1

Introduction to Electoral Systems

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Electoral systems matter. They are a crucial link in the chain connecting the preferences of citizens to the policy choices made by governments. They are chosen by political actors and, once in existence, have political consequences for those actors. They are an important object of study for anyone interested in the political process, and in this book we subject them to systematic analysis.

In all but the smallest-scale societies, government is representative government, in which the people do not govern themselves directly but rather delegate the task of political decision-making to a smaller set of public officials. In democratic societies these representatives are elected, and it is the question of how they are elected that is the focus of this book. In particular, we are interested in exploring variations in these methods of election, and in knowing whether, and in what ways, it makes a difference how they are elected. The method of election is, quite obviously, a crucial link in the chain of representative democracy.

First, we need to start with a definition. By an *electoral system* we mean the set of rules that structure how votes are cast at elections for a representative assembly and how these votes are then converted into seats in that assembly. Given a set of votes, an electoral system determines the composition of the parliament (or assembly, council, and so on as the case may be). The electoral system is narrower than what we term *electoral regulations*, by which we mean the wider set of rules concerning elections. Such rules—concerning, for example, ease of access to the ballot for would-be candidates, the right to vote, the fairness of the administration of the election, the transparency of the counting of the votes—are all very important in determining the significance and legitimacy of an election. However, they should not be confused with the more narrowly defined concept of the electoral system itself.

Sceptical readers faced with a large book on electoral systems thus defined might wonder whether it really matters so much which electoral system a country adopts. Why should anyone care whether a country opts for the D'Hondt or the Sainte-Laguë method of allocating seats? What difference does it make if the weight of preference votes is increased or decreased? Would anyone other than a few electoral system fanatics with nothing better to do with their time even notice if a country moves from a parallel mixed system to a compensatory one or vice

versa?[1] Anecdotal evidence suggests that many practising politicians do, indeed, frequently react with bored indifference to what they see as trivial technicalities that can be left to the anoraks in the back room to sort out while they decide the really important questions. Ordinary citizens, too, might wonder whether the analysis in this book is really something they need to know. The choices might seem obscure, the terminology arcane, and the issues at stake unclear.

Needless to say, we believe these questions do matter—otherwise we and the authors of the following chapters would not have taken the trouble to put this book together. Moreover, even a little bit of reflection should be enough to convince anyone that electoral systems can make a difference. Even those who do not feel they need to understand the distinction between the highest averages and largest remainders methods of seat allocation realize that there is a big difference between single-member constituency systems (such as 'first-past-the-post') and proportional representation (PR) systems. That is one choice that very few politicians would be willing to leave to someone else to decide.

To illustrate this, consider the history of British government since the late 1970s. Throughout the 1980s, the Conservative Party under Margaret Thatcher enjoyed huge parliamentary majorities and implemented a series of radical right-wing changes to economic and social policy. In 1997 and 2001, the Labour Party under Tony Blair achieved equally large majorities in the House of Commons. Yet, each of these majority governments was elected on 41–43 per cent of the votes. If Britain had had a PR system then, even if there was no change in the way votes were cast, the pattern of government formation would have been very different. In 2001, for example, Labour, having won 41 per cent of the votes, would have had either to negotiate a coalition with the third-placed Liberal Democrats or to try to form a minority government on its own. Under either option, Tony Blair would not have been nearly as free to commit British troops to the war in Iraq in 2003. Individuals will have their own opinions as to whether this would have been a good thing or a bad thing—what cannot be disputed is that a different electoral system would have made a big difference to policy output.

Electoral systems matter in other ways too, as we shall see. They may make a big difference to the shape of the party system, to the nature of government (coalition or single-party), to the kind of choices facing voters at elections, to the ability of voters to hold their representative(s) personally accountable, to the behaviour of parliamentarians, to the degree to which a parliament contains people from all walks of life and backgrounds, to the extent of democracy and cohesion within political parties, and, of course, to the quality of government, and hence to the quality of life of the citizens ruled by that government.

In this book, we are looking at two kinds of issues. First, we are interested in the 'political science of electoral systems'—this book aims to join the canon of works that have attempted to explore various relationships between electoral systems on

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[1] Or, as David Farrell (2001: 1) puts it, 'How many wars were fought over whether the electoral formula was ''largest remainder'' or ''highest average''?'

the one hand and the kind of 'outputs' that we mentioned in the previous paragraph. We do not, though, see electoral systems merely as causal agents—we will also be examining the origins of those systems. Second, the book studies the 'politics of electoral systems'. It treats each country's electoral system as, potentially at least, constituting a political issue in its own right. We will be asking who supports an electoral system and who opposes it, who benefits from it and who loses out, and we will be focusing on the current debate in each country on the question of electoral reform. This will highlight issues relevant to normative debates about which electoral systems 'work well' and which ones do not, which ones operate uncontentiously and which ones are a focus of division in the countries employing them.

Shortly, we will elaborate on these points by outlining the structure of this book. First, we will present a brief overview of the various 'families' of electoral systems.

DIMENSIONS OF ELECTORAL SYSTEMS

'It is the easiest thing in the world to get inextricably tangled among the complexities of electoral systems', wrote Eckstein (1963: 249) in the middle of the last century. To avoid bogging the reader down in a morass of detail at this stage of the book, we refer readers to Appendix A for a discussion of the mechanics of electoral systems and an explanation of exactly how they work. Here, we outline some broad categories into which electoral systems fall. For the purposes of this book, we have assigned electoral systems to one of five categories, listed in Table 1.1, although in some cases there is considerable variation within these.

Table 1.1 Categories of electoral system

Broad category	Specific types	Country examples
Single-member constituency systems	Single-member plurality (SMP) Alternative vote (AV) Two-round system (2RS)	*Chapters 4–9* Australia, Canada, France, India, UK, USA
Mixed systems	Mixed compensatory Mixed parallel	*Chapters 10–15* Germany, Hungary, Italy, Japan, New Zealand, Russia
Closed-list systems	—	*Chapters 16–18* Israel, South Africa, Spain
Preferential list systems	Open list Flexible list	*Chapters 19–24* Austria, Belgium, Chile, Denmark, Finland, Netherlands
PR-STV	—	*Chapter 25* Ireland

The first category consists of those systems under which all seats are allocated within single-member constituencies (known in the USA as single-member districts and hence often abbreviated, even outside the USA, to SMDs). There are many different ways of allocating a single seat, and we will elaborate on these later in the chapter and in Appendix A, but since such systems have a lot in common in terms of their effects, it makes sense to treat them as a single broad category. As Table 1.1 shows, we will be looking in detail at six countries with such systems.

The second broad category is that of 'mixed' systems, in which some MPs are elected by a plurality or majority formula (usually from SMDs) and others are elected by PR. This type of system is growing in popularity, and six chapters examine the operation of mixed systems. List systems are based on the idea of parties presenting lists of candidates within each multimember constituency. They are conventionally divided into two types: those using closed lists, in which the voter cannot express a choice for individual candidates on the list, and those based on preferential lists, where voters can do so. We will be looking in depth at three countries with closed list systems and at six with preferential list systems. Finally, under PR-STV (proportional representation by the single transferable vote) voters are able to rank-order all candidates within each multimember constituency, and the final country chapter examines the record of this system in Ireland. Before we move on to the country studies in chapters 4–25, though, we need to outline more fully the main dimensions on which electoral systems differ, and these are set out in Table 1.2.

District magnitude

The first dimension is district magnitude, the number of seats per constituency. As we shall see throughout the book, this is not just a useful taxonomic aid but a factor that makes a big difference to the effects of an electoral system and thus to a country's politics. Measuring average district magnitude is straightforward in countries where all constituencies are of the same size: single-member constituency systems such as Australia, Canada, France, India, the UK, and the USA, or those few other countries where all the constituencies are multimember and of uniform size such as Chile (2) and Malta (5). In a few countries there is only one (national) constituency, so the number of seats is the district magnitude in the Netherlands (150), Israel (120), and Slovakia (150).

In some other countries district magnitude varies, but we can easily work out an average value. For example, in Spain 350 members of parliament (MPs) are returned from 52 constituencies, so average district magnitude equals 6.7, while in Ireland there are 42 constituencies and 166 MPs and average district magnitude is 4.0. We might wonder, though, whether it matters how this mean is arrived at. In Ireland, as it happens, all constituencies return either three, four, or five MPs—but suppose its 166 MPs were instead returned from 40 two-seat constituencies and 2 forty-three-seat constituencies? Would this make any difference to the kind of outcomes we could expect? Simulations conducted by Taagepera and Shugart (1989: 264–6) suggest that in many ways it would not make a difference, but small parties can

expect to fare better if there are at least a few really large constituencies. More detailed study by Monroe and Rose (2002) of the consequences of this 'magnitude variation' concludes that this factor is more important than generally recognized and, because district magnitude in urban areas is usually larger than in rural areas, the effect is to disadvantage large parties with a predominantly urban base. We might also wonder whether the number of constituencies, as well as their average size, makes a difference. The simple answer is that it does, and this question is explored more fully in Appendix C.

Things become a bit trickier when there is more than one 'tier' of seat allocation, but since we have not discussed that dimension yet, we will postpone the full consideration of district magnitude until the end of this section.

Number of votes cast

Since 'one person one vote' is a hallmark of a democratic system, why would we encounter any variation here? The reason is simple: giving people more than one vote does not violate democratic principles provided everyone still has the same number of votes. Having just one vote is very much the norm, but in most cases within the family termed 'mixed' systems everyone has two votes. For example, when voters in Germany or New Zealand go to the polling station on election day they are confronted with a ballot paper that invites them to cast one vote for a candidate to represent their local single-member constituency, and another vote for a party in the contest for seats awarded at the national level (see Figure 10.1 or 14.1).

Ballot structure

Douglas Rae (1971: 17–18) was the first to make a distinction between ballot papers under which voters must cast a vote for one and only one party, which he termed 'categorical' or 'nominal', and those under which the voter can rank-order the parties or candidates, which he called 'ordinal'. The significance of the distinction is explained by Rae (1971: 18) in this way: 'Categorical systems channel each parcel of electoral strength into the grasp of a single party, while ordinal balloting may disperse each parcel of electoral strength among a number of competing parties'. Unfortunately, Rae seemingly did not realize that this 'clarification' goes beyond his initial definition and leaves considerable confusion about how we should classify ballot structures that allow the voter to 'divide' his or her vote between two or more parties but not to do any rank-ordering.

The first category, at least, is clear enough. It covers ballot papers in most countries. In these cases, the voter expresses support for the sole candidate of a party (under single-member plurality), for a party list (Spain, Israel), or for one candidate (Finland, the Netherlands, and others) or perhaps several candidates (pre-1994 Italy) on one party's list.

Rae's 'ordinal' category, as we have said, is a little confused, and does not cover all the systems in which the ballot structure is not categorical. Rae's own treatment

Table 1.2   Dimensions on which electoral systems vary

Dimension of variation	Value	Examples
District magnitude (number of seats per constituency)	1	*Single-member plurality* (Canada, India, UK, USA)
		Alternative vote (Australia)
		Two-round system (France)
	More than 1	*PR-list systems* (Israel, Spain, South Africa, Austria, Belgium, Chile, Denmark, Finland, Netherlands)
		Mixed systems (Germany, Hungary, Italy, Japan, New Zealand, Russia)
		PR-STV (Ireland)
How many votes can a voter cast?	2	*Mixed systems* (Germany, Hungary, Italy, Japan, New Zealand, Russia)
	1	All other systems
Ballot structure	Categorical (also termed nominal or integral)	*Single-member plurality* (Canada, India, UK, USA)
		Two-round system (France)
		Virtually all PR-list systems
	Dividual: can 'divide' vote among different parties	*Mixed systems* (Germany, Hungary, Italy, Japan, New Zealand, Russia)
		PR-list with panachage (Luxembourg, Switzerland)
	Ordinal: can rank-order candidates	*Alternative vote* (Australia)
		PR-STV (Ireland)
How much choice does the voter have regarding individual candidates?	No choice of candidate within party	*Single-member constituency systems* (Australia, Canada, France, India, UK, USA)
		Mixed systems (Germany, Hungary, Italy, Japan, New Zealand, Russia)
		Closed-list PR systems (Israel, South Africa, Spain)
	Choice of candidate within party	*Preferential-list PR systems* (Austria, Belgium, Chile, Denmark, Finland, Netherlands)
	Choice of candidate within party and across party lines	*PR-STV* (Ireland)

Table 1.2 (*Continued*)

Dimension of variation	Value	Examples
How many levels of seat allocation does electoral system have?	1	*Single-member plurality* (Canada, India, UK, USA) *Alternative vote* (Australia) *Two-round system* (France) *Some PR-list systems* (Belgium, Chile, Finland, Israel, Netherlands, Spain) *PR-STV* (Ireland)
	2 (higher tier and lower tier)	*Compensatory mixed systems, also termed corrective or MMP* (Germany, Italy—partially compensatory, New Zealand) *Some PR-list systems* (Denmark, South Africa)
	2 (both allocations are at same level)	*Parallel mixed systems, also termed MMM* (Japan, Russia)
	3 (lowest, middle and highest levels)	*Some mixed systems* (Hungary—partially compensatory) *Some PR-list systems* (Austria)
Measures to limit the degree of proportionality	Small district magnitude (DM)	DM = 1 (Australia, Canada, France, India, UK, USA) DM = 2 (Chile), average 4 (Ireland) DM is in effect small in mixed systems when list seat allocation is separate from single-member seat outcomes (Japan, Russia)
	Significant vote thresholds that parties need to cross in order to get any (or 'fair') representation	Germany, Hungary, New Zealand, Russia
	Malapportionment	USA (Senate), Chile, Spain, Canada, France, India

Source: Chapters 4–25 of this book. The classification scheme draws in particular on the ideas and discussions of Blais and Massicotte (2002); Cox (1997: 37–68); Farrell (2001: 4–10); Lijphart (1994: 10–56); Taagepera and Shugart (1989: 19–37).

of such systems does not clear up the confusion, and Lijphart (1994: 119) has already called attention to Rae's 'errors of classification' here. Rae (1971: 42–4) describes the German two-vote system as categorical (even though voters can cast their two votes for different parties, thus 'dividing' their vote, in his terms). Logically, then, we might expect him to deal similarly with those PR systems under which voters are

provided with the facility termed *panachage*, under which they have a number of preference votes at their disposal and can distribute these among candidates on more than one party's list. This is used in Luxembourg and Switzerland (countries not covered in this book). Inconsistently, though, Rae describes these as ordinal systems, even though the voter cannot rank the options.

In reality, Rae's classification would have been more useful with three categories, allowing us to distinguish systems permitting rank-ordering from those permitting simple vote-splitting. We term the latter 'dividual', since they enable votes to be 'divided' among more than one party.[2] This category includes mixed systems in which voters may, if they wish, cast their constituency vote for a candidate of one party and their list vote for a different party, an option exercised by many voters in New Zealand and by rather fewer in Germany. In a two-round system, voters may switch from one party at the first round to a different one at the second—though since voters cannot split their vote in any one round, and only one of their votes can contribute towards the election of a candidate, this is probably better classified as categorical. PR-list systems with the option of *panachage* belong in the dividual category.

Ordinal voting, correctly defined, permits voters to rank-order the candidates on the ballot paper. This is a central feature of both the alternative vote and PR-STV. In each case, voters are faced with a list of all candidates in the constituency and may rank all of them (or, at least, as many as they wish, depending on the specific electoral laws) in order of their choice.

Choice of candidate within parties

The structure of the ballot will also make clear whether voters have any power to choose among the candidates of their party. This facility is self-evidently unavailable under single-member constituency systems, when parties do not offer more than one candidate in the first place.[3]

PR-list systems differ on this dimension. Some, broadly termed preferential-list systems, enable the voter to indicate a preference for one candidate (or sometimes several candidates) on their party's list, and these preference votes then play a role in determining which candidates fill the seats that the party receives. Some preferential-list systems are more open than others, and in Chapter 2, where this dimension is explored fully (see pp. 41–4), a distinction is drawn between fully open lists, where the voters alone determine which candidates receive the seats, and flexible lists, where the party's initial ordering of the candidates determines the outcome unless sufficient numbers of voters combine to overturn this. How much of a role the preference votes play therefore varies from case to case. In some countries, under

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[2] 'Dividual' is defined by the Oxford English Dictionary as meaning 'capable of being divided into parts, divisible, divided into parts, fragmentary, divided or distributed among a number'.

[3] As so often, an exception can be found even to this apparently solid generalization: in Japan the LDP in safe seats sometimes allows two candidates to run and then admits the victor to its parliamentary party, treating the election in effect as a primary (see Chapter 13, p. 283 below).

fully open lists, they completely determine it (if the party wins three seats, for example, the seats go to the three candidates with the highest numbers of preference votes). In others, using flexible lists, the impact of preference votes is muffled by the details of the rules. Chile and Finland epitomize the former approach, Belgium and the Netherlands the latter. The sweeping generalization of Sartori (1997: 17–18), based on Italian experience, according to whom party 'machine bosses' can manipulate preference voting to ensure that they and their favoured candidates are elected no matter how apparently 'open' the lists are, does not stand up to empirical scrutiny as a broad proposition.

Other PR list systems, in contrast, employ 'closed lists', in which the voter can choose among parties but not among candidates within parties, and the order of candidates' names that is decided by the party determines which of them receive its seats. As it happens, in most of the mixed systems used to elect national parliaments (and in all of those covered in this book) the list element employs closed lists, though this is not an essential feature of mixed systems and in principle the lists could be open, as they are in Lithuania. It is possible to see two different concepts of representation underlying the choice to be made between preferential list and closed list systems, a distinction that emerged when the question of which variant to adopt was discussed in Sweden in the 1990s. According to one concept, the purpose of elections is to enable the direct representation of the people, and consequently preferential list systems, allowing the people to choose their own representatives, are more appropriate. According to the other, representation takes place through the political parties and the purpose of elections is to enable the parties to secure their proper share of representation; consequently, closed lists are more appropriate than open ones because the parties' candidate selectors are better judges than the voters of who is best able to realize the ideas and goals of the parties (Petersson et al. 1999: 117–23). In 'principal–agent' terms, MPs are the agents; closed list systems seem to assume that parties are the sole principals, while open list systems assume that MPs have two principals, parties and voters.

Finally, PR-STV gives voters a choice not only among their party's candidates but also across party lines; voters are not constrained by party lines when deciding how to rank-order the names of all the candidates on the ballot paper.

Levels of seat allocation

Most of the dimensions that we have looked at so far are fairly straightforward, but, all too often, it is when we get on to levels of seat allocation that those not instinctively enthused by the subject of electoral systems find their eyes glazing over. This is a pity because, even though the details of specific systems can be complicated to master, the basic principles are easy enough to grasp.

In many countries there is only one level of seat allocation. In other words, each voter casts a vote in a constituency; seats in that constituency are awarded, in accordance with the rules, to parties (and candidates); and each party's national total of seats is simply the sum of the seats it won in each of the constituencies. There

is, by definition, only one level of seat allocation in single-member constituency systems such as Australia, Canada, France, India, the UK, and the USA. There is also just one level in about half of the PR systems that we cover in detail in this book (see Table 1.2).

Why, then, complicate matters by having more than one level or 'tier' of seat allocation? There are various reasons for doing this, perhaps the most common of which is that it gets round the problem caused by one of the most robust findings in electoral systems research, namely that the smaller the average district magnitude, the greater the disproportionality. This relationship is unfortunate because it points to a trade-off between two desirable properties of electoral systems, namely ensuring a close correspondence between the overall levels of electoral support and seats in parliament for parties, and providing a local constituency representative for voters. With just one tier, the two poles are a single-member constituency system, which scores well on the local representation dimension but poorly on proportionality, and a PR system with just one constituency covering the whole country (as in Israel and the Netherlands), which gives excellent proportionality but no direct representation for localities. With only one level of seat allocation, we are forced to sacrifice a bit of one desirable property in order to get more of the other.

Having more than one level means that we might be able to have our cake and eat it. Archetypal mixed systems, such as that in Germany, illustrate this point. Here, half of the MPs are elected from single-member constituencies, while the other half are elected from party lists. The list seats are awarded to parties in such a way as to ensure that the total number of seats received by each party is proportional to its share of the list votes.[4] Hence, the system delivers a high degree of overall proportionality, while at the same time each voter has a local constituency MP. Mixed systems have thus been described as 'the best of both worlds' (Shugart and Wattenberg 2003*c*: 595). While the details differ greatly, the same kind of thinking, i.e. supplying both proportionality and local representation, underlies the choice of a two-tiered or even three-tiered seat allocation in some other countries too: those using mixed systems, such as New Zealand, and single-vote systems such as Austria and Denmark.

Of course, in the real world, there are also less noble reasons to have higher tiers. Sometimes these tiers mainly have the effect of giving additional benefit to the larger parties, as in the 'reinforced PR' used in Cyprus and Greece in the past, because of the high threshold a party needed to pass in order to qualify for any of these seats. In Hungary, the existence of three tiers is not, as those confronted by the system might initially suppose, designed to confuse and to ensure that only a handful of initiates really understand what is going on but, as explained in Chapter 11, reflects the outcome of bargaining at the time of the transition to democracy in the late 1980s coupled with a degree of inertia.

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[4] This is a somewhat simplified account of the German system, omitting details such as the threshold and *Überhangmandate*, which are explained fully in Chapter 10.

In the above cases (other than Cyprus and Greece) the higher tier is convention-ally[5] termed *compensatory* or corrective, because the seats awarded at the higher tier(s) are used to compensate the parties that were underrepresented at the lower level and to correct disproportionalities that arose there (Shugart 2000). In Germany, for example, the smaller parties such as the Greens and the FDP win few, if any, of the single-member seats and so they are brought up to their 'fair' overall share by being given the appropriate number of list seats. In other cases, though, the two 'tiers' are *parallel*; really, each is on the same level and neither can be seen as higher or lower. In Japan and Russia, for example, voters have two votes just as in Germany, but the list seats are awarded in proportion to the list votes only, without any regard for the seats that the parties won in the single-member section of the election, so large parties retain the seat bonus that they usually achieve in the SMD component. Hungary and Italy are somewhere between the two, having elements of parallel allocation but also providing for a degree of compensation, so they can be seen as partly compensatory. In the terms of Shugart and Wattenberg (2003*b*: 14–15; see Chapters 11 and 12 for details), they provide for 'vote linkage' rather than 'seat linkage' between the PR and SMD components, in that parties' list vote totals are in effect reduced for each SMD seat that they win. In parallel mixed systems, the over-representation of the large parties in the single-member seats is only partially 'corrected' by the list seats and proportionality is not particularly high.

Limitations on proportionality

Proportionality is generally regarded as a 'good thing'—in moderation. Few elect-oral systems go for broke on the proportionality dimension; most have, in practice, some way of limiting it.

The most explicit entry barrier is the use of thresholds. Virtually every PR system employs some kind of threshold that prevents the smallest parties getting their 'fair' share of the seats. In Germany, for example, the only parties that qualify for any list seats are those that either win 5 per cent of the list votes, or win three single-member constituencies. In Russia, there is a threshold that has an initial value of 5 per cent (to be increased in future to 7 per cent) but can be adjusted downwards if this figure debars parties representing too many voters—a rare example of a floating threshold (see Chapter 15). In a number of other postcommunist countries (Czech Republic, Latvia, Poland, Slovakia) parties receive no seats at all unless they win 5 per cent of the national votes (Rose and Munro 2003). This discrimination against small parties and their supporters is usually justified in terms of preventing excessive fragmenta-tion and thereby making it easier to form stable governments, a particular concern in postcommunist countries given their usually weakly structured party systems.

Non-PR systems generally do not have rules specifying a threshold, mainly because they do not need to. As has often been pointed out in the electoral systems

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[5] This is something of an overstatement given the terminological profusion in the field.

literature, in practice there is always an 'effective threshold' that makes it next to impossible for parties below a certain size to win a seat. This effective threshold is determined above all by the district magnitude, with the seat allocation formula also playing a part. While we cannot specify a formula that will tell us the effective threshold in all circumstances, Lijphart (1997: 74) and Taagepera (1998: 394) concur that it can best be estimated by the formula $(75/(m+1))$, where m refers to the district magnitude. In other words, in a constituency with 10 seats, for example, the effective threshold equals $75/(10+1)$, i.e. $75/11$ or 6.8—meaning that a party with fewer than 6.8 per cent of the votes in such a constituency is unlikely to win a seat.[6] Hence, if there is a formal threshold that is fixed at a level lower than 6.8 per cent then it is likely to prove superfluous, while if it is higher than 6.8 per cent it may well prove meaningful. In a two-seat constituency the effective threshold is $75/3$, i.e. 25 per cent, meaning that only parties above this level of strength have a realistic chance of gaining representation. Thus the effective threshold imposed by small district magnitude is usually even more deadly to small parties than a legal threshold in a PR system. In single-member constituency systems, certainly, proportionality is already low enough to satisfy even its harshest critics, so there is no need for formal thresholds. Proportionality increases as district magnitude increases (when a PR formula is being used, that is), but even when district magnitude is in the 2–4 range we can expect a significant deviation from complete proportionality.

Another way of building in a limit to proportionality is through malapportionment: awarding some areas of a country more seats in relation to population than others (Katz 1998).[7] This is not an important factor in most of the countries mentioned in this book, but it is in some. Both Chile and Spain feature in the 'top twenty' most malapportioned lower houses of parliaments, with Canada, France, and India not very far behind, and malapportionment in the US Senate is over twice as high as in Chile's Chamber of Deputies (Samuels and Snyder 2001: 660–2). Malapportionment might be effected by the party in power for blatantly partisan reasons—obviously, it would then give more seats to the areas where it is strongest—but that is not always why it occurs. Small, peripheral, predominantly rural regions of a country where population density is lowest and contact between voters and MPs may be relatively difficult to bring about are the areas most likely to receive generous representation—although, of course, this usually has political consequences, with parties of the left typically losing out since they are weak in such regions. The constitution or laws in many countries place some constraints on how far the ratio of representation in each constituency can deviate from the national

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[6] It should be emphasized that this relationship applies only within an individual constituency. It does not purport to tell us the effective national threshold in a country whose parliament is elected from a large number of ten-seat constituencies. It is also worth noting that just as the effective threshold can be computed from a known district magnitude, so an effective magnitude can be computed from a known threshold. See Appendix C for a fuller discussion.

[7] A related concept—in that both result in some parties paying a higher 'price' in terms of votes per seat than others—is gerrymandering (see Glossary).

average figure but, even so, the range of variation within a country is often surprising (see also Grofman and Lijphart 2002).

District magnitude revisited

As we noted earlier, it is easy to calculate average district magnitude in single-tier systems but more complicated when there are two or more tiers. For example, of the 598 MPs in Germany, 299 are elected in single-member constituencies, while the other 299 are returned from lists. The list seats are awarded in such a way as to ensure that the *total* number of seats (not the list seats) received by each party is proportional to the share of the list votes it received. So, should we regard district magnitude in Germany as being 1.99 (598 divided by 300, i.e. the 299 single-member constituencies plus the one national constituency), or as being 598 (on the ground that all 598 seats are shared out in a single allocation among the parties in proportion to their votes)? Or should we settle on a plausible-looking value some-where in between?

Rae (1971: 20–1) adopts the first of these approaches, but, perhaps inevitably for a pioneering study, his work contained flaws that subsequent researchers were able to identify. Lijphart (1990: 486) observes that in many instances, his method produces a result that is simply logically impossible, being even smaller than the lower-tier district magnitude. The correct calculation of district magnitude in two-tiered systems (and, by extension, systems with more than two tiers) depends on which tier is decisive in determining seat allocations, and this depends on the specific rules in each case. A key factor is the relative number of seats awarded at the two levels. In a compensatory or corrective two-tiered system, the question is whether the number of higher-tier seats is sufficient to 'correct' the disproportionalities arising at the lower level. As Taagepera and Shugart (1989: 129) put it:

> The magnitude of the basic district becomes irrelevant to the final votes-to-seats conversion, if sufficient numbers of remainder seats or compensatory seats are allocated at a second stage, so that they compensate for district-level deviation from PR.

In Germany, the 50 per cent of seats returned from lists have proved enough to correct these deviations, so if there were no legal thresholds restricting access to the share-out of these seats, we should treat Germany as having a district magnitude of 598. If, on the other hand, Germany had 588 single-member constituencies and just ten higher-tier seats, it is obvious that the district magnitude would in effect be very little different from 1.

How many higher-tier seats, then, do there need to be to overcome the dispro-portionalities arising at the lower level? Clearly, this depends on how much dis-proportionality was generated at the lower level, and that in turn depends heavily on average district magnitude (Taagepera and Shugart 1989: 131; Shugart and Watten-berg 2003*b*: 19–22). Whether it is possible to frame a precise relationship between the two is a question for future research. The aim would be to find the function of *M* (district magnitude at the lower tier) that generates an equation telling us what

proportion of seats need to be reserved for the higher tier if we are to reduce disproportionality to the bare minimum—an equation that would have the form:

$$\frac{\text{HTS}}{\text{TS}} = \frac{1}{\text{f}(M)}$$

where HTS is the number of higher-tier seats and TS the total number of seats. For example, the equation

$$\frac{\text{HTS}}{\text{TS}} = \frac{1}{M+1}$$

would mean that when single-member constituencies are employed at the lower tier, half the total number of seats need to be allocated at the higher tier, while if the average district magnitude at the lower tier is 9, then only 10 per cent of seats need to be reserved for the higher tier. A refined version could start with an agreed 'acceptable level' of disproportionality and a predetermined average district magnitude at the lower tier, to establish how many higher-tier seats need to be provided to ensure that disproportionality is unlikely to exceed the set limit.

Preliminary investigation suggests that the number of higher-tier seats needed is probably lower than would be produced by the formula above. The biggest component in the total amount of disproportionality is usually generated by the over-representation of the largest party, so in practice the seats-to-votes ratio of the largest party is a key variable.[8] Even under SMP systems, this is rarely significantly in excess of 3:2 (the approximate ratio seen in the example that we analyse in Appendix C, where in the SMD component of the 1998 German election the SPD won 65 per cent of the seats for 44 per cent of the votes). Hence, higher-tier seats would need to amount only to a third of the total number in order to ensure something close to full proportionality even when the lower-tier seats are filled in SMDs, since the largest party's SMD seats would now amount to something very close to its 'fair' share of the total number of seats. This suggests that the equation

$$\frac{\text{HTS}}{\text{TS}} = \frac{1}{2M+1}$$

[8] To be precise, the important variable in achieving full proportionality is technically the highest seats-to-votes ratio achieved by any party. Of course, this might not be the largest party; a party with 0.6 per cent of the votes might win 1.2 per cent of the seats and thus achieve a ratio of 2, which would require there to be as many higher-tier seats as lower-tier seats, with this party receiving no higher-tier seats, to bring its lower-tier seats down to 0.6 per cent of the total seats. However, a small party can be left with a high seats-to-votes ratio without doing much damage to overall proportionality (because it has only a seat or two more than its entitlement) whereas a large party, even if its seats-to-votes ratio is 'only' 3:2, is likely to have tens or hundreds of seats more than its 'fair' share. Hence, in practical terms, the seats-to-votes ratio of the largest party is usually what matters.

might produce a reasonable estimate of the number of higher-tier seats needed to achieve near-complete proportionality in a compensatory mixed system.

Even in the absence (for the time being) of a more precise formula, it seems safe to say that in nearly all the countries covered in this book, district magnitude is determined by the higher tier. In New Zealand, as in Germany, there are enough higher-tier seats to ensure that (again leaving aside thresholds) the district magnitude is in effect equivalent to the number of seats in parliament. In Denmark, although the number of higher-tier seats is smaller (40 out of a total of 175), the lower tier itself does not generate much disproportionality (135 MPs elected in 17 constituencies, each with an average district magnitude of 7.9), so the 40 higher-tier seats are quite sufficient to ensure that the overall results are highly proportional. The exception is Italy, where only a quarter of the 630 seats are available at the higher tier, the rest being awarded by plurality in single-member constituencies—moreover, the higher-tier seats are only partially compensatory rather than fully compensatory, as we noted earlier.

We should mention two further aspects of two-tier seat allocations. The first is that, as Lijphart (1994: 32) points out, higher-tier seats may be either adjustment seats or remainder-transfer systems. Those discussed above (Germany, New Zealand, Denmark) are adjustment seat cases in that the number of higher-tier seats is fixed and preset. In remainder-transfer systems, in contrast, all seats are in theory available to be awarded at the lowest tier, but in practice this never happens. Usually, in the lower-tier constituencies, each party receives a seat for each 'quota' of votes it wins, and any remaining votes the parties win over and above their full quotas, along with any seats not awarded, are transferred to the higher tier. What happens at the higher tier depends on the precise rules in a particular country. In Austria, for example, seats are awarded in such a way as to make the outcome proportional in terms of the *total* number of votes (not just the higher tier, or remainder, votes) won by each party, and so district magnitude, again leaving aside the thresholds in operation, is in effect the number of seats in parliament: 183.[9]

The second aspect concerns parallel mixed systems where, as we have said, the two components of the election—the single-member constituency section and the list section—are on the same level rather than constituting different tiers. In Japan, for example, 300 MPs are elected from single-member constituencies and the other 180 from 11 multimember constituencies. In analytic terms it makes perfect sense to treat this as if the country were divided into two, with single-member constituencies used in one part and a PR-list system in the other. Here, then, it is valid for once to employ Rae's approach and to calculate district magnitude simply by dividing the total number of seats (480) by the total number of constituencies (311), giving a district magnitude of 1.5. Likewise, in Russia, the average district magnitude in the 2003 election equalled the number of seats (450) divided by the number of constituencies (226), i.e. 2.0.

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[9] For a detailed account see Chapter 19 on Austria. Another example is South Africa, for which see Chapter 17.

THE STRUCTURE OF THE BOOK

In order systematically to explore the questions outlined in the first section of this chapter, we have gathered together a large team of collaborators (thirty-one in all) with expertise in the field of electoral systems, in one country or in many. The plan of this book is straightforward. The core of the book is devoted to twenty-two country studies in Chapters 4–25. Table 1.3 indicates where the electoral system of each of these countries can be placed on the four most important of the dimensions that we have just discussed (Table 26.1 presents a more detailed summary of each country's electoral system). The country chapters are grouped according to the broad category into which their electoral systems can be placed.

In Chapters 4–9, contributors explore the dynamics of electoral systems in six countries employing single-member constituencies to elect all their MPs. Four of these use the simplest method of all of electing MPs, single-member plurality (commonly, if misleadingly, termed 'first-past-the-post'): Canada, India, the UK, and the USA. Australia uses the alternative vote, while in France, deputies are elected by the two-round system.

Chapters 10–15 focus on what are usually termed 'mixed' systems, under which some MPs are elected in single-member constituencies while others are returned from party lists. Of the six countries in this section, only Germany had such a system in 1989, indicating that systems in this mould hold attraction for those setting the rules in democratizing countries such as Hungary and Russia and for reformers in established democratic regimes such as Italy, Japan, and New Zealand. As the chapters make clear, even though these systems all look pretty similar at a superficial glance, some of the differences in the rules can make a really big difference to the outcomes.

The next nine chapters deal with countries employing some kind of list system to elect all their MPs. In the first three (Israel, South Africa, and Spain, covered in Chapters 16–18), voters merely cast their vote for a party list and have absolutely no say in which individual candidates get elected; the votes determine how many seats each party has, but which individuals get to fill those seats is a matter that is decided entirely by the political parties themselves. In the other six list system countries (Chapters 19–24), voters have some kind of choice as to which individual candidate they wish to see elected, because they can cast a vote for a specific candidate as well as (or instead of) just indicating which party they are voting for. The impact of these preference votes for individual candidates varies dramatically. Preference votes count for a lot in Chile, Denmark, and Finland, for somewhat less in Belgium, and for relatively little in Austria and the Netherlands.

The last of the country studies (Chapter 25) concerns Ireland, whose electoral system, PR-STV, cannot readily be placed in any of the above categories, although it might be seen as sharing more of the characteristics of open list systems than of any other type of system.

Table 1.3   Main features of electoral systems in 22 countries

Country	Average district magnitude	Ballot structure	Levels of seat allocation	Choice of candidates within party
Single-member constituency systems				
Australia	1	Ordinal	1	None
Canada	1	Categorical	1	None
France	1	Categorical	1	None
India	1	Categorical	1	None
UK	1	Categorical	1	None
USA	1	Categorical	1	None at election stage; choice provided by primaries
Mixed systems				
Germany	598	Dividual	2	None
Hungary	2.2	Dividual	3	None
Italy	1.3	Dividual	2	None
Japan	1.5	Dividual	2	None
New Zealand	120	Dividual	2	None
Russia	2.0	Dividual	2	None
Closed-list systems				
Israel	120	Categorical	1	None
South Africa	400	Categorical	2	None
Spain	6.7	Categorical	1	None
Preferential list systems				
Austria	183	Categorical	3	Within party
Belgium	13.6	Categorical	1	Within party
Chile	2	Categorical	1	Within party
Denmark	175	Categorical	2	Within party
Finland	13.3	Categorical	1	Within party
Netherlands	150	Categorical	1	Within party
PR-STV				
Ireland	4.0	Ordinal	1	Within and across parties

Note: The figures for average district magnitude here do not take any account of the legal thresholds that might be imposed, and are not necessarily the same as the 'effective magnitude', for which see discussion in Chapter 26 and Appendix C.

In Hungary and Italy the complex (partially compensatory) linkage between the two tiers makes it difficult to establish a precise average district magnitude. The figures given in the table are based on the simplifying assumption that both systems are parallel, i.e. have no linkages between the tiers.