

on the record of a neo-conservative government. As the ruling Tories were reelected with more seats than in the previous election, many observers concluded that Mrs Thatcher's policies had been strongly endorsed. The fact is, however, that the actual vote for the Tories decreased slightly between 1979 and 1983, and the outcome of the election would have been quite different if Britain had had proportional representation.

The first necessary step for an understanding of the consequences of an electoral system is to have a good grasp of the kinds of electoral systems that exist. Hence the need for classification. We provide a summary of the rules that apply to direct legislative and presidential elections.

Typologies of electoral systems can be based on the *electoral formula*, which determines how votes are to be counted in order to allocate seats, on *district magnitude*, which refers to the number of seats per district, or on *ballot structure*, which defines how voters express their choice (Rae 1967; Blais 1988). Emphasis on district magnitude ignores the fact that multi-member districts produce very different outcomes depending on the electoral formula used, while grounding a typology on the ballot structure similarly leads one to overlook that the two systems providing for ordinal ballots (the alternative vote and the single transferable vote) have different consequences. We follow the classical approach and describe electoral formulas first, while taking into account district magnitude and ballot structure. Other typologies exist (Martin 1997; Reynolds and Reilly 1997). We do not pretend to summarize all possible systems, just the existing ones. Experience teaches that electoral engineers are quite imaginative folks.

There are three basic electoral formulas, corresponding to as many criteria of legitimacy as to what is required to be elected. Supporters of *plurality* are satisfied when a candidate gets more votes than each individual opponent, while others feel that one should be declared the winner only if he or she can muster more than half of the vote, that is, a *majority*. Advocates of *proportional representation* (PR) feel that political parties should be represented in parliament in exact (or nearly exact) proportion to the vote they polled. *Mixed systems* combine PR with either plurality or majority.

It is convenient to examine electoral formulas in chronological order (from the oldest to the more recent) and in the order of their complexity (from the simplest in its application to the most sophisticated). While plurality in English parliamentary elections dates back to the Middle Ages and majority began to be applied to legislative elections in the early 19th century, PR was imagined during the first half of the 19th century and began to be used for national legislative elections at the end of that century.

Before the First World War, Joseph Barthélemy (1912) confidently predicted that the day would come when proportional representation would become as widespread and unchallenged as universal suffrage. So far he has not been vindicated. The proportion of democratic countries using PR has remained more or less constant since the early 1920s, hovering around 60%. The only significant trend is the increasing popularity, lately, of mixed systems, where different formulas are used simultaneously in the same election.

## 2

### Electoral Systems

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Electoral rules have fascinated politicians and political scientists for decades, because they are commonly assumed to condition the chances of success of competing parties or candidates. This chapter covers one important set of electoral rules, namely the electoral system, which defines how votes are cast and seats allocated. Other sets of rules, such as those concerning the use of referenda, the control of election spending, and the regulation of political broadcasting, are dealt with in other chapters.

We first document the great diversity of electoral systems presently existing among democracies. This raises the question of whether electoral systems matter, of what concrete impact they have on political life. The second section thus examines the political consequences of electoral laws. Once these consequences are known, we are in a position to tackle the crucial normative question of which is the best electoral system. The third section of the chapter reviews the debate and identifies the major tradeoffs involved in the choice of an electoral system.

#### Diversity of electoral systems

Even scholars specialized in the field are amazed by the diversity and complexity of contemporary electoral systems. The rules that govern how votes are cast and seats allocated differ markedly from one country to another.

Selecting an electoral system is not a purely technical decision. It may have huge consequences for the operation of the political system. As discussed in the following section of the chapter, applying two different formulas to the same distribution of votes will produce quite different outcomes in terms of members elected for each party.

To give a concrete example, let us look at the critical British election of 1983, the first election in a major nation where voters were passing judgment

Figures 2.1 and 2.2 outline, in some detail, the electoral systems that exist in the 58 countries covered in this book, for presidential and legislative (first chamber) elections.<sup>1</sup> Readers are advised to refer to those figures for a better understanding of the typology offered in this chapter.

### Plurality systems

Plurality, also known as *first-past-the-post* (FPTP), outperforms all other options in terms of its pristine simplicity. To be elected, a candidate needs simply to have more votes than any other challenger.

The plurality rule is usually applied in single-member districts: indeed, this is so often the case that we sometimes forget or overlook that it can be used in multimember districts as well. For example, in US presidential elections, members of the Electoral College are elected within each state on a winner-take-all basis (also known as the *bloc vote*), as the party slate which gets the highest number of votes in the state gets all the votes of that state in the Electoral College.<sup>2</sup> Under the plurality rule, even when voters cast as many individual votes as there are members to be elected (and thus can split their ballot between parties if they wish), party cohesion usually allows the majority party to sweep all, or almost all, seats.<sup>3</sup>

As the bloc vote normally results in the elimination of minority parties within each district, variants were imagined in the 19th century in order to allow for some minority representation within multimember districts using the plurality rule. One is the now-extinct *cumulative vote*, used in the State of Illinois until 1980, whereby voters were granted as many votes as there were members to be elected but were allowed to cumulate two or more votes on a single candidate: it was expected that supporters of the minority party in each district would focus their voting power on a single candidate to enhance their chances of securing at least one seat. The *limited vote*, still used for elections to the Spanish Senate, aims at a similar objective, though by the different device of granting each voter *fewer* votes than there are members to be elected (for example, most Spanish provinces elect four Senators, with each elector casting up to three votes for different candidates): here the expectation is that the majority party will not be able to carry all seats if the minority party presents a single candidate. A variant of the limited vote is the *single nontransferable vote* (SNTV) used in Japan until 1994 and still used for electing most legislators in Taiwan, where electors cast a single vote in a district electing between three and five members.

Cruder procedures for ensuring minority representation while keeping the plurality rule were common in Latin America before PR was introduced, and they still can be found. Post-Pinochet Chile has two-member districts, where the leading party gets both seats only if it polls twice as much as the party that came second.<sup>4</sup> Otherwise, one seat goes to each of the two leading parties. In the now directly elected Senate of Argentina, two

seats in each province go to the leading party while the third goes to the party that came second in the popular vote.

Out of the 58 democracies covered by this book, six use the plurality rule for presidential elections (Figure 2.1) and nine for legislative elections (Figure 2.2).

Other countries have provided for presidential election systems that incorporate the plurality rule with some qualifications. In Argentina, which did away with the electoral college in 1994, the candidate with a plurality of the vote is elected, provided that plurality is equal to at least 45% of the vote, or exceeds 40% of the vote coupled with a lead of at least 10 points over the strongest challenger. If not, a runoff is held. Costa Rica requires a plurality representing at least 40% of the vote. Failing that, a runoff election is held. In recent years, Ecuador and Nicaragua have enacted complex arrangements of that kind.<sup>5</sup>

### Majority systems

With majority systems, we cross a small step towards greater complexity. Requiring a majority without further specification opens the possibility of having no winner at all if there is a single-round election, or to have a succession of indecisive ballots if no candidate is eliminated following each round. These problems are solved through one of the following three variants. In *majority-runoff* systems, a majority is required on the first ballot. If no candidate obtains a majority, a second and final ballot, known in the US as a runoff, is held between the two candidates who received the highest number of votes in the first round.<sup>6</sup>

This is the system utilized in 19 of the 32 countries with direct presidential elections (Figure 2.1) (Blais, Massicotte, and Dobrzynska 1997); Mali uses the same method for legislative elections (Figure 2.2). In *majority-plurality* systems (used for French legislative elections), there is no such drastic reduction in the number of contestants on the second ballot (though a threshold may be imposed for candidates to stand at the second ballot)<sup>7</sup> and the winner is the candidate who gets a plurality of the vote. While one normally must have stood as a candidate on the first ballot to be allowed to compete at the second, there are past instances of major countries imposing no such requirement.<sup>8</sup>

As both formulas require the holding of a second round if no majority is reached on the first one, the *alternative vote* emerged as a less costly option whereby voters, instead of casting a vote for a single candidate, rank candidates in order of preference. First preferences are initially counted, and candidates winning a majority of these are declared elected. Second and lower preferences are taken into account only if no candidate secures a majority of first preferences. The candidate who received the smallest number of first preferences is eliminated, and second preferences expressed on his or her ballots are counted and "transferred" to other contestants. If this

operation produces a winner, the contest is over. If not, the weakest candidate then remaining is eliminated and subsequent preferences on his or her ballots (which then means third preferences on transferred ballots and second preferences on untransferred ballots) are similarly transferred, and so on until eliminations and transfers produce a majority for one of the remaining candidates. As in all other majority systems, transfers may result in the final victory of a candidate who did not get the highest number of first preferences. The alternative vote is used in Ireland for presidential elections (Figure 2.1) and in Australia for elections to the House of Representatives (Figure 2.2).

**Proportional representation**

By definition, PR can be used only in multimember districts, for it is obviously impossible to distribute a single seat among many parties, except on a chronological basis, an option that no legislator to our knowledge has adopted.

There are two major types of PR systems. With 29 countries, the *list system* is by far the most widely used type among the countries surveyed (Figure 2.2). The other type, the *single transferable vote*, is in force only in Ireland.

**List systems**

Devising a PR list system involves making five major decisions as to districting, formula, tiers, thresholds, and preferences for candidates. There are many different ways of combining these variables, which explains why no PR systems are exactly alike.

**DISTRICTS** The first choice concerns district magnitude. One option, which is the most conducive to accuracy of representation, is to have the whole country as a single electoral district. Israel, the Netherlands, and Slovakia all have a single national constituency electing 120, 150, and 150 members respectively (Figure 2.2).

The vast majority (26) of PR countries covered in this book have opted for smaller districts, the boundaries of which generally correspond to administrative subdivisions. For example, the 350 members of the Spanish Congress of Deputies are elected in 52 electoral districts: each of the 50 provinces constitutes an electoral district, as well as the African enclaves of Ceuta and Melilla. The latter two are single-member districts in view of their small population. The number of seats in the provinces ranges from three in Soria to 34 in Madrid. The resulting small district magnitude has repeatedly allowed the largest party to get a majority of seats with a plurality of votes: in 2000, the Popular Party won 183 seats out of 350 with 44.5% of the vote.

**THE ELECTORAL FORMULA** A second choice involves the method by which seats will be distributed *within each district*. The two basic options are

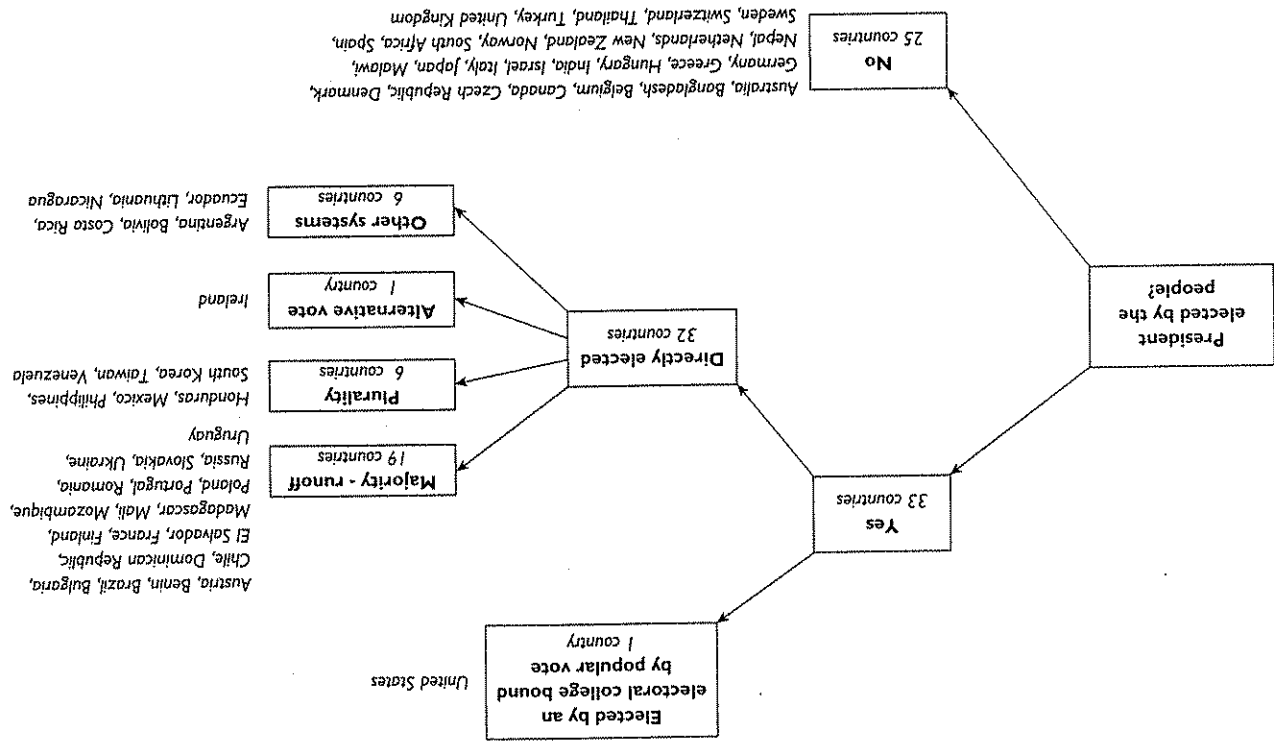


FIGURE 2.1 A Typology of Electoral Systems (Presidential)

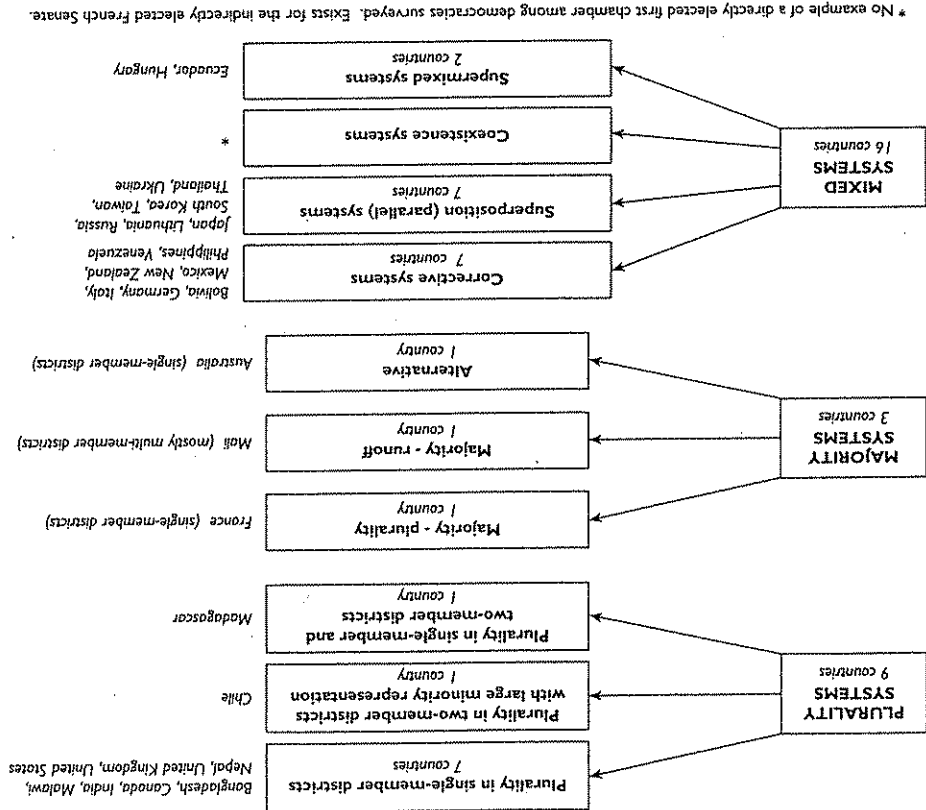


FIGURE 2.2 A Typology of Electoral Systems (Legislative)

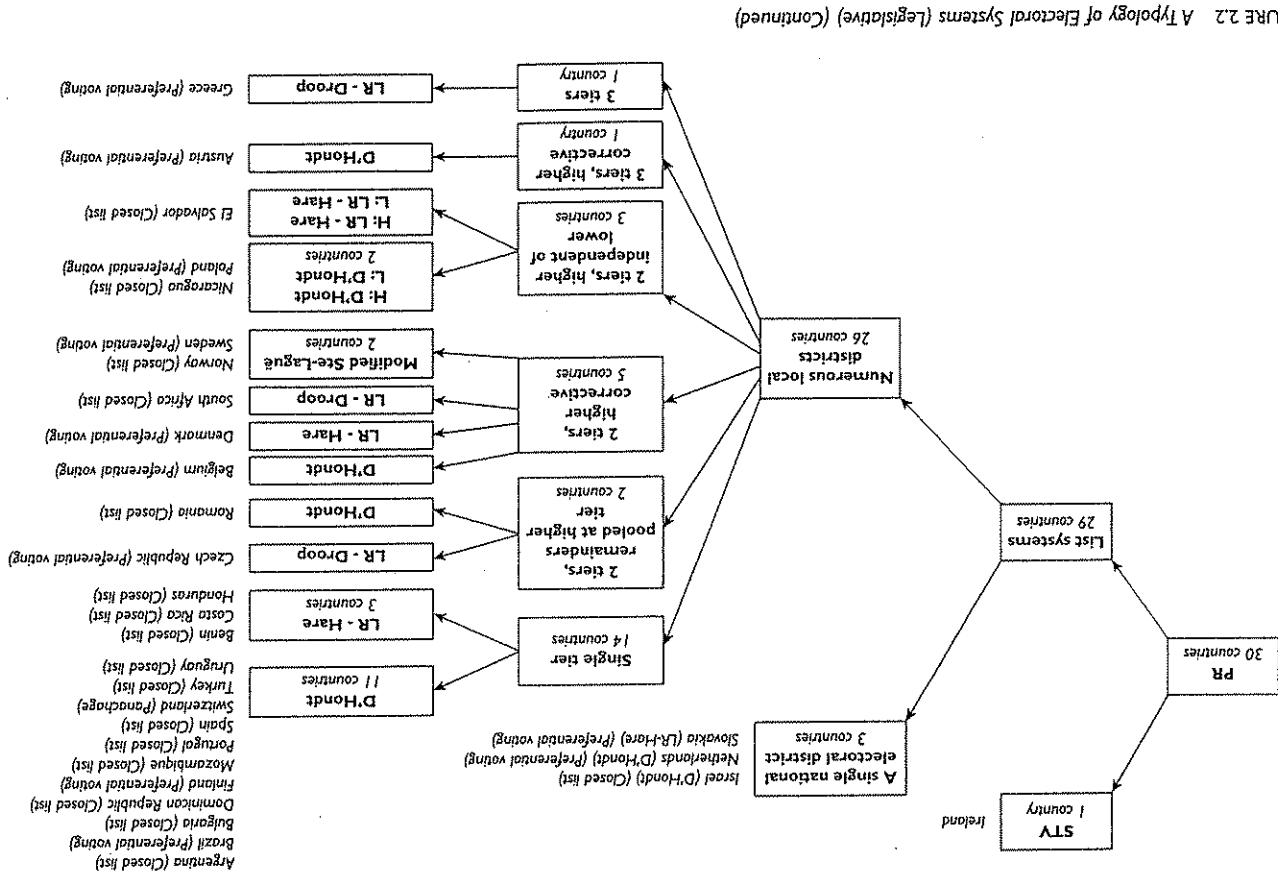


FIGURE 2.2 A Typology of Electoral Systems (Legislative) (Continued)

highest averages methods, which use a divisor, and largest remainders methods, which use quotas.

Highest averages methods require the number of votes for each party to be divided successively by a series of divisors: seats are allotted to the parties that secured the highest resulting quotients, up to the total number of seats available. There are three such methods currently in use<sup>9</sup> which differ by the sequence of divisors. The most widely known and used (18 countries; see Figure 2.2) is the *D'Hondt* formula, which uses divisors 1, 2, 3, 4, etc.<sup>10</sup> The logical alternative is the "pure" *Sainte-Laguë* formula (also known as the odd-integer number rule), where divisors are instead 1, 3, 5, 7, etc. In this pure form (which can be found in the mixed system of New Zealand), *Sainte-Laguë* normally produces a highly proportional distribution of seats, a feature which may explain why a "modified" *Sainte-Laguë* formula was devised, the single difference being that the first divisor is raised to 1.4 (instead of 1), a move which makes it more difficult for smaller parties to get a seat. The modified *Sainte-Laguë* formula is used in Denmark (in local districts), Norway, and Sweden. Of the three highest averages methods, *D'Hondt* is acknowledged to produce a bonus for larger parties and pure *Sainte-Laguë* the most likely to produce a proportional outcome, with modified *Sainte-Laguë* falling in-between.

Table 2.1 shows how seats would be allocated in a 12-member district under each of the three methods among the six following parties: Blues, 57,000 votes; Whites, 26,000 votes; Reds, 25,950 votes; Greens, 12,000 votes; Yellows, 6,010 votes; Pinks, 3,050 votes, for a total of 130,010 votes. In this case, each formula produces a slightly different outcome. The strongest party, the Blues, are better off under *D'Hondt*, while the second weakest party, the Yellows, manage to secure a seat only under pure *Sainte-Laguë*.

Largest remainders (LR) systems involve two successive operations. First, the number of votes for each party is divided by a quota, and the resulting whole number corresponds to the number of seats each party initially gets. Second, seats still unallocated are awarded to parties that had the largest surpluses of unused votes (known as remainders) following division.<sup>11</sup> The only variations within the largest remainders system concern the computation of the quota. The total number of votes polled in the district may be divided either by the number of members to be elected (a *Hare quota*) or by the number of members to be elected *plus one* (a *Droop quota*).<sup>12</sup>

LR-Hare is used in Benin, Costa Rica, Denmark, El Salvador, Honduras, and Slovakia, and LR-Droop in the Czech Republic, Greece, and South Africa (Figure 2.2).<sup>13</sup> Raising the divisor by one unit gives a lower quota. As a result, fewer seats normally remain unallocated after division, which slightly reduces the proportionality of the outcome.

Table 2.2 uses the same example as in Table 2.1 to illustrate how LR-Hare and LR-Droop work. The first step is to obtain a quota, which corresponds to the total number of votes (130,010) divided by 12 in the case of Hare and by 13 for Droop. Each party's votes are divided by the

TABLE 2.1 Distribution of Seats by the Three Highest Averages Methods

	Blues	Whites	Reds	Greens	Yellows	Pinks
Votes	57,000	26,000	25,950	12,000	6,010	3,050
D'Hondt formula						
1	57,000 A	26,000 C	25,950 D	12,000 I	6,010	3,050
2	28,500 B	13,000 G	12,975 H	6,000		
3	19,000 E	8,667 L	8,650			
4	14,250 F	6,500				
5	11,400 J					
6	9,500 K					
7	8,143					
Seats won	6	3	2	1	0	0
Modified Sainte-Laguë formula						
1.4	40,714 A	18,571 C	18,536 D	8,571 H	4,293	2,179
3	19,000 B	8,667 F	8,650 G	4,000		
5	11,400 E	5,200 K	5,190 L			
7	8,143 I	3,714	3,707			
9	6,333 J					
11	5,182					
Seats won	5	3	3	1	0	0
Pure Sainte-Laguë formula						
1	57,000 A	26,000 B	25,950 C	12,000 E	6,010 K	3,050
3	19,000 D	8,667 G	8,650 H	4,000	2,000	
5	11,400 F	5,200 L	5,190			
7	8,143 I	3,714				
9	6,333 J					
11	5,182					
Seats won	5	3	2	1	1	0

NOTE: The letters indicate the order in which seats are awarded to parties in a 12-member district.

quota (10,834 for Hare and 10,001 for Droop), and unallotted seats go to the parties with the largest remainders. LR-Hare yields more proportional results than LR-Droop (in our example, they are identical to those obtained under pure *Sainte-Laguë*).

TIERS While most PR countries covered in our book have settled for a single tier of districts (whether national or local), quite a few have added a second tier of distribution, generally in order to reduce distortions resulting from the allocation of seats in the first tier (see Figure 2.2). There can be two or even three tiers. Belgium has 20 *arrondissements* while its ten provinces serve as higher tiers. The Greeks have been the fondest practitioners of multiple tiers, and currently have 56 local districts, 13 regional districts and a single national one.

The distribution of seats at the higher tier can proceed in three basic ways. The first approach, now found in the Czech Republic and Romania,

TABLE 2.2 *Distribution of Seats by the Two Largest Remainders Methods*

	Votes	Quota	Dividend	Seats won
		Hare quota		
		Quota = $(130,010 \div 12) = 10,834$		
Blues	57,000	$10,834 = 5,260$		5
Whites	26,000	$10,834 = 2,400$ (x) <sup>a</sup>		3
Reds	25,950	$10,834 = 2,395$		2
Greens	12,000	$10,834 = 1,110$		1
Yellows	6,010	$10,834 = 550$ (x) <sup>a</sup>		1
Pinks	3,050	$10,834 = 280$		0
Total			$10$ (2) <sup>b</sup>	12
		Droop quota		
		Quota = $(130,010 \div 13) = 10,001$		
Blues	57,000	$10,001 = 5,699$ (x) <sup>a</sup>		6
Whites	26,000	$10,001 = 2,660$ (x) <sup>a</sup>		3
Reds	25,950	$10,001 = 2,595$		2
Greens	12,000	$10,001 = 1,200$		1
Yellows	6,010	$10,001 = 601$		0
Pinks	3,050	$10,001 = 305$		0
Total			$10$ (2) <sup>b</sup>	12

<sup>a</sup>Seats going to the parties with largest remainders.

<sup>b</sup>Total number of seats allocated through largest remainders.

necessitates a pooling at the higher level of remainders from local districts. In the lower tier (that is, in the basic electoral districts), party votes are divided by the quota. The higher tier is where the seats unallocated in each district following division by the quota are grouped and distributed among parties on the basis of the collected remainders from each district. This procedure normally works to the advantage of the smaller parties insofar as it allows them to offset the wastage effect produced by the dispersion of their vote in local districts.

One implication of this technique is that the number of seats that are allocated at the higher tier(s) are not predetermined by the law. Indeed it may vary from one election to the next, depending on the extent of party fractionalization—the more fractionalized the electorate in districts, the smaller the number of seats awarded at this initial stage—and on the quota used. As noted above, a Hare quota normally results in a smaller number of seats being allotted at the lower level than a Droop quota.

The second approach uses the higher tier as a corrective. In this case, a fixed number of seats are reserved for correcting at the higher level the distortion between votes and seats generated by the use of local districts with small magnitudes. Sweden, for example, is divided into 28 basic districts which together elect 310 members. There are also 39 seats to be awarded at the national level in order to correct imbalances. The distribution of those 39 seats involves the following operations. First, the total number of seats, this is 349 (310 + 39) is distributed among parties on the

basis of their total vote as if Sweden were a single national constituency. Next, the resulting seat allotment is compared with the actual distribution of 310 district seats. Whenever a party wins fewer seats in districts than it would be entitled to under the national computation, it gets the difference as national seats. Thus imbalances created at the district level are corrected at the national level. This kind of corrective higher tier is used in Austria, Denmark, Sweden, Norway, and South Africa. Belgium's *apparentement provincial*, through different procedures (which do not provide for a fixed number of corrective seats), also has a corrective effect.

A third option is for members elected at the higher level to be selected independently of members elected in basic districts. Poland has 391 members elected in 52 districts under the D'Hondt rule. There is also a national constituency where 69 seats are distributed on the basis of national party totals under the D'Hondt method, bringing the total size of the legislature to 460. This kind of arrangement also prevails in Nicaragua and El Salvador.

Multiple tiers normally reduce distortions, provided there is no threshold that prevents smaller parties from getting national seats. If such thresholds exist, a higher tier can serve to give a bonus to larger parties.

**THRESHOLDS** This brings us to a fourth dimension of PR, namely the existence in most PR countries of legal thresholds of exclusion. Politicians are rarely willing to follow a principle up to its full logical conclusion. As previous paragraphs make clear, there are plenty of ways, even in PR systems, to grant a "bonus" to stronger parties at the expense of the weakest. While the effect of other techniques for dampening proportionality, like the D'Hondt rule or low district magnitude, is subtle and difficult to gauge except for trained electoral engineers, a threshold flatly states that political parties that fail to secure a given percentage of the vote, either in districts or nationally, are deprived of parliamentary representation or at least of some of the seats they would otherwise be entitled to.

Thresholds are fairly common. Only ten countries having list systems of PR do not impose any, while 19 do (Figure 2.3). Eight have local thresholds, seven have national thresholds, while Greece, Poland, Romania, and Sweden combine local and national thresholds. In addition, many mixed systems also impose thresholds for the PR tier. The law may require a fixed percentage of the national or district vote, or a certain number of votes or seats at the district level, to be entitled to seats at the national level. In Eastern Europe, higher thresholds are sometimes imposed upon coalitions. The best-known threshold is the German rule, which excludes from the Bundestag any party which fails to obtain 5% of the national vote or to elect three members in single-member districts. Turkey goes the farthest, by demanding 10% of the national vote to secure a local seat, followed by Poland with a national threshold of 7% for national seats.<sup>14</sup> All other countries require 5% or less of national or regional vote.

Thresholds send a clear and frank message that marginal parties are not considered suitable players in the parliamentary arena. As there is



weakest candidates are eliminated and their votes are similarly transferred to remaining candidates, until all seats are filled.

While this system has been warmly advocated for over a century in Anglo-American circles, Ireland is the single country covered in this book to use it for elections to the first chamber, while Australian Senators are also elected by STV (Bowler and Grofman 2000).

#### *Mixed systems*

It is technically possible to mix together different electoral systems in order to devise a hybrid, or "mixed" system. Not all scholars agree on the meaning of that expression (Massicotte and Blais 1999; Shugart and Wattenberg 2001). We define a mixed system as a system where different formulas (plurality and PR, majority and PR) are used simultaneously in a single election.<sup>15</sup> Before the 1990s, mixed systems were often dismissed as eccentricities, transitional formulas, or instances of sheer manipulation doomed to disappear. It may be time to revise such generalizations, as 16 of our countries (including Germany, Japan, Italy, and Russia) have mixed systems. The Scottish Parliament and the Welsh National Assembly are also elected under mixed systems, as well as 13 of Germany's 16 *Länder* assemblies.

There are at least three ways of mixing PR with either the plurality or majority rule.<sup>16</sup> The simplest way (which we propose to call *coexistence*) is to apply PR in some parts of the national territory, and either plurality or majority everywhere else. In French Senate elections, a majority-plurality system is used in departments having one or two seats, while PR prevails in departments where three Senators or more are to be elected (about 70% of all seats).<sup>17</sup>

A second type of mixed system involves having two tiers of members (some elected by PR, the others elected by plurality or majority) throughout the country. Following the 1994 electoral reform, Japan offers an example of this kind of mixed system, which we call *superposition* or *parallel*. Three hundred members of the House of Representatives are elected in single-member constituencies under first-past-the-post. The other 200 (180 since 2000) are elected in 11 regional constituencies by proportional representation. The Russian system is of the same broad type, except that PR members account for half of the total and are elected in a single national constituency. Taiwan combines 125 members elected by the single nontransferable vote in 27 constituencies, with 36 members elected nationally by PR.

In the Japanese and Russian systems, PR seats are not distributed so as to correct party distortions created by the operation of the plurality rule in single-member districts. Each tier is elected independently of the other. The German system is the best example of a third type of mixed system, where PR seats are distributed in a *corrective* way, so as to compensate weaker parties that did poorly in single-member seats and to produce a

parliament where each party gets its fair share of seats. Thus the Bundestag includes 328 members elected by plurality in single-member districts, plus 328 PR seats in a single national constituency. Electors cast two votes, first for a candidate in their single-member district, second for a party.

The allocation of seats requires first the distribution, on the basis of second or "party" votes cast by electors, of 656 seats by proportional representation (LR-Hare method). The results of such computation are compared with the actual distribution of the 328 constituency seats among parties. The other 328 seats are then awarded so as to make the final distribution of 656 seats fully proportional. In 1993, New Zealanders opted for a formula close to the German one. The Italian system of 1994 reaches the same corrective goal through more complex procedures.<sup>18</sup> Mexico provides for PR seats so as to ensure the presence of some opposition members in its Chamber of Deputies, while the ruling party normally sweeps the vast majority of single-member districts. All these cases mix plurality with some form of PR.

Hungary's system provides one of the most byzantine mixes ever tried. Broadly speaking, it is a superposition system, as 176 members are elected by majority in single-member districts while 152 members are elected by PR D'Hondt in 20 regional districts. However, a further 58 national seats are allocated at the national level with a corrective effect, since they are to be distributed by PR on the basis of *votes cast for candidates defeated at the other two levels*.

A country may use the same system for elections at all levels, but it may also resort to different formulas for different levels. France, for example, uses majority-runoff for presidential elections, majority-plurality in single-member districts for legislative and departmental elections, majority-plurality in multimember districts for senatorial elections in smaller departments and for municipal elections in smaller municipalities, PR D'Hondt in a nationwide district for European elections and in larger departments for senatorial elections. Larger municipalities elect councillors, generally in a single constituency, through a unique procedure: half the seats are allotted to the list that secures an absolute majority of the vote on the first ballot (or a simple plurality on the second), while the other half is distributed among all lists (including the leading one) under PR D'Hondt. A variant of that original formula (which we propose to call *fusion*) is now used for regional elections. In countries with directly elected second chambers, it is quite common for the latter to be elected under a system entirely different from the one used for electing the first chamber (Massicotte 2000).

Political circumstances sometimes produce intricate arrangements. In Malta, where STV prevails, the Labour Party got in 1981 a majority of seats while the other party had obtained more than 50% of the vote. Public outrage resulted in a "safety net" mechanism guaranteeing that if this kind of scenario occurred again, the aggrieved party would have its representation increased so as to obtain a majority. Since then, the safety net has come into operation twice (Hirczy de Mino and Lane 2000).



Electoral systems tend to be relatively stable. Some countries, like the United States, Britain, and Canada, have clung to the same system since their origins. Others, like most continental European countries, once switched from majority or plurality to PR, and never changed again. A few countries, like France and Greece, have altered their systems repeatedly, from plurality or majority to PR, and back and forth afterwards. The 1990s, however, have witnessed major electoral reforms in Japan, Italy, and New Zealand. Disillusion with politicians seems to have been a major factor behind these changes, two of which (the exception is Japan) were driven from outside parliament by a disgusted citizenry through referendums (Dunleavy and Margetts 1995; McKean and Scheiner 2000). The outcomes have not always met all the expectations.

### Political consequences of electoral systems

We may distinguish two types of consequences: those that take place before the vote and those that occur after. Following Duverger (1951), we may call the former *psychological* and the latter *mechanical*. Mechanical effects are those that directly follow from electoral rules. Psychological effects pertain to how parties and voters react to these rules: they may change their behavior because of their expectations about the mechanical effects of electoral systems and about how other actors will react. Psychological effects affect the vote, mechanical effects affect the outcome of the election, given the vote (Blais and Carry 1991).<sup>19</sup>

#### *The psychological effect*

Electoral rules can affect the behavior of parties and voters. Concerning parties, two questions may be raised. First, does the number of parties contesting an election depend on electoral rules? Katz (1997) looks at more than 800 elections held in 75 countries over more than a century and compares the actual number of parties running in different systems. The average number is nine in PR and single-member majority systems and six in single-member plurality ones. Elites thus refrain from forming new parties in plurality systems because they know it is more difficult for small parties to win seats. On the other hand, there are almost as many parties running in majority as in PR elections. This underlines the fact that majority elections are quite different from plurality ones, a point to which we return below.

Party leaders respond to the incentives created by electoral rules. The response, however, is not automatic. This is clearly illustrated by Gunther's (1989) thorough analysis of the impact of the electoral law on party elites in Spain. As noted above, this country has a PR system, but it contains many features that make it strikingly unproportional. The system should serve as a deterrent to schisms and an inducement to mergers among parties.

Yet, little of this has happened, partly because party leaders miscalculate their likely level of support and partly because the maximization of parliamentary representation in the short run is less important than other political objectives. Gunther's analysis is a useful reminder that electoral rules only create incentives, they do not determine behavior. Over the long haul, however, these incentives do leave their imprint.

A second question is whether electoral rules affect party strategies. The question is examined by Katz (1980), who shows that PR and large district magnitude tend to make parties more ideologically oriented, whereas party cohesion tends to be weaker when voters are allowed to express preferences among candidates within the same party. In the latter case, as Katz explains, candidates must mount an independent campaign, and that weakens party attachments.

Turning to voters, the question that has attracted the most attention is the presence or absence of strategic or tactical voting in plurality systems.<sup>20</sup> Suppose there are three candidates in an election: A, B, and C. Consider voters who prefer C, then B, then A, and know C is not popular and has very little chance of winning. These voters have the choice of voting for their most-preferred candidate or of voting strategically for their second-preferred, because that candidate has a better chance of defeating their least-liked candidate (Cox 1997).

A number of studies have looked at how candidate viability affects the vote in plurality elections. Black (1978) and Cain (1978) have shown that the propensity to vote for a second choice is related to the closeness of the race (as indicated by the actual outcome of the election) in a district. Abramson et al. (1992) go a step further and show that the vote in American primaries reflects both preferences and perceptions of candidates' viability. Blais and Nadeau (1996), Alvarez and Nagler (2000), and Blais et al. (2001) refine the analysis and estimate how many voters cast a strategic vote, that is, would have voted for another party if they had not factored in their perceptions of the various parties' chances of winning in their constituency. The standard estimate is around 5%, which indicates that strategic voting exists but also that it is not a widespread phenomenon.

This raises the question as to whether strategic considerations play a role in PR or majority elections. We would expect thresholds in PR systems to induce some degree of strategic voting. If a voter's most preferred party is expected to have fewer votes than the required threshold, he/she has to choose between voting for that party even though it has little or no chance of being represented in parliament and supporting another party that is likely to meet that threshold. The only piece of evidence we have on this is provided by Gunther (1989), who shows that sympathizers of small parties are less likely to vote for those parties in smaller districts, with high effective thresholds.<sup>21</sup> An even more intriguing question, which has not been examined in the literature, is whether voters in PR systems hesitate to vote for parties that are perceived to have no chance of being part of the government.

In two-ballot majority elections, the issue is whether voters express their pure preferences on the first ballot, knowing that they will be able to have another say in the second ballot. There is little doubt that the vote on the first ballot does not merely reflect preferences, that strategic considerations play a role. In the French legislative election of 1978, for instance, a substantial number of RPR supporters voted UDF in those constituencies where the UDF had won in the previous election and was thus more likely to defeat the Left (Capdevielle, Dupoirier, and Ysmal 1988: 29).<sup>22</sup> We should also note an intriguing pattern identified by Parodi (1978): the electoral coalition that gets more votes on the first ballot tends to lose votes on the second. The exact reason why this occurs has not been elucidated.<sup>23</sup> It is an interesting case of voters reacting to the collective signal given on the first ballot.

### *The mechanical effect*

The electoral law determines how votes are to be translated into seats. The most direct issue regarding the mechanical impact of electoral systems thus pertains to the relationship between the proportion of votes a party gets and the proportion of seats it wins in the legislature. Two subsidiary questions concern the outcome of the election: the number of parties that get represented in the legislature, and the presence or absence of a parliamentary majority.

### *Votes and seats*

Rae's seminal book (1967) is the starting point. Rae regressed seat shares against vote shares under PR and under plurality/majority formulas. He finds the regression coefficient to be 1.07 for PR and 1.20 for plurality/majority. All systems give an advantage to stronger parties but that bias is much less pronounced in PR systems. The average bonus to the strongest party is eight percentage points in plurality/majority systems, and only one point under PR.

Unfortunately, that specific line of inquiry has not been pursued in a cross-national perspective. Some studies have looked at specific countries and refined the analysis by incorporating other factors such as the concentration of the vote (Sankoff and Mellos 1972, 1973) and the relative performance of parties in constituencies of different sizes (Spafford 1970), but we do not have updated and revised estimates of the basic seat/vote relationship in various types of electoral systems.

Taagepera (1986) proposed a radically new perspective to the issue. His starting point was the cube law of plurality elections, formulated at the beginning of the century, according to which the ratio of seats won by two parties equals the cube of the ratio of their votes. Taagepera showed that the most appropriate exponential is not necessarily three but rather the logarithm of the total number of votes divided by the logarithm of the total

number of seats. He extended the model to PR elections, in which case the exponential depends on district magnitude as well as on total numbers of votes and seats.

Taagepera's work constitutes a major improvement. It is elegant and has the great advantage of proposing a model that can be applied to all electoral systems. For plurality elections, Taagepera is very persuasive in showing that his model outperforms the cube law. It is not clear, however, that it does a better job than the models proposed by Spafford or Sankoff and Mellos. We still lack a systematic comparative evaluation of these various approaches.

With respect to PR elections, Taagepera and Shugart (1989: ch. 11) stress the decisive impact of district magnitude. Rae (1967) had already shown that district magnitude strongly affects the degree of proportionality of PR. He did not, however, take into account the presence of supradistrict adjustment seats or legal thresholds. Taagepera and Shugart devise a complex procedure for computing a measure of effective magnitude that incorporates all these elements.

### *The number of parties in parliament*

Duverger (1951) claimed that the plurality rule favors a two-party system while the majority rule (with second ballot) and proportional representation are conducive to multipartyism. He also argued that only the relationship between plurality rule and a two-party system approached a true sociological law. Riker (1986) concluded that Duverger was basically right. There is an association, but only a probabilistic one, between proportional representation and multipartyism. In Riker's view, the relationship between plurality and a two-party system is much stronger. He points to only two exceptions, India and Canada, and proposes a revised law accounting for these two exceptions. This is not very compelling, however, as the number of cases supporting the law is very small<sup>24</sup> and as Britain can hardly be characterized as a two-party system, at least as far as the distribution of votes is concerned.

This raises the question of how to count parties. One simple method is to count the number of parties represented in the legislature. Unfortunately, no study has compared electoral systems on that criterion. Attention has focussed on measuring the "effective" number of parties, which weights parties according to their electoral strength.

The most popular measure is the one proposed by Laakso and Taagepera (1979), where the effective number of parties equals 1 divided by the sum of squared vote shares. Molinar (1991) proposes an index giving special weight to the largest party. As Lijphart (1994a: 69) shows, both measures have their merits and limits, and they yield similar results in most instances.

Lijphart (1994a) compares the effective number of parliamentary parties in various systems. The average is 2.0 in plurality, 2.8 in majority, and 3.6 in PR systems. Within PR systems, the only important factor is the effective threshold. Within the sample examined by Lijphart, the effective

threshold varies from 1% to 13%; the number of effective parties is reduced by 1 when the threshold is over 8%.

Finally, Ordeshook and Shvetsova (1994) and Neto and Cox (1997) look at how electoral systems mediate the impact of ethnic heterogeneity on the number of parties. These two studies show that "the effective number of parties appears to depend on the product of social heterogeneity and electoral permissiveness, rather than being an additive function of these two factors" (Cox 1997: 221).

#### *Is there a parliamentary majority?*

The ultimate objective of an election is to determine who will govern. A crucial question in parliamentary systems is whether the election allows the formation of a single-party majority government. Clearly, parliamentary majorities are infrequent in PR systems. Blais and Carty (1987), in their study of 510 elections in 20 countries over almost a century, reported that 10% of PR elections produced such a majority. Lijphart (1994a), who examined elections in 27 countries between 1945 and 1990, found a majority in 20% of the cases. He also showed that the probability of a one-party majority government in a PR system hinges very much on the effective threshold. It is about nil when that threshold is very small but reaches 30% when the effective threshold is 10%, as in Spain.

Parliamentary majorities, either natural or manufactured,<sup>25</sup> are much more frequent in plurality elections. Blais and Carty (1987) and Lijphart (1994a), who look at different sets of countries and periods, report that in their samples the proportion of plurality elections that produced one-party majority governments is respectively 69 and 93%.

What about majority elections? Lijphart (1994a) examines France and Australia; he finds a parliamentary majority in half of the cases. The same proportion is reported by Blais and Carty (1987), who consider many more cases. The latter study includes, however, multimember majority systems; the proportion drops to 27% when these are excluded. On this criterion, the single-member majority system is closer to PR than to plurality.

In plurality systems, one-party majorities are normally won by parties that secure a plurality or a majority of the votes. It is possible, however, for a party that comes second in terms of votes to obtain a majority of the seats. This was the case, for example, in two successive elections (1978 and 1981) in New Zealand. This may occur for two reasons. Seats carried by the winning party tend to come from less populated districts, and/or votes for the losing party are too highly concentrated (and wasted) in some districts (Taylor and Johnston 1979; Massicotte and Bernard 1985; Grofman, Koetzle, and Brunell 1997).<sup>26</sup>

#### The debate over electoral systems

Which is the best electoral system? Analysts and practitioners have debated the issue for more than a century. The debate has touched upon every

dimension of electoral systems, the ballot, the constituency, and the formula. As we have seen in the first section of this chapter, there is a wide range of options available, especially if we take account of the possibility of combining these options in various ways.

The debate has focussed mainly on the choice of an electoral formula, and it is thus logical to start with that dimension. We then turn to the debate over the constituency and the ballot. Our review is confined to the most important arguments advanced to support or oppose a given option.<sup>27</sup>

As we show, a good case can be made for almost any electoral system. This is so because there are alternative visions of democracy, and because electoral systems are meant to accomplish not one but many objectives, which entail tradeoffs.<sup>28</sup> That the debate remains unsettled may account for the recent popularity of mixed systems.

#### *The formula*

The dominant debate in the literature has been between plurality and PR systems. The basic argument in favor of the plurality rule is that it produces one-party majority government, while PR is advocated because it produces broad and fair representation.

Why is one-party majority government such a good thing, according to proponents of the plurality rule? For two main reasons. The first is stability. One-party majority governments are believed to be more stable and government stability is perceived to enhance political stability. There is little doubt that one-party majority governments are more stable than coalition governments typically found in PR systems. At the same time, it must be acknowledged that most coalition governments in PR systems are reasonably stable (Laver and Schofield 1990: ch. 6). The most difficult question concerns the relationship between government and political stability. The jury is still out on this question. Powell (1982) finds no relationship, while Blais and Dion (1990) note that among non-industrialized countries democracy breaks down more often in PR systems with low government stability. Lijphart (1994b, 1999) argues that PR countries in fact perform better than plurality/majority countries on crucial indicators like economic growth, the incidence of strikes, and political violence. He points out that too many arguments against PR are drawn from specific cases like Italy or Israel. More research is needed on this important topic in order to sort out the specific impact of electoral systems versus other factors such as presidentialism (Strepan and Skach 1993).

The second virtue that is claimed for one-party majority government is accountability. Accountability stems from decisiveness. An election is decisive when it has a direct and immediate impact on the formation of government (Powell 1989; Strøm 1990: 72-4; Powell and Whitten 1993). It is easier for voters in a plurality system to get rid of a government they do not like; they just throw the rascals out and replace them with a new

The second argument in favor of majority rule is that it offers a reasonable degree of both responsiveness and accountability. It allows the presence of many parties, fewer than does PR but more than the plurality rule. It often leads to the formation of coalition governments, but the process of coalition-building tends to be more open than under PR. Coalitions are more likely to be formed before the election, or at least before the second ballot, so electors have an opportunity to pass judgment. Compared with the situation under PR, voters have a more direct say in which coalition will form the government, and parties and governments are more accountable, though less than under the plurality rule. The majority rule should thus appeal to those who wish to obtain a mixture of responsiveness and accountability. The majority rule is, however, much less satisfactory with respect to fairness. In fact, it is in majority systems that disproportionality between seat shares and vote shares can be the greatest.<sup>32</sup>

### *The constituency*

The main debate here is about the virtues and vices of single- and multi-member districts. That debate overlaps, to some extent, the one over plurality and PR systems, as the latter entail multimember districts (MMDs) and the former (as well as majority systems) usually resort to single-member districts (SMDs).

Supporters of single-member districts claim that SMDs give voters a closer relationship with their representatives and maximize accountability, as district representatives can be held responsible for defending constituency interests. That responsibility is diluted among many representatives in multi-member districts. Representatives have to work in a smaller district, which presumably facilitates contacts with constituents. Some formerly PR countries (Germany, Bolivia, Venezuela) have switched to corrective mixed systems so as to guarantee that a substantial portion of the membership of the Assembly would be drawn from single-member districts while not impairing the fairness of party representation.

Single-member districts have at least one important drawback. They have to be altered periodically in order to maintain populations of relatively equal size. This may result in artificial units of no particular relevance to citizens and raises all the problems involved in designing and redesigning districts (Butler and Cain 1992). Multimember districts need not be of the same size. They can be made to correspond to sociological or administrative boundaries and are thus more congruent for voters (Niemi, Powell, and Bicknell 1986). Their boundaries can remain intact even if their population increases or decreases as it is possible to simply adjust the number of members to be elected in the district.

The alleged advantage of multimember districts is that they ensure a better representation of various groups, especially minority ones. There is much evidence, in particular, that women tend to be better represented in

government. In a PR system, the fate of a government is decided only partly and indirectly by voters. A party may lose support but still remain a member of a coalition government, as the composition of the government depends on deals among the parties. In this sense, one-party majority governments are more accountable than their coalition counterparts. A serious drawback, however, is that there is no guarantee in a single-member plurality system that the party with the most votes overall will actually form the government, as approximately one plurality election out of ten held since 1944 resulted in a plurality of seats for a party that was lagging behind in the popular vote.<sup>29</sup>

For advocates of proportional representation, the two key words are fairness and responsiveness. Almost by definition, PR is fair since it is intended to give each party a share of seats more or less equal to its share of votes. That principle is of course qualified by the use of small districts and/or legal thresholds. Moreover, the distribution of seats in the legislature may be fair, but the distribution of cabinet seats in government is surely much less fair.<sup>30</sup> Nevertheless, it cannot be disputed that PR leads to fairer representation than the plurality rule.

Proportional representation also allows for a greater diversity of viewpoints to be expressed in the legislature and in government, as more parties are represented in both. Parties in plurality systems must of course be sensitive to different perspectives if they want to attract enough votes to win, but the mere fact that more parties get to argue their positions in a PR system should make governments more aware and concerned about the diversity of opinions. And there is indeed evidence of greater congruence between the median ideological position in the legislature and the median ideological position of the electorate in PR systems (Powell 2000; Powell and Vanberg 2000).

Proportional representation is especially advocated for societies with deep ethnic or linguistic cleavages. The argument is that in such societies it is imperative that minority groups be fairly represented within political parties, in parliament and in cabinet, and that only under PR can that goal be achieved (see Cairns 1968; Liphart 1977; Sisk 1995). Critics reply that PR can induce the formation of narrow ethnic parties that appeal to ethnic cleavages in order to maximize support (Tsebelis 1990). They also point out that there is no evidence that minority groups are more supportive of the system in PR countries (Norris 2000a).

The choice between plurality and PR is thus mostly about what is deemed to be more important: accountability and (perhaps) stability on the one hand, fairness and responsiveness on the other hand.

There is a third option: majority rule. The arguments in favor of majority rule have not been as systematically articulated.<sup>31</sup> There are, we believe, two basic reasons for advocating it. First, the majority principle is at the very heart of democracy. In a direct democracy, the majority wins and in a representative democracy, most decisions are made by legislators through the majority rule. It would thus seem natural to apply the same logic to the selection of representatives.

multimember districts, as parties strive for an overall balance (Rule 1992; Rule and Norris 1992), although the Jenkins report in Britain has concluded that this evidence was not overwhelming (Jenkins 1998). The consequences of MMDs are less certain, however, for groups that are territorially concentrated. In the United States, in particular, blacks and Hispanics do better under SMDs (Rule 1992; Welch and Herrick 1992; Davidson and Grofman 1994), especially since the Voting Rights Act encourages the creation of districts where racial minorities predominate.

The choice between single- and multimember districts is thus one of competing values, mainly the advantage of having accountable individual representatives versus the benefit of having a more representative and responsive legislature.

### *The ballot*

How voters are allowed to express their preferences depends to a great extent on the kind of electoral formula that is used. Consequently, the debate over voting procedures takes different forms in plurality, majority, and PR systems. Before reviewing these debates, one general observation should be made. Everything else being equal, it seems likely that the more information the ballot reveals about voters' preferences, the more accurate the representation of preferences is likely to be. Thus a system that allows voters to express degrees of preferences is arguably preferable to one that does not. At the same time, however, such a system may be less simple for voters, and there may be a tradeoff between simplicity and the amount of information that voters are asked to provide.

### *The ballot in plurality systems: one or many votes?*

In single-member plurality systems,<sup>33</sup> voters are typically asked to indicate which candidate they prefer. There are other possibilities: voters can be asked to rank order the candidates or to vote for as many candidates as they approve of. The latter approach, approval voting, has been advocated by Brams and Fishburn (1982).

There are two major reasons for supporting approval voting. First, it provides voters greater flexibility in expressing their preferences; voters are not forced to choose only one candidate. It thus yields a more accurate measure of preferences, without undue complexity. Second, it ensures the candidate with greatest overall support is elected. It makes it impossible, in particular, for an extremist to squeeze in as the winner when there are two moderate candidates, something that can occur in a standard plurality election.

The main objection to approval voting is that it may increase the number of parties and reduce the probability of a one-party majority government. The reason is that when voters have to vote for one candidate in a plurality election, they are induced to vote strategically for parties that have a chance of winning and not to support parties that appear to be weak.

While strategic voting may well occur under approval voting (Niemi 1984), the incentive for voters not to support weak candidates is not as strong: they may vote for both their preferred weak candidate and their second choice. As a consequence, more parties are likely to get votes and seats, and one-party majority government is likely to be less frequent.

For those who are firm believers in the virtues of one-party majority government, then, approval voting is not likely to be very popular. When such considerations are not crucial, for the election of a president for instance, it has greater appeal. Approval voting can also be used for majority and PR elections, where it does not have the same disadvantage (one-party majority governments are unlikely anyway).

### *Majority rule: the alternative vote versus multiple ballots*

Under majority rule, a candidate must obtain more than 50% of the votes to win. It is possible that no candidate meets that condition and that no one is elected. As noted earlier in this chapter, there are two ways to proceed when this occurs. The first is to resort to multiple ballots. The second approach is to have voters rank order the candidates (the alternative vote).

The case for the alternative vote is that it provides richer information about voters' preferences; it conveys information about how they react to each candidate. The procedure is somewhat more complex for voters but it is less costly as they vote only once. The case for two ballots is that it allows voters to reconsider their choice and to compare more systematically the two or three "serious" candidates that remain on the second ballot. Citizens are also faced with a simpler task, simply to choose one candidate on each ballot.

### *PR systems: can voters express their preferences among candidates?*

The basic principle of proportional representation is that seats should be distributed among parties according to their vote shares. This assumes that people vote for parties or lists of candidates. The problem with closed list PR is that voters are not allowed to express preferences among individual candidates. Critics claim that this is an important shortcoming. Proponents reply that it is preferences among parties that really matter. The bottom line here is the importance to be attached to the representation of opinions about candidates versus those about parties. It is possible, however, to allow voters to express their opinions about candidates in a PR system, through either *panachage* or preferential voting in a list system or the single transferable vote (see earlier).

The single transferable vote allows voters to rank order candidates and thus grants them maximum freedom to express their preferences. It is a more complex procedure but it provides richer information about voters' preferences. It has two drawbacks. First, it can be applied only if there are relatively few members to be elected in each district: otherwise there would be too many candidates to be rank ordered by voters. But small districts entail

a lower degree of proportionality in party representation. Second, it induces candidates of the same parties to compete against each other, hindering party cohesion (Katz 1980). The single transferable vote is thus an appealing option only for those who are willing to accept only a modest degree of proportionality and relatively uncohesive parties.

The other approach is to keep the list system but to allow voters to indicate their opinions about candidates through panachage or preferential voting. This is a simpler procedure and it can be used in large districts, thus ensuring a high degree of proportionality in party representation. However, *panachage* and preferential voting have the same detrimental effects on party unity. They entail the coexistence of two simultaneous contests, one among parties and one among candidates within the same party.

The debate over electoral systems highlights the role of competing values and tradeoffs in deciding which rules best serve democracy. At least two basic questions need to be addressed. First, which preferences should be represented? The issue is the relative importance to be attached to preferences about parties and candidates. The case for list PR, in particular, rests very much on the assumption that top priority should be given to parties. The greater the importance given to individual candidates, the less appealing list PR becomes. Second, which is the best way to ensure that those elected follow public opinion? One approach is to focus on the make-up of legislatures and of governments. The assumption is that representatives are more likely to be in accordance with public opinion if they resemble those they represent. This is the fundamental belief underlying support for PR. A second view is to focus on legislators' and governments' incentives. The assumption is that representatives will follow public opinion if they think they will not be reelected if they do not and that we should devise a system that makes it easy to get rid of a government that does not do a good job. This is the reasoning of advocates of the plurality rule.

Because of these competing values, it is impossible to characterize any electoral system as inherently better than the others. As Katz (1997) has forcefully argued, the choice of electoral institutions very much depends on one's conception of democracy. This may be one reason why mixed systems have become more popular recently.

## NOTES

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1. Data for this chapter are drawn from Blais and Massicotte (1997), Blais, Massicotte, and Dobrzynska (1997) and Massicotte and Blais (1999). The main sources were the databank maintained by the Inter-Parliamentary Union (Internet site <http://www.ipu.org>), *Keating's Record of World Events*, Blaustein and Flanz (n.d.), and the Political Database of the Americas maintained by Georgetown University (Internet site <http://www.georgetown.edu/LatAmer/Political/Constitutions/>).

constitutions.html). We also relied on the electoral laws of many countries as well as on many other sources, all of which are listed in our contributions cited above.

2. However, in two states (Maine since 1969, and Nebraska since 1991), the procedure for allocating electoral votes is more complex. Two votes are allocated to the candidate winning the district. The remaining votes are allocated to the winner in each congressional district, a modification that might allow the candidate who is trailing on a statewide basis to secure a few votes. Up to, and including, the 2000 election, this feature has failed to produce a split electoral vote in either state.
3. For an analysis of US state legislative elections, see Niemi, Hill, and Grofman (1985).
4. Some analysts (see, especially, Jones 1995a; Cox 1997) characterize the Chilean system, also used for part of the Ecuador and Madagascar legislatures, as PR D'Hondt. It is true that the system works exactly as PR D'Hondt would. It is also true, however, that none of these laws (except Madagascar's) refers to PR, or D'Hondt, or highest averages. Furthermore, the rule that applies in the great majority of instances is simple plurality: the two leading parties each get one seat. It seems to us that a system in which only two parties can get elected can hardly be described as PR.
5. In Nicaragua, a runoff is held unless the leading candidate has at least 40% of the vote, or at least 35% of the vote with a 5-point lead over the main challenger. In Ecuador, under the 1998 Constitution, no runoff is held if the leading candidate gets 40% of the vote and a 10-point lead over the main challenger.
6. Majority-runoff is used for elections to the US House of Representatives in the states of Georgia and Louisiana, which elect a total of 18 members (out of 435). The threshold for standing at the second ballot in French legislative elections is now 12.5% of the electorate.
7. The examples are German presidential elections under the Weimar Republic and French legislative elections in the 1930s (Lakeman 1974). A particularly interesting instance occurred in Germany at the 1925 election: the candidate of the rightist parties, Karl Jarres, withdrew after the first ballot in favor of Field-Marshal von Hindenburg, who had not stood at the first ballot. Hindenburg won.
8. There is a fourth highest average method, known as the Imperiali rule. In Belgian municipal elections (the only occasion where this method is used), the divisors are 1, 1.5, 2, 2.5 etc. This rule works strongly in favor of larger parties (van den Bergh 1955). This Imperiali system, named after a Belgian Senator, should not be confused with the Imperiali quota formerly used in Italian legislative elections.
9. Under D'Hondt, each seat is awarded to the party that would have the highest average vote per seat if it received this seat. This is the purest application of the principle of highest average.
10. Largest remainders and highest averages methods are normally considered mutually exclusive. However, in South Africa, the first five seats unaltered after division are distributed to the parties with the largest remainders, while the D'Hondt highest averages method is used for the remaining seats.
11. Strictly speaking, this should be called a *Hagenbach-Bischoff quota* rather than a Droop quota, as the latter is a Hagenbach-Bischoff quota increased by one. The difference is so minute that Lijphart (1994a) has proposed to select the shortest name to refer to these two quotas. A few Latin American countries resort to a so-called "double quota" system, whereby the first quota serves as a threshold, while the second is used for allocating seats among the parties that crossed the threshold. We classify those systems on the basis of the second quota.

13. We leave aside the Imperiali quota, where the total number of votes is divided by the number of seats *plus two*. This method was used in a single country (Italy) and was dropped in 1993.
14. In Turkey, in districts returning at least five members, the party getting the most votes is awarded a bonus seat, with the rest of the seats awarded under D'Hondt. The system not only disadvantages weak parties, but also advantages the strongest of all.
15. Geographical conditions may necessitate, in a country where PR is the rule, the election of a handful of members in single-member constituencies. This occurs in Finland, Spain, and Switzerland. In our view, such cases should not be considered as instances of mixed systems, a label that should be used only when the proportion of members elected under a different system is more than 5% of the total.
16. For a thorough overview of all the options, see Massicotte and Blais (1999).
17. Until July 2000, the French Electoral Code provided that PR would prevail in departments electing five Senators or more, while majority-plurality was to be used in departments having four seats or less. This meant that only one-third of Senators were elected by PR.
18. Three-quarters (475) of members of the Chamber of Deputies are elected by plurality in single-member districts, while the other 155 are elected by straight PR in a single national constituency and subsequently reallocated between 26 regional constituencies. However, PR seats are allocated to parties not on the basis of their total vote, but on the basis of "amended" party totals that include only votes cast for candidates defeated in single-member districts and for winning candidates in excess of what they needed to win, that is, a plurality of one over their strongest opponent. In other words, only votes wasted at the local level are considered for PR purposes, with the result that parties that do poorly in single-member districts get some correction under PR.
19. We focus, as does the literature, on legislative elections held in parliamentary systems. There have been few studies of the impact of electoral rules on presidential elections (see, however, Shugart and Carey 1992; Jones 1995b; Shugart 1995). Little attention has been given to potential interaction effects between electoral systems and other institutional variables. It is quite possible, for instance, that the consequences of electoral rules are quite different in parliamentary and presidential systems.
20. We leave aside the question of whether proportional representation fosters voter turnout, which is examined in Chapter 7.
21. The legal threshold is the minimum number of votes a party needs under the law to be entitled to seats. In small districts, however, a party may cross the legal threshold without winning any seat. The *effective* threshold is the minimum number of votes a party must actually garner in order to win at least one seat. That effective threshold is not a specific number but a range between the so-called thresholds of inclusion and exclusion. The former is the minimum vote that *may* earn a party a seat under the most favorable conditions, and the latter is the minimum vote that *guarantees* a party a vote even under the most unfavorable conditions. For three parties competing in a three-member district with the D'Hondt formula, the threshold of inclusion is 20% since it is possible for a party to win a seat with that percentage if the other two parties split the rest of the vote evenly, each receiving 40% of the vote. The threshold of exclusion is 25% since by exceeding that percentage by only one vote a party wins a seat even in the most unfavorable condition of another party garnering all other votes, that is, almost 75%. The effective threshold is assumed to be the midpoint between the lower and higher thresholds. For a lucid exposition, see Lijphart (1994a: 25–9).
22. We should note that strategic voting is inferred here from the non-concordance of party identification and vote. This inflates the amount of strategic voting

since voters may vote for a party that is not the one they feel attached to because of the issues of the campaign, party leaders, or local candidates. The fact that the number of parties does not tend to diminish over time in France suggests that strategic voting on the first ballot is limited.

23. A similar pattern seems to take place in plurality elections. In Canada and the United States the frontrunner at the beginning of a campaign tends to lose votes during the campaign (Johnston et al. 1992; Campbell 2000). It could be that the frontrunner is more attacked by other parties and gets closer scrutiny from the media, and that this induces some voters to reconsider their support for that party.
24. Furthermore, one of the few cases supporting the law, the United States, has other institutional features—presidentialism and primaries—that could account for the presence of a two-party system.
25. A natural majority occurs when a party gets a majority of both votes and seats. A manufactured majority is one where a party obtains a majority of seats without having a majority of votes.
26. An analogous result can occur under special rules such as those governing the election of the US president. In 2000, George Bush won the US presidential election while trailing Al Gore by about 500,000 votes nationwide.
27. For a more elaborate review, see Blais (1991) and Dunleavy and Margetts (1995).
28. For a cogent exposition of the tradeoffs see Dunleavy and Margetts (1995), and Katz (1997).
29. This assessment is based on an analysis of national elections held in Britain, New Zealand, and Canada as well as provincial elections in the latter country.
30. This problem is sometimes solved by a requirement that the executive mirrors party strength in the legislature (as in a few Austrian *Länder*) or by a decision to build government coalitions including more parties than is mathematically necessary to command a majority in the legislature (as in Switzerland).
31. See, however, Fischella (1984) and Blais (1993). There is also a debate over the merits and limits of the plurality and majority rule for presidential elections. The majority rule ensures that the elected candidate has strong support. Its main drawback is that it induces many candidates to run in the first election (Shugart and Carey 1992: 215–6).
32. It is in France, for instance, that the index of proportionality tends to be the lowest (Rose 1984: 75). This occurs, however, because only first-ballot votes are taken into account.
33. We confine ourselves here to single-member plurality systems and do not consider the single nontransferable or limited vote. Lijphart, Pinrot, and Some (1986) show that in their consequences these systems lie somewhere between single-member plurality and proportional representation.