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IDENTIFYING DIMENSIONS AND LOCATING PARTIES: METHODOLOGICAL AND CONCEPTUAL PROBLEMS

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INTRODUCTION: BASIC QUESTIONS

Parties not only carry ideas but focus them into a specific programme for the medium-term development of society. These programmes have ideological roots in Marxist and socialist writings, Judeo-Christian doctrine, market-based neo-liberalism, nationalism or traditional conservatism. Parties apply these ideologies to the issues of the day in order to generate preferred solutions, which they advocate in election campaigns as one way of attracting or consolidating their vote.

Ideologies serve not only to suggest solutions to issues but also, and perhaps even more importantly to filter out those that parties emphasize and those they ignore. The number of potential issues which might be taken up in a given society is vast – notionally the number of individuals living in it multiplied by the number of their concerns. Of course, individual concerns overlap, and many are dealt with by other means than politics – markets or churches for example. Nevertheless the potential overspill into politics is enormous. A prime purpose of party ideology therefore is to indicate what topics deserve attention and which do not – given that constraints of time and attention, as well as the simplifications involved in appealing to a mass audience, severely limit the number that can be discussed.

Not only can a class-based ideology, for example, serve to identify the 'important' class-related issues which should be dealt with, it also gives a guarantee that these will appeal to habitual and potential supporters of the party who will have been originally mobilized by a class-based appeal. The same can be said of all the party families discussed above. All base their appeal on clusters of ideologically related issues which then define the choice situation faced by voters in the election. Parties and their ideologies thus serve an important function for electors as well as governments: they structure the public choices electors make, rendering them manageably simple – and of course, on the reverse side, strongly restricting choice, sometimes to the extent of being accused of ignoring the 'real' issues of the time.

If parties compete only on a limited number of super-issues to which specific issues of the campaign are ideologically related and squeezed down, the question then arises of how these super-issues themselves relate to each other. Some parties (e.g. socialists and Christians) may advocate more government intervention to solve social problems such as homelessness, while others (e.g. neo-liberals and conservatives) oppose this in the name of market and social freedoms. It is easy to see this confrontation as arising from one fundamental disagreement, about the scope of government intervention in society, on which different parties can be placed at different positions. Not only is the idea of reducing passing issues to this fundamental disagreement helpful in simplifying choices and letting us decide where we are in relation to the parties. It also permits us to develop a simple one-dimensional

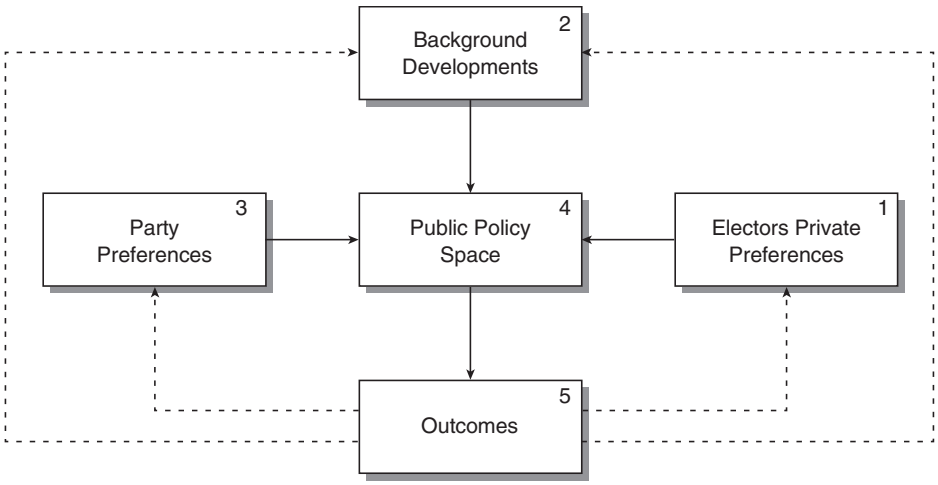

Figure 36.1 Inputs to public policy space

spatial 'map' of politics (cf. Figure 36.2) which specialists can then use to measure changes in party positions during and between elections – indeed, not only changes in party positions but also changes in electoral preferences.

Such a simplification is clearly an immensely useful tool for political scientists, not least in allowing for straightforward measurement of ideological and policy positions. Strong substantive doubts remain, however, as to whether all the complexities and nuances of party politics – or even all the important ones – can be captured so simply. Indeed, for many outside the field, the reduction of all politics to one dimension of difference is not so much useful simplification as simple-mindedness. Objections have taken two major forms: policy space is not one- but many-dimensional, or – more radically – political complexities cannot be mapped spatially at all.

Most of this chapter is taken up with discussing these points in the context of available theory and evidence about parties, electors and their interactions. Before going on to review the history of this debate it is as well to note one fundamental question about the *purpose* of our spatial and dimensional analyses. Is it to uncover the 'real' dimensions or super-issues underlying contemporary debate, as used and perceived by all the participants in it? Or is it to devise a useful analytic tool, which may not exactly mirror the 'real' political situation but gives plausible and useful results nonetheless? Answers to these questions are interrelated but it is useful to keep the two apart and be sure about which we are addressing in the often tangled debate about dimensionality.

Figure 36.1 summarizes many of the points made above. It shows how both parties and electors face problems in translating their private preferences into the public space defined by party policies as relayed above all by the media. The elector has to decide how her private preferences for a quiet and orderly neighbourhood, personal prosperity, good health and better schools for her grandchildren can be expressed by a choice between Liberal, New Labour, Christians and Greens. This is a hard translation. It is important to realize that it is a translation and that electors do not think instinctively in terms of the public choices available.

Parties, too, have to make a translation – how to define their private desires (e.g. for office or a theocratic state) into an acceptable public position that will not repel votes. Other thresholds are involved in policy-making. 'Objective' or 'background' developments help define current issues of concern but may not be reflected directly in the public space: for example, an increase in unemployment may stimulate demands for greater government efficiency and hence job-cutting. Public policies, especially those which seem to have won elections, affect the government policies which are implemented but perhaps not in a one-to-one way given problems of implementation or the absence of information about cause and effect.

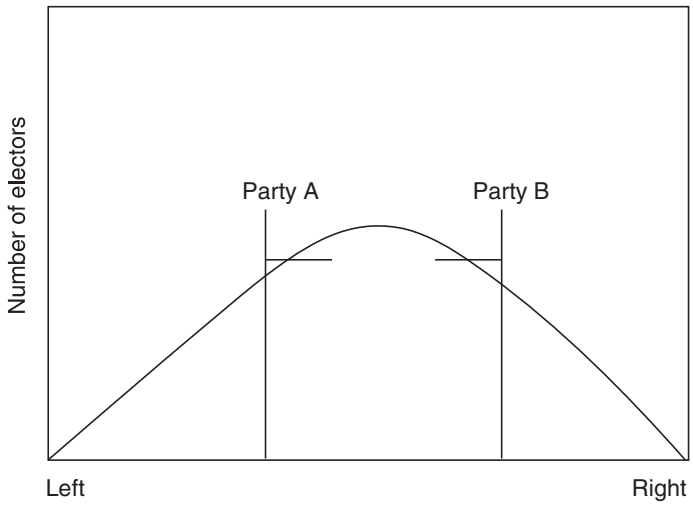

Figure 36.2 Downs' model of two-party competition: vote-seeking parties converge on the median elector's position under certainty about policy positions

In what follows we will be concerned mainly with the ways in which the public policy space itself is conceived and measured. But both of course are inevitably influenced by its dependencies on the other spaces shown in Figure 36.1, even if its internal structures are to some extent autonomous.

HISTORICAL DEBATES

Public policy has been a key focus of political science since the Greeks. The idea that it could be represented and measured spatially was, however, popularized mostly by Anthony Downs (1957), drawing on earlier suggestions by Hotelling (1929) and Smithies (1941). Though Downs' *Economic Theory* can for the most part be expressed non-spatially (Budge and Farlie, 1977: 102–30) its most memorable representation is the one shown in Figure 36.2. Where preferences and policies for more or less government intervention are arrayed along a single dimension of electoral preferences peaking in the middle there would only be scope for two parties to compete. To get a majority and hence form a government, office-seeking parties will converge in policy terms during the election campaign on the preference of the median elector. The winning party will be the one closest to the electoral median and has an incentive to translate that preference into public policy in order to maintain a credible position at the next election. Figure 36.2 provides the basis for a spatial version of government mandate theory, the main contemporary justification for representative democracy. It thus became the focus for much mathematical modelling in the rational choice tradition over the last 40 years (see Enelow and Hinich, 1984; Coughlin, 1992).

The representation also covers the type of policy parties will adopt in elections which will affect their subsequent behaviour in government. In this connection Downs proposed a contrasting spatial representation of a multiparty system (Figure 36.3) where parties did not converge but held on to their existing votes and policy position. Consequently no party got a majority to form a single-party government and electors were deprived of the ability in influence government policy, not knowing which coalition government would form – a critique often subsequently applied to multiparty systems based on proportional representation (cf. Powell, 2000).

Downs' spatial representations were developed analytically and supported with anecdotal evidence. The vast expansion in election surveys of the 1960s and 1970s prompted many researchers to investigate empirically how electors pictured policy space and located themselves in it. Computer developments aided this: general-purpose scaling programs – both factor-analytic and non-metric – became widely available and could be applied to questions about the closeness of electors to parties

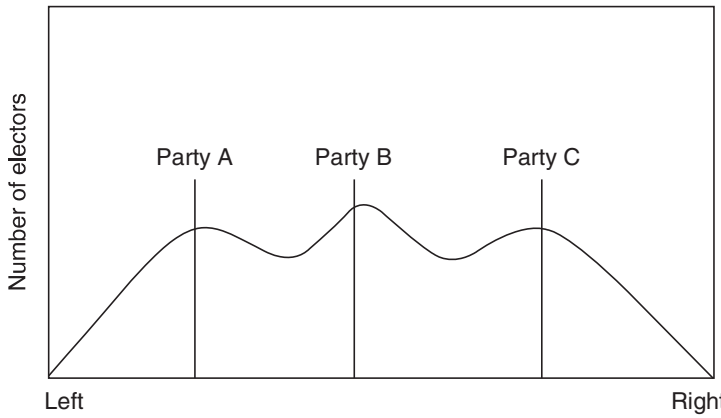

Figure 36.3 Downs' model of multi-party competition: immobility of parties at each mode of the distribution of preferences under certainty about policy positions

(for a review, see Budge and Farlie, 1978). In general such analyses produced two-dimensional policy spaces, the main dimension being indeed a class-based left–right one, but with another religious–moral dimension cross-cutting it. This result seemed to correspond more to the enduring cleavages identified by Lipset and Rokkan (1967) at the base of European party systems (class, religious, centre–periphery) rather than the one-dimensional space assumed by Downs (1957).

The 'real' dimensionality of public policy space assumed wider theoretical importance because of the rediscovery by Arrow (1951) of Condorcet's problem of cylical voting majorities (Table 36.1); see Condorcet (1975). Under democratic voting rules unstable majorities like those shown in the table are always possible. Stable majorities can be guaranteed, however, if there is a one-dimensional distribution of preferences. Indeed, a driving motive behind Downs' choice of a one-dimensional representation for his argument was precisely the need to guarantee a stable majority (Downs, 1957: 67–8: see also Black, 1958). Conversely, McKelvey (1979) and Schofield (1985) demonstrated that there was no guarantee of stable majorities emerging in any n-dimensional space for $n \geq 2$.

Though Niemi (1969, 1983) showed that the actual probability of cycles emerging in multi-dimensional spaces was low, debate focused on the need to avoid them altogether. This, together with the methodological criticisms that could be made of survey-derived spaces (see below), fuelled renewed interest in one-dimensional solutions. These had first, however, to meet the influential objection made by Stokes (1966), that Downs' space cannot give a comprehensive or even a useful representation of election politics because it misses out the major issues which are generally 'valence' in nature rather than 'positional'. By positional Stokes means ones where parties take up graduated 'pro' and 'con' positions (e.g. for and against government intervention). The more important issues, he argued, are 'valence ones' where there is only one position available – corruption, for example, where you must, electorally, be against it. Who also could fail to support peace?

This objection was met by Robertson (1976). His *Theory of Party Competition* innovated in two ways. First it used written texts (British party manifestos) rather than surveys to derive a policy space. Secondly, it dealt with the valence objection – in a way which was supported by the handling of issues by the parties themselves in their manifestos – by suggesting that *all* issues were 'valence issues' in the sense of having only one generally approved position associated with them. On tax, for example, it is theoretically possible to be for or against. To advocate higher taxes is such a potentially suicidal position however that parties will in general only talk about cutting them. Some parties (market liberals, for example) have better credibility on tax cutting than, for example socialists, and hence will emphasize the importance of 'their' tax issue in an election while others downplay it – seeking instead to convince electors of the importance of (increasing) welfare. By counting emphases (sentences or words) of a manifesto on opposing issue categories such as 'tax' and 'welfare' it is thus

Table 36.1 *The paradox of voting: Electors' individually consistent preference orderings give rise to cyclical and unstable majority choices*

Preference orderings over policy alternatives or candidates	Classic case of the paradox (% of electors)	Less extreme case of the paradox (% of electors)
A → B → C	33.3	22.2
A → C → B	0	11.1
B → C → A	33.3	22.2
B → A → C	0	11.1
C → A → B	33.3	22.2
C → B → A	0	11.1
% voting to choose A over B	66.6	55.5
% voting to choose B over C	66.6	55.5
% voting to choose C over A	66.6	55.5

A, B and C represent three policy alternatives or candidates. The arrow → represents preferences as between alternatives. Thus A → B → C stands for 'A is preferred to B and B is preferred to C'.

possible to characterize parties' policies quite precisely and construct theoretically based left–right spaces in which to put them and to measure their movements over time (cf. Figure 36.4 for the US parties, 1948–2000). A whole series of studies based on post-war manifestos and platforms in around 50 post-war democracies were carried out by the Manifesto Research Group (Budge *et al.*, 1987, 2001, 2006; Laver and Budge, 1992; Klingemann *et al.*, 1994). These used policy spaces both in particular domains and at a general left–right level to examine not only party movements but also their relationship to electoral preferences, government functioning and policy outputs – usually measured within the same spaces. Attempts have been made to computerize these procedures. This would enable spatial analysis to be applied to a much wider range of documents (including legislation), but they remain at an experimental stage for now (Bara, 2001; Kleinnijenhuis and Pennings, 2001; Laver and Garry, 2001; Laver *et al.*, 2003).

MAJOR EMPIRICAL FINDINGS OF SPATIAL AND DIMENSIONAL ANALYSES

It is clear that discussions about space and dimensionality have been driven by a mixture of theoretical, conceptual, measurement and substantive concerns, powered by developments in computer technology. This has been very fruitful in developing the field and perhaps serves as a model for cumulative research in other areas of political science. What have been the major substantive findings to come out from the research? What are their implications for our conception of party politics, for our understanding of dimensionality and for our future use of spatial analyses themselves? Taking these questions in order we can say the following:

1) Spatial analyses have shown most spatial theories of party behaviour proposed during the 1960s and 1970s not to be upheld by their evidence. This applies above all to minimum winning and policy proximity theories of government coalition formation (Budge and Laver, 1992: 416–17). The major positive finding about governments has been that the median parliamentary party participates in 80% of them (van Roozendahl, 1990, 1992; Budge and Laver, 1992: 415–20; Müller and Strøm, 2000: 563–9). This has given rise to alternative theories of median party dominance in policy-making (van Rozendahl, 1990, 1992; Laver and Shepsle, 1996; McDonald *et al.*, 2004).
2) In general, winning party policy positions have been shown to influence government ones (McDonald *et al.*, 1999) and to match changes in final policy outputs. Given the inertia of the latter, the exact nature of the relationship remains to be explored. Mandate theories of representative democracy do, however, appear to be upheld by comparative spatial research (McDonald *et al.*, 2004).
3) At election level, spatial analyses have shown parties not to converge (Budge, 1994; Adams, 2001) but to maintain the same relative position over time even in pure two-party systems (cf. Figure 36.4). Downs' (1957) static model of party positioning in Figure 36.3 thus seems a more accurate representation of their behaviour than his better-known convergence model (Figure 36.2).

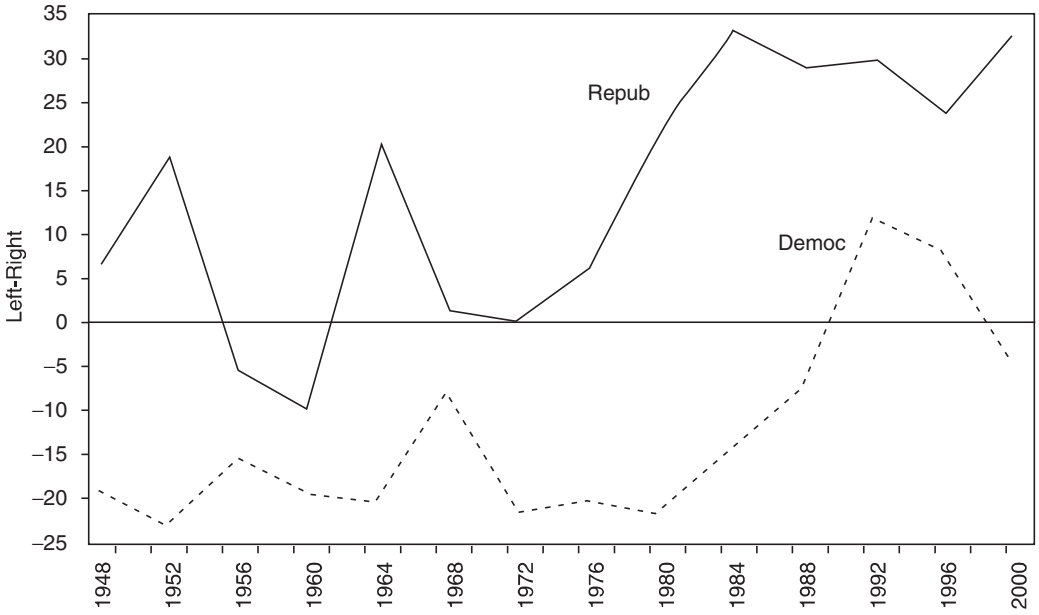

Figure 36.4 US parties' ideological movements on a left–right scale, 1948–2000

4) Party positions do not seem particularly responsive to electoral preferences within specific issue domains (McDonald *et al.*, 2004). But they do seem responsive within a general left–right dimension (Adams *et al.*, 2004; McDonald *et al.*, 2004).
5) This finding has reinforced the growing consensus that a unidimensional left–right space is probably the best representation of party-electoral space. As Roy Pierce (1999: 30), summing up 50 years of survey research, puts it: 'The issue to which they [voters] … give high priority … is the ideological super-issue … the Left–Right dimension on the European continent or the liberal-conservative dimension in the United States. Voter–party congruence on more specific issues, even those that are traditionally linked to the ideological dimension, is much more limited' (see also Inglehart and Klingemann, 1976: Klingemann, 1995). Survey evidence on this point is reinforced by analyses of party texts. Most of the research cited above carried out parallel analyses in multi-dimensional and unidimensional left–right space (see in particular Budge *et al.*, 1987; Laver and Budge, 1992), reaching the same broad conclusions in both, but more clearly in left–right space. Highly inductive comparative factor analyses also reached the conclusion that a left–right dimension dominated the policy space (Budge *et al.*, 1987: 293; Gabel and Huber, 2000). In analyses of or around elections, a unidimensional left–right space thus seems the right one to use, in terms of both analytic convenience and of the way in which parties and electors see the political world at that time (though perhaps not at other times: see Figure 36.6).
6) This conclusion has far more than analytical consequences, for it takes us back to the initial question of the whole debate over dimensionality: is it possible to find an equilibrium point round which a stable democratic majority can emerge (cf. Table 36.1)? The median position guaranteed in a one-dimensional policy space is such a point. Perhaps, therefore, the structuring of the space in left–right terms accounts for another major finding from the empirical research that has been done: few or no voting cycles have been discovered. This confirms Niemi's (1969) point – not being able to guarantee that a voting cycle will *not* appear is not equivalent to expecting that it will appear *frequently*. Generally cycles seem precluded by the structuring of political debate.

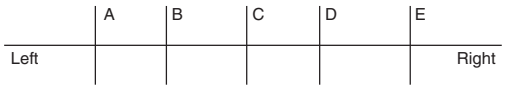

Figure 36.5 The dominant position of the median actor, C, in a one-dimensional policy space

EMERGENCE OF THE MEDIAN

The growing confidence in the existence of a median position has led to a growing exploitation of its uses in spatial theory. Party convergence on the median in a Downsian sense (Figure 36.2) may not be present. But this is not to imply that the median position may not dominate in policy terms. To see why, we need only consider Figure 36.5, which sets the standard power of the median argument in the kind of left–right space which has now emerged as empirically appropriate for democratic electors and parties. When distributed along this kind of continuum, the relevant actors prefer any policy closer to their own position to any further away. This puts C, at the median, in the most powerful position. Actors both to Left and Right need C to form a majority. C can thus bargain for a public policy close to its own position, by threatening to join the alternative majority if C does not get its own way. Compared to the policy position of its rivals on one wing, C's position will be preferred by partners on the other wing whatever coalition it joins. Thus C's position will constitute the point towards which majority-backed policy always tends.

It is important to realize that this standard 'power of the median argument' applies both to electors and policy-oriented parties. It is the reason why the median is so often used as an indicator of popular majority preferences (Powell, 2000: 163–7: McDonald *et al.*, 2004). Without the median voter a knowable and coherent majority cannot be formed, by definition. The same logic must apply to parties if their internal discipline is tight enough for them to be regarded as unitary actors. Even if C is very small compared to other parties, these still need C's support to form a majority. Just as in the electorate, party C can bring policy close to its position by threatening to defect to the opposing wing. Under majority voting rules in a legislature, C is policy king.

The growing confidence in the applicability of left–right space and therefore in the existence of a median actor in parliaments as well as electorates has helped shift the focus in policy-making theories from governments to median parties (van Roozendahl, 1990, 1992; Laver and Shepsle, 1996; McDonald *et al.*, 2004). An extension of this is to see representative democracy as based on a median rather than a government mandate, leading to an evaluation of electoral systems in terms of whether or not they bring median elector and median legislative party into line (McDonald and Budge, 2005). This may improve the democratic credentials of 'consensus democracy' (Lijphart, 1999) and unify our ways of looking at different 'visions' of democracy (Powell, 2000).

MEASURING LEFT–RIGHT SPACE

These theoretical advances stem from the ability of empirical investigations to shed light on the nature of the left–right public space shared by parties and electors. To a major extent this is created by the way parties choose to present themselves to electors. Under representative democracy electors have no choice outside the alternatives offered by the parties. If these choose to array themselves in left–right terms, as they seem to do, electors have to evaluate policies in these terms and vote for the party positions offered to them. Election left–right space is thus a party dominated space if not entirely a party-defined one (see below). It is not just projected or scaled down from electors' policy spaces (Figure 36.1). Rather it is projected from the *party* space at the right-hand side of the figure into which electors have to insert themselves. The primarily party-based nature of public space is what justifies basing measurements, even of electors' preferences, primarily on the parties' definition of the situation (Kim and Fording, 1998).

The growing realization that election space is basically unidimensional left–right spurred efforts in the 1970s to get electors to rate both themselves and the parties on a 10- or 20-point pictorial 'ladder' between these positions (cf. Inglehart and Klingemann, 1976). The additional realization that parties were responsible for creating the space and presenting it to electors led to the transfer of this technique to surveys of party experts, who were asked to place parties along such scales (Castles and Mair, 1984; Huber and Inglehart, 1995). Though widely used, such placements had limitations (Budge, 2000). In particular, they were entirely static (McDonald and Mendes, 2001), being

Table 36.2 *Grouping theoretically left and right topics to form a text-based scale*

Right emphases: sum of %s for sentences mentioning:		**Left emphases: sum of %s for sentences mentioning:**
Military: positive		Decolonization
Freedom, human rights		Military: negative
Constitutionalism: positive		Peace
Effective authority		Internationalism: positive
Free enterprise		Democracy
Economic incentives		Regulate capitalism
Protectionism: negative	minus	Economic planning
Economic orthodoxy		Protectionism: positive
Social Services limitation		Controlled economy
National way of life: positive		Nationalization
Traditional morality: positive		Social Services: expansion
Law and order		Education: expansion
Social harmony		Labour groups: positive

simply a quantification of the traditional classification of political parties into Communist, socialist, centre, liberal and conservative families. This rendered them irrelevant for studying party movements *between* elections, as shown in Figure 36.4, for example.

One extension of expert judgements (Laver and Hunt, 1992) was to create a multidimensional party space on the grounds that only this would be complex enough to represent party policy differences properly. However, the placements made in this expert survey along the specific policy dimensions all relate strongly to an underlying left–right continuum (McDonald and Mendes, 2001: 141) – suggesting once again that the latter is an adequate representation of the space. (For a study of congruence between party and electoral positions within such a space, see Klingemann, 1995.)

In so far as they can be compared, the different attempts to 'put parties in their place' (Gabel and Huber, 2000) along the left–right dimension, whether based on texts or on expert judgements, concur substantially in their positioning. This result not only validates the various scales as such but also the general idea of a left–right representation of election space (Gabel and Huber, 2000; Budge *et al.*, 2001).

The content of left–right differences

The derivation of scales from party election programmes has produced a specification of the themes associated with left and right positions, respectively (Budge and Klingemann, 2001: 21–2). These are listed in Table 36.2. While based on ideological writings, the listings group themes which are focused on by parties themselves in their programmes, over some 50 post-war democracies. These fall into three broad groupings on each side. Right-wing emphases are broadly on freedom (with a particular application to the economy), an ordered society, and strong defence. The left wants an extended sphere for government, welfare and protection of labour, and peaceful internationalism. These broadly opposing positions are not linked with each other in terms of strict logic, and in fact Christian parties put together themes from both left and right, landing up in a 'centrist' position as a result. The themes are linked because ideological writings and party policy documents on both sides *do* put them together, seeing, for example, worker's interests being best served by the creation of appropriate government structures both at home and abroad.

Possible variations in dimensionality over time

Once we get away from the idea that there is a real issue space out there, on an analogy with physical space, it is possible to see the constituent issues involved in left–right differences coming together at certain points notably around elections – and being separated out at other times, notably during the governmental and parliamentary phases of representative democracy. As has been emphasized elsewhere in this volume, parties are unique linking institutions as they operate at different levels – both among electors, in legislatures and in governments. However, they may not focus on all these levels at the same time. Around elections their dialogue may be primarily with the mass

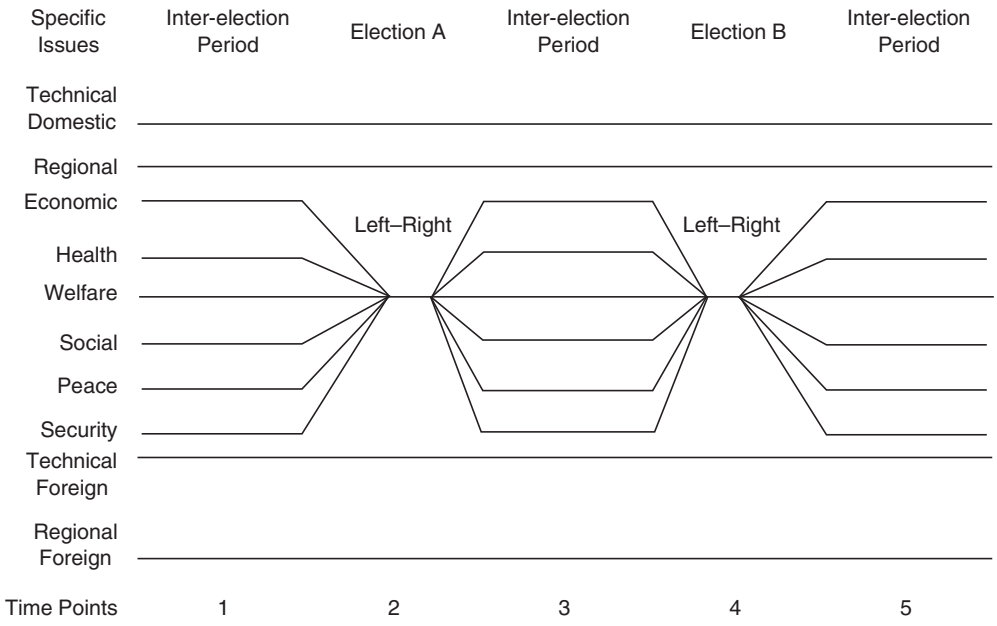

Figure 36.6 Public policy space: the dynamics of dimensionality

public, rendering it necessary to compress current issues into one unidimensional left–right space, as Pierce (1999) has noted.

During the inter-election period, however, parties focus their attention on the legislative and governmental arenas. The mechanics of debate there are different, shaped by the institutional division of policy areas between ministries and the structuring of parliamentary procedures around these. Foreign policy is thus not normally discussed in relation to internal social regulation, nor education in close relation to health and welfare. Discussion of each of these areas takes place within different contexts and at different times (cf. Shepsle and Weingast, 1981). The result is a likely splitting of the unified left–right dimension into separate dimensions for each policy. As the next election draws closer and debate broadens out again to the mass public, these different threads are again drawn together into a unified left–right continuum. The resulting expanding and contracting effect is illustrated in Figure 36.6. (Less central issues, shown by lines at the edges of the figure may just get totally ignored in the election.)

It must be emphasized that this process is conjectural and hypothetical, if plausible, at this point. Whether the public space varies in its dimensionality over time is, however, an interesting research question which to our knowledge has not yet been raised. Answering it could get us away from sterile debates about whether the 'real' public space is unidimensional or multidimensional: it may be both, at different times.

Even so, however, the suggestion here is that the multi-dimensional space is not the Euclidean one which gives rise to voting cycles. Its essence, given by the ministerial structuring of debate, is that dimensions are separable and indeed separate. Each is discussed on its own, as a single policy dimension, so there is always a median around which a majority can cohere (Ordeshook, 1986: 250).

This could raise another problem, however, very relevant for mandate theories. If elections designate the parliamentary median party in terms of a general left–right context, but this then splits between elections into separate policy dimensions with different medians (which may also differ from the overall left–right one) how could one guarantee that the popularly chosen party dominated? This may be difficult though a comparative study of 16 democracies indicates that it does dominate, with some 'slippage' in specific policy areas (McDonald and Budge, 2005).

CLASSIFYING SPATIAL REPRESENTATIONS OF PARTIES AND ELECTORS

The points made above can be put in context by listing the various types of spatial representations of political parties which have been made over the last 50 years and commenting on their salient features (Budge and Farlie, 1977: 31–101, 176–81; 1978):

1 *Pure a priori policy space*. This is based on theoretical grounds (such as ideological writings), and is represented *par excellence* by the Downsian spaces illustrated in Figures 36.2 and 36.3. Direct operationalizations of such a space would fall under this category. This type of space is driven by the way electors are seen to organize their public preferences because of information economizing (Downs, 1957: 98–100). Parties then locate themselves in it. A practical example is given by the Inglehart and Klingemann (1976) left–right 'ladder' used with electors, where electors also placed the parties.

2 *Party-dominated pure policy space*. On the other hand most operationalizations of policy space discussed here concentrate on locating the policy alternatives offered by parties, to which electors under representative democracy have no choice but to adapt. The scales on which parties are placed are theoretically derived in terms of party ideology. One such is the Manifesto Research Group left–right scale illustrated in Figure 36.4 and Table 36.2, with other Manifesto Research Group policy scales (Budge *et al.*, 2001).

   In so far as expert placements of parties are made on theoretical criteria (cf. Huber and Inglehart, 1995) or are based on the ideological classification of parties into families (Beyme, 1985: 29–136), they would also fit this category. These placements usually result in a one-dimensional left–right scale. But both expert judgements (Laver and Hunt, 1992) and manifestoes (Laver and Budge, 1992) are capable of generating multi-dimensional spaces with the separable dimensions discussed above.

3 *Inductive policy spaces*. These are typically associated with factor analyses of policy texts or issue questions. If unconstrained they will usually end up with four or five dimensions, which are by convention represented orthogonally to each other.[1] However, factor analyses can be constrained to produce only one dimension which generally turns out to be left–right (Gabel and Huber, 2000). Being an inductive technique, factor analyses will reflect co-variation within all of the existing data set. This has two undesirable consequences: First, if the data set is expanding (new elections being added, for example) new factor analyses may well produce different results than the old ones. So the policy space and conclusions based on it may change. Second, in comparative analyses the locations of very different parties at different periods are made interdependent, for example, the position of Swedish Social Democrats in 2001 depends on that of Italian neo-fascists in 1948.

4 *Inductive policy-background spaces*. The nature of factor-analytic spaces depends on what is put in. If social characteristics of party candidates or electors are added to issues and policy the result is a mixed space rather than a pure policy space. One should be conscious of this when making inferences from the representation about, for example, party movement.

5 *Party defined spaces*. The spaces listed above are bounded by policy points, such as (pure) left, (pure) right. Spaces can, however, be bounded by pure party positions, in which case locations within the space are defined by their distance from these. A well-known example of such a space is the distribution of party identifiers, bounded by strong Republicans to one side and strong Democrats to the other. Budge and Farlie's (1977) comparative analyses of parties and electors created a 'likelihood ratio space' whose ends were defined by pure party positions – in a two-party system, a line: in a three-party system, a triangle, etc. Electors were distributed over the space in terms of characteristics and opinions which defined their proximity to the party. Recently Laver and Garry (2001) have proposed a pure policy version of this idea, in which words differentially associated with the parties are used to measure the distance between them.

6 *Party inferred spaces*. The non-metric scaling techniques applied to electors' feelings of proximity to parties, used extensively in the 1970s, typically gave rise to two-dimensional spaces in which the nature of the dimensions was inferred from the positions of all parties on them. Thus a dimension on which socialists opposed conservatives was interpreted as a left–right one, while one

where Christians opposed liberals was taken as a religious (clerical versus lay) dimension. The limitation here is that the space offers no opportunity of tracing party movement over time, since that changes the meaning of the dimensions and makes spaces non-comparable.

The most important research lesson to be drawn from this listing is that the operationalization of a space should meet the theoretical purposes which investigators have in mind. Because of the very close interconnections between theory, measurement and substantive research in this field, it is likely that pure policy representations will be most used in the future, as they have been for the last 20 years.

NOTE

1. The convention of producing orthogonal dimensions for presentational purposes has generally led analysts to forget that dimensions are usually correlated. Adams and Adams (2000) have shown that spaces with correlated dimensions very much reduce the risk of voting cycles and unstable majorities.

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