non-centrist party positions in plurality systems, as empirically observed for example in the U.S. where no party locates at the mean or in Britain where the center party is not a winning candidate. His

contribution is showing that by introducing a valence term into the probabilistic spatial model, the mean voter theorem only holds if certain conditions are met. Those conditions concern the valence difference between highest and lowest ranked party, the variance of voters' ideal point distribution and the number of dimensions of the policy space. Otherwise, the mean is no *local strict pure strategy Nash equilibrium* (LSNE) (Schofield 2004, 2005a, 2007). If the conditions for convergence are not met, the mean will not be a local equilibrium, and thus cannot be a global equilibrium, because the party with lowest valence will increase its vote share by unilaterally moving away from the joint mean. Via simulation studies he illustrates that in such situations, there are multiple local equilibria in which the low valence parties are located far from the center and all parties will be distributed along a principal electoral axis (Schofield 2003, 2007). This axis marks the "one dimensional subspace along which the variance of the distribution of voter ideal points is maximum" (Schofield et al. 2011a, p. 454).

He applied his model to numerous empirical cases, for example national elections in Israel and Britain (Schofield 2004; Schofield and Sened 2005b; Schofield et al. 2011a), the Netherlands (Schofield 2006), and Turkey (Schofield et al. 2011b). Yet in many of the empirical applications of his valence model, the predicted equilibrium points are not consistent with the empirically observed ones (Schofield 2004, 2005b, 2007; Schofield and Sened 2005b). There are even elections, e.g. Britain 1992 and 1997, for which the necessary and sufficient conditions for the mean voter theorem hold, although the empirical party pattern did not show a convergence of policy positions towards the mean (Schofield 2004). Schofield's solution to that recurring discrepancy between the too centrist predictions of his (or generally most) models and the empirical observations of party positions is to attribute it to what he calls an *activist pull* (Schofield 2004, 2005b; Schofield and Sened 2005a). The basic idea is that party members have private policy preferences and their dedication towards election campaigning decreases if the party's policy position diverges from their own preference. The contributions of those party activists "affect the overall non-policy appeal of the party (by allowing it greater access to the media, etc.)" (Schofield 2005b, p. 350f). Thus, the valence term is modeled as consisting of two parts: an *exogenous* valence that is independent of a party's position and an *activist* valence. This leads to an analytic setting in which "choosing an optimal position for the party requires the party leader to balance more 'radical' preferences of activists against the attraction of the electoral center" (Schofield and Sened 2005a, p. 357). Schofield shows that, if the activist valence function is concave, a non-centrist equilibrium will exist (Schofield and Sened 2005a). He admits that the empirical application of this equilibrium configuration "is difficult since the model requires data not just on voter preferred positions, but also on the motivations of party activists" (Schofield and Sened 2005a, p. 361). Accordingly, the model including endogenous activist valence did not attract many empirical applications.

Summing up, including a valence term in spatial models of party competition has become standard as shown by recent applications of spatial models (e.g. Clark and Leiter 2014; Gouret et al. 2011; Green 2015; Kurella and Pappi 2015; Roth 2011).

Consequently, there emerged a large strand of research focusing on the measurement of valence and its relative weight in comparison to spatial considerations in models of vote decision (Clarke and Whitten 2013; Green and Jennings 2012; Sanders et al. 2011). The model presented here will follow this development and combine spatial distance with valence considerations. Issues of operationalization and measurement will be revisited in the empirical part.

2.4 Models Including Behavioral Factors

As mentioned above, Stokes (1963) claimed to consider non-policy related factors that influence vote decision in spatial models. Yet non-policy related factors are by no means restricted to considerations of the quality or competence of candidates or parties, as conceptualized in the classical valence term. There is also a large literature from behaviorists, showing that there exist non-policy related long-term party preferences within the electorate that are based on socio-structural voter characteristics like class or religion, as argued in the Michigan model (Campbell et al. 1960). Erikson and Romero (1990) were among the first to combine behavioral factors and spatial theory. They relied on the approach taken by behaviorists and added a stochastic component to the spatial model, thus modeling vote decision as a probabilistic rather than a deterministic process, which, as mentioned above, also became standard in the spatial models without behavioral factors (Ansolabehere and Snyder 2000; Groseclose 2001; Lin et al. 1999). As already mentioned, this allows for equilibria in multidimensional policy spaces, where the median voter result otherwise doesn't hold. It also has the advantage of easily fitting a probit model of vote decision that can be applied to empirical cases. Erikson and Romero thus include spatial distances on multiple issue dimensions in a model together with a behavioral factor of vote choice, party identification, and a valence term. Their analytic and empirical results show that if partisanship correlates with voters' preferences on the issue dimension, this has an effect on equilibrium points:

In summary, when correlated with the issue dimension, party identification (or any nonissue causes of the vote) will affect the location of the candidate equilibrium. As we have shown, the views of marginal voters weigh most heavily. In a one-sided contest, partisans of the losing party should find solace in the fact that their preferences weigh most heavily, even as their candidate loses. (Erikson and Romero 1990, p. 1113)

They conclude that the inclusion of behavioral factors in a (probabilistic) spatial model influences candidate equilibria and additionally, although it may seem counter intuitive at first sight, this may provoke more stable equilibria (Erikson and Romero 1990, p. 1123).

Adams and colleagues followed on that seminal work by developing their *unified model* of party competition (Adams 2001; Adams et al. 2005). As in the model developed by Erikson and Romero (1990), their model combines spatial distance with a term indicating party identification as a proxy for behavioral

factors. Analyzing the interdependence of partisans' policy demand and parties' vote maximizing strategies, their most important conclusion is that "In multiparty spatial competition, parties have electoral incentives to appeal on policy grounds to voters biased towards them for non-policy reasons" (Adams 2001, p. 15). This again demonstrates that the combination of spatial models with insights from behavioral theory enlarges our understanding of party competition, although at first sight, it may seem counter intuitive that non-policy factors influence competition about policy positions.

An alternative approach of including behavioral factors into the spatial model is given by Schofield et al. (2011b). Taking the pure valence model discussed above as the baseline, the authors extend it by including a *sociodemographic valence* term. This term incorporates party specific valences that vary between different societal groups. Thus, subgroups of the population are assumed to evaluate parties differently according to a dichotomous or continuous characteristic they are sharing. To put it the other way round, different groups are assumed to evaluate parties differently for non-policy related reasons. This also influences equilibrium behavior of parties, and the simulated equilibrium predictions show divergence from the mean, although there still remains discrepancy to the estimated positions.

Concluding, the consideration of behavioral factors in spatial theory pays off by predicting more accurate and stable equilibrium configurations in empirical applications. As individual vote decisions seem to rely partly on behavioral factors, and partly on policy considerations in spatial terms as argued from a rational choice perspective, those two approaches are by no means exclusive, but can be fruitfully combined.

2.5 Models Considering Variation in Issue Salience

A last strand of research that shall be presented here questions the assumption of identical utility functions among the electorate. More specifically, this section focuses on the development of models that explicitly question the assumption that all voters put equal weight on different policy dimensions in cases where the policy space is multidimensional. Already Anthony Downs acknowledged that "people with an intense interest in some policy are more likely to base their votes upon it alone than are those who count it as just another issue; hence government must pay more attention to the former than the latter. To do otherwise would be irrational." (Downs 1957b, p. 141). Also, Stokes questioned the static view of the policy space as having a fixed structure. He claims that "what is needed is language that would express the fact that different weights should be given different dimensions at different times" (Stokes 1963, p. 372). Those claims have been reconsidered in recent advances in the field of spatial theory by many scholars who are mainly interested in voting behavior and less so in party competition. Two strands of research may be differentiated.

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