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(editor)

# Handbook of ELECTORAL SYSTEM CHOICE

Foreword by

Bernard Grofman

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Also by Josep M. Colomer

*Game Theory and the Transition to Democracy: The Spanish Model*

*Political Institutions: Democracy and Social Choice*

*Political Institutions in Europe (editor)*

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Electoral studies have long focused more on the effects than the  
causes of

electoral rules. As Josep M. Colomer notes in his introduction to  
this volume,

however, the very strength of the effects leads to a natural line of theorizing about causes: parties introduce new rules in anticipation of their effects on those parties' future electoral fortunes. The individual essays in this volume show that this simple notion plays out in many and sometimes subtle ways in particular cases. Cumulatively, they provide the most extensive collection we possess to date. Moreover, Colomer's synoptic overview shows that there is an important general trend visible in the historical record, toward greater proportionality. Every serious student of electoral systems will want this handbook on their shelf.

Gary W. Cox

Professor of Political Science

University of California, San Diego

This volume goes a long way in providing the necessary detailed historical evidence about the roots of electoral system change for a large and diverse set of democratic nations throughout recent history. Professor Colomer offers a new and highly original theory of electoral change which lays the groundwork for a radical revision of what has become the common wisdom about the effects of electoral laws. The chapters provide us a wealth of new information and new theoretical insights.

From the Foreword by

Bernard Grofman

Professor of Political Science and Mathematical  
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J-M.C.

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THE STRATEGY AND HISTORY OF ELECTORAL SYSTEM CHOICE  
Josep M. Colomer

It is for the importance of the electoral system consequences, especially on the number of political parties and the political composition of assemblies and governments, that their choice matters. However, electoral systems –as other prominent political institutions-- are also a consequence of already existing political parties in assemblies and governments, each of which tend to prefer those institutional formulas and procedures that can consolidate, reinforce

or increase their relative strength. As will be argued and discussed in the following pages, political configurations in which there is a single dominant party or two rather balanced parties tend to produce choices in favor of rather restrictive or exclusionary electoral systems, such as those based on the majority principle, while pluralistic settings with multiple parties tend to favor choices in favor of more inclusive electoral formulas, such as those using rules of proportional representation.

More generally, the choice of electoral systems seems to follow what could be called 'Micro-megas' rule', by which the large prefer the small and the small prefer the large: a few large parties tend to prefer small assemblies, small district magnitudes, and rules based on small quotas of votes for allocating seats, while multiple small parties tend to prefer large assemblies, large district magnitudes, and large quotas. In a nutshell, large parties prefer small institutions in order to exclude others from competition, while small parties prefer large institutions able to include them within.

This may be seen as Duverger's laws upside down. As the French political scientist brilliantly sketched in mid 20th century and several

generations of scholars have further developed and re-elaborated, electoral rules and procedures have indeed paramount influence on relevant aspects of public life, including the number of candidacies or political parties that are created by would-be leaders and the number of them that prove durable, the number of individuals and different groups in the electorate that attain representation in councils and assemblies, their relations with elected representatives, the political party composition of the legislative and the executive, and the degree of social acceptance or rejection of the polity and

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its constitutional structure. But we should take into consideration that electoral systems –and formal political institutions and rules more generally—are not absolutely independent variables, but also subjects of political choices by already existing political actors, which tend to make decisions in their own interest. Then it can be expected that electoral systems will usually crystallize, consolidate or reinforce previously existing political party configurations – and the other political features that can be associated to-- rather than generate new party

systems or political outcomes by themselves. It is exogenous changes in the parties' relative strength or expectations, whether by the emergence of new parties or, in general, by coordination failures of the existing parties—in spite or against the incentives provided by the existing electoral system—, that can induce further electoral system changes. These statements do not deny, but, on the contrary, assumes Duverger's laws as granted, that is, that electoral systems have clear consequences on the number of parties, but it inserts this relationship within a more encompassing analytical framework including the choice of electoral systems by already existing political parties.<sup>1</sup>

It seems reasonable to assume that, under restrictive formulas such as majority rule, political actors facing the effects of their own failure at coordinating themselves into a small number of candidacies and the emergence of new issues and new contenders for seats and

<sup>1</sup> To be fair, also Maurice Duverger subtly noted that "the first effect of proportionality is to maintain an already existing multiplicity... On the whole, proportional representation maintains virtually without change the party system existing at the time of its adoption", but

he did not elaborate (Duverger 1950: p. 346). For an early, although also brief statement more explicitly putting the hypothetical line of causality upside down, see John G. Grumm: "the generally-held conclusions regarding the causal relationships between electoral systems and party systems might well be revised.... it may be more accurate to conclude that P.R. is a result rather than a cause of the party system in a given country" (Grumm 1958: p. 375). More extensively, Leslie Lipson developed some historical analysis from the premise that "chronologically, as well as logically, the party system is prior to the electoral system" (Lipson 1964, p. 343); similarly, Bo Särilvick (1982) developed a strategic analysis of the choice of electoral systems in Scandinavian countries; Vernon Bogdanov echoed the hypothesis that electoral systems could be the dependent variable, but he denied any possibility to generalize (Bogdanor 1982, pp.254-261). Other authors could be mentioned that pointed out a relation from social structures, rather than political parties, to electoral systems, a subject deserving to be dealt with elsewhere. For sources and discussion, see also Gary Cox (1997, pp. 14-19). In more formal literature, Anthony Downs assumed

endogeneity of the electoral system (Downs 1957), while David P. Quintal sketched a formal model of electoral system choice based on benefit-cost analysis (Quintal 1970).

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offices, may shift to prefer electoral institutions able to reduce the risks of competing by giving all participants higher opportunities to obtain or share power. When there are only a few parties, they can be satisfied with majoritarian electoral systems, but when the number and the size of new parties increase, the incumbent parties may begin to fear the risk of becoming absolute losers and try to shift to more inclusive electoral formulas. As will be shown in the following pages, electoral system changes indeed tend to move overwhelmingly in favor of increasingly inclusive, less risky formulas: from indirect to direct elections, from unanimity to majority rules, and from the latter to mixed systems and to proportional representation (in other words, towards large assemblies, districts, and quota rules).

Three basic variables emerge into consideration at the time of choosing a specific electoral system: the performance of the existing rules and the changing actors' expectations of

electoral results under them; the availability or invention of alternative electoral rules and formulas with different expected effects; the actors' relative capability of institutional decision-making. The performance of the existing electoral rules will likely be evaluated by political actors for the type of winners and losers they tend to produce, that is, for the opportunities they create for the survival of different political parties, the attainment of seats and offices within the institutional structure, the possibility to implement their preferred policies, the likelihood to be reelected, and the fairness of the overall distribution of power positions. It can be postulated that the more restrictive and exclusionary the existing electoral system –such as those based on majority rules--, and the higher the number of parties with popular support or reasonable expectations of getting it, the stronger the pressures for electoral system change in favor of more permissive and inclusive formulas will be. In the below analysis, we will use the 'effective number' of parties in votes (that is, the number of parties weighed by their size in votes) as a proxy for the potential parties suffering from underrepresentation under the existing rules and able to expect benefits

from such a change.

Two caveats can be taken into consideration. First, of course, the type of change will also depend on the knowledge of alternative formulas and, in absolute terms, on the stock of mathematical and legal inventions available at the moment. But it is 'bad' —that is, unfavorable or unpalatable-- performances that can more likely induce political actors to experiment with alternative formulas or suggest scholars and experts to invent new rules and procedures able to produce different outcomes than those already enforced. Intellectual

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creativity can then feed new expectations and reshape actors' institutional preferences and political strategies accordingly.

Second, it could be expected that electoral institutions —as any other enforceable rules of the game in social inter-actions and exchanges— may have some capability of imposing costs on those not complying, fostering learning processes by which even the losers in the game can obtain relative net benefits from playing (in comparison with the costs of undertaking changes and plays under a new electoral system), and attracting actors' adaptation

to the constraints and incentives provided. Thus, the longer the duration of an existing system, the higher could be the probability that adapted actors will give the system endogenous support while institutionally-induced losers will be eventually absorbed or excluded and decreasingly able to challenge the rules. In other words, relative capability of institutional decision-making may decrease over time for those actors being victims of the existing institutional rules.

In a first, very simple approach, it can, thus, be hypothesized that:

- (1) electoral system changes will move mostly in favor of more inclusive formulas permitting representation of relatively high number of parties;
- (2) they should be more probable the higher the effective number of existing parties,
- and (3) the shorter the duration of the previous electoral system had been.

From this perspective, this introductory chapter presents three different approaches -- logical, historical, and empirical-- to the problem of electoral system choice. First, it presents a 'strategic' model of how electoral systems are chosen by decisive political actors. Second, it

displays a very long-term historical panorama of the invention and adoption of different electoral rules and formulas, which is organized around four basic principles: unanimity, lottery, majority, and proportionality. Finally, several worldwide tests of the choice of electoral systems on 154 occasions in 94 countries since the 19th century strongly support the hypotheses just sketched above.

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#### 1. A Model of Electoral System Choice

Let us, first, present a 'strategic' model of how electoral systems are chosen by relevant political actors, whether in situations of general change of institutional regime or within more stable frameworks. A few assumptions can be stated in a preliminary way in order to develop a deductive reasoning, which will be further tested and discussed.

First of all, let us assume that voters and leaders are motivated to participate in elections and voting decisions in order to win, that is, to see their preferred candidates elected or their values or policies adopted as collective, enforceable decisions, or at least to achieve that the winning alternatives are as close as possible

to their most preferred ones. Selfinterested individuals, thus, will prefer and, if given the opportunity, choose or contribute to choose the electoral rules and voting procedures from which they can expect higher likelihood of winning or achieving satisfactory outcomes. Other criteria may, doubtless, appear in the public debate and the corresponding exchanges and negotiations, if any. But external references such as electoral systems that had been used in some past experience of the community, imitation of neighbors or other communities, institutional import, as well as inventing and creative engineering, are likely to be dependent on internal, present criteria and choices.

Let us now consider several hypothetical situations faced by those self-interested political actors just identified. If the distribution of power in a community is such that one single group is institutionally dominant and expects to be secure winner with the existing electoral rules and voting procedures, these will not likely be changed –institutional stability can be expected. More specifically, if the existing winners are sufficiently powerful to impose or maintain their preferred rules, and at the same

time they are optimistic about their future electoral chances, they will likely choose in favor of rather restrictive rules based on the majority principle and on single, categorical ballots giving each voter a single choice. Since this type of electoral rules tends to produce a single absolute winner, they can give the dominant group more opportunities to remain as winner and retain control.

There can be, in contrast, other situations more prone to institutional change, resulting whether from uncertainty or under threat. One type of these situations can exist when no single group of voters and leaders, including in particular the incumbent rulers in a well-organized

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political community, is sufficiently sure about its support and the corresponding electoral prospects in future contests; in other words, when there is high uncertainty regarding the different groups' relative strength. Uncertainty can be the result of partial or confusing information regarding the different groups' relative support and the subsequent inability to tune up electoral prospects. Also, uncertainty may result from the enforcement of rules and procedures producing unpredictable, rather arbitrary

winners and collective decisions, that is, able to make every actor, even those with more reliable voters' support, insecure about the likelihood of winning.

Another situation prone to make electoral system change enter the agenda of relevant political actors may appear when, with reasonable certainty, the incumbent winners feel that new groups are emerging, gaining increasing support among voters, challenging their domination, and threatening with replacing them with an alternative set of candidates, values or policies as a result of elections with the existing rules and procedures. Political parties' failure at coordinating their candidacies, especially their inability to concentrate support under the constrictions of majority rules, may transform winners into losers and viceversa, even if social support of the interests and opinions represented by the different candidacies has not changed so much.

Let us adopt now the standard assumption that most actors are risk-averse when they make their choices, including, for our problem, choices on electoral rules and procedures. A not difficult logical implication from the just presented assumptions is that, under conditions

of uncertainty or threat, self-interested, risk-averse actors will prefer and tend to choose electoral rules and voting procedures creating less opportunities for them to become absolute losers. More specifically, if the existing winners cannot impose their preferred rules because increasing demands and pressures from opposition groups force them to cede or negotiate or, even if retaining sufficient institutional power to impose their preferences, they are pessimistic about their electoral prospects, they will try to assure some partially winning positions for themselves through appropriate, that is, more inclusive electoral rules involving multiple ballots or approaching proportional representation. Certainly, existing electoral systems, even the most restrictive ones, may have powerful self-reinforcing mechanisms. On the one hand –as suggested above--, not only usual winners, but also permanent losers may adapt to play within the existing rules of the game as a

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consequence of high expected costs and uncertain benefits of a hypothetical institutional replacement. An electoral system can be considered to be relatively stable if, given the opportunities it provides for actors to gain or share

institutional and political power, none of them would find it worthwhile to undertake new initiatives to change the rules of the game.

However, for anticipated losers or threatened winners, institutional change can be a rational strategy if the expected advantages of alternative formulas surpass those of playing by the existing rules. Change can, thus, be facilitated by several processes, such as accumulative learning on the consequences that can be reasonably expected from different electoral formulas, thanks to both political experience and scholarly analysis; imitation or contagion from changes in other communities where alternative formulas have produced desirable effects; and reduction of risks by parallel agreements and guarantees among the relevant actors regarding some basic statutes or rights.

Under different conditions of information, two types of electoral system choices can be distinguished, which can be called, respectively, 'propositive' and 'reactive'. The former type should better correspond to situations in which actors' preferences over different rules and procedures are clearly defined. These may lead to straightforward decisions when certain

actors have a well-profiled role of political initiative and sufficient decision power to introduce institutional reforms. Cases fitting this type, and to be analyzed in this book, include, for instance, Sweden in 1907 with the sudden, simultaneous introduction of universal suffrage and proportional representation by a Conservative government under threat from rising Socialists; the replacement of simple plurality rule with a majority-preferential system in Australia in 1918 under pressure from farmers to open up space for a third, agrarian party; or the establishment of proportional representation in Switzerland in 1918 or in South Africa in 1994, among many other countries, as result of a previously existing, solid multipartism (as explained, respectively, by Leif Lewin, Marian Sawer, Georg Lutz, and Andrew Reynolds in the corresponding chapters).

But when none of the actors is sufficiently strong to impose its own alternative, wellinformed and well-defined preferences may also lead to formal negotiations between opposite political sides producing intermediate compromises. These can be, for instance, a mixed majority-proportional system, as in Hungary in 1989, or a qualified plurality rule mid-way

between simple plurality and absolute majority, as in Argentina in 1994 (as explained, respectively, by John W. Schiemann and Gabriel Negretto in the corresponding chapters).

'Propositive' choices can, thus, reflect quite directly pressures from excluded actors, negotiations between the government and the opposition, or anticipation of risks by incumbent rulers, but they produce, in general, changes in favor of less risky, more inclusive electoral systems, such as those involving multiple ballots, the combination of different principles of representation, and higher degrees of proportionality.

In contrast, the 'reactive' type of electoral system choice may occur in situations in which actors face more deficient information regarding possible institutional alternatives, more uncertain expectations regarding each actor's future voting support, stronger constitutional restrictions on more drastic reforms, or confusing and entangled decision processes. Political actors can then 'react' against negative features of the really existing electoral system, for instance because it may produce hazardous or inconsistent results (such

as giving more seats to the least voted party or candidate, as in parliamentary or in presidential college elections by plurality rule), or for being too rigid to transform new citizens' demands or political initiatives into institutional representation. Under conditions of significant ignorance on the matter, actors typically recur to 'learn' from their own experience, perhaps embellished as (local) 'historical lessons' (rather than to learn from others' instructive experiences or from scholarly work producing accumulative knowledge). 'Reactive' choices tend to adopt 'opposite' formulas to those really existing whose consequences have shown to be undesirable, thus replacing, for instance, single-member districts with multi-member districts, or majority rule with proportional representation, or closed lists of candidates with open lists, or viceversa, etcetera. Political parties with different interests and prospects may coincide in favoring changes of this type if they share rejection of the existing rules, but they may not necessarily forecast accurately the likely effects of the new combinations of institutional elements on which they can converge. Thus, 'reactive' choices may produce patchwork electoral systems with unanticipated

new undesirable consequences. Cases include, for instance, the electoral system adopted in Spain by the new Republic established in 1931 in reaction to the previous 'monarchical' system, which induced high polarization and conflict; the one enforced in Colombia since 1991, which destroyed the internal consistency of political parties; or the Italian mixed system

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introduced in 1993, which did not reduce the number of parties but replaced centripetal competition around moderate positions with high polarization (as explained, respectively, by the author, Arturo Valenzuela and Miguel Ceballos, and Diego Gambetta in the corresponding chapters). Certainly, political leaders and organizations can also learn from their own experience of tentative, failed or mistaken decisions and tune progressively up their further choices –as visibly happened, for instance, in Poland in the post-Communist period (as explained by Marek Kaminski in his chapter).

Reactive choices, however, can also forge fortunate new inventions able to produce widely satisfactory results, reinforce themselves by the practice of using them, and even to be imported from elsewhere. This has happened, for

instance, with qualified-plurality rules for presidential elections, as introduced in Costa Rica in 1936 and further imitated by other Latin American countries (according to Fabrice Lehoucq); or with the personalized proportional representation system bargained in Germany after the Second World War, which, thanks to its capability to reunite both qualities of proportionality and closeness between citizens and representatives, was also adopted, among others, by apparently somewhat myopic political leaders in New Zealand in 1993 (as explained by Marcus Kreuzer and Jack Nagel in their respective chapters). 'Reactive' choices may, thus, imply changes in the direction of either more inclusive or more exclusive formulas, calculation mistakes, and a higher than usual number of unintended consequences. However, since majority rules and exclusionary formulas are more likely to create dissatisfaction among actors than the corresponding alternatives, changes in this direction are also more likely to be cancelled and revised.

The 'strategic' approach here proposed can, thus, enlighten not only the formation of different actors' preferences regarding electoral systems, but also their preference changes as a

consequence of miscalculations under rapidly evolving relations of forces, mistaken expectations, myopic reactions to undesired features of the previously existing electoral system, or unanticipated electoral results, which will be observed in retrospect. If, for instance, initially optimistic rulers maintaining some restrictive electoral system based on majority rules turn to be defeated in the corresponding election, they may feel induced to shift their preferences in favor of more inclusive formulas. Conversely, unexpected winners may be tempted with projecting their present strength into the future and bet for risky electoral rules producing a single absolute winner. Usually there can be asymmetric information among

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different groups' leaders regarding the likely effects of electoral rules. Certain institutional reformers may even prefer difficult-to-understand electoral systems constraining reaction or strategic behavior capabilities from rival leaders and voters. General ignorance of electoral system experience and literature or objective difficulties in identifying factors of advantage or disadvantage for certain parties or groups can also lead to myopic or blind bets for certain

institutions and strategies.

But, in general, it should be expected that, in the long term, more inclusive electoral rules will develop stronger endogenous support than restrictive systems and, thus, will tend to endure more and create more solid institutional equilibria. In other words, the very leaders, groups and political parties whose political and institutional power has been made possible by the existing electoral system will support it and will resist the introduction of adverse changes.

The actors' electoral participation and their play within the existing rules of the game tend to reinforce the rules themselves. Thus, electoral rules favoring multiple winners and, for this effect, able to promote actors' strategies complying with them can become relatively more stable, self-enforcing sets of rules.

This reasoning can be applied to both foundational institutional choices, such as those made at the time of creating a new state or political community, at some crucial moment in a process of democratization or within a general process of political regime change, as well as to partial or 'incremental' institutional reforms that can be promoted and implemented within more stable institutional frameworks. Generally

speaking, we should expect that constitutional choices in favor of relatively inclusive and less hazardous electoral rules and procedures, and in particular in favor of proportional representation, would likely be confirmed in further periods. This tendency to institutional self-reproduction can be derived from actors' selfinterest since, once electoral systems producing multiple winners exist it would be highly risky for the latter to bet on alternative rules favoring the production of a single absolute winner and many losers. Thus, the same reasoning can be applied to founding or extremely innovative institutional decisions and to further stages. Restrictive rules can survive under conditions of low uncertainty of the electoral winners regarding their future capability of obtaining relatively favorable electoral results. In contrast, under alternative conditions of higher uncertainty about their future electoral strength in successive elections, they may prefer to introduce additional institutional changes likely producing wider distribution of spoils.

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The realism of this model does not always require open revelations of all actors' preferences or even not explicit exchanges and

agreements. Certain electoral reforms can be promoted by threatened incumbent rulers for self-interested motives even if they only anticipate their future troubles and are not forced to negotiate with a challenging opposition. But, even if institutional choices are made 'from above' by rulers in control of the decision process, the new rules can increase the opposition institutional strength and favor the emergence of new challenging groups, which can lead the risk-averse incumbents to accept further innovative formulas producing wider distributions of power. In contrast, attempts to make the existing electoral system more restrictive are likely to find resistance from those groups whose formation, activity and institutional power respond to the incentives provided by the existing rules.

### **From Single-winner to Multiple-winner Rules**

Roughly speaking, and according to the classification and analysis that will be extensively developed below, electoral systems based on the majority principle, which tend to produce a single, absolute winner and the subsequent absolute losers, must be considered a more risky choice than those based, say, on proportional representation, a principle forged to create

multiple partial winners and much fewer losers than majority rule. Within each of these two principles, different formulas and voting procedures may also make a difference regarding risks. For elections under the majority principle, voting procedures giving each voter the opportunity to vote for only a single candidacy of multiple candidates 'in bloc' are more risky to be chosen by self-interested political actors than those permitting multiple votes, whether categorical, cumulative, or ordinal, for different candidates or alternatives. Likewise, for elections based on the principle of proportional representation, certain formulas may be considered more risky because they tend to favor relatively large groups to a major extent than others, while voting procedures requiring from voters a single vote for a party's closed list of candidates may also increase the probability to create absolute losers than others permitting voters to choose both among parties and among individual candidates.

A testable implication of this reasoning is that certain electoral systems producing a single absolute winner may remain stable for relatively long periods of time to the extent that a single dominant group or party can expect to repeat

victories in the future, as well as in  
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situations in which two rather balanced groups or parties expect to alternate as winners with high and somewhat regular frequency. Another implication is, however, that choosing, establishing or maintaining this type of electoral system can be a mistaken or highly risky decision for all those groups not expecting to be secure winners in the future, whether because they are minority groups in opposition or because they are threatened rulers with uncertain prospects. In the short term, thus, we should expect electoral system stability in many cases in which political parties are few, well organized, and solidly entrenched among voters' preferences. But in the mid or long term, electoral system change is likely to emerge.

The corresponding results to be found in a long-term historical perspective should, thus, be increasing numbers and proportions of electoral system choices in favor of those formulas and procedures producing multiple winners, as well as a relative reduction of existing electoral systems producing a single absolute winner. Naturally, specific decisions will be constrained by the set of available electoral

formulas at the time –although, as mentioned, new inventions are also fostered by the pressures of choice. Thus, within the period in which the unanimity principle was considered to be superior –to be revised and illustrated below--, different procedures were gradually invented and adopted to make unanimous decisions feasible. These included, in particular, the acceptance of qualified majorities, such as those formed by wiser, older or more zealous people or by two-thirds or three-fourths or voters, as sufficiently compelling to make reluctant or small minorities withdraw their objections and acquiesce to a unanimous decision. Eventually, these artifacts were simplified into the rule that a simple numerical preponderance would in itself suffice to declare a winner or make an enforceable decision. Likewise, under the further dominion of the majority principle –also to be revised in the following pages--, voting procedures producing absolute victories for a single group, such as 'bloc' ballot in multi-member districts by plurality rule, were progressively replaced with others permitting certain minorities to share power with the winners, such as 'limited' ballot in multi-member districts, or single-member districts.

Further on, some of these procedures became encouraging platforms for designing new, even less risky formulas able to produce proportional representation of different groups. Also under the principle of proportional representation, certain formulas and procedures --which will be analyzed in detail below--

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were increasingly preferred and chosen over others for their higher ability to satisfy large majorities of voters and leaders and, thus, reduce the risks of losing.

As mentioned, intermediate, mixed settings for less straightforward institutional choices can also exist. If, for instance, the existing winners have to concede to disturbing opposition pressures but are still optimistic about their electoral prospects in a more open competition, they will try to persuade the opposition leaders to participate in the election with minimal institutional changes, in any case with appropriate rules still giving the incumbents significant opportunities to win. To the extent that they can be rather pessimistic regarding their own electoral strength, they can propose or negotiate more open and innovative electoral rules and procedures, but in a way able to find

themselves among the winners created by these, more complex arrangements. Institutional combinations can include, for instance, 'mixed' electoral systems in which the likely winner shape a high number of single-member districts by plurality rule while giving the opposition chance to compete for a portion of seats by proportional representation.

Actually, many electoral system choices and reforms are embedded in larger sets of institutional choices, especially regarding the enlargement of voting rights to new population groups, the apportionment of seats regarding population, gerry-mandering electoral districts, the establishment of electoral authorities and tribunals oriented to reduce electoral fraud, and other elements usually included in electoral laws, such as rules for candidate eligibility, restrictions on campaigning, party's finance regulations, opposition access to public media, and procedures for ensuring fair voting counts. In particular, the introduction of universal suffrage and processes of democratization have been, already since the late 19th century and in further waves, paramount occasions for incumbent rulers and challenging opposition groups to decrease the global costs of changing political

institutions and, specifically, deal with innovative electoral rules and formulas. For this reason, the variables above mentioned as favorable to electoral system change—the restrictions of the existing system and a high number of effective parties—have not a deterministic effect. Under favorable conditions, electoral system change will be more likely if a general political opportunity of institutional change exists, as when suffrage rights are broadened, democratization fostered, or a constituent assembly called.

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In these situations, risk-averse actors may also try to enlarge the opportunities to compete for power positions by creating multiple institutional levels submitted to elections, such as the separation of the presidency from the assembly, the embodiment of regional governments, or decentralization into local units. This strategy may enlarge the scope of electoral system choices, but it can also reduce innovativeness at the national level. For instance, the degree of multi-partism in the assembly can be constrained by the introduction of simultaneous direct presidential elections, which are always submitted to some majority rule

and thus foster polarization --as happened, for instance, in France after the constitutional changes introduced during the period 1958-1962. As another example, federalism or territorial representation in large countries with diverse population may work as a substitute for proportional representation by giving different ethnic, regionally-based groups opportunities to enter institutions and, thus, preventing a major electoral reform --which may explain the persistence of plurality rule elections in multi-party systems, such as in Canada and India since independence or in Lebanon and Papua-New Guinea in more recent times.

Specific analyses of electoral system choices, such as those that are presented in the region- and country-chapters of this book, need, thus, to place the question in the context of the global relationship of forces among the relevant political actors and the proposal exchanges in which they can enter on parallel settings for multiple institutional choices. The general test presented at the end will also select all those opportunities of enlargement of voting rights or general regime change that can be considered favorable for a new electoral system choice.

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## 2. The Invention of Electoral Rules and Procedures

Human history has witnessed continuous inventions and re-inventions of electoral formulas. A somewhat evolutionary view will guide the historical panorama of electoral rule and procedure inventions and choices in disparate parts of the world along several centuries which will be presented below. The presentation will be ordered around four basic principles: unanimity, lottery, majority, and proportionality --although in reality, of course, there also exist many intermediate formulas or 'mixed' systems combining two or more of these principles. Each of them can be associated to different virtues and vices, has been prevalent in different periods, and proved more adapted to some specific type of collective decisions.

But, in fact, the adoption of each of the principles, as well as the invention of the huge variety of rules and procedures with which they can be applied in the practice of voting and electing, have been broadly encouraged by actual opportunities and challenges of choice. For

example, the disadvantages of unanimity rule to make effective decisions or elect a ruler --say, a pope in the high Middle Ages, for instance-- moved those embedded in such a kind of decisions and elections, like priests, monks and theologians, to explore, study, imitate and experiment with different variants of majority rule. Likewise, the drawbacks of majority rule in new mass elections during the 19th century --say, in parliamentary elections in countries with highly divisive social or ethnic issues -- led politicians, mathematicians, lawyers and other scholars to rediscover or invent new procedures of voting, as well as formulas able to allocate seats and offices to different groups and parties instead of admitting only one absolute single winner.

As will be mentioned in the following historical presentation, many voting procedures and formulas have been re-invented, even after several centuries of previous discoveries, under the pressure of finding new, better solutions, to practical electoral problems. Intellectual creativity, which is usually fostered by necessity and convenience, has been, on the matter of electoral systems, typically the work of actual or prospective losers with strong motivation to

win.

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## UNANIMITY

Approval of proposals and election of delegates by unanimity are almost spontaneous procedures in relatively simple, rather homogeneous, not highly numerous gatherings and assemblies. Families, friends' groups, urban gangs, neighbors' meetings, corporation partners, and club members tend to make collective decisions under conditions of general agreement.

Varied historical evidence suggests that at more encompassing levels, also Ancient Mesopotamian, Assyrian and Sumerian assemblies, Athenian and Spartan agoras, early Christian communities, German tribes and communes, pre-Columbus Amer-Indian peoples, English and American small town-hall assemblies, and other comparable units usually made collective enforceable decisions and reached agreements by virtual unanimity. Also, consuls were elected by traders, bishops by priests and believers, magistrates by citizens, etcetera, on the basis of large consensus. Decision procedures in those disparate communities include silent acquiescence, clashing spears against shield,

shouts of commendation or acclamation, murmurs in favor or cries against the proposer, rising up, and other 'viva voce' expressions rather than formal voting sessions.

### **The Invention of the Unanimity Principle**

More formally, regulations of decisions by unanimity may be found in the Justinian code of Rome, which established the principle that 'What concerns similarly all ought to be approved by all'. Also the Christian Church adopted in the 5th century the principle that 'He who govern all should be elected by all'. These principles, however, entailed some confusion between participation and decision, since general suffrage was associated to unanimous consent. As it would correspond, in modern times, to families, business companies or other corporations of private law, it was assumed that the members of those old communities had a clear common interest --to the fulfillment of which each of them contributed not on egalitarian basis but according to their resources-- and that a single decision in favor of the common good should thus be easily identified. Of course, organized factions or parties were not even conceivable. Individuals' disagreements would lead to their exit, since they would reveal that the presumed

common interest did not exist any longer. Lack of unanimity could, thus produce, secession,

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split, schism or divorce and the formation of new units with sufficiently small size and homogeneous composition to be able to reach unanimous agreements.

In practice, however, several procedures were implemented to make decisions which could be accepted by all participants even in not highly homogeneous communities. These include the following: explicit acquiescence of the dissidents to the collective decision; preliminary voting followed by formal, public expression of the decision by all the community members; acceptance of decisions made by a qualified part of voters to whom the others submitted (in accordance to members' non-egalitarian contributions or different dignity); and others eventually leading to the replacement of the unanimity requirement with qualified- or simple-majority rules.

Regarding the requirement of acquiescence, minorities can consider the expression of themselves too costly if it requires, for instance, resisting the roar of acclamation, standing up in the middle of the assembly or leaving the room.

Actually, many moral, legal or coercive devices can be implemented to force the minority to obey and make the collective decision binding. In certain ancient Middle-East assemblies, those having revealed their dissident opinion during deliberation were required to kneel down in front of the assembly as a form of assent. In the medieval German communes, after the masters of households in the commune voted, usually an oath of membership and obedience was taken. In Nordic law, the dissident minority was threatened to be punished with fines, as in Denmark, or exile --in Iceland. In Russian law, even physical constraints were implemented.

More solemnly, monarchist philosopher Gottfried W. F. Leibniz, still in early 18th century, accepted citizens' political participation on public affairs only as a way to make "the people themselves agree to what is good for them", but preventing the arbitrariness that was found in assemblies "when cabals and animosities prevail over reason". He praised practices, such as those in the United Provinces (Dutch) parliament, by which unanimity was reached through the force of persuasion and "friendly coming to terms" (or 'composition amiable'), but

he also supported other "practical and quite efficacious" means to deal with "stubborn and malevolent people" resisting the common will (Leibniz 1701). As in modern private communities, these different ways of forcing explicit acquiescence of the dissidents were means to assure that they would obey the collective decision, respect the elected, or contribute with their corresponding effort or duties, in spite of their previous disagreements.

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### **Church, Empire, and Assemblies**

Unanimous decisions were particularly hard to be reached within the Christian Church, especially because the principle of unanimity was invested with a mystical and theological notion of the Church's unity. Whereas voters' unanimity was believed to be the way to discover God's will, any failure in obtaining such a total consensus was seen as an instigation of the devil. Dissent and disagreement were dominated by passionate condemnations under the assumption that 'vox populi, vox Dei' (taken from the Bible: "a voice of the people... is the voice from the Lord", Isaiah, 66,6; also I Samuel 8,7). In the first centuries of the Christian era it had been customary for bishops and other

clerical bosses to appoint their successors, although a few choices by unanimous agreement under direct inspiration of the Holy Spirit are recorded during the 2nd and 3d centuries – including in form of the descend of a dove upon the head of the selected candidate. Since the 5th century bishops, abbots and abbesses, and priests began to be elected, respectively, by the bishops and the clergy of the province, the monks of the convent, and the faithful of the corresponding diocese, parish or other jurisdiction –'the Christian people'--, typically by acclamation. Also the pope –actually the bishop of Rome-- had to be elected by unanimity of the sixteen bishops of the province for a long while. (Eusebius Pamphilus 324, book 3, ch. 11; book 6, ch. 29, 39).

The requirement of unanimity, however, produced frequent violent conflicts, schisms, and simultaneous elections of two (or more) different popes and anti-popes, already since midthird century. During schismatic periods, also some monasteries had two abbots and two priors, some parishes two priests, and so on. An early attempt to replace such an ineffective electoral rule was introduced by pope Simaccus in

500 by decreeing that an elected pope should have the unanimous support of the clergy or, in case of division, the support of the majority, but this provision was hardly used. In fact, most of the popes from the 4th to the 12th centuries were appointed or confirmed by the Emperor, who had to act as arbiter on many electoral disputes.

More successful was the qualification of decisions for the dignity of the voters having supported them. Since the 11th century the college of cardinals of the Roman church were given the decisive part in papal elections. In order to attain a unanimous decision, priority was

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given to cardinal-bishops who were entrusted with gaining the assent of the cardinal-priests and the cardinal-deacons, as well as the approval of the other members of the clergy and the people. The principle of 'the sounder and greater part' ('sanior et maior pars') –vaguely inspired on Saint Benedict's rule for electing abbots-- more solemnly gave qualified weight to the preferences of those voters with higher hierarchy, stronger zeal, and seniority (including age and length of time on official capacity).

Most canonists interpreted that elections were valid

if the 'greater part' included the 'sounder part'. But the two parts often did not coincide, an occurrence which gradually moved decision-makers to bend on the side of qualifying voting results not by the dignity of voters but by numbers. It was pope Alexander III who formally replaced the unanimity principle with the rule of two-thirds qualified majority for electing popes and bishops since 1179 (the election of bishops by the clergy was not officially eliminated until 1917). Monastic orders, including benedicts, adopted the same rule. Alexander III probably took inspiration from previous experiences with less-than-unanimity rules for elections of abbots, as well as from Venice's sophisticated voting procedure to elect the city's Duke (Baldwin 1968). For papal elections, the requirement of two-thirds majority could be initially oriented to the aim of obtaining the support of at least two of the three orders of cardinals. But it soon became just a numerical criterion. As formulated by pope Gregory X, "Not zeal to zeal, nor merit to merit, but solely numbers to numbers are to be compared" (VI *Decretalium*, book I, tit. VI, chap. 9, in Alberigo 1991). Note that once a candidate is elected by two-thirds qualified

majority, the losers would have to persuade a *majority* of the winner's original supporters to change their mind. Faced with this requirement, the losing coalition could hardly have been expected to continue the fight. Divine inspiration of the corresponding choices was still claimed, as in pope Pius II's words about his own election in mid-15th century: "What is done by two thirds of the sacred college [of cardinals], that is surely of the Holy Ghost, which may not be resisted" (Gragg and Gabel 1959). But further canonists expeditiously identified the 'sunder part' with just 'the greater part'. (Colomer and McLean 1998).

Similar problems emerged since the 11th century on the occasion of elections of Franc, Carolingian, as well as Bohemian, Hungarian and Polish kings. These princes were elected by their peers, usually gathered at colleges of electors formed by dukes, marquises and counts, archbishops, bishops and abbots, expectedly by unanimity. Higher elections of the Holy

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Roman-German emperor followed the same model. But they ended on split among the electors on three occasions between the end of the 12th century and early 14th century, thus producing

pairs of kings and anti-kings that undertook violent expeditions to affirm their respective rights. On the three occasions, the corresponding popes were called as arbiters --in symmetric role to the Emperor's acting as arbiter in several divisive papal elections, as mentioned above.

Two of the popes bent on the side of the candidate they considered more qualified for the job for having been supported by the 'sounder', although minority part of electors. Also here, thus, quality prevailed over quantity, a principle that would be defended theoretically by Marsilius of Padua at identifying the 'valentior pars' of the princes' college as representative of all (*Defensor pacis* 1324).

The defeated candidate for emperor in 1257, Alphonse X the Wise, king of Castile and Leon, who had received a majority of votes, remarked that the emperor would have authority only "after being chosen by all those with choice power or by the major part" (Alfonso X, *Siete partidas, Especulo* II, 1, 2). But the winner by both majority and soundness in 1314, Ludwig of Bavaria, insisted on the unanimity thesis that the elected by majority should be considered elected "in concord, not in discord".

According to successive regulations, the grand

electors of the German emperor had to commit themselves to accept a majority decision as a unanimous one. But only the Golden Bull introduced by Charles X of Luxembourg in 1356 minutely regulated the election procedure, including the reclusion of the college electors in a locked-in chamber along the lines of previous experiences by the Dominican monastic order, several Italian cities, and the papal conclave. The Golden Bull explicitly required the grand electors' unanimity, the election becoming valid only if the minority did conform to the majority. The formal, public and sophisticated ceremony of investiture of the elected was actually the building moment of unanimity in which even those having voted for losing candidates participated in a newly created common will. (Ruffini 1925).

Comparable evolutions can be identified in late medieval towns, assemblies and parliaments called by kings and emperors, especially in Central and Southern Europe. From the 11th century on, many civil assembly regulations established that decisions should be made by 'consensus and acclamation', 'approval and consent', 'unanimity', with 'no discrepancy', with 'no contradiction', by 'free veto',

and so on. In assemblies of municipalities,  
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as well as in their leagues, as the German Hanse and the Swiss confederation, since usually a valid decision could not be reached if the minority persisted in its opposition, the subsequent rhetoric device was that 'the minority must follow the majority'. The meaning was that the minority should withdraw its objection and agree with the majority, in order that a unanimous common will could be formed.

As mentioned, also North Italian towns made collective decisions by very broad agreements. In Florence, Genoa, Pavia, Pisa, Siena, Venice, the general assembly of all citizens approved the appointment of the Consulate, usually by acclamation. But the requirement of unanimous consent did not always produce quick, agreeable decisions in increasingly complex, urban settings, in contrast to easier general coincidences in simpler, more homogeneous, rural environments. Several mechanisms were, thus, invented to produce acquiescence where a single unanimous preference did not exist. Already certain Italian communes adopted less-than-unanimity rules, such as those requiring two-thirds, foursevenths

or other qualified majorities, together with indirect elections in several stages and other devices. But "a major source of political frustration" –as noted by a reputed historian-- resulted from "a belief that unity was essential, and of an etiquette that frowned upon the exposure of irreconcilable viewpoints" (Brucker 1963).

The Aragonese and the Catalan parliaments or 'Corts' since the 13th century, as well the Polish Diet since the 16th century, were outstanding examples of enduring representative assemblies working by unanimity rule. However, unanimous decisions also turned out to be difficult to be made, especially when social interest differentiation increased among the different corporative bodies represented. Analogous procedures as those previously mentioned for other institutions developed. For instance, public and ordered voting rounds, starting with the higher or 'sounder' part, could be organized in the expectation to attract voters from the other branches to jump the bandwagon and forget their discrepancies. The Parliament of Catalonia formally asked the king to replace unanimity rule with that of the 'major e de la pus sana part'. Several qualified majority rules were also

introduced, such as those requiring the agreement of two of the estates, for instance the nobles and the citizens, to make decisions valid even in the clerical representatives' disagreement or abstention. In general, however, majority decisions were considered as a means of arriving at the necessary unanimity by

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imposing the duty of assent upon the minority. (Coroleu and Pella 1876, Konopczynski 1930, González Antón 1978, Ferro 1987).

Even the English parliament maintained the fiction of unanimity until very late.

Regarding the election of representatives, by mid-16th century a judge sentenced that "the election might be made by voices or by hands, or such other way, wherein it is easy to tell who has the majority, and yet very difficult to know the certain number of them", so discarding the count of numbers and inducing the acceptance of the elected by a potential but not acknowledged opposition. Within the House of Commons, still in the early 19th century it was commonly assumed that majority voting meant unanimity, most decisions being made by acclamation, that is, by loudly shouting 'yeah' or 'nay' (as still observed, for instance, by

Jeremy Bentham in his parliamentary tracts, Bentham 1834). Only the formation of modern, well-organized political parties led to the adoption of more formal voting procedures requiring numerical precisions

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In modern times, the ambition to reach unanimous agreements has been transferred to the more ethereal world of international relations, where each of the sovereign parties has veto rights. Some of the other defining features of earlier settings above analyzed can also be found in international organizations: corporate (now state) suffrage; search of consensus; burdens distributed proportionally to contributions or resources; offices held by turns or lots; decisionmaking limited to those issues in which a general common interest can be presumed (such as peace, monetary stability, environmental protection). Increasing complexity and salience of more divisive issues, however, also lead to the adoption of less-than-unanimity decision rules.

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## LOTTERY

The choice of public officers by drawing lots is an old tradition that can be found in ancient and medieval local democracies, modern private settings, and some international organizations –as has just been mentioned in the previous section. In all these cases, lotteries are a device to preserve the central role of the assembly of members to make decisions on the most relevant issues, typically by acclamation, assent or other forms of unanimity, in the assumption that the identification of a common interest should not be a too difficult task.

The most relevant historical experience of selection of delegates, representatives or public officers by lots was developed in Athens during the democratic period from mid-5th century to the end of 4th century B.C. On the basis of this experience, philosopher Aristotle built his concept of democracy, which included the possibility of "ruling and being ruled by turns". Aristotle introduced a sharp distinction by

which "the appointment of magistrates by lot is thought to be democratic, and the election of them oligarchic" (Aristotle 325 BC, book 4, passim). By 'democratic' he meant self-governed by the people, while 'aristocratic' pointed out to the idea of government by the best –which could also lead to a perverse form of oligarchy. This classical criterion was retaken, many centuries later, by provincial French Charles-Louis de Secondat, baron de la Brède et de Montesquieu, for whom "the suffrage by lot is natural to democracy". According to Montesquieu, the advantages of making choices by lot are, first, that it "is unfair to nobody, and [second, that] it leaves each citizen a reasonable hope of serving his country" (Montesquieu 1748, book 2, ch. 2). Likewise, Genevan philosopher Jean-Jacques Rousseau, also in the 18th century, highlighted the role of lots in an ideal democracy, in which –according to his Athens-inspired, assembly-based model— public offices should be considered "a burdensome charge" and administrative acts be reduced as much as possible (Rousseau 1762, book 4, ch. 3). The choice of public officers by lots may have, thus, two types of advantages. First, by holding frequent sorts and establishing short terms

of office, it can produce high rotation of members in administrative or arbitral posts, thus preventing the formation and selfreproduction of a permanent, closed, rather impermeable elite --whether in form of an economic oligarchy or just a class of professional politicians. By replacing public officials very frequently and opening public jobs to very wide layers of the society, no one can be

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blamed for making or implementing unpleasant decisions --but no one can be praised either. Only the members' assembly remain as ultimate responsible for the consequences of collective decisions.

Certainly, the principle of filling public offices by lots is contrary to the ambition to be ruled, in an ideal world, by 'the best'. But, in comparison to other actual processes of choosing rulers, the average quality of the chosen by lots may not be so different from the one obtained in fact with less unpredictable procedures. Officers chosen by lotteries, especially when there is a high number of candidates, are, as a whole, 'typical' representatives of the citizens or potential candidates, for their characteristics, capability and criteria of decision. Mediocrity,

thus, rather than excellence, should be expected to prevail. But this is precisely the outcome which is aimed at with such a procedure. Only those offices requiring particularly high levels of professional or technical skill or experience have always been excluded from selection by lots.

From this perspective, lots can be considered a clearly better and less risky procedure to select public officials than hereditary succession, cooptation by incumbent office-holders, or the buying (or auctioning) of offices, by which the probability that outliers, eccentric or incapable candidates can be appointed is dramatically high. Also, likely winners by lottery may not be so different –in personal characteristics and professional skills-- from those selected in certain modern political processes through convoluted political party organization internal interactions, hazardous electoral campaigns, and disparate voting procedures. This proximity, however, is usually veiled in the public opinion only by the retrospective attribution of talent or merit to those elected –if no more for the fact that they have been able to get elected.

The second type of advantage of choices by lots

and the subsequent rotation in public offices is that they produce wide dispersal of political and administrative knowledge in public affairs among the citizens. The experience of learning and becoming familiar with the problems of satisfying collective common interests can be a good platform for further occasions of participation by voting and elections, such as the assembly's decision making and the choice of some other public officials. Thus, lottery can be an appropriate procedure to select public officers in conditions of clear identification of the common interest of the members of the community, relatively low technical requirements to fill the public jobs

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submitted to sortition, and strong instruments by the community to make other, most important decisions, including control of those appointed by lots.

### **Athens, Communes, and International Organizations**

Public choice by lots has never been an exclusive procedure, as mentioned. The Athenian democracy was based on the central role of the assembly or 'agora', open to all citizens, both to elect certain officers and to vote on war and peace

and other important decisions. The frequency of assembly meetings, which were called at blast of a trumpet and the lighting of a bonfire and were attended by a few thousand citizens, increased over the years from about 10 to about 40 a year. The scope of public decisions was also broadened until the assembly became the major legislator and decision-maker. Typically, most issues required only yes-not decisions, thus permitting the formation of a clear majority. Voting was, thus, possible to be held, in different periods, mostly by acclamation, by also by show of hands, or by pebbles (in Greek 'psephos', from which the typically British denomination of 'psephologists' for the students and experts in elections was coined). In contrast, elections to fill some highly specialized offices for which several candidates could run required more sophisticated procedures, including the cast of ballots in form of pieces of tile or potshard or by written waxed tablets in vessels inside a wooden enclosure.

Just in order to preserve the central role of the assembly making decisions by unanimity is that the Council in charge of setting the assembly agenda, which was formed by 500 individuals, was appointed, first, by an electoral

college elected by the assembly, later in annual elections, and then by turns, in order determined by lot. The Council was formed by 50 members selected by lot by each of the 10 tribes which had evolved from military to basic administrative units. The permanent committee of the Council and its president were also selected by lots. No citizen could hold any office more than once, so it is estimated that about half of citizens aged 30 or more became members of the Council at some moment in their lives.

About 600 of the other 700 public officers were also selected by sorts among candidates previously presented. These included the following: the 10 members of the archonship, approximately equivalent to a modern attorney general, as well as the body in charge of organizing religious ceremonies, which were appointed by lots from a pool of

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candidates previously selected by each tribe, also by lots; tribunal members, chosen by lots from a pool of all adult citizens, in charge of judging also on the legality of the conduct of public officials; and a number of administrative jobs, encompassing treasurers, those in charge

of settling public contracts, collecting public revenues, supervising streets, or inspecting markets. Only a few offices requiring special technical skills and qualifications, including high military commands and financial administrators, were excluded from lotteries and submitted to direct election. In contrast to those appointed by lots, the elected for these latter posts were, of course, not 'typical' representatives of the citizenry, but they were also subjected to stronger scrutiny and accountability at successive elections. The procedure of selecting candidates for public offices by lots was based, initially, on candidates' drawing white and black beans from a container with an open top, the total number of beans being equal to the number of candidates and the number of white beans equal to the number of places to be filled. In a further development, Athenians also used allotment machines, usually providing a tube in which balls could be inserted at random and released at the other end. (Headlam-Morley 1981).

The choice by lots implies the acceptance of average mediocrity as a collective criterion for choosing public officers, as well as some uncertainty regarding specific outcomes and decisions. On some occasions, it was, however,

covered by the belief that it would involve some divine sanction; in other words, that choosing by lots was the way to make right decisions, provided by gods. Greek philosopher Plato, most notably, praised lots as a way to let gods make their choices, especially for officers of the temples (Plato 360 BC, book 6). The Old Testament had included a number of stances in which decisions by lot –as other events that seem accidental-- were meant to reveal God's will (*Proverbs* 16: 33). The Lord also instructed Moses to divide land by lot among different tribes (*Numbers* 16: 52-56, 33: 54). The first apostles of Jesus also drew lots to select the substitute for the traitor Judas (*The Acts of the Apostles* I, 23-26). Apparently, they were imitated by some early non-orthodox Gnostic Christians, who drawn lots at each of their meetings to elect short-living priests, bishops and other officers –only to be replaced at the following meeting. This device could also be aimed at preventing a sacerdotal oligarchy from developing (Goodwin 1992, p. 44). But the Christian Church condemned such a practice as blasphemy and solemnly forbade the choice of priests, bishops or other prelates by lots (more formally since the 13th century).

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Lots have also been used for choosing public officers in other settings based on some open assembly making decisions by virtual unanimity, typically by acclamation, with similar intentions as in those instances previously referred to prevent the formation of oligarchies and voting manipulations, and always in combination with other procedures of election. The Roman Republic, for instance, had used lots to establish the order of voting by tribes or other political units, but most decisions were made by voting procedures involving majority rules – as will be explained in the next section.

A number of Italian communes –which have been identified in the previous section among the instances making decisions by assembly acclamation-- also used lots since the 13th century for choosing magistrates and allocating offices in charge of implementing assembly decisions. This was, in particular, the case of Venice for the indirect election of the Duke (*Doge*) since the 13th century --after having been directly elected by the people's assembly since the end of the 7th century. The popularly elected Great Council adopted an increasingly complicated procedure to choose the Duke with up

to nine stages of approval ballots and lots, which was conceived with the aim of making manipulative maneuvers unviable (Lines 1986). Likewise, the Florentine republics during the 14th and 15th centuries, and again in the late 15th and early 16th centuries, elected its main governmental body, the Lordship (*Signoria*), chaired by the standard-bearer of justice (*Gonfaloniere*), by means of a complex system of approval ballots and very frequent lots. Again, the aim was to prevent fraud, manipulation and the commune's domination by a few powerful families.

Also in Barcelona the popularly elected Council of 100 chose the Consuls of Sea, that is, the judicial body for commercial and maritime affairs, by an indirect procedure involving lots. At least in the 15th century, and probably earlier, the procedure required a less-than-seven-years-old child to distribute beans from a jar full of water and covered by cloth among the candidate-members from each of the estates –the 'honest', the merchants, the artists, and the artisans--, the number of white beans being equal to the number of electors to select from each estate. Afterwards, the electors so chosen, together with the city councilors, elected the

consuls by casting ballots in a urn (Carrère 1967). Finally, lots were used, also in combination with several stages of indirect elections, in Spain and the Spanish colonies in the Americas still by early 19th century. First, elections called by the central Junta formed to organize the resistance against Napoleon's French troops

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were held in 1809, with municipalities electing candidates to deputies which were finally selected by lot. New elections in 1810 to form an extraordinary assembly ('Cortes'), which gathered in Cádiz and produced a new constitution, were also held by a combination of indirect elections in three stages and a final selection of one deputy in each district by lots among the two or three candidates previously chosen (Fernández 1992, Rueda 1998). After the approval of the so-called constitution of Cádiz in 1812, this type of procedure was not used again in Spain, but it was reproduced in some further elections in Spanish America.

Specifically, in Buenos Aires, indirect elections of colleges (usually called 'juntas') led to final selection of members of the provincial assembly by lots, according to regulations enforced in 1811, while a mixed procedure of voting,

lots, and final popular vote by plurality was used for the election of governors in 1815. In Chile a combination of lots and plurality voting was still used in 1822. (Chiaramonte 1995). In Mexico, local elections in 1812 still involved some stage of selection of candidates by lots (Emmerich 1985). Lots remained a usual practice in indigenous communities not politically integrated in the new independent state's political institutions. Ironically, they became part of supposedly traditional, still in the 21st century to-be-preserved, indigenous 'usages and customs' –actually the most visible legacy of Spanish colonial rule. (Favre 1986). In modern times, lots are only used as a method to distribute goods and burdens in some private corporations, as well as for allocating temporary jobs, vacation periods or household tasks in other private settings. For public affairs, they are used in certain countries for such tasks as selecting jurors for jury trials, for appointing election administrators, for breaking election ties, as well as for selecting candidates to military service. At more encompassing political levels, certain institutional settings formed by units retaining their sovereign rights, that is, confederal or

international organizations making decisions by near-unanimity rules, use different procedures of rotation by turns of high public offices –which produce the same effect as lotteries without replacement. A paramount example is the Helvetic Confederation of Switzerland, which is still mainly an instrument for preserving popular self-government of cantons. Nowadays, it is governed by surplus multiparty coalitions in the Federal Assembly and the Federal Council, usually encompassing more than 80 percent of votes. While they make very broad consensual decisions under the threat of cantons' revoking referenda, the presidency of the Federal Council –comparable to the

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republic's president— is filled in rotation among the Council members by turns. Likewise, in the European Union, the European Council, which is formed by the chief executives of the member-states, and the Council of Ministers (officially called Council of the European Union), formed by representatives of the member-states at ministerial level, have had very important agenda and decision powers. While they usually make decisions by unanimity or highly-qualified majorities, the Presidency is held by

six-month turns among the memberstates. Finally, the United Nations Organization (UNO) also distribute some high offices by informal rotation and turns among its memberstates. The Presidency of the General Assembly is filled by 'symmetric rotation' among countries of five regional groups (Africa, Asia, Latin America and the Caribbean, Western Europe and other developed countries, and Eastern Europe). The Security Council, which works by near-unanimity decisions of the five permanent members (France, Russia, China, the United Kingdom, and the United States), is also formed by a number of temporal members rotating in their posts for periods of two years. They are formally elected by the Assembly, but they must also be distributed fairly among different world regions (in the initial period since 1946, there were two for Latin America, and one for Western Europe, the British Commonwealth, Eastern Europe, and the Middle East; after general de-colonization and the subsequent enlargement of the UNO membership, ten temporal members are distributed, since 1963, in portions of two for Latin America and the Caribbean, two for Western Europe, one for Eastern Europe, and five for Africa and Asia).

Similar proportions are used for filling, by informal turns, the posts in the Economic and Social Council and other committees. (Marín-Bosch 1994).

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## MAJORITY

Majority rule had already been used, in combination with other rules and procedures, for collective decisions and elections of public officers in some ancient and medieval institutions.

But the majority principle was rediscovered and more explicitly invested with the power to create authority in more modern times.

During the Roman republic, that is, for about five centuries immediately before our era, many collective decisions and most public officials had been chosen by procedures involving majority rules. As in other historical processes previously discussed, majority decisions emerged from truncate traditions of unanimous decisions, typically made by acclamation.

Specifically, the 'centurial comitia', organized in 193 units of 100 men each, formed from military units in the army into units of vote in a political assembly open to all citizens. The traditional show of allegiance made by the soldiers to its commanders eventually became formal voting sessions to declare war, legislate, elect consuls and censors (in the executive), praetors (in charge of provincial governments), and

temporary dictators, as well as to dictate capital judicial sentences. Later on, the 'tribal comitia' by which the people elected its tribunes by acclamation also evolved into 'councils of the plebs', organized in up to 35 large tribes, from which patricians were excluded. They held frequent voting sessions to elect 'ediles', 'quaestors', lower offices and special commissioners promoting specific demands, to approve general legislation and 'plebiscites', and to impose sentences on crimes against the state and on all those punishable by fines.

These early experiences of voting and elections with majority procedures should be analyzed as forms of indirect elections, having developed the same kind of biases and arbitrary outcomes as when elections in two or more stages were developed again in more modern times. In the Roman experience, first, each 'centuria', tribe or voting unit made an internal decision. Oral voting by acclamation was eventually replaced, especially in the plebeian tribes, with individual oral voting before a questioner and, later, with written ballots cast into a urn made of wicker or stone. When several officers had to be elected at the same time, each unit worked as a multi-member district with individual

multiple ballot in which decisions were made by simple plurality or relative majority. Once the units had reached internal decisions, then voters were summoned to the Campus of Mars, or Capitol Hill, or the Forum, and each  
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unit's vote was publicly announced in turn. An alternative or candidate could succeed by winning by majority or plurality in a majority of units –so by obtaining, for instance, as little as one fourth of total citizen's votes. Usually, proceedings terminated as soon as an alternative obtained sufficient support or a number of candidates equal to the number of places to be filled had been proclaimed, thus ignoring the largeness of the winner's support and the number of votes cast in favor or other alternatives or candidates. The decisive unit's vote was openly celebrated, usually by acclamation, as revealing momentum. The winner became the focal point to gather general support around. For this reason, while in the previous aristocratic 'curial comitia' wealthier groups had enjoyed precedence in the voting and, thus, in making winners, in centurial and tribal assemblies the voting unit which was called upon to vote first was selected by lot, so ensuring some rotation and

fair distribution of decision power.

As can be seen, the most relevant features of these procedures were much later replicated in modern formulas of indirect elections, like the United States electoral college to elect the president, as well as in further experiences of primary elections and party conventions to select presidential candidates, always organized with majority rules. Common developments under this kind of framework included victory by majority at further stages with a minority of popular votes, random selection of king-makers, and the building of instant unanimity around the proclaimed winner. But direct connections between ancient and modern experiences of voting by majority rules are difficult to be established, since the fall of the Roman republic and empire apparently broke the continuity and even the memory of those earlier institutional procedures.

### **The Re-invention of Majority Rule**

In medieval times, decisions and elections by qualified and simple majorities were again, gradually accepted in Germanic law and the Church's canon law as an expediency procedure when unanimous decisions turned out to be impossible, as discussed in the first section of this

chapter. Initially, the minority was summoned to acquiesce to the majority will as an expression of unanimous support, as illustrated above with several means. But the formation of reluctant, repeated, stable defeated minorities eventually tended to make majority decisions acceptable and presumably enforceable even if the minority did not explicitly assent to share a unanimous common will. Thus, majority rule typically emerged as an acceptable decision rule

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from the experience of two-side contests—respectively becoming the winners and the losers—rather than the other way around (that is, as if two-party systems were 'created' by majority rules). When the losers were divided among several sides, they would seek the adoption of more inclusive electoral rules, as will be discussed in the following section. Thus, the majority principle seems to be intrinsically associated to the previous formation of relatively stable factions or parties within the community, logically requiring the respect of minority will.

However, in a similar way as certain medieval theologians had praised unanimity rule for its presumed capability to reveal God's will, early modern, naturalist philosophers also

associated majority rule to the discovery of people's will, that is, the new presumed truth and good. Hugo Grotius, for instance, explicitly stated in early 17th century that "the majority would naturally have the right and authority of the whole" (Grotius 1624, book 2, ch. 5, 17).

The English John Locke, by the end of the same century, formally established that, in a civil society formed on the basis of every individual's rights and consent, collective decisions should be made "only by the will and determination of the majority". In particular, he postulated that, in representative assemblies, "the act of the majority passes for the act of the whole and determines, as having by the Law of Nature and Reason, the power of the whole"

(Locke 1689, II, 96). Likewise, the Genevan Jean-Jacques Rousseau believed, in mid 18th century, that the general will, which was supposed to be "always right", could be discovered by voting by majority rule, so that "the vote of the majority always binds the rest" (Rousseau 1762, book 4, ch. 2). Still, French revolutionary, abbot Emmanuel-Joseph Sieyès praised majority as an "incontestable maxim", while daringly identifying the majority, that is, "the third estate", with "all" (Sieyès 1789, ch. 6).

In parallel to these honors, resource to majority rule for simple reasons of expediency was also argued by other theoreticians, such as the English Thomas Hobbes in mid 17th century. "If the representative --said Hobbes-- consist of many men, the voice of the greater number must be considered as the voice of them all. For if the lesser number pronounce, for example, in the affirmative, and the greater in the negative, there will be negatives more than enough to destroy the affirmatives, and thereby the excess of negatives, standing uncontradicted, are the only voice the representative has" (Hobbes 1651, ch. 16). Thus, the weight of force, rather than the search of truth, was, at least in the English and Scottish utilitarian tradition, another very good reason to adopt majority rule.

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Actually, in late medieval and early modern times collective decisions were expeditiously made by majority in local communes, commercial organizations and other assemblies. At some moment, they could begin to be made even not by absolute majority rule, that is, by requiring more than half of voters to coincide on a single alternative, but by

adopting the alternative supported by only a relative majority or 'plurality', that is, by higher number of voters than any other alternative but not requiring any particular number, proportion or threshold of votes. In practice, this made possible that generally binding elections presumably decided by 'majority' were actually won by only a minority of voters.

Most notably, a very long-living statute adopted in England by mid 15th century for the election in shires of members of Parliament had established that the sheriff in charge of electoral assemblies, after listening to the shouts of supporters of different candidates or counting by heads, should declare elected those with "the greatest number" of supporters. This was probably intended as a means not to have to count votes, especially those supporting defeated candidates, as mentioned before. But, while the fiction of unanimous decisions was maintained, especially within the parliament, this regulation permitted in practice the popular election to be won even by relative, not absolute majority.

Other than deciding by simple plurality, there were different proposals to make majority rule enforceable, although many of them

were not widely adopted in practice of voting and elections. Old procedures include the very early proposal of exhaustive pair-wise voting presented in the 13th century by the Catalan philosopher Ramon Llull. By this procedure, an election should be made by holding multiple rounds of voting between pairs of candidates and declaring the winner the one having won a greatest number of pair-wise comparisons. In different texts, Llull presented this procedure and some variants in scholarly, general manner, and also with narrative illustrations, possibly taking inspiration from elections of abbots and abbesses in monasteries and convents in which such a procedure had been used (Llull c.1274, 1283, 1299).

A similar, normatively more ambitious, but much less applicable procedure was devised five hundred years later in France, under the pressures of Enlightenment and Revolution, by Jean-Antoine-Nicolas de Caritat, Marquis de Condorcet (1785). The Condorcet procedure requires, for a winner by majority principle to be decided, to be preferred in all pairwise comparisons, that is, by majority against every other candidate.

When the candidates are perceived by the voters as ordered along a single linear dimension (such as the left-right axis in modern times), the winner by Condorcet's exhaustive pair-wise voting is always the one preferred by the median voter. This is so because, by definition, the median voter is the one having less than half of the voters on one side (such as the left on the ideological axis just mentioned) and less than half on the other side (the right), in a way to be always included in any consistent majority of voters. Thus, the Condorcetwinner, when it exists, can be considered to be highly efficient in terms of social utility, since the median voter's position is the one to which the sum of distances from all the voters' preferences is minimum. However, in non-linear ideological or policy spaces, that is, those involving multiple dimensions, the Condorcet procedure may fail to produce a winner since no candidate can be able to win against every other in pair-wise comparisons. The frequency of failures with the Condorcet procedure depends on the number of issue-dimensions in the policy space and the number of candidates. Assuming that all possible distributions of voters' preferences are equally likely (that is, a high multi-

dimensional space), computing calculations have shown that the Condorcet procedure of voting would fail to give a winner about 9 percent of times for three candidates, but increasing more than proportionally, reaching, for instance, 32 percent of times for 6 candidates (Fishburn 1973).

Although Condorcet himself had also sketched a simplified, more efficacious version of his procedure, close to Lull's (Condorcet 1787), the procedure usually associated to his name has never been used in mass political elections, especially for its ineffectiveness in producing a decision or a winning candidate. However, its hypothetical results can be used as a reference for evaluating results produced by other, more expedient rules and procedures –as will be suggested below. Specifically, we will refer to the likelihood that other simpler and more effective procedures may produce the Condorcet-winner, that is, the hypothetical winner in pair-wise comparisons against every other alternative, as well as the Condorcet-loser, that is the alternative which would be defeated by every other alternative in pair-wise contests and can, thus, be considered the least socially efficient one.

A comparable voting procedure, currently known as rank-order count, had also been early designed in the late Middle Ages by another Catholic thinker, Nicholas of Cusa (Nicolaus Cusanus). He had been motivated by failures in elections of Christian popes, but also of Holy Roman-German emperors, as discussed above. According to the author, his

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procedure would require the voter to mark "after the name [of each candidate] a clear digit -1, 2, 3, and so on... until he comes to the candidate who is in his judgment the best". The winner is the candidate having collected the highest sum of points (Nicolaus Cusanus 1433, book 3, ch. 37).

About three-hundred and fifty years later, the same voting rule was devised by member of the French Academy of Sciences Jean-Charles de Borda. He also presented his invention with an alternative procedure of voting similar to the one introduced by Condorcet (who, as permanent secretary of the Academy, was in charge of publishing it). An exhaustive pair-wise comparison of candidates would be developed, but the scores for each candidate against the others would be aggregated -the result being the

same as with the rank-order count (Borda 1781).

As the other procedures just mentioned, Nicolaus and Borda invention, thus, also required from every voter a complete ordering of preferences regarding all the candidates. But while, as Lull's procedure and in contrast to Condorcet's, Nicolaus-Borda's procedure of rankorder count always delivers a clear winner, it is highly vulnerable to insincere or 'strategic' voting --in contrast to both Lull and Condorcet versions of pair-wise comparisons. Those with information regarding other voters' preferences can give lower points than would correspond to their sincere preference to rival alternatives with high probabilities to win, thus truncating the expression of voters' preferences. This weakness induced the two inventors of rank-order count to warn potential users with similar notes of caution. While Nicolaus stated that "no method of election can be conceived which is more holy, just, honest, or free... if the electors act according to conscience", Borda remarked that his procedure had been conceived "only for honest men".

More practical proposals emerged during the French revolutionary Convention in

1793, which although they were not finally incorporated to the subsequent constitution, were somehow re-invented or adopted later for mass political elections in different countries.

Condorcet himself proposed two innovative procedures, both conceived as more feasible substitutes, in terms of time and the voters' enlightenment required, of his "rigorous method of majority judgments between the candidates taken two by two... [which] is often impracticable". The first was a form of limited ballot by which the election of a number of representatives in a multi-member district would be made by giving each voter a lower

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number of votes than seats to be filled --specifically, in primary elections for indirect formation of the assembly, each voter would have two votes to elect between nine and 18 representatives in the district, in Condorcet's constitutional project. By declaring elected those with higher numbers of votes, this formula would allow representation from more than one party in each district, thus introducing some degree of pluralism. The second procedure was an apparently slight variant of the first by which the two votes per voter would be distinguished

between first and second preferences. Only if no candidate obtained a majority of voters' first preferences, the second votes would be counted –that is, the procedure currently known as 'supplementary vote' (Condorcet 1793a, 1793b). In the same setting, and as a reply to the Girondin project of constitution, mostly written by Condorcet, the Jacobin constitutional project presented by Antoine-Louis-Leon de Saint-Just proposed to vote in multi-member districts with single individual votes. Specifically, he proposed to elect the National Assembly of France in a single national district with 341 seats by giving each voter one vote for only one candidate, and declaring elected all those 341 candidates having obtained the greatest numbers of votes (Saint-Just 1793, ch. V). This formula, modernly known as 'single non-transferable vote', is usually considered able to approach proportionality of representation very closely. But, in Saint-Just version, it would obviously have produced the highest level of 'multi-partism': likely only individual representation, with no collective organization of representatives at all.

### **Multi-member Districts**

In fact, many of the theoretical inventions just

mentioned were not directly or immediately relevant for actual choices of voting systems based on the majority principle in real committees, councils, assemblies and parliaments, which in general tended to adopt the simplest possible devices. One of the most basic, almost spontaneous, oldest and wide-spread procedures of voting to choose delegates or representatives from a community can be described with the following features. All people with a common interest in the election gather in assembly at their common place; they agree to choose a committee or council to be formed by a few individuals; each voter selects one or more candidates of his or her preference (the number of votes per voter being equal to, lower or higher than the number of posts to be filled); the candidates with higher numbers of votes are elected.

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This is, basically, the type of procedure that can be found very frequently in elections at schools, universities, housing condominiums, neighborhood associations, trade unions, professional organizations, corporations, and some local elections in small towns. At broader level, it is also the type of procedure which was used

since the 13th century for elections of officers and deputies in German and Swiss communes and cantons (Lloyd 1907), in French municipal assemblies, provincial Estates and the Estates-General (Babeau 1882, 1894, Cadart 1952), in English counties, cities and boroughs to form the Parliament (Bishop 1893), and in Virginia and other North American colonies in further periods (Sydnor 1962, Pole 1971). This voting procedure was also used for the indirect election of assemblies, parliaments and presidential colleges in most states of Europe, the United States and Latin America during most of the 19th century. In some cases, only candidates having received an absolute majority of votes were initially elected, and new rounds of vote were taken for each of the remaining seats; the latter could be filled by requiring again a majority and, if no candidate attained such a support, by holding a second round runoff between the two most voted candidates. Voting in some of these historical institutions was by show of hands, while in others voters expressed orally their choice one by one, but secret vote in written ballots can, of course, also be compatible with this type of rules. Political science has created a precise jargon which

would define this basic procedure as consisting of multi-member districts, open ballot, and either simple plurality or absolute majority rules. It can also include different forms of approval ballot, whether permitting to vote for as many candidates as wished or only for as many as seats to be filled. We know from both logical analysis and empirical evidence that this type of procedure can be highly inclusive and permit somewhat varied representation, since different preference groups encompassing in total broad proportions of voters can see their chosen candidates elected. Spontaneity at defining the rules –which look almost 'natural' at the unsophisticated eyes—and inclusiveness of actual results can explain the several-century duration of this type of procedure in very different institutions and organizations, such as those mentioned, as well as its frequent adoption in non-political, small-scale associations in all times. The results of these and the following procedures by majority rules are illustrated in stylized manner in Table 1. As can be seen in the very simple example of a three member district with one hundred voters, representation by open ballot, by which each voter can vote for as many candidates as he or

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she wants up to the number of seats to be filled, in this case from one to three, can fall in the hands of three candidates holding different preferences (in the example in the Table the seat allocation is preference  $x:1$  seat, preference  $y:1$  seat, and preference  $z:1$  seat).

The consequences of this simple type of election procedure can change dramatically if well-organized factions or parties are formed. With this we are just referring to groups of candidates and voters with a common purpose that coordinate their behavior in order to win as many possible seats in the election. In the type of multi-member election previously sketched, the emergence of factional candidacies able to attract some voters' support may produce a set of winners corresponding to only one of the preference or interest groups in the community at the expense of all the rest. To attain this result, it is not necessary that most or even many voters follow the advice of faction leaders to vote for all and only for the members of a list of candidates; it is sufficient that a few people do it, since, even if they are very few, they can make a difference in comparison to the previous scenario without organized factions and make

all the candidates in the list winners. This is, of course, due to the fact that plurality rule does not require any specific amount of votes to make a winner, but only to obtain one more vote than the other candidates.

In face of an organized faction able to accumulate all the seats in contest, the best corresponding strategy by other candidates and voters is, certainly, the organization of comparable factions, able at least to neutralize the advantage obtained by the first faction. This will eventually transform the competition from one among individuals to one among factions.

Voters then vote 'in bloc' for a list of candidates rather than choose their preferred individuals.

In more precise terms, the procedure of voting moves from 'open ballot' to 'bloc ballot' or 'closed list'. The new distribution of seats in a multi-member district by plurality rule when collective candidacies are organized is also shown, by way of simple illustration, in Table 1. In contrast to previous results with 'open ballot', which was able to produce, as in the example, an allocation of 1-1-1 seats to three different preference candidates, now plurality 'bloc' or 'closed list' ballot produces an allocation in which all the seats are given to the candidates of the

largest faction: 3-0-0, even if it has obtained the votes of only a minority of voters (40 out of 100 in the example).

The introduction of absolute majority rule with a second round between the most votes candidates at the previous round may produce similar results if all major candidacies induce

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voting in bloc for a list of candidates. Majority rule with a second or third round run-off was early used in indirect elections multi-member districts in France for the election of Estates General in 1789, and on in direct elections to the French Assembly until 1871, as well as in at least other six European countries during the second fourth of the 19th century. As illustrated in Table 1, these rules and procedures also concentrate all the seats on a single factional candidacy –the winner at the second round, which can be different from the winner by plurality at the first round (in the example in the Table, the corresponding allocation of seats is 0-3-0).

This perspective may enlighten why 'faction' is usually associated in classical political literature to bad intentions, in the disadvantage of general or at least broadly collective

interests. In contrast, 'party' has enjoyed somewhat better consideration in modern times –at least in academic circles. But actually early political parties were formed just as electoral factions and they are still so, especially if the electoral system induces or forces voters to vote in bloc for a closed list of candidates, in addition to have developed different kinds of complex organization. In some early modern times, when elections in relevant large-scale political institutions were of the type above presented, the distinction between 'faction' and 'party' was difficult, as witnessed, for example, by the Scottish and British David Hume, who –reflecting a general mood of the time-- initially considered that "sects and factions [should] be detested and hated... [because they] subvert government, renders law impotent, and beget the fiercest animosities" (1741). Later on, however, he pondered that "to abolish all distinctions of party may not be practicable, perhaps not desirable, in a free government". Very interestingly, when in the further period Hume had to face the undesirable but perhaps unavoidable existence of political parties, he turned to wish that government were in hands not of a single party but of multiple-party coalitions in order "to prevent all

unreasonable insult and triumph of the one party over the other, to encourage moderate opinions, to find the proper medium in all disputes, to persuade each that its antagonist may possibly be sometimes in the right, and to keep a balance in the praise and blame, which we bestow on either side" (1758).

A similar evolution can be detected in the Virginian and American James Madison – actually influenced by reading Hume-- who initially also condemned factions, but later on saw them as unavoidable and even a necessary evil. Madison perceptively noted that, with parties organized, in small communities there would likely be a single dominant party embedded in

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local prejudices and schemes of injustice --and "the smaller the number of individuals composing a majority, and the smaller the compass within which they are placed, the more easily will they concert and execute their plan of oppression". In contrast, greater political units would provide "the greater security afforded by a greater variety of parties, against the event of any one party being able to outnumber and oppress the rest... In an equal degree does the increased variety of parties comprised within the

[large] Union increase this security"  
(1788, No. 10; see also discussion in Dahl 2002: 29-37).

Perhaps it was Jean-Jacques Rousseau who had better realized and anticipated the dramatic influence of factions in elections held in multi-member districts by plurality rule –as used in his natal Geneva. "When factions arise –he observed in a rather known but diversely interpreted passage--, and partial associations are formed at the expense of the great association, the will of each of these associations becomes general in relation to its members, while it remains particular in relation to the State: it may then be said that there are no longer as many votes as there are men, but only as many as there are associations... Lastly, when one of these associations is so great as to prevail over all the rest, the result is no longer a sum of small differences, but a single difference; in this case there is no longer a general will, and the opinion which prevails is purely particular". Highly remarkably, also Rousseau pondered that if factions of parties were unavoidable, that is, "if there are partial societies, it is best to have as many as possible and to prevent them from being unequal" (1762).

All the authors mentioned –who were, of course, among the most influential on constitution-making and criticism in England, the emerging United States, revolutionary France, and many other countries at the time--coincided, thus, on the following observations.

First, they realized that the formation of electoral factions or parties produced worse results than previous practices based on individual votes among individual candidates. Second, they eventually acknowledged that in large, complex societies in which the homogeneity of interests and values which had prevailed in small, simple communities during the Middle Ages had visibly decreased, the formation of political factions was unavoidable and even necessary to make possible the political representation of a diversity of groups. Finally, they considered that, once parties had begun to intervene in the electoral process, the existence of multiple parties was better –in the sense of re-establishing to some extent the previous capacity of elections to give representation to different preference groups-- than the existence of just a few

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able to provoke concentration of power in the hands of a single party; in other words, that, if

parties were unavoidable, multi-partism was better than bi-partism.

Basically two different types of procedures were then devised to make organized faction- or political party-competition somehow compatible with pluralistic, inclusive representation, while majority was still the basic principle of decision. First, several ballot procedures were invented in order to produce more-than-one-party representation in multimember districts by plurality rule. Second, the alternative of single-member districts, whether by plurality or by majority second-round rules, was diffused, also in the expectation to reduce the high concentration of power in a single party produced by bloc ballot in multi-member districts. Of course, small, disadvantaged but rising groups favored the adoption of these relatively more inclusive electoral procedures, while large, dominant and well-settled incumbents resisted such innovations in favor of maintaining better opportunities for concentrating all seats.

### **Limited, Cumulative Ballots**

The two most diffused innovative ballot procedures in multi-member districts have been limited ballot and cumulative ballot. Limited ballot –

which had been initially proposed by Condorcet in 1793, as mentioned above-- was designed precisely to permit at least the second minority in a district to obtain a minority of seats. By this procedure, each voter is allowed to vote for a number of candidates which is less than the total number of seats to be filled in the district, while the candidates with higher numbers of votes are elected. With high proportions of limited votes (for instance, 2/3 of the seats to be filled), this procedure will give as many seats as votes per voter to candidates of the largest party while the remaining minority of seats will be allocated to candidates of the second party in votes. Only if the largest party obtains a very high proportion of votes and is able to coordinate its followers' votes to be distributed efficiently among its different candidates, can it expect to receive all the seats in the district. Different forms of limited ballot with several votes per voter were used tentatively in a minority of districts in Britain since 1867, as well as in Italy, Portugal and Spain a few years later. More daringly, limited ballot was adopted as the general formula to fill all the seats in the Assembly in Brazil since 1882, as well as in Argentina, Bolivia, Peru, Portugal and Spain at

the end of the 19th century. With this procedure, as illustrated in Table 1, while the most voted

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party list obtains a majority of seats, a second party can also receive some seats (in the example in the Table, the corresponding allocation of seats is 2-1-0).

A particular form of limited ballot is the one giving only one vote per voter –as was proposed by Saint-Just in 1793, as previously mentioned. This formula was innovatively used in Spain from 1865 to 1876. In districts with more than two seats, this form of limited single ballot can distribute the seats among more than two parties, actually producing a really pluralistic and approximately proportional representation, as illustrated in Table 1. In modern times, this procedure has been called 'single non-transferable' vote and has been used, most notably, in Japan since 1900 and again after the Second World War.

The procedure of cumulative ballot –which had been proposed in Britain by member of Parliament James Garth Marshall (1853)-- gives each voter as many votes as seats to be filled in the district, but permits to accumulate more than one vote on a single candidate. The results

of this procedure depend on voters' information regarding the expected support of the different candidates and their ability to coordinate their accumulations. In general, it can be expected that seats will be allocated to more than one party. But only if the larger party fails to coordinate its supporters' accumulated votes while the smaller parties succeed in doing so, the allocation of seats can be as pluralistic as with limited ballot. Cumulative ballot was used in three-member districts for the election of the Illinois state legislature from 1869 to 1980, as well as in Chile, Brazil and Peru during late 19th and early 20th centuries. Table 1 also illustrates some hypothetical allocations of seats under this procedure in the simple example of a three-member district. (The incentives for strategic voting and the likely consequences of both limited and cumulative ballots were insightfully analyzed by Charles Dodgson, better known as Lewis Carroll, in 1884; see also Black 1996).

### **Single-member Districts**

As an alternative to these procedures oriented to permit more-than-one-party representation in multi-member districts, the division of large multi-member districts into smaller singlemember

districts can also produce some pluralistic representation. In order to see how this happens, Table 1 illustrates the simple example of a three-member district which becomes three single-member districts. As shown in the Table, a single party able to receive all seats in a multi-member district may fail to become the largest party in some of the smaller single-member districts, thus permitting some other party to obtain representation. (In the example of the Table, the new allocation of seats, instead of favoring a single party, 3-0-0, as produced in a three-member district, is now 2-0-1; observe that the party with no seats has wider total support than the party with one seat, but the latter is the strongest in one district).

In fact, single-member districts can be combined with different rules, mainly plurality, majority with a second-round by plurality, and majority with a second-round run-off by majority between the two most voted candidates at the first round. If, according to the first of the rules just mentioned, the seats of an assembly are elected in single-member districts by plurality rule, certain global minorities with relatively strong support in small local areas can see their candidates elected, which is a more

inclusive result than the one produced by multimember districts. Single-member districts, however, can work against large minorities with wide-spread support across the territory if they are not the largest group in any significant area, up to not giving representation to a relatively large preference group.

The adoption of single-member districts in elections by plurality rule were apparently adopted, first, in the British colonies in North America and introduced in England since 1707.

They developed in late 18th and early 19th century for the election of the House of Commons in Ireland, Scotland and Wales (in contrast to most of England, where two- and three-member districts prevailed), as well as in certain states and the United States for the election of the House of Representatives. They, however, did not become the general formula in Britain until 1885 --at Conservatives' demand as a protective device in exchange for a new enlargement of the franchise which they felt to be threatening. In the United States single-member districts expanded gradually, but they finally replaced at large and other multi-member districts with bloc voting in a few states only in 1970. Much

before that, Denmark for one had formed its parliament with this only formula in 1848.

As was noted by English philosopher and politician John Stuart Mill on the occasion of discussing electoral reforms in Britain, a parliamentary election in single-member districts by plurality rule –as an indirect election with factions, as previously discussed-- can give victory to "a majority [of voters] of the majority [of districts], who may be, and often are, but a minority of the whole" (Mill 1861). Actually, Mill was still short in his insight, since, by this procedure, as implemented in Britain, a parliamentary majority can be given to a relative

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majority, so a minority of voters of the majority of districts, which can indeed be a very small minority of the whole number of voters, and even smaller than some other groups.

The election of a single winner by plurality rule was also implemented for the direct election of presidents in regimes with separation of powers between the Presidency and the Assembly. The earliest cases were Colombia in 1853 (replacing the U.S.-inspired electoral college) and Brazil since 1892 (replacing the Portuguese monarchy). Later on, this rule was

adopted for direct presidential elections in many countries of Latin America, as well as in the Philippines, South Korea, and some African countries under former British control. As can also happen in any parliamentary single-member district, a plurality-winning president may be an extreme candidate receiving strong rejection from a majority of voters that may have divided their votes between several relatively closer, defeated candidates. In other words, the winner by plurality can be the Condorcet-loser, that is, a candidate that would be defeated by any other candidate in pair-wise contests. As happened, a number of political crises and democratic regime breakdowns were produced in both Latin American, Asian and African countries after the election of minority extreme presidents by plurality rule, especially by mid-20th century.

### **Absolute Majority Rules**

Comparable, but relatively less bad results can be obtained in parliamentary single-member districts, as well as in presidential elections, if majority rule with a second round is used. A first variant, requiring an absolute majority at the first round and only a plurality at the second round, was adopted for the election of the National

Assembly of France in 1875 and has been used there most of the time up to the present. This system can only make a difference with simple plurality rule if the candidates coordinate their withdrawals at the second round in favor of those who are relatively closer in their preferences (or more willing to enter into favor exchanges) and have higher likelihood of winning. In conditions of sub-optimal coordination, however, the winner may be as extreme and minority in voters' first preferences and provoke similar wide rejection as the winner by simple plurality rule in a single round.

Another variant requires an absolute majority at the first round and reduces the choice to the two most voted candidates at the second round. This system was used for parliamentary elections in Germany since 1871. For presidential elections, a precedent of second round runoff rules can be found in the procedure establishing a first direct election round by majority and a second round run-off in Congress between the two or three most voted candidates. This formula was adopted in France in 1851, as well as in Bolivia in 1871, where is still used now, and in at least other six Latin American countries in different periods. Direct presidential

elections by majority with a second round run-off between the two most voted candidates has been used in France since 1965, as well as in African countries under former French control, in most countries of Latin America in the most recent democratic periods (starting with Ecuador in 1978), and in post-Communist regimes in Central and Eastern Europe since the 1990s.

A further variant of absolute majority rule requiring a single round of voting was initially devised by Harvard college professor William R. Ware in 1871 by working at simplifying some of Thomas Hare's proposals (to be mentioned below) and imported by mathematician E. J. Nanson in 1882 for elections in Australia, for whose House of Representatives was adopted since 1918. Usually known as 'majority-preferential' or 'alternative' vote, this procedure requires voters to order their preferences among candidates. Any candidate obtaining a majority of first preferences is elected; otherwise, the candidate with the lowest number of votes is eliminated and his or her supporters' votes are transferred to their next or further preferences for successive rounds of counting until a majority candidate

results. The procedure, thus, enable voters to indicate for which candidate they would have voted at a second round if their favorite candidate were eliminated at the first round –for this reason it is usually known as 'instant runoff' in the United States.

Majority rule, whether with a second round run-off or with alternative vote, does not guarantee that the winner is the candidate with relative widest acceptance and less rejection among voters, since this can be eliminated at the first round of voting or at some preliminary round of counting. Even if the candidates are perceived by most voters as ordered along a single linear dimension, such as the left-right axis, the median voter's candidate, which is always able to form a majority around him against any other candidate, may obtain fewer votes than other two, more extreme candidates and be eliminated. In other words, the winner by majority with any of these procedures may not be the Condorcet-winner, that is, the candidate able to win against any other candidate in pair-wise contests, but one that could be defeated by absolute majority by some of the eliminated candidates.

However, at least two caveats can be introduced at comparing the expected outcomes by simple plurality rule with those by absolute majority run-off rule. Assuming a single dimension of voters' preferences in which the median voter can be clearly identified, and the same number of candidates running, if no candidate obtains an absolute majority of votes at the first round, majority run-off creates double probability than plurality rule that the final winner will be the candidate with the median voter's support. This is due to the fact that if the median voter's candidate is present at the second round, it must be expected to win by majority against any other rival. Thus, the probability for the median voter's candidate to win is equal to the probability to be one of the two most voted candidates at the first round, which, under the above assumptions, a priori and with whatever number of candidates, is double than the probability to be the single most voted candidate at the first round.

The second caveat is linked to the first. While simple plurality rule can give victory to the Condorcet-loser, that is, the candidate that would be defeated by every other candidate in pair-wise contests, as mentioned above, the winner

by absolute majority run-off rule or its variants cannot be the Condorcet-loser since he or she will have been able to win at least one of the pair-wise contests or comparisons, that is, the one between the two survivors at the second round of voting or the final round of counting. (This point was early made by E. J. Nanson 1882).

This means that, in parliamentary single-member districts, as well as in presidential or other elections producing a single absolute winner, it should be expected that the winner by majority rule with a second round run-off or alternative vote will be, as an average, relatively more accepted and less rejected by the voters than the winner by simple plurality rule. Of course, specific elections can produce winners with characteristics opposite to those just mentioned, but we are just presenting here a general statement regarding the results that can be expected a priori from every electoral rule.

### **The Choice of Majority Rules**

This classification of majoritarian electoral rules and procedures for their capability of inclusion of varied political groups and of producing relatively acceptable winners permits to establish some basic strategic criteria for

institutional choice. The choice of procedures with relatively higher inclusiveness, such as limited or cumulative ballot or single-member districts,

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or of rules with higher requirements of votes for winning absolutely, such as majority run-off rule, implies less risk, while the bet for exclusionary procedures, such as multi-member districts with 'bloc' closed lists, or for rules with no specific vote requirements for winning absolutely, such as simple plurality rule, should be expected to correspond to more risk-prone actors.

In the perspective supplied by the above analysis, it should be expected that a single dominant party with optimistic expectations to remain in such a position will tend to prefer electoral formulas like multi-member districts with 'bloc' closed lists and plurality rule to other formulas permitting minority representation. In contrast, in situations in which the incumbent rulers are seriously challenged by a rising opposition or by new emerging parties, as well as in situations of relative ignorance or high uncertainty regarding the likely support of different candidacies –for instance, when a new regime with broad voting rights is established--, the

relatively more inclusive electoral formulas –that is, limited or cumulative ballot, singlemember rather than multi-member districts, and majority runoff rule rather than simple plurality rule-- can be less risky choices for self-interested actors, able at the same time to produce more socially acceptable results. A further cross-country, long term analysis will test these implications on electoral system choice.

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Table 1. Majority Rules and Procedures

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Candidacies

- Individuals:  $w_1 w_2 w_3 x_1 x_2 x_3 y_1 y_2 y_3 z_1 z_2 z_3$

- Parties: W X Y Z

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Total voters: 40 30 20 10 /100

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Per areas: A 20 10 0 5

B 20 10 0 5  
C 0 10 20 0

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Rules Votes 3 seat allocations

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M=3, Open ballot,

Plurality rule e.g.  $w_1:40, x_1:30, y_1:20, z_1:10$  1 1 1 0

M=3, Block ballot,

Plurality rule  $W:40, X:30, Y:20, Z:10$  3 0 0 0

M=3, Block ballot, 1st round:  $W:40, X:30, Y:20, Z:10$

Majority-runoff rule 2nd round, e.g.:  $W:40, X:60$  0 3 0  
0

M=3, Limited ballot  $w_1:40, w_2:40, x_1:30, x_2:30,$

( $V=2$ ), Plurality rule  $y_1:20, y_2:20, z_1:10, z_2:10$  2 1 0 0

M=3, Limited ballot

( $V=1$  single non-transferable)

Plurality rule  $w_1:40, x_1:30, y_1:20, z_1:10$  1 1 1 0

M=3, Cumulative ballot,  $w_1:40-120, x_1:30-90,$

Plurality rule  $y_1:20-60, z_1:10-30$  1-3 0-1 0-1 0

M=1, Single ballot, A-  $w_1:20, x_1:10, y_1:0, z_1:5$

Plurality rule B-  $w_2:20, x_2:10, y_2:0, z_2:5$

C-  $w_3:0, x_3:10, y_3:20, z_3:0$  2 0 1 0

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## PROPORTIONALITY

The principle of proportional distribution of shares, burdens, and voting rights is usually adopted in private communities and companies on the basis of number of inhabitants, resources, property or the contribution to provide or finance collective goods. Remote precedents of proportional representation for distributing seats in more political settings can be found in ancient leagues of cities and tribes. In early modern times, confederal unions and a number of peace plans in Europe also addressed the question of fair representation of

representatives. More formally, and for domestic political elections, the principle of proportional representation was first formulated in late 18th century France during the process of holding traditional, corporative elections which would trigger the revolution. The basic mathematical formulas that would make the principle operable were also invented about the same time in the process of setting the new representative institutions of the United States of America. However, these formulas were not used in the United States for the allocation of institutional seats to political candidacies, but only for apportioning seats in the House of Representatives among the differently populated states. Proportional representation formulas were re-invented several times in Europe in the second half of the 19th century before they began to be used for the allocation of seats in modern assemblies and parliaments.

### **The Invention of the Proportionality Principle**

Regarding ancient confederal leagues, the most remote precedent of proportional representation can probably be found in the Lycian League in Asia Minor from 168 BC to c.50 AD. It reunited 23 cities (including, for instance, Olympos and Xathros) that were represented

in the governing Council with one, two or three votes each, according to their size. They also bore proportional share in financial responsibility. But the most considerable of the confederacies of the Antiquity was the Amphictyonic League, which was organized around Delphos for religious and mutual defense affairs with 12 Hellenic tribes, including Athens and Sparta. The representatives of all units met twice a year to vote on decisions which were executed by the Senate. Although working with equal number of votes per unit during most of its existence, during a short period from 31 BC to 14 AD the Amphictyonic League was organized with a more proportional distribution of votes: three cities had six votes, three cities

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had two votes, and six cities or groups of small tribes had one vote each (which was cast by one of its components by turns). Although not precisely distributed according to a mathematical formula, the different numbers of votes roughly corresponded to each city's or group' population. (Freeman 1898).

Approaching similar problems, a number of confederal plans and attempts of uniting different political units for common purposes of

defense can be identified during the late Middle and early Modern Ages. One of the most remarkable was developed in late 17th century by English colonizer William Penn, whose peace plan for Europe included the formation of a Diet (also called Estates or Parliament) at which each sovereign would be represented in proportion to "its value" (to be calculated not only in terms of population but also of wealth and military strength). Up to fifteen units were devised (from the German Empire, France, Russia, Spain, and Turkey to the smallest Swiss cantons and German ducats) with a total of 90 votes distributed in a scale with eight values from 12 to one (Penn 1693). Similar problems were, of course, faced by modern confederations and federal states forming representative assemblies –from the United States in late 18th century to the European Union in late 20th century--, as well as by all kinds of parliaments and assemblies whose members were to be elected in territorial units of different size and population. For the purpose of organizing popular elections, an early formulation of the principle of proportional representation of the different groups of voters in political assemblies came

from politician and electoral candidate Honoré Gabriel Riqueti, Count De Mirabeau, in the very first weeks of 1789. In his address to the provincial estate of Provence on the occasion to elect the delegates to the Estates-General of France, Mirabeau famously stated that "The Estates-General are [ought to be] to the nation what a chart is to its physical configuration; in all its parts, and as a whole, the copy should at all times have the same proportions as the original" (Mirabeau 1789, 1: 7). In a lesser known passage of the same speech, Mirabeau remarked that he did not aim only at obtaining a faithful or fair representation of the different groups of society, but was also concerned with inducing socially efficient outcomes from the corresponding political institutions. In this orientation, representation of all parts should prevent the two dominant estates, the aristocracy and the clergy, from prevailing over the whole nation. "The nation is not there –he noted— if those who call themselves the representatives have not been chosen in free and individual elections, if the representatives of

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groups of equal importance are not equal numerically and in voting power... In order to know

the will of a nation, the votes must be collected in such a way so as to prevent the mistake of taking the will of an estate for one other, or the particular will of certain individuals for the general will" (idem: 7-8).

### **Proportional Quotas**

About the same time as Mirabeau formulated his principles, some of the leading politicians of the newly created United States of America were inventing for first time the basic mathematical formulas that would make proportional representation feasible. As suggested, they did not invent them with the intention to promote fair, pluralistic and socially efficient representation of different groups of voters in the corresponding institutions, but only for the sake of fair territorial representation in the new federation, as mandated by the United States constitution (Article 1, section 2).

For the U.S. first rulers and electoral law makers, the basic problem was to define a 'quota' of state inhabitants worth of a seat in the House of Representatives –which is, formally, the same problem as to define a 'quota' of party votes worth of a seat in any council, assembly or parliament, as would be addressed later on. Three types of quota were then and in

further periods defined, which can be called, respectively: 'exact', 'sufficient', and 'fixed' quotas. Table 2 shows an example of how different quota formulas can be applied.

The 'exact' or 'simple' quota was first defined by Alexander Hamilton, one of the main authors and propagandists of the new United States federal constitution, for the first House elections in 1791. The exact proportional quota is the divisor between the total number of inhabitants (or votes) and the total number of seats; that is,  $1/M$  (where  $M$  is the magnitude or number of seats in the district). This formula is quite intuitive from the notion of proportionality, but has the big drawback of not to be decisive or complete since the distribution of inhabitants among states, or that of votes among parties, hardly comes in exact multiples of such a quota. Therefore, the remaining seats not able to be allocated on the basis of the exact quota have to be allocated by using some other supplementary formula which may introduce significant distortion. As this formula was initially proposed both by Hamilton and, in the context of parliamentary elections, by English lawyer and politician Thomas Hare about

seventy years later, the remaining seats were to be allocated to those states or parties having 'largest remainders' of inhabitants or votes, respectively (Hare 1859).

In actual electoral systems, however, the 'exact' or Hamilton-Hare quota has been used together with disparate supplementary formulas for allocating the remaining seats, such as giving preference to the larger parties, or to the smaller parties, or by random, or by applying some other formula of proportional representation to the remaining votes, or –as one of the most distinguished critics of the Hamilton's proposal voiced—"according to any other crotchet which ingenuity may invent, and the combinations of the day give strength to carry" (Jefferson 1792). In order to reduce the number of seats to be allocated by a supplementary criterion, London barrister Henry R. Droop proposed a somewhat lower quota,  $1/M+1$  (rounded up); with a lower quota value, a higher number of seats can be allocated by quotas, but still this formula would need a supplementary one to allocate at least a few remaining seats (Droop 1868, 1869).

Logically, the combination of two different formulas for the allocation of the same slot

of seats may produce some unexpected and undesirable consequences. Even the standard Hamilton-Hare formula allocating some seats by the exact quota and the rest to the largest vote remainders has found able to produce some paradoxical allocations, such as giving fewer seats to a party (or state) having increased its proportion of votes (or inhabitants) –usually known as the 'Alabama paradox'.

The second formula, which can be called 'sufficient' quota, was first conceived by Virginian politician and further U.S. president Thomas Jefferson in 1792 as a response to Hamilton's quota –the latter being finally vetoed by president George Washington at Jefferson's persuasion. Seeking support in the instructions of the U.S. constitution and in the appeal of simplicity, Jefferson proposed to define a quota able to allocate all the seats by a single criterion. Literally, he stated: "We must take, as the ratio of distribution, the common divisor which, applied to every state, gives to them such numbers as, added together, come nearest to 120 [the total number of seats in the House of Representatives at the time]". The idea of a common divisor for all allocations of seats also motivated Belgian civil law professor

Victor d'Hondt to re-invent this quota about one-hundred years later (d'Hondt 1878,1882). Of course, to fulfill its aim of allocating all the seats, the Jefferson-d'Hondt quota must be smaller than the Hamilton-Hare quota.

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Although it has been common to confuse the Jefferson-d'Hondt 'sufficient' quota formula with some of the calculation methods to establish its value, the basic meaning of the formula should not be forgotten. In fact, there are several methods to find such a quota and produce the corresponding allocation of seats, including by trial and error, as proposed initially by Jefferson; by using a series of divisors until obtaining the M-th highest quotient or 'highest average' (being M the number of seats to be allocated), as divulgated by d'Hondt and known as the method of 'divisors series'; or by starting tentatively with the quota  $1/M+1$  (rounded down) and decreasing it down until fitting, as divulgated by Swiss physics professor and local politician Eduard Hagenbach-Bischoff (1888).

Several variants of this type of quota have also been invented. For instance, United States Senator Daniel Webster began, in 1832, to

modify the quota by increasing its value to the nearest whole number and then, if necessary, giving extra seats to those states or parties having more than half the quota. This formula, which is known as 'major fractions', would be used for seat apportionment in the U.S. in early 20th century. It was later re-invented, together with another calculation method based on the divisors series of odd numbers, by French mathematician André Sainte-Laguë (1910) and has been used for parliamentary elections, in modified versions, especially in Scandinavian countries.

Finally, what can be called 'fixed' quota is just an absolute number of votes established a priori as worthy a seat. This was actually the basic criterion that had been used in a few ancient and early modern leagues and confederations, previously mentioned, in which the number of each unit's representatives was established on the basis of some fixed amount of inhabitants. For political elections, this formula was first proposed by French mathematician Joseph-Diaz Gergonne in 1820. In his own words: "At the elections the voters should group themselves freely according to their opinions, their interests, or their desires, and any citizen

would become a Deputy from the department in the elective chamber who bore a mandate from two hundred voters [his arbitrarily proposed quota]" (Gergonne 1820). Similarly, Philadelphia's manufacturer and activist Thomas Gilpin proposed a fixed quota in a pamphlet published in 1844. The context of Gilpin's proposal, against which he tried to react, was the system previously discussed of multi-member districts by plurality rule by which each voter had to vote in bloc for a closed list, thus producing a single dominant party. His intention was to prevent further successive self-reproductions of rulers in power and make "the elected body

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to be an exact representation of the public interests". Otherwise –he warned-- "is the virtual source of oppression and injury the cause of great discontent, and when not subversive of the administration, it is subversive of the harmony and confidence which ought to be afforded to it". Gilpin's proposal was a fixed quota and open lists in which voters could express their ordinal preferences regarding individual candidates (Gilpin 1844). A similar, but more practically usable formula, actually inspired on Gergonne, was further proposed in the United

States by J. Francis Fisher (1863). However innovative and well-intentioned these proposals might be, it is remarkable that they were apparently formulated in complete ignorance of the proportional quota formulas that had been and were at the time used in the same political system for the apportionment of seats.

'Fixed' or Gergonne-Gilpin quotas may have some advantages, such as encouraging turnout and producing uniform distributions of seats among parties independently on districts numbers, magnitudes and apportionment. However, they are not able to establish a previously known number of seats in any district or in the total of the assembly. With varying assembly sizes, this type of quota --which was being used in the German land of Baden-Baden-- was adopted by the so-called 'Weimar Republic' of Germany in 1919 with a rather demanding quota of 60,000 votes per seat.

Of course, different quotas may produce different allocations of seats in favor of either larger or smaller parties and can be chosen by electoral law-makers according to their expectations. But, as Webster established: "The divisor may be anything which produces accurate and uniform division".<sup>2</sup>

There are, thus, two crucial elements in proportional representation electoral systems which may produce different results in advantage of different parties: the number of seats and the quota formula. With 'number of seats' we refer to the total number of seats or 'assembly size', as well as to the 'magnitude' or number of seats per district. The number of seats can be small, if the assembly size is small, or, even for a large assembly, if a high number of districts makes their magnitudes small. The 'quota' as the basic ground for distributing seats among

<sup>2</sup> Other quotas proposed and used in the United States for apportioning a high number of seats among a relatively smaller number of states, such as those invented by former president John Quincy Adams and by mathematicians Edward V. Huntington and Joseph A. Hill, cannot be used for elections with more candidates than seats; see Balinski and Young (1982), Marshall, Olkin and Pukelsheim (2002).

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parties can be relatively large, like the Hamilton-Hare 'exact' quota, relatively small, like the Jefferson-d'Hondt 'sufficient' quota, intermediate, like the Webster-Sainte Laguë 'major fraction' quota, or have any value, like the Gergonne-

Gilpin 'fixed' quota. Further modifications can be introduced by the requirement of legal thresholds to enter the process of allocation, whether in form of a given percentage of votes or as requirement of obtaining one 'exact' quota or a portion of it, actually decreases the effective quota for the parties above the threshold. Mal-apportionment of seats regarding the population, and, in particular, the allocation of a minimum number of seats to every district, even the smallest ones, can also distort representation based on quotas of votes. Note, however, that the smallest quota is the one which is applied with plurality rule: literally, the quota can be any value higher than zero, only depending on the number of parties or candidates. Second-round formulas also imply very small quotas since passing into the second round is a contest by plurality rule, at which no specific threshold is required, and, on some of its variants, the final winner may also be just the most voted candidate at the second round.

The consequences of the different electoral formulas just revised can be summarized the following way. First, the smaller the number of seats (both in the total assembly and in

every district), the higher the number of votes which can be sufficient for a party to receive a seat --this is the value usually called 'exclusion threshold'. The smaller the number of seats and the higher the corresponding exclusion threshold, the more disadvantaged are, of course, the small parties and the more advantaged are the larger ones. Second, the smaller the quota, the more advantaged are the larger parties which can obtain higher numbers of quotas rewarded with seats. In particular, plurality rule, whose quota is, as mentioned, whatever value higher than zero, as small it can be, maximizes the representation of the largest party. Among the basic formulas of proportional representation previously discussed, the Jefferson-d'Hondt 'sufficient' quota, which is relatively small, maximizes the representation of the parties larger than the average.

### **The Choice of Proportional Representation**

This analysis may allow us to identify some basic strategic criteria of electoral system choice.

It can be expected, in short, that the larger will prefer the small and the small will prefer the

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large. Specifically: dominant, optimistic or risk-prone, and would-be large parties will prefer:

(1) small assemblies, (2) small district magnitudes, and (3) small quotas. In other words, large parties should be expected to prefer assemblies with relatively low number of seats, apportionments creating small numbers of seats per district, as well as plurality rule rather than proportional representation formulas and, among the latter, the Jefferson-d'Hondt formula which implies relatively small quotas rather than the Hamilton-Hare formula or other variants.

Of course, high numbers of districts and high legal thresholds belong to the same set of preferences. Conversely, seriously challenged, pessimistic or risk-averse, and would-be small parties should be expected to prefer: (1) large assemblies, (2) large districts, and (3) electoral formulas implying large quotas, in particular those of proportional representation rather than majoritarian ones.

These electoral system preferences and choices have been justified with different arguments. First, fairness and social efficiency of the subsequent political decisions can be called in support of proportional representation. Conservative Thomas Hare, for instance, said to have devised a system which, in contrast to the concentration of power created by plurality

rule, would secure representation of all classes, including minorities. He, however, remarked that his project did not aim at simply securing 'representation of minorities', but to "end the evils of corruption, violent discontent and restricted power of selection or voter choice" (Hare 1859). Hare's main propagandist, liberal John Stuart Mill, also remarked that proportional representation would give all interests or classes "protection against the class legislation of others without claiming the power to exercise it in their own" (Mill 1861). French socialist leader Jean Jaurès, on his own, made this didactic presentation of the choice of electoral systems: "This will kill that. So is the formula of voting in [a single-member] district. These will kill those. So is the formula of voting by list without proportional representation. These and those will have their fair share. So is the formula of voting by list with proportional representation".

However, in addition to fairness arguments, group self-interest has been, sometimes, also explicit. For instance, the leader of the German socialist party, Wilhelm Liebknecht, addressed the annual conference of his party in 1890 with these words: "Our party would

derive great advantages from the introduction of this electoral system [proportional representation]... Under the present electoral system the greater part of our votes is lost –  
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whereas under proportional representation our strength in parliament would be doubled or tripled" (in Rustow 1950: 121).

In fact, majoritarian systems have been supported by successful actors in single dominant- or frequently alternating two-party systems --typically formed by conservatives and liberals or, in more recent times, by conservatives and socialists. In contrast, proportional representation is usually favored in emerging multi-party systems by different types of actors: on the one side, by incumbent conservatives or liberals under threat of losing their privileged position, on the other side, by minority but growing opposition parties, traditionally including socialists, christians, and ethnic parties. In a summary survey it can be observed that, among the earliest countries which adopted proportional representation in late 19th and early 20th centuries, "Belgium had essentially a three-party system before it adopted proportional representation in 1900, Denmark had a four-party

system during most of the period in which it employed a British-type of electoral system, Norway had at least three major parties on the eve of the adoption of proportional representation in 1921, Switzerland had four parties in the last elections under the plurality system, and Germany had anywhere between six- to twelve-party system depending on the criterion used to define it" (Grumm 1958: 374). A more systematic test is presented in the following section of this chapter, showing that, indeed, multi-party systems already existed in most countries when electoral systems of proportional representation were chosen in modern times.

### **Mixed Systems**

Less straightforward calculations than here generically assumed, as well as successive refinements in the invention and design of electoral formulas and procedures, can account not only for specific combinations of proportional representation formulas and district magnitudes, but also for the choice of intermediate or 'mixed' electoral systems. Three basic categories of so-called 'mixed' systems can be distinguished, which have been called 'coexistence' (involving different rules for different sets of voters and seats), 'multiple tier

allocation' (involving one vote per voter and two or more rules), and 'parallel' systems (involving two votes and two rules) --although loose vocabulary is widespread.

'Coexistence' means that different rules and procedures are used in different districts to fill different portions of the assembly seats. This was the case, for instance, of Costa Rica

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since 1913, Greece in 1956 or Panama since 1983, where some districts are decided by plurality rule and others by proportional representation

'Multiple tier' allocation, involves a single ballot, but two or more rounds of counting the same votes by different rules to allocate different portions of seats in the assembly. A typical combination includes one round of counting by plurality rule and another round by some formula of proportional representation --as in South Korea in 1960 and again since 1987, Mexico since 1986 or Taiwan since 1991. This type of system allows electoral law-makers to make well-tuned calculations and adjustments, since while it establishes complex and sophisticated voting counts, it reduces voters' choice to a single decision not permitting much

strategic behavior.

Finally, 'parallel' systems give each voter two votes to select candidates for two different portions of seats which are allocated by two different rules. This type of system may result from intermediate compromises, at either explicit negotiations or underlying calculations, between less-than-secure incumbent rulers, which would have preferred to be able to maintain or establish plurality or majority rules, and increasingly emerging but not overwhelming opposition groups preferring proportional representation systems. In contrast to the previous type of multiple-tier allocation, parallel mixed systems allow voters to split their ballot between candidates or lists belonging to different parties, thus permitting a rather subtle revelation of preferences. However, the resulting composition of the assembly can be distorted by the use of different allocation principles and rules. Of course, the advantage of the larger parties and the degree of dis-proportionality in representation will be higher the higher the portion of seats allocated by plurality or majority rule.

An early case combining plurality rule and proportional representation in 'parallel'

mixed systems was Brazil in 1933. A number of 'parallel' systems have also been established in recent processes of democratization in which institutional formulas have been chosen under rather balanced relationships of forces between the incumbent rulers and the opposition, as in Russia and several countries in Central and Eastern Europe in the 1990s. Likewise, parallel mixed systems have been compromised in better-established democratic systems in which a long-term dominant party has entered in clear decline, but has not been completely replaced in voters' support by the opposition, as in Italy under the tension between the eroded governmental christian-democrats and the challenging but never winning communists, and in

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Japan after some erosion of the long-term governing liberal-democrats under pressure from the socialists and other minority and divided parties in opposition, on both cases since the mid-1990s.

In contrast to these types of mixed systems, other combinations of rules and procedures are much more easily to be classified either as majoritarian or proportional. The first category may include electoral systems in which an absolute

majority rule is used to allocate most seats, and only in case that no party obtains such a majority, a formula of proportional representation is applied. This type of system involves one vote per voter and one rule, with another rule just in reserve (or, as has been suggested, as 'supplementary' or 'conditional' rule). A few would-be dominant parties betted on this type of system in France in 1919 and 1951, and in Italy in 1923 and 1953 –in most cases without obtaining the majority representation they were expecting. On the other side, proportional representation systems can also be organized by using different formulas at different tiers, that is, at districts including different distributions of voters such as national, regional and local. Cases include Belgium since 1919, Denmark and Germany since 1920, Greece at a number of experiments with three tiers since 1926, the Netherlands since 1933, Italy since 1946, or Ecuador since 1978. Finally, 'personalized proportional representation' (also called 'mixed-member proportional'-, 'additional member'-system, and other names) distinguishes each vote as valid both for an individual candidate competing in single-member districts by plurality rule and for a party list in a large district by

proportional representation. In contrast to mixed systems, however, the allocation of seats is 'compensatory', which means that those seats obtained by a party at single-member districts are discounted from those obtained from the total pool of the assembly seats by proportional representation. This type of system was pioneered used in Denmark in 1915. As the system was established in the Federal Republic of Germany since 1953, each voter has two votes. In fact each party receives a number of seats based on its proportion of party list votes; then about half of total seats in parliament are occupied by those individual candidates with higher number of individual votes in single-member districts, while the rest are selected from the party's closed lists. With this combination, both high proportionality between party's votes and seats, and closeness and accountability of some individual candidates to voters can be achieved –a combination that most properly deserves the epithet of 'the best of two worlds'. This type of system was also adopted in Bolivia, New Zealand and, temporarily, in Venezuela

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in the 1990s, during processes of opening or broadening the political system to more

pluralistic party configurations.

### **Open and Closed Ballots**

The complexity of formulas such as those just revised suggests that electoral systems can be chosen not only for the inter-party allocations of seats they can prefigure out, but also for their consequences on intra-party competition between individual candidates. Roughly speaking, while strongly independent individual candidates should be expected to prefer systems permitting voters the opportunity to choose among individuals, compact, disciplined parties will prefer to establish nomination systems of candidates by which the choice of voters will be determined by party labels rather than by their individual figures.

Four types of formulas are revised in the following paragraphs along these lines: (1) primary elections; (2) open ballot or 'panachage', as well as ordinal single transferable vote; (3) preferential vote for individual candidates, including limited ballot in majority systems, and double vote and open lists in proportional representation; and (4) categorical vote, including single ballot in majority systems and closed lists in proportional representation. The order in which these formulas are discussed

presumably corresponds to a gradation from higher to lower opportunities for individual candidates to campaign and attract votes. Regarding the choice on electoral rules and formulas, it can be expected that the more open the selection of individual candidates, the lower the pressure that can be expected for 'opening' the electoral system, as will be discussed below. First, primary elections, which began to be used to nominate presidential candidates in the United States in 1912, are presently held in the U.S, as well as in a number of other countries, to select single-winner individual candidates for single-member offices such as president, governor, congressmen in single-member districts, or top list candidates. Primary elections can include a relatively large number of candidates located on varied positions along the policy-ideology spectrum. This is in contrast to the usual restrictions in competitions for single-member offices, which tend to focus on a couple of major candidates. In this sense, a primary election can be compared to the first round in a majority electoral system with two rounds for their role in selecting the very few candidates that will actually compete for office.

A high number of candidates can enter the race and find the subsequent results acceptable for the opportunities that have been given to compete. However, since, in contrast to the first round in an open election, each primary election is reserved to select only one political party's or coalition's candidate, voters' participation tends to be much lower in the latter than in the former. In the United States, for example, participation in presidential primary elections for the two major parties since they were generalized in 1972 has been, in average, about one third of the participation in the corresponding real presidential election. All students of these experiences have noted that primary voters are non-representative of their parties' voters, and even less of the whole electorate. In general, primary voters tend to favor more extreme or outsider candidates than the electors, so distorting electoral competition in a remarkable way. The probability that none of the candidates in the election corresponds to the median voter's preference, as revealed regarding the candidates running in the primary election, is, thus, much higher than the probability that no median voter's candidate survives at the second round when the first round

is open to competition among all parties.

Second, single-transferable ballot can also promote high intra-party individual

competition among candidates. Actually, this was the first type of ballot invented for

proportional representation electoral systems. Early proposals oriented to make voters choose

among individual candidates were gradually refined by English school-teacher Thomas W.

Hill in 1821, by calling voters to gather in groups with the same preferences, as was

experimented in the Southern Australian colony of Adelaide in 1839; by Danish conservative

Prime minister Carl-Christopher-Georg Andrae, as was used for the election of a minority

portion of seats for the joint assembly of Denmark and Schlesswig in 1855 (not the Danish

parliament); and by English lawyer Thomas Hare, first, in two books published in 1857 and

1859, with the impractical proposal of establishing a single national district which would

require enormous computing effort, and only precisely establishing the procedures to transfer

ballots from voters' first to second and further preferences in 1865.

In its more elaborated form, proportional representation with single-transferable-ballot

requires each voter to rank individual candidates. Seats are allocated to candidates who have obtained a quota of voters' first preferences, while in the remaining ballots votes are transferred to the following candidates in voters' ordinal preferences. Thus, for some voters

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only their first preference is accounted, while for others favoring less popular candidates and selected at random several preferences are taken into account. Intra-party competition among individual candidates is, with this ballot, maximum, as should correspond to weakly organized parties. This is the form of proportional representation that has prevailed in former British colonies, including Ireland since 1922, the Australian Senate since 1949, and a number of cities in the United States, especially from the 1920s to the 1940s.

Third, ballots based on party lists of candidates were proposed by socialist Víctor

Considerant and began to be used in some Swiss cantons since 1861, as well as, for nationwide parliamentary elections in Belgium and Serbia since 1899 and in most of the other countries adopting proportional representation in the years coming. Open lists, preferential

ballot, as well as personalized proportional representation and voting for 'lemas' and 'sublemas', allow the voter to select a party candidacy and one or more individual candidates.

Variants include compulsory or optional preferences, the latter permitting to vote for a party list as given. The basic procedure requires all preferential votes for either individual candidates or party lists to be counted as votes for the corresponding party; after each party has been allocated the number of seats corresponding to those votes, they are filled partly with

those individual candidates having received higher numbers of preferences and party by other candidates provided in the list. Of course, the higher the number of individual preferences that each voter can express, the higher the individual candidates' competition to fill the corresponding seats can be expected to be. Open lists permitting the voter to select a few candidates, usually from one to three, have been used in most countries of Western Europe, presently including Austria, Belgium, Denmark, Finland, Greece and Sweden, as well as in Latin American countries like Brazil and Peru, while personalized proportional representation

is used, with double vote, in Germany, Bolivia and New Zealand, as mentioned, and 'lemas' in Uruguay..

In this perspective, the single-transferable-ballot previously discussed, as well as the open ballot or 'panachage' used in Switzerland, could be considered extreme cases, beyond the opportunities supplied by open lists or double vote, since they permit to select candidates from different parties and, thus, promote very high intra-party individual competition. At the other extreme, the system of closed lists actually restricts the voters' choice to a party's label, since it does not permit any modification in the order of candidates as given by the party. From the

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point of view of individual candidates' selection, closed lists, which are presently used, for instance, in Argentina, Portugal, Spain and Venezuela, can be compared to single ballot in single-member districts, as used in Britain and the United States. None of these categorical formulas permits anything else than total acceptance or total rejection of the candidacy as presented by one of the parties in contest.

Regarding the choice of electoral rules, candidate selection procedures and ballot

formulas with relative openness, such as primary elections, single-transferable ballot, open lists and double vote, can have a counterweight effect on demands for replacing the existing electoral system. The more open the selection of candidates, the lower the pressure that can be expected for 'opening' the electoral system, since the latter's restrictions may be somehow reduced by the former feature. This relation may help to explain, for instance, the stability of such restrictive electoral rules as single-member congressional districts, single-winner presidential elections, plurality rule, and bipartism in the United States, due, at least in part, to the openness of primary elections. It may also be significant that primary elections were generalized to almost all states in the U.S in response to increasing pressures from new groups and political proposals since the 1960s. The experience of primary elections in Latin America, especially in Venezuela since the late 1960s and in Argentina, Chile and Uruguay since the late 1990s, also suggests that this device can be adopted in well-established presidential regimes when they receive new demands for larger inclusion from varied political groups against the restrictions inherent in any presidential

electoral system, which tends to center competition on a very few potentially winning candidates. Conversely, and by the same kind of argument, we can expect that the more open the electoral system regarding the selection of individual candidates, the lower can be expected to be the pressure for primary elections.

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Table 2. Proportional Representation Formulas

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Parties: W X Y Z Total

Votes: 40 30 20 10 / 100

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Rules 6 seat allocations

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### Hamilton-Hare

Exact quota:  $100/6 = 16.6$  By quotas 2 1 1 0 4

[Vote remainders 6.6 13.3 3.3 10]

By largest remainders 1 1 2

Total seats 2 2 1 1 6

### Jefferson-d'Hondt

Sufficient quota:  $[40/3 =] 13$  By quotas 3 2 1 0 6

### Webster-Sainte Lagué

Modified quota:  $100/6+1 = 14$  By quotas 2 2 1 0 5

By half-quota (7) 1 1

Total seats 2 2 1 1 6

### Gergonne-Gilpin

Fixed quota; e.g. 15 votes By quotas 2 2 1 0 5

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### 3. The Electoral System Evolution

According to the discussion presented in the previous sections, several general tests of the basic propositions on actors' motives and electoral system changes and their observable implications will be here developed. Data are collected in ten tables for five world-regions -- the Americas, Western Europe, Eastern Europe, Asia-Pacific, and Africa--, in each case for the Assembly (lower or single chamber) and for the Presidency, included in the corresponding chapters of this book. The relevant information is summarized in Tables 15 and 16 (at the end of this introductory chapter).

The Tables include 289 electoral systems, all those having been used in 2,145 elections (1,601 for assembly and 544 for presidency) with minimally acceptable levels of political competition and available data in 94 countries since early 19th century. Countries are selected for having more than one million inhabitants and

some democratic experience. The latter criterion is operationalized as having appeared as 'free', or with scores 3 or lower out of 7, in Freedom House thirty annual reports (1972-2002) for a period encompassing at least two successive elections. For the countries selected, all electoral systems having been used in minimally competitive elections in any period are included (even in not fully democratic elections for restrictions on voting rights or candidacies). We exclude only dictatorial periods and fake elections with a single candidacy or won by the incumbent with open fraud (which are alternative ways of choosing an 'electoral system'). Roughly speaking, available data are from early 19th century on for most countries in Western Europe and the Americas, a few in Central Europe in the 1920s, since independence after World War II in a number of countries in Africa, Asia and the Pacific area, and from more recent democratization periods in other countries in these latter regions and in Eastern Europe. Data allow us to count 154 electoral system changes in 56 countries. In order to proceed also to checks with complete and more homogeneous data, tests are also ran for changes produced only during democratic periods

having lasted to the present (end of 2002), including 36 electoral system changes in 29 countries.

Electoral systems are classified separately for assembly and for presidential elections.

In consistency with the previous discussion, four basic categories of assembly electoral  
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systems are distinguished, with a few subcategories also distinguishing between several formulas and procedures. From less to more inclusive, they are:

- Indirect elections;

- Majority rule, including three subcategories:

Majority<sub>1</sub>- Multi-member districts with bloc ballot;

Majority<sub>2</sub>- Multi-member districts with limited (including single non-transferable) or cumulative ballots;

Majority<sub>3</sub>- Single-member districts;

- Mixed systems, including 'coexistence', 'parallel' systems, and 'multiple tier' allocations combining plurality or majority rules with proportional representation;

- Proportional representation, including three subcategories:

Proportional<sub>1</sub>- Average district magnitude lower than nine, any formula and

procedure;

Proportional<sub>2</sub>- Average district magnitude higher than eight, with closed lists;

Proportional<sub>3</sub>- Average district magnitude higher than eight, with open lists, open ballot ('panachage'), or personalized PR.

Likewise, presidential electoral systems are classified as follows:

- College or indirect election;
- Simple plurality in direct elections (as in the following categories);
- Qualified plurality (33%, or 40%, or 45%, etc.) with a second round (either by plurality, by majority runoff, or by the Assembly);
- Majority with a second round (either by plurality, by majority runoff, or by the Assembly);
- Majority with single transferable or supplementary vote.

The most relevant propositions and observable implications previously presented are submitted to empirical scrutiny in the following paragraphs:

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\* Changes of electoral systems should be expected to be produced rather in favor of increasingly inclusive formulas than against. So we

should find significantly higher number of changes from indirect to direct elections, from unanimity to majority rules, from majority rules to mixed systems, and from mixed systems to proportional representation or other changes between categories in this direction than the other way around. Tables 15 and 16 summarize data of 154 electoral system changes. We proceed to separate analysis of the 126 assembly and the 28 presidential electoral system changes. For assembly elections, we analyze, first, all collected cases since the 19th century and, second, only changes during the present democratic periods. For total data available since the 19th century, we have counted 82 major assembly electoral system changes between the four basic categories: indirect, majority, mixed, and proportional in 41 countries. The countries with the highest numbers of changes are, of course, among those with the longest periods registered, but, within this set, they are, interestingly, concentrated in Mediterranean Europe: Greece with 9 major changes, France with 7, Italy and Portugal with 6 changes each, and Spain with 4 (in the rest of the world, only Brazil with 6 major changes and Denmark with 4 are above 3 changes). The countries mentioned have

experienced high political regime instability, of which electoral system changes are a component, but also some specific inclination to electoral system manipulation since in other countries with comparable degrees of political regime instability, particularly in Latin America, there have been fewer major changes of electoral system and usually limited to fewer formulas.

In total, 66 changes have been in the expected direction toward more inclusive formulas, while only 16 have implied reversal moves --a proportion of more than 4 to 1. More specifically, 18 electoral systems based on indirect elections have been replaced with direct elections, while only on 2 occasions indirect elections have been reestablished (on both cases also having been replaced with direct elections later on); 40 majority rule systems have been replaced with mixed or proportional rule systems, while only on 2 occasions with indirect elections (as just mentioned); 8 mixed systems have been replaced with proportional representation systems, while only 6 reversal moves can be identified. In total there have been 40 moves to proportional representation (5 from indirect elections, 27 from majority systems

and 8 from mixed systems), while reversal moves from proportional systems are only 13 (7 to 94

majority and 6 to mixed systems). Actually the trend may be under-valuated for lack of information regarding some countries in which indirect elections or plurality rule systems were replaced in remote periods

It is interesting to note that most of the new mixed systems have been the result of changes from indirect or majority rule systems, while only a few have been established from previous proportional representation systems. Specifically, while 1 mixed system was established from indirect elections and 13 mixed systems have been the result of reforms from majority rule systems, only 6 have resulted from previous proportional systems.

These findings are confirmed for all world regions. The balance between 'inclusive' and 'exclusive' moves is positive in the Americas: 19 to 2, Western Europe: 31 to 12, Eastern Europe: 8 to 1, and Asia-Pacific: 8 to 0. In Africa there have been a significant number of changes in the expected direction since the independence movements in the 1960s, but we have only registered 1 reversed change within the

present democratic periods.

Table 3. Major Changes of Assembly Electoral System

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New system: Indirect Majority Mixed Proportional

Previous system: \_\_\_\_\_

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Indirect \* 12 1 5

Majority 2 \* 13 27

Mixed 0 1 \* 8

Proportional 0 7 6 \*

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Note: Changes in the upper right part are toward more inclusive systems (66 changes), while those in the lower left part are toward more exclusive ones (16 changes).

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Table 4. Changes of Assembly Electoral System

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New system: Indirect Maj.-1 Maj.-2 Maj.-3 Mixed

Prop.-1 Prop.-2 Prop.-3

Previous system: -----

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Indirect *	7	1	4	1	3	1	1
Majority-1	2	*	2	12	3	6	1
Majority-2	0	0	*	2	2	5	1
Majority-3	0	7	2	*	8	5	4
Mixed	0	0	1	0	*	3	2
Proportional-1	0	2	0	4	3	*	1
Proportional-2	0	0	0	1	0	0	*
Proportional-3	0	0	0	0	3	3	2

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Note: Indirect: indirect elections; Maj-1: majority-rules in multi-member districts; Maj.-2: majority rules with limited or cumulative ballot; Maj.-3: single-member districts; Mixed: mixed systems; Prop.-1: proportional representation, average district magnitude < 9; Prop.-2: proportional representation, average district magnitude >8, closed lists; Prop.-3: proportional representation, average district magnitude >8, open list or double vote.

Changes in the upper right part are toward more inclusive systems (96 changes in total), while those in the lower left part are toward more exclusive ones (30 changes in total).

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Taking also into account the eight subcategories of electoral system above distinguished, we have counted 126 changes in 49 countries. Again, the countries with higher numbers of changes are France with 12 changes, Spain with 10, Greece and Portugal with 9 each, and Italy with 8. In total, 96 changes have been in the expected direction toward more inclusive formulas, while only 30 have been in the opposite direction –a proportion of 3.2 to 1. The general tendency is confirmed for changes between all pairs of systems. Within majority rule systems, multi-member districts with bloc ballot have been replaced with forms of limited or cumulative ballot on 2 cases and with single-member districts on 12, a total of 14, while opposite direction moves have been only 7. Regarding proportional representation systems, in 12 cases systems based on small districts (magnitudes lower than nine) producing low proportionality have been replaced with larger districts, while the opposite move can only be observed on 3 occasions; finally, within proportional systems with large district magnitudes, we have registered two changes from closed lists to open lists and two on the opposite direction. The general trend is also confirmed for all

world regions: 27 more inclusive to 4 more exclusive changes in thirteen countries of the Americas, 48 to 20 in fifteen countries in Western Europe, 10 to 4 in twelve countries in Eastern Europe, and 11 to 2 in ten countries in Asia-Pacific.

When the set of electoral system changes is limited to those produced during present democratic periods, major changes between the four basic categories: indirect, majority, mixed, and proportional, are 19. Of these, 14 have been in the expected direction toward more inclusive formulas, while only 5 have been in the opposite direction –a proportion close to 3 to 1. The relatively less overwhelming proportion of inclusive changes within present democratic regimes than in all previous periods is, of course, produced by the fact that indirect assembly elections have not longer been used in present democracies and the proportion of majority rule systems has been reduced by previous changes toward more inclusive formulas. In spite of so,

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however, the number of changes from majority rule systems toward mixed and proportional representation systems are still very significant: 8 and 3, respectively, so 11 in total, in front of

only 2 in the opposite direction. More interesting is the tie that can be observed in changes between mixed and proportional systems: 3 in each direction. But they refer to fewer countries: two having moved toward proportional systems (Bulgaria and Croatia) and two toward mixed systems (Madagascar and Italy, but the latter with a total of three changes, back and forth). The total balance does not make mixed systems a focal point of attraction from any other system: again, most of the new mixed systems have been the result of changes either from dictatorships or from majority rule electoral systems, while only a few have been established from previous proportional representation systems. Specifically, while 7 mixed systems have been established in recent processes of democratization from authoritarian regimes (not counted in Tables 3 and 4), 8 have been the result of reforms from majority rule systems, most of them also in new electoral democracies or semi-democracies moving fast towards more inclusive formulas in the 1990s (Albania, Armenia, Lithuania, Philippines, Russia, Thailand and Ukraine, while Japan is the only case having experienced such a move among older

democracies). In contrast, only 2 countries have adopted mixed systems from proportional representation (Italy twice and Madagascar). This suggests that mixed systems are, in most cases, an ersatz for proportional representation in countries recently emerged from authoritarian regimes or restrictive majority rule systems, as well as an intermediate step towards proportional representation systems when democracy endures.

In total, reversal changes from proportional representation to mixed or majority rule systems within present democratic regimes are very few, only 5 moves in 4 countries, while the number of new proportional systems established is still higher: 6. The balance between 'inclusive' and 'exclusive' moves is also positive in Eastern Europe: 6 to 0, and in Asia: 6 to 0.

In Western Europe it looks negative, 2 to 4, but again this is due to several changes in just two countries: France moved twice from proportional representation to a majority rule system (in 1958 and 1988) with one inverse move in between (1986), and Italy followed the same trajectory from proportional to mixed twice (1953 and 1993) with proportionality reestablished in between (1956).

Table 5. Major Changes of Assembly Electoral System in Present Democratic Periods

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New system: Majority Mixed Proportional

Previous system: -----

Majority \* 8 3

Mixed 0 \* 3

Proportional 2 3 \*

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Note: Changes in the upper right part are toward more inclusive systems (14 changes in total), while those in the lower left part are toward more exclusive ones (5 changes in total).

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Table 6. Changes of Assembly Electoral System in Present Democratic Periods

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New system: Maj.-1 Maj.-2 Maj.-3 Mixed Prop.-1

Prop.-2 Prop.-3

Previous system: -----

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Majority-1 \* 0 2 1 0 0 0

Majority-2 0 \* 0 1 0 0 0  
Majority-3 1 0 \* 6 1 0 2  
Mixed 0 0 0 \* 0 2 1  
Proportional-1 0 0 2 1 \* 0 5  
Proportional-2 0 0 0 0 0 \* 1  
Proportional-3 0 0 0 2 1 1 \*

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Note: Maj-1: majority-rules multi-member districts;  
Maj.-2: majority rules, limited or cumulative vote; Maj.-3: single-member districts;  
Mixed: mixed systems; Prop.-1: proportional representation, average district magnitude < 9; Prop.-2: proportional representation, average district magnitude >8, closed lists; Prop.-3: proportional representation, average district magnitude >8, open list or double vote.

Changes in the upper right part are toward more inclusive systems (22 changes in total), while those in the lower left part are toward more exclusive ones (8 changes in total).

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Taking also into account the eight subcategories of electoral system above distinguished, we have counted 30 changes within

presently existing democratic regimes. Of these, 22 have been in the expected direction toward more inclusive formulas, while only 8 have been in the opposite direction – a proportion of 2.75 to 1.

For presidential electoral system changes, we have in total 28 cases in 14 countries. Of these cases, 19 have been in the expected direction, while only 9 in the opposite one – a proportion of 2.1 to 1. Actually 7 countries have experienced more than one change between electoral systems (while other three countries not included in the present count have

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suppressed direct presidential or prime-ministerial elections in recent periods: Germany, Estonia and Israel). All changes but one are in Latin America (the other is the replacement of college with direct elections in Finland).

In summary, 11 electoral colleges have been replaced with direct elections, while 2 reversal moves in Argentina and Colombia have also been replaced with direct elections later on. On 7 occasions, simple-plurality rule has been replaced with more inclusive formulas (2 qualified-plurality rules and 5 absolute-majority rules with second rounds). Of the 4 reversal

moves towards plurality rule registered, 3 have also been replaced with majority-second round rules in further periods. Looking at the whole story, 13 countries have experienced changes in different periods having produced a present electoral system different from the one in the most remote period registered. Of these, 10 countries have, at the end, moved in the expected direction toward more inclusive electoral systems, while only 3 have moved in the opposite direction. Again, the trend can be under-estimated for not including college or plurality elections in certain countries in some remote periods. With the available information, at least one country, Peru, has passed through all the stages in the expected order of increasing inclusiveness: electoral college in 1828, plurality rule in 1896, qualified-plurality (33 per cent) rule in 1931, and majority rule with a second round runoff since 1978.

Table 7. Changes of Presidential Electoral System

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New system:	College	Plurality	Q.-plurality	Majority
	STV			
Previous system:	_____			

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Electoral College	*	6	1	4	0
Simple-plurality rule	2	*	2	5	0
Qualified-plurality rules	0	0	*	1	0
Majority second-round	1	4	2	*	0
Single-transferable vote	0	0	0	0	*

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Note: Changes in the upper right part are toward more inclusive systems (19 changes in total), while those in the lower left part are toward more exclusive ones (9 changes in total).

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Table 8. Changes of Presidential Electoral System in Present Democratic Periods

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New system:	College	Plurality	Q.-plurality	Majority	STV
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Previous system: \_\_\_\_\_

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Electoral College	*	0	1	1	0
Simple-plurality rule	0	*	1	3	0
Qualified-plurality rules	0	0	*	0	0
Majority second-round	0	0	1	*	0
Single-transferable vote	0	0	0	0	*

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Note: Changes in the upper right part are toward more inclusive systems (6 changes in total), while those in the lower left part are toward more exclusive ones (1 change in total).

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The trend is even stronger during the present democratic periods, in which 7 changes are registered, 6 in the expected direction and 1 in the opposite. Specifically, 2 countries have abandoned electoral colleges for direct elections with a second round (by qualified-plurality in Argentina and by absolute-majority in Finland), and 4 have replaced plurality rule with second round procedures (by qualified-majorities in Nicaragua and by absolute-majority in Colombia, Dominican Republic and Uruguay). Only Ecuador has moved within second round rules from absolute majority to qualified-plurality.<sup>3</sup>

\* The number and proportion of indirect elections and majority electoral systems should decrease over time, while countries adopting proportional representation should not abandon them in significant numbers. The evolution of electoral systems in the countries selected is, in

fact, the result of the processes of choice analyzed in the previous paragraphs. Results are summarized in Tables 9, 10 and 11. The dates chosen –1874, 1922, 1960 and 2002-- correspond to peaks in successive waves of democratization, so that the number of cases in each date is higher than in immediately previous and following years. The number of cases increase over time until comprehending all 89 countries with more than one million

<sup>3</sup> The findings here presented, although based on differently formulated hypotheses and different categories of electoral systems, are consistent with other empirical tests. Specifically, Arend Lijphart analyzed electoral system changes in 16 democratic countries from 1945 to 1999, finding that more than two thirds had been in favor of greater proportionality (Lijphart 1994, pp. 52-56). André Blais and Louis Massicotte analyzed electoral systems existing in 166 democratic and non-democratic countries around 1995, finding, among other correlations, that the more democratic a country the more likely it is to adopt proportional representation and the less likely it is to have a majority system (Blais and Massicotte 1997).

inhabitants that can be considered democratic in 2002 (four of the countries included in the analysis of past periods have no present democratic regimes: Belarus, Cuba, Nigeria, Pakistan, and one does not longer exist: Czechoslovakia). The data collected strongly confirm the hypothesis that exclusive electoral systems are more easily replaced. Indirect assembly elections decreased and virtually disappeared in early 20th century. Majority rule, which was the basic formula for broadening suffrage rights, opening political competition and democratizing in late 19th century and early 20th century, was replaced in its appeal by proportional representation especially since the First World War; this trend has intensified in recent processes of democratization. Mixed systems have also widely spread in the most recent periods, although—as mentioned—this has been more a result of changes from majority rule systems than from proportional representation ones. In total, for assembly elections, much more than half of the present democracies in countries with more than one million inhabitants use proportional representation (57 percent), while less than one fourth use majority rule systems (23 percent), and one fifth use mixed systems (20

percent).

The evolution can also be observed within subcategories. Within majority rule systems, multi-member districts, which were still 43 percent of cases in late 19th century, have been reduced to ten percent; within proportional representation systems, those with small districts (magnitudes lower than nine) were a majority still in the 1920s, but they are now barely a third; within those proportional systems with large district magnitudes, almost two-thirds use open lists and similar procedures rather than closed lists.

Table 9. Number of Basic Assembly Electoral Systems Over Time

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Electoral system:	Year:	1874	1922	1960	2002
Indirect elections		6	2	-	-
Majority rules		14	11	16	20
Mixed systems		-	2	-	18
Proportional representation		-	18	23	51

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Total countries: 20 33 39 89

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Table 10. Number of Assembly Electoral Systems Over Time

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Electoral system: Year: 1874 1922 1960 2002

Indirect elections 6 2 - -

Majority rules-1 6 2 1 2

Majority rules-2 3 2 1 -

Majority rules-3 5 7 14 18

Mixed systems - 2 - 18

Proportional rep.-1 - 10 12 19

Proportional rep.-2 - 2 3 12

Proportional rep.-3 - 6 8 20

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Total countries: 20 33 39 89

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Note: Indirect elections: Maj-1: majority-rules multi-member districts; Maj.-2: majority rules, limited or cumulative vote; Maj.-3: single-member districts; Mixed: mixed systems; Prop.-1: proportional representation, average district magnitude < 9; Prop.-2: proportional representation, average district magnitude >8, closed lists; Prop.-3: proportional representation, average district magnitude >8, open list or double vote.

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Table 11. Number of Presidential Electoral Systems

## Over Time

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Electoral system: Year: 1874 1922 1960 2002

Electoral College 6 4 3 1

Simple-plurality rule - 4 9 10

Qualified-plurality rules - - 1 5

Majority second-round - 6 3 33

Single-transferable vote - - 1 2

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Total countries: 6 14 17 51

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For presidential electoral systems, the evolution is also very strongly in the expected direction. The number of cases also increase over time until including 51 countries. Electoral college procedures, which were once popular in the Americas, have been reduced to the single case of the United States. Simple plurality rule, which was a typical formula for new direct presidential elections in the past, is currently used by only one fifth of the countries. Absolutemajority rule with a second round had already been popular in early 20th century, although at the time in all but one of the six cases registered the second round was transferred to Congress. Nowadays, relatively inclusive majority rule and qualified-plurality rules (the latter a recent

innovation in a few countries), both with a direct second-round runoff between the two most

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voted candidates, encompass together three fourths of the countries with presidential elections.

The single-transferable and supplementary votes remain the experience of only two countries in the world.

\* The change of an electoral system should be more likely the higher the number of effective parties in the initial institutional setting. The focus of our analysis is the immediately previous political situation from which a decision to change the electoral system may be made, including constituent assemblies, electoral support of the incumbent government, and negotiation or threat power of opposition parties.

The formula of effective number of parties captures the number of parties weighed by

their size ( $N = 1 / \sum p_i$

$^2$ , where  $p_i$  is the proportion of votes for each party  $i$ ). It can be presumed

that the higher the effective number of parties, the weaker the expectation for any single party

to become the sure winner, and, thus, the more likely its preference for an inclusive electoral

system permitting multipartism to develop. Although

the party's support in votes may not be transferred to a correspondent degree of negotiation power within the institutions as a consequence of being deformed by the existing restrictive electoral system, it can be considered a rough proxy for their strength and expectation of support, which is the basis of the corresponding threat or negotiation power. Expectations, however, may also form from recent trends marked by the emergence of new, still small, but already rising parties or pessimistic forecasts regarding its own support. Data of effective numbers of parties in votes have been calculated for elections immediately previous to 49 electoral system major changes in favor of more inclusive electoral formulas, that is, from indirect or majority rule systems to mixed or proportional representation systems for the assembly, from college or plurality rule systems to secondround formulas for the presidency, as well as for some paramount occasions of such type of changes, as constituent assemblies, that have not produced major change of already existing inclusive electoral systems. Cases excluded are only those in which a new electoral system has been preceded by a significantly long authoritarian

period without elections, making, thus, the former party system irrelevant for the new electoral system choice, or those during the 19th century with unavailable data. The average number of effective parties immediately before 49 electoral system changes in favor of more inclusive formulas in 36 countries is 3.8, thus  
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making clear that multi-party systems are a fact previous and not only subsequent to the adoption of assembly rules with proportional representation or presidential rules with a second round. The observations here collected suggest that when the number of effective parties is not much higher than three, one or two larger parties can expect to become absolute winners under the existing majoritarian rules and, consequently, they will tend to maintain them, while when the effective number of parties increases, in contrast, any party can risk becoming an absolute loser under majority rules, so they may prefer to move to mixed or proportional representation systems securing them a fair portion of seats.<sup>4</sup>

<sup>4</sup> In addition to the 49 cases, reported above, of electoral system changes in favor of more inclusive formulas or constituent assemblies confirming proportional representation or

presidential runoff rules, we also have 7 cases in three countries of changes in the opposite direction. In order to increase the number of cases with changes towards more exclusive formulas and correct some selection bias, a logit regression has been run with all those cases mentioned plus the present (end of 2002) assembly electoral systems in all 89 democratic countries with more than one million inhabitants. The latter addition is based on the assumption, central in the present work, that the number of parties is not only produced or permitted by the electoral system but it also supports its continuity. The result of the logit regression between effective number of parties and electoral systems adopted in the past or supported in the present for 142 cases is in the expected sign and significant, thus supporting our hypothesis.

Logit regression: Dichotomous dependent variable:  $\log(X/1-X)$ , with  $X=1$  for changes in favor of more inclusive systems or present proportional representation, mixed or second-round presidential systems, and  $X=0$  for changes in favor of more exclusive systems or present indirect elections, assembly majority rules, or college or plurality presidential systems.

Independent variable: the effective number of parties in the immediately previous election to electoral system change or constituent assembly or the latest election with the present systems before 2003. Number of cases:142. Coefficient: 0.259; Standard error: 0.154; Significant: 0.092. Cases included: From indirect to majority to mixed or to proportional systems: Albania 1992, Argentina 1963, Argentina 1972, Argentina 1994 (presidential-P), Armenia 1995, Belgium 1899, Bolivia 1952, Brazil 1945, Brazil 1986 (P), Bulgaria 1991, Chile 1925, Colombia 1931, Colombia 1991 (P), Costa Rica 1913, Costa Rica 1936 (P), Croatia 2000, Cuba 1940, Denmark 1915, Dominican Rep. 1995 (P), Ecuador 1978, Ecuador 1997, El Salvador 1984, France 1946, France 1986, Germany 1918, Greece 1932, Greece 1936, Greece 1955, Greece 1958, Guatemala 1985, Indonesia 2002, Italy 1919, Italy 1946, Italy 1956, Japan 1994, Moldova 1993, Netherlands 1918, New Zealand 1993, Norway 1919, Peru 1933, Peru 1979, Philippines 1995, Russia 1993, South Africa 1994, Sweden 1909, Switzerland 1918, Thailand 1997, Ukraine 1993, Uruguay 1996 (P). In the opposite direction: France 1958, France 1988, Greece 1928, Greece 1933, Greece

1952, Italy 1953, Italy 1993. Present electoral systems: all 94 countries in Table 15 except Belarus, Czechoslovakia, Cuba, Nigeria and Pakistan.

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A sample of changes in specific regions, time periods, and type of electoral systems is presented in Table 12. First, data for nine early, innovative changes of electoral system in West European countries from majority rule systems to proportional representation in early 20th century show that the average number of effective parties in the previous assembly elections was 4.0. This means that, just before the introduction of proportional representation, multi-party systems already existed, not certainly as a consequence of the existing majority rule electoral system, but in spite of it, and as a factor of its change. As a contrast, the same index has been calculated for a few failed reforms of the electoral system. The introduction of proportional representation or a mixed system in the United Kingdom failed both in 1918 and 1998 in the environment of a low degrees of multipartism, which can be estimated in 2.4 and 3.1 effective parties in votes, respectively (and, of course, much more reduced in seats). In

particular, on the latest occasion, the Labour party program for introducing proportional rules could have been encouraged by the relatively high degrees of multipartism in votes in the two previous elections, in 1987 and 1993, as a consequence of higher dispersion of votes between conservatives, labour and the liberal-socialdemocratic alliance. The Labour victory in 1997, however, somehow dismissed this trend and reestablished a single party domination. Reversal changes from proportional representation to majority rule or mixed systems have also been attempted on a few interesting occasions in countries of Western Europe. In Germany it was formally promoted in 1967 by the would-be dominant christian-democrats, which could find encouragement in the relatively reduced and decreasing numbers of effective parties in the two previous elections -3.5 in 1961 and 3.1 in 1965. But the degree of pluralism was still sufficiently high to provoke rejection of a move towards a more exclusive electoral system not only from the smaller parties but also from the second-in-size but wary socialdemocrats. In the Netherlands the social-democrats promoted a similar change in 1977, but, in

front of a very high level of multipartism –measurable by the 6.9 effective parties in the previous election--, they blatantly failed in their purpose.

In other two West European countries moves from proportional representation to majority or mixed systems have been more successful, as previously mentioned. In France, as is well known, the moves in 1958 and 1988 were completed in spite of having systems with 6.1 and 4.7 effective parties in the respective previous elections. Major institutional regime changes, initially implemented through a coup d'etat, helped success on the first occasion,

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while on the second it implied the reestablishment of the previously existing electoral system after a single election with the new one. In Italy, as also mentioned, the first change from proportional to a mixed system was attempted in 1953, when the governing christiandemocrats could be encouraged by a dramatic reduction of the degree of multipartism in the previous two elections, from 5.6 effective parties in 1946 to 2.9 in 1948. They, however, failed to obtain the 50 per cent of popular votes that they themselves had targeted as the condition

for the majority rule component of the new system to be applied, and reestablished proportional representation. The second reform to a new mixed system was introduced in 1993 in the environment of a high degree of multi-partism, measurable at 6.6 effective parties, but under the illusion among some left circles that the ongoing dissolution of the christiandemocratic party would open a new period of hegemony of the left. During the first three further elections in which the new system has been used the number of parties decreased slightly but not dramatically, so still making the system vulnerable to further changes.

Table 12. Effective Number of Parties and Electoral System Change

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Assembly: Changes from majority rule to proportional representation

Country	Year	Previous election	Country	Year	Previous election
Year	Type	ENP	Year	Type	ENP

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Belgium	1899	1898	As.	3.7	Costa Rica	1913	1913
			Pdt.	2.9			

Sweden 1909 1908 As. 2.6 Chile 1925 1921 As. 5.6

Denmark 1915 1913 As. 3.9 Colombia 1931 1930 Pdt. 2.0

Germany 1918 1912 As. 5.9 Cuba 1940 1940 Ct.As. 7.5

Netherlands 1918 1913 As. 6.6 Brazil 1945 1945 As. 3.7

Switzerland 1918 1917 As. 3.4 Bolivia 1952 1951 Pdt. 3.3

Italy 1919 1913 As. 2.7 Argentina 1963 1962 As. 6.7

Norway 1919 1918 As. 3.6 Ecuador 1978 1978 Pdt. 4.8

Greece 1932 1928 As. 3.4 Peru 1979 1978 Ct.As. 4.8

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Guatemala 1985 1984 Ct.As. 7.7

Average 4.0 -----

----- Average 4.9

Failed changes: -----

United Kingd. 1918 1910 As. 2.4

1998 1997 As. 3.1

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Assembly: Changes from proportional representation to majority rule or mixed systems

France 1958 1956 As. 6.1

1988 1986 As. 4.7  
Italy 1953 1948 As. 2.9

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1993 1992 As. 6.6

Failed changes:

Germany 1967 1965 As. 3.1

Netherlands 1977 1972 As. 6.9

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Presidential elections:

Changes from college or plurality rule to qualified-plurality or absolute-majority with second round

Country Year Previous election

Year Type ENP

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Costa Rica 1936 1932 Pdt. 2.8

Argentina 1972 1965 As. 4.9

1994 1994 Ct.As. 3.0

Ecuador 1978 1978 Pdt. 4.8

Peru 1979 1978 Ct.As. 4.8

Guatemala 1985 1984 Ct.As. 7.7

Brazil 1986 1982 As. 2.7

Colombia 1991 1990 Ct.As. 2.2

Dominican R. 1995 1994 As. 2.8

Uruguay 1996 1994 As. 3.3

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Average 3.9

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Failed changes:

United States 1956 1954 As. 2.0

1969 1968 As. 2.0

Honduras 1981 1980 Ct.As. 2.1

Venezuela 1999 1998 Ct.As. 6.3

1998 Pdt. 2.1

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Note.

ENP: Effective number of parties =  $1 / \sum p_i^2$

, where  $p_i$  is the proportion of votes for party  $i$ .

Previous elections: As.: Assembly; Pdt.: Presidency;

Ct.As.: Constituent Assembly. Internal

factionalization of parties is not accounted, although it was high, for instance, in Brazil and

Colombia.

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In consistency with the general hypothesis here discussed, also for ten innovative changes of assembly electoral system from majority rules to proportional representation in countries of Latin America along the 20th century we find a high average number of effective parties in the constituent assembly or the immediately previous election, at 4.9, as shown in

Table 12. Similarly, ten changes of presidential electoral systems from electoral college or plurality rule formulas to qualified-plurality or absolute-majority formulas with a second round have been introduced, most recently, in nine countries in which the average number of effective parties was 3.9, as shown in Table 12. Likewise, a few formal occasions of changing presidential electoral rules toward more inclusive formulas have failed in the context of pure two-party systems: in the United States in 1956 and 1969, where the corresponding constitutional amendments to replace the electoral college with direct elections passed the House but died in the Senate, and in Honduras in 1981, where the constituent assembly retained plurality rule. In contrast, plurality rule for the election of president was also maintained in the new constitution of Venezuela in 1999, in spite of having been approved by a constituent assembly elected with 6.3 effective parties, together with other restrictive institutional reforms concentrating powers in the presidency. This decision was encouraged by the results of the previous presidential election, won at a single round by a large coalition

majority with 56 percent of votes and only 2.1 effective parties in the system. However, in spite of the very high concentration of power in the presidency, the high degree of legislative multipartism made further pressures for opening the political system in Venezuela not to subside.

\* The change of an electoral system could be more likely the shorter its duration had been. If this hypothesis were correct, the duration of the electoral systems having been changed should be, as a whole, lower than the presently existing systems. Testing this hypothesis, however, is difficult because we do not know whether and when the present electoral systems will be changed in the future; their duration, as measured until the end of 2002, will, thus, be undervaluated. The duration of the four basic types of assembly electoral system in number of elections at which they have been used is summarized in Table 13.

Indirect elections disappeared, as previously observed. For each of all the presently existing electoral system basic types –that is, those based on majority rules, mixed systems, and proportional representation— the data collected seems to support the hypothesis above

presented: electoral systems that were replaced in the past had been, in average, less durable than those presently existing. Also, restrictive electoral systems were replaced in spite of some long duration, while more inclusive systems could only be replaced if they had not had the

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time to obtain endogenous support. Specifically, systems based on indirect elections or majority rules lasted for about 10 elections each in average before they were replaced, while newer and more inclusive systems, that is, mixed and proportional systems, were changed very soon: in most cases after just one election (and after less than 3 or 4 election in average, respectively) --in other words, before they were entrenched in the organization and action of really existing political parties and electoral candidates.

Regarding the presently existing electoral systems, both majority rule and proportional representation systems are enduring considerably, in average, which would imply that most of them may be difficult to be changed in the future. The duration of present majority systems, however, relies significantly on the extreme case of the House of Representatives of the

United States, which accounts for almost a third of the total number of elections held with presently existing majority systems; if this is dropped from the sample, the average duration of presently existing majority systems is reduced to 11.3, only slightly higher than those having been replaced in the past. In contrast, most of the presently used mixed systems are still recent, having been used in most cases for only 2 or 3 elections, which may suggest that a number of them (that is, the actors playing within the existing systems) may be able to present softer resistance to change than most of the majority and proportional current systems.

Available data on the duration of presidential electoral systems, as shown in Table 14, are not able to give support to the hypothesis previously presented regarding the longer duration of existing electoral systems. This may be partly due to the inherent exclusiveness of all presidential electoral systems, which necessarily produce a single absolute winner and may provoke subsequent rejection by all the losers, in contrast to many assembly electoral systems permitting multiple parties to exist and share representation. It can be noted that, in the past, the average duration of presidential electoral

systems was even shorter than the average duration of assembly electoral systems also based upon plurality or majority rules (shown in Table 13). Low numbers of elections for current presidential electoral systems also reflect the fact that most of them exist in recent democracies in Latin America and are, thus, still necessarily short-living. All the current formulas of direct presidential elections have been used, so far and in average, during shorter periods than those that were changed in the past—in most cases, for only 2 or 3 elections—which may suggest that they may be still significantly vulnerable to further changes.

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Table 13. Duration of Assembly Electoral Systems

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Electoral system: Indirect Majority Mixed Proportional

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Systems replaced in the past

No. of electoral systems counted 17 40 9 12

Average no. of elections / system 9.4 10.2 2.9 3.9

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Current systems (end of 2002)

No. of electoral systems counted 0 22 18 50  
Average no. of elections / system 0 15.7 3.5 11.2

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Table 14. Duration of Presidential Electoral Systems

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Electoral system: College Plurality Q.plurality Majority  
STV

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Systems replaced in the past

No. of electoral systems counted 11 9 1 7 0  
Average no. of elections / system 8.2 7.3 6.0 7.7 0

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Current systems (end of 2002)

No. of electoral systems counted 1 11 5 34 2  
Average no. of elections / system 54 6.9 5.4 4.1  
6.5

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Table 15 Assembly Electoral Systems

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Albania:Maj3-1991-1;Mix-1992-3 ●Argentina:Maj1-1826-1//1853-9;Maj2-1912-10//Maj3-1946-2//1957-4//PR2-1963-1//1973-1//1983-10 ●

Armenia:Maj3-1990-1;Mix-1995-1;1999-1 ●Australia:Maj3-1902-6;1918-33 ●Austria:PR1-1918-4//1945-8;PR3-1970-9 ●Bangladesh:Maj3-1971-1//1979-1//1991-3 ●Belarus:Maj3-1996-2 ●

Belgium:Maj1-1831-17;1877-11;PR1-1899-8;PR3-1919-7//1946-18 ●Benin:PR1-1991-3 ●

Bolivia:Maj2-1924-?;PR2-1952-5//1966-1//1980-4;PR3-1994-2 ●Bosnia-Herzegovina: PR1-1996-4 ●

Botswana:Maj3-1965-8 ●Brazil:Ind-1824-4//1860-4;1875-1;Maj3-1881-2;Maj1-1890-1;Maj2-1892-4;1904-5//1927-2;Mix-1932-1//PR3-1945-3;1950-3//1982-6 ●Bulgaria: Mix-1990-1;PR2-1991-4 ●Canada:Maj3-1867-2;1874-25;1972-9 ●Cape Verde:PR1-1992-2 ●Central African Rep.:Maj3-1993-2 ●Chile:Maj1-1833-?;Maj2-1879-?;PR1-1925-1//1932-11//1980-3 ●Colombia:Maj1-1857-?;Maj3-1886-?;Maj2-1910-5;PR1-1931-10;Mix-1951-2//PR1-1958-6;1970-10 ●Costa Rica:Ind-1893-10;Mix-1913-15//PR1-1953-13 ●Croatia:Mix-1995-1;PR2-2000-1 ●Cuba:Ind-1901-10//PR2-1940-6// ●Czechoslovakia:PR1-1920-4//PR3-1990-1 ●Czech Rep.:PR3-1992-3;2002-1 ●

Denmark:Ind-1834-?;Maj3-1848-22;1901-

7;PR3-1915-1;PR1-1920-11;PR3-1953-18 ●  
Dominican Rep.:PR1-1966-9;2002-1 ●Ecuador:Maj1-  
1895-6//1928-1//PR2-1946-7//1978-8 ●El  
Salvador:Maj1-1886-1//PR1-1963-8//1984-6  
●Estonia:PR3-1919-6//PR1-1989-1;PR3-1992-4 ●  
Finland:Ind-1863-?;PR3-1906-17//1945-14  
●France:Ind-1789-1;1791-2;1795-4;1815-2;Maj1-  
1817-3;Maj3-1820-1;1824-3;Maj1-1848-2;1871-  
2;Maj3-1875-3;Maj1-1885-1;Maj3-1889-7//PR1-  
1919-2;Maj3-1927-3//PR1-1945-3;1951-2;Maj3-  
1958-7;PR1-1986-1;Maj3-1988-4 ●Georgia:Mix-  
1995-2 ●Germany:Maj3-1871-13;PR2-1919-  
1;1920-8//PR3-1949-1;1953-1; 1956-8;1985-5 ●  
Ghana:Maj3-1956-2//1969-1//1979-4 ●Greece:Ind-  
1822-3//1843-1;Maj1-1844-8;1864-21//1920-  
2;PR1-1926-1;Maj3-1928-1;PR1-1932-1;Maj1-1933-  
1;PR1-1936-1//1946-3;Maj1-1952-1;Mix-1956-  
1;PR1-1958-1;1961-2//1974-4;1989-3;1990-3  
●Guatemala:PR1-1944-3//1984-4 ●Honduras:Maj1-  
1879-1//1954-1;PR1-1966-6 ●Hungary:Mix-  
1922-?;1990-4 ●India:Maj3-1950-2;1961-3//1977-  
8 ●Indonesia:PR3-1953-2//PR2-1999-1  
●Ireland:PR1-1922-25 ●Israel:PR2-1949-1;1951-  
6;1973-5;1992-3 ●Italy:Maj3-1879-4;Maj1-  
1882-3;Maj3-1892-7;PR3-1919-3;Mix-1923-1//PR3-  
1946-2;Mix-1953-1;PR3-1956-9;Mix-1993-3  
●Jamaica: Maj3-1962-10 ●Japan:Maj2-1946-

1;1947-19;Mix-1994-2 ●Kenya:Maj3-1963-10  
●Korea South:Maj3-1950-1//Mix-1962-3//1987-4  
●Latvia:PR3-1922-4//1992-4 ●Lebanon:Maj1-  
1943-3;1953-6//1992-3 ●Lithuania:Maj3-1920-  
1;PR2-1922-3//Maj3-1990-1;Mix-1992-2;2000-1  
●Macedonia:Mix-1998-2 ●Madagascar:PR1-1992-  
1;Mix-1998-2 ●Malawi:Maj3-1994-2  
●Malaysia:Maj3-1957-3//1974-7 ●Mali:Maj1-1992-  
4 ●Mexico:Ind-1824-5//1843-3//1857-2//1867-  
4//Maj3-1917-17;Mix-1963-5;1977-6;1996-3 ●  
Moldova:Maj3-1989-1//PR2-1993-3  
●Mongolia:Maj3-1989-1;Maj1-1992-1;Maj3-1996-2  
●Mozambique:PR2-1993-2 ●Namibia:PR2-  
1990-2 ● Nepal:Maj3-1959-1//1981-5 ●  
Netherlands:Ind-1815-?;Maj1-1848-?;Maj3-1887-  
9;PR3-  
1918-5;1933-1//1946-17 ●New Zealand: Maj3-  
1890-6;1908-28;PR3-1993-3 ●Nicaragua:PR1-  
1984-4 ●Nigeria:Maj3-1959-2//1979-2//1992-  
1//1999-1// ●Norway:Ind-1815-24;1884-7;Maj3-  
1906-5;PR1-1921-6//1945-2;1953-8;PR3-1985-5 ●  
Pakistan:Maj3-1970-2//1988-4//2002-1  
●Panama:Ind-1916-2//PR1-1946-8//Mix-1983-  
1//1989-1//1994-2 ●Papua-New Guinea:Maj3-  
1975-  
6 ●Paraguay:PR1-1993-2// ●Peru:Ind-1828-1//  
Maj2-1861-1//1868-4;PR1-1933-2//1950-3//1963-

1//1979-3//PR3-1995-1//2002-2 ●  
Philippines:Maj1-1935-2;Maj3-1953-5 // 1987-3; Mix-  
1995-2  
●Poland:PR1-1918-3//1928-2//PR3-1991-1;1993-  
2;PR2-2001-1 ●Portugal:Ind-1820-1;Maj1-1822-  
1; Ind-1826-1 //1834-3;Maj1-1852-2;Maj3-1859-  
?;1878-2;1884-2;Maj1-1895-?;Mix-1896-?;Maj2-  
1901-?;1911-1;PR1-1915-?// PR2-1975-11 ●  
Romania: PR1-1990-4 ●Russia:Ind-1917-1;Maj3-  
1990-1;Mix-1993-3 ●Senegal:Mix-1992-2 ●  
Slovakia:PR3-1992-4 ●Slovenia:PR3-1990-4 ●South  
Africa:PR3-1994-2 ●Spain:Ind-1810-1;1812-  
1//1820-3//1834-1;Maj1-1836-1;Ind-1836-1;Maj1-  
111  
1837-6;Maj3-1846-4; Maj1-1854-1;Maj3-1857-  
4;Maj2-1865-2;1868-6;Maj3-1878-20//Maj2-1931-  
3//PR1-1977-8 ●Sri Lanka:Maj3-1946-7//1977-  
1;PR3-1978-3 ●Sweden:Ind-1810-?;1866-15;PR1-  
1909-13;1952-6;PR3-1970-11 ●Switzerland:Ind-  
1848-8;1872-10;1900-6;PR1-1918-22  
●Taiwan:Mix-1991-4 ●Thailand:Maj1-1978-8;Mix-  
1997-1 ●Trinidad-Tobago:Maj3-1962-10  
●Turkey:Maj1-1946-4//PR1-1961-1; 1965-1;1969-  
1;1973-2//1982-2;1991-1;1995-3  
●Ukraine:Maj3-1990-1;Mix-1994-3 ●United  
Kingdom:Maj1-1832-9;1868-2; Maj3-1885-15;1949-  
15 ●United States:Maj1-1789-26;Maj3-1842-

63;1968-18 ●Uruguay:PR1-1918-6//PR3-1934-10//1984-4 ●Venezuela:PR1-1946-1//1958-7;PR3-1989-2;PR1-1999-1 ●Yugoslavia:PR1-1992-3

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Note: This Table summarizes the detailed five world regional tables included in the corresponding chapters.

Information for each country: Type of electoral system-Starting year-Number of elections.

Type of electoral systems: Ind.: Indirect elections;

Maj<sub>1</sub>: Multi-member districts, bloc ballot,

majority rules; Maj<sub>2</sub>: Multi-member districts, limited or cumulative ballots, majority rules;

Maj<sub>3</sub>: Single-member districts, majority rules; Mix:

Mixed system; PR<sub>1</sub>: Average district

magnitude lower than nine, proportional representation; PR<sub>2</sub>: Average district magnitude higher

than eight, closed lists, proportional representation;

PR<sub>3</sub>: Average district magnitude higher

than eight, open lists, open ballot or double vote, proportional representation.

The sign // indicates a period without elections or with authoritarian fake elections. Present democratic periods are counted since the latest //.

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Table 16. Presidential Electoral Systems

Argentina: Col-1853-12//1931-2//1946-1;Plu-1949-1// Col-1955-2//Maj-1972-2// Col-1983-2;QP-1994-2 ●Armenia:Maj-1991-3 ●Austria:Maj-1945-10 ●Bangladesh:Plu-1977-3  
 ●Belarus:Maj-1996-2 ●Benin:Maj-1991-2 ●Bolivia:Maj-1899-4//1921-3 //1940-1//1947-1//1951-1;Plu-1956-3//Maj-1967-6 ●Bosnia-Herzegovina:Plu-1998-2 ●Brazil:Col-1834-2;Maj-1892-12//Plu-1945-4//Maj-1986-4 ●Bulgaria:Maj-1991-3 ●Cape Verde:Maj-1992-2  
 ●Central African Rep.:Maj-1993-2 ●Chile:Maj-1925-11//Maj-1989-3 ●Colombia:Col-1821-1//Col-1832-7;Plu-1853-2//Col-1863-11//Col-1886-2//1904-1;Plu-1910-10 //1958-9;Maj-1991-3 ●Costa Rica:Col-1889-4//1909-1;Maj-1913-2//1919-4;QP-1936-4//1953-13  
 ●Croatia:Maj-1990-3 ●Cuba:Col-1901-5//Col-1940-3// ●Dominican Republic:Plu-1962-1//1966-8;Maj-1995-2 ●Ecuador:Maj-1895-7//4//Maj-1978-5;QP-1997-2 ●El Salvador:Maj-1886-8//Maj-1963-3//Maj-1983-4 ●Estonia:Maj-1992-1 ●Finland:Col-1919-10;Maj-1988-3

●France:Maj-1848-1//Maj-1962-7 ●Georgia:Maj-1995-2 ●Germany:Maj-1918-2// ●Ghana Maj-1979-1//1992-3 ●Guatemala:Maj-1944-2//Maj-1984-4 ●Honduras:Maj-1879-3//1954-3//Plu-1966-5 ●Ireland:STV-1937-9 ●Israel:Maj-1996-3 ●Kenya:QP-1963-1//1992-3 ●Korea South:Plu-1950-3//1963-3//1987-4 ●Lithuania:Maj-1992-3 ●Macedonia:Maj-1994-2 ●Madagascar:Maj-1992-3 ●Malawi:Plu-1994-2 ●Mali:Maj-1992-3 ●Mexico:Col-1824-3//1847-2//1857-5;Col-1874-10//Plu-1917-17 ●Moldova:Maj-1991-2 ●Mongolia:Maj-1993-3 ●Mozambique:Maj-1994-2 ●Namibia:Maj-1990-2 ●Nicaragua:Maj-1911-2//Plu-1984-2;QP-1995-1;QP-1999-1 ●Nigeria:QP-1979-2//QP-1993-1//1999-1 ●Panama:Plu-1916-4//1952-5//1984-1//1989-1//1994-2 ●Peru:Col-1828-1//Col-1861-1//1866-1//1868-3//Plu-1896-5//1915-1//QP-1931-1;QP-1933-2// 1956-1//1962-1//1963-1//Maj-1978-7 ●Philippines:Plu-1935-6//1987-2 ●Poland:Maj-1990-3 ●Portugal:Maj-1976-6 ●Romania:Maj-1990-4 ●Russia:Maj-1993-3 ●Slovenia:Plu-1991-3 ●Sri Lanka:SV-1978-4 ●Taiwan:Plu-1996-2 ●Ukraine:Maj-1994-2 ●United States:Col-1789-54 ●Uruguay:Plu-1899-12//1942-5//1984-3;Maj-1996-1 ●Venezuela:Col-1830-2// 1847-3//Col-1874-

1//Plu-1946-1//1958-10

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Note: This Table summarizes the detailed five world regional tables included in the corresponding chapters.

Information for each country: Type of electoral system-Starting year-Number of elections.

Type of electoral systems: Col: Electoral College: Plu: Plurality rule; QP: Qualified-plurality rules; Maj: Majority runoff; STV: Single-transferable vote; SV: Supplementary vote.

The sign // indicates a period without elections or with authoritarian fake elections. Present democratic periods are counted since the latest //.

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Notes and Sources for Tables

Notes:

Electoral systems are distinguished for having changed at least one of these elements:

single- or multi-member districts, ballot, rule or formula. In contrast, changes are recorded

within a single system for term, number of seats, number of districts, magnitudes, and

thresholds, which are given as ranges within each

period (or as average \*). Public ballot and indirect elections are indicated when exist; otherwise, secret ballot and direct elections.

'Universal MS' indicates the introduction of universal male suffrage. The sign // indicates a period without elections or with authoritarian fake elections. See Glossary for definitions.

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