

How Electoral Systems Matter for Democratization

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Electoral rules delimit the democratic game, but are also part of the game. In conjunction with political culture and skills they lead to an electoral *system*. This overview first addresses their effect in mature democracies, especially on the number of parliamentary parties and deviation from proportionality. The results are cautiously extended to early democratization. The main advice is to keep the electoral rules simple, so that world-wide empirical and analytical experience can be used to obtain somewhat predictable outcomes. Once chosen, keep the same rules for at least three elections, so that an electoral *system* has time to develop. For scholars the main lesson of the newly democratizing countries is modesty in prediction.

Introduction

Containers matter. True, the content matters more, and containers do not decide what it is poured into them. But if they leak, crack, overflow or corrode, they do affect the outcome. Indirectly, they even affect the content because one learns from experience not to pour, for instance, the proverbial new wine into old wineskins. It is false dichotomy to ask whether containers matter or not. It is a question of how much they matter, and how.

So it is with political institutions. Excellence of institutional framework cannot compensate for political culture they enclose, but inadequate institutions can leak, crack or overflow. The risk is especially high when political culture is corrosively undemocratic, as it well may be at the start of formal democratization. To maximize stable democratization, institutions should be congruent with political culture, to use Harry Eckstein's terminology¹ – but not so fully congruent as to help perpetuate the undemocratic culture.

Electoral rules are part of such democratic institutions. Note my using 'electoral rules' rather than 'systems'. In systems theory, a system is something that divides the world into external and internal, and has some

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capacity to restore internal equilibrium when disturbed by external factors. If so, then one can speak of an electoral *system* only when electoral rules have become embedded in a political culture where actors have acquired reasonable skills of handling the electoral rules to their enlightened self-interest, including most actors' long-term interest in preserving a modicum of stability. Such skills are based on experience. Hence electoral rules can become the containing carapace of an electoral system only when they have been used a fair number of times.

By such definition, developing an electoral system is part of developing democracy rather than something established in the early stage of democratization. The same goes for 'party system'. Early party constellations are often kaleidoscopic configurations of individual actors, devoid of anything akin to a system. Indeed, even 'kaleidoscopic' may overstate the stability, because in a kaleidoscope the pieces remain the same, while during early democratization many major actors may vanish and new ones arise over a short time. Fleeting party constellations become a party *system* only slowly, during democratization. But one has to start with some parties (or proto-parties), if one assumes that efficient decision-making requires some non-atomized structure. And one certainly needs electoral rules right away, so as to be able to carry out elections, if one assumes that democracy needs elections.

Now we have two distinct issues. How and to what extent do electoral systems matter, once they have developed as part of democratization, for the nature and stability of the resulting fairly democratic societies? And how and to what extent do early electoral rules matter for keeping early democratization on an even keel? The two questions are distinct, because the electoral rules most congenial for developed democracy may conceivably be dysfunctional during early democratization, if lack of congruence with existing non-democratic political culture results in breakdown. Before addressing these separate issues, one further particularity of electoral rules must be pointed out. This is best done by contrasting them with rules of chess.

Chess Rules and Electoral Rules

Chess rules are extraneous to the game. Election rules are interwoven with the game. In his classic *Fights, Games, and Debates* (1960) Anatol Rapoport introduces the Games part by imagining going to a statistics-oriented person to analyse chess. The latter reports items like the distribution of duration of games and the attrition rates for chess pieces at successive moves. Rapoport, however, mumbles: 'But is this what we want to know about chess?' In particular, does this enable us play better chess? Guess not.

Still, I always felt such statistical information on chess would be of some interest. It certainly would, if proposals arose for changing the chess rules. Would the change make games boringly long, or to the contrary, awkwardly short? But even then the rules would not be part of the game. Before sitting down at the chessboard a player will not negotiate for fairer chess rules, threatening boycott, much less declare that, if he wins, he will change the rules. I am not talking about things like lighting and noise in the room but about the rules that prevail on the chessboard. These rules are remarkably constant in space and time. They define the game rather than being part of the game. And the loser cannot claim that the rules were biased against him. Electoral rules also define the game, but they are also part of it. They vary tremendously in space and time. They can be and are blamed by losers. Change in electoral rules can be part of the election platform. Because these rules can be changed – and changed by political processes – the statistical and logical analysis of the properties of electoral systems is part of the study of politics much more than study of the consequences of various conceivable chess rules is part of learning chess.

This is not to deny the strategic aspects of politics nor to claim equal importance for institutional aspects, but simply to note that institutions, including electoral systems, matter. How much do they matter? Your car includes many parts that are not on your mind while you drive, but call themselves to your attention when they break down. A good electoral system cannot salvage a polity where many other institutions, attitudes and policies break down. On the other hand, an otherwise healthy polity can compensate for a poor electoral system in many ways. However, a poor electoral system can contribute to crisis in the case of shaky polities – and most polities have their fragile aspects and periods.

My approach to electoral systems is very much in line with what made Rapoport ask ‘But is this chess?’ For the study of chess the answer would be ‘No’. For the study of politics, however, it would be ‘Yes’ because here the rules are themselves part of the game.

The discussion will first investigate how electoral systems matter in mature democracies, and then shift to early democratization. It will conclude by asking what newly democratizing countries can learn from the analysis of existing electoral systems, and what analysts can learn from the new democracies. The scope is largely limited to the lower (or only) chamber of assemblies. The rules of presidential, upper chamber and local elections also matter – and they interact with the lower chamber elections.² But one has to draw a line somewhere.

How Electoral Systems Matter in Mature Democracies

Stable electoral systems consist not only of electoral rules but also of the way these rules are used in the given democratic culture. This culture includes *informed* self-interest, meaning some concern for stability and tradition, and avoidance of gross miscalculations resulting from limited understanding of the effect of given electoral rules. Such experience comes with time. A stable electoral system consists of electoral rules that have withstood the test of time.

Such time would be shortened, if the local learning experience could be complemented by general scholarly knowledge about the properties of electoral rules and their interaction with other factors. Is there sufficiently hard knowledge? Or is every electoral system *sui generis*, because similar electoral rules are embedded in different historical and socio-political contexts? If so, then no advice to newly democratizing countries would be possible, beyond impressionistic, which varies from one advisor to the next. They would have to muddle through on their own. But I claim some hard knowledge already does exist, to a limited degree. It is important to make a short inventory, clearly distinguishing what we know to be universal, what we suspect of being so, and where our knowledge becomes fuzzy. Nor must we lose sight that even what is universal for mature systems may not apply to young ones.

In the following, there will be a review of some items we can measure among the presumed outputs of electoral rules, among the inputs by these rules, and among other factors that may enter the process – usually to confuse the picture. Then some relations between these inputs, outputs and extra factors will be reviewed. Finally, some cautious recipes are deduced for *moderate* changes in electoral rules in the case of *stable* polities.

Although I have talked about inputs and outputs, the processes involved actually involve no clear-cut independent and dependent variables but only interdependent variables. For instance, while certain electoral rules may exert a downward pressure on the number of parties, the endangered parties will also push for changes in rules, and sometimes they succeed (for example, New Zealand 1996). The rules are part of the game.

Some Measurable Outputs of Electoral Systems

What features interest us, among those that might be affected by electoral rules? Broadly, we are interested in fairness and stability. A major (though by no means the sole) criterion of fairness is proportionality between vote shares and seat shares. Representation of significant minorities is an aspect of it. Stability is affected, among many other factors, by the number of parties – and in several directions. Too many parties may make for unstable

coalition governments. A permanent one-party hegemony may lead to corruption and erosion of democracy. We might also be concerned about citizens having a personal representative, about party cohesion, and many other features. But I will restrict myself to these few, because they clearly are among the most important and can be measured – though not easily.

Consider a 100-seat assembly divided as 40–30–20–5–2–1–1–1 among parties (and independents). The total number of seat-winning parties (8) matters as an indicator of the system's permissiveness to small and new parties. However, as far as decision-making is concerned, the assembly is likely to behave like a 3- to 4-party system. A self-weighting procedure leads to the widely used *effective number of parties*, for which the most general (though not the simplest) expression is

$$N_s = (\sum S_i)^2 / \sum (S_i^2),$$

where S_i is the i -th party's number or percentage of seats and subscript s indicates that this number is based on seats. An analogous number, N_v , can be calculated on the basis of votes. If component shares that add up to 1 are used, the expression simplifies into

$$N_s = 1 / \sum (p_i^2),$$

where p_i is the fractional share of the i -th component.³ In the example above $N_s = 3.4$.

For deviation from proportional representation (PR) the widest-used measure used to be

$$D = \frac{1}{2} \sum |s_i - v_i|,$$

where s_i and v_i are the i -th party's fractional or percent shares of seats and votes, respectively. However, it is now being displaced by an index introduced by Michael Gallagher:

$$Gh = [\frac{1}{2} \sum (s_i - v_i)^2]^{.5}.$$

The difference between D and Gh is in the weight given to small and possibly random deviations. Compare the following constellations (in %):

	A.	B.
v_i :	50 35 15	10 10 10 10 10 10 10 10 10
s_i :	55 35 10	11 11 11 11 11 9 9 9 9 9

$D=5$ per cent for both A and B, while $Gh=5$ per cent for A but only $Gh=2.24$ per cent for B, where all individual deviations are tiny. The same indices can be used to measure volatility from one election to the next, simply by replacing seats and votes by votes resulting from two different elections.⁴

As mentioned before, the accessibility of the system to small and new parties is reflected in the number of seat-winning parties. But one can also determine the empirical threshold of representation. Operationally, this is the votes level T such that over many elections using the same rules the cases where seats were won with less than T votes equals in number the cases where no seats were won with more than T votes.⁵

We are also interested in features like the degree of party cohesion, the extent to which voters have a personal representative and so on. Unfortunately, no operationalized measures have as yet been developed.

Measures of regime stability are one step removed from the electoral rules in that they may be affected through the intermediary of party system. The duration of cabinets (C) may be one such measure, provided that one specifies when a cabinet is considered replaced. Lijphart has measured average cabinet durations in a number of countries.⁶

Some Measurable Inputs by Electoral Rules

The most important components of electoral rules include district magnitude (M , the number of seats allocated in the electoral district), legal threshold (T_L), and seat allocation formula. A low T_L (if there is any) favours small parties, and so does high M , provided that seat allocation is not by district-wide plurality but some PR formula. The oft-used dichotomy of single-member and multi-member districts ($M=1$ vs. $M>1$) is a matter of degree. Low-magnitude multi-seat districts behave much like single-member districts in discouraging multi-partism (unless countermanded by certain allocation rules). So would systems with a very high legal threshold.

In a coarse way then, M and T_L are 'the two sides of the same coin', in Lijphart's words.⁷ However, many electoral systems allocate seats at several tiers (district, regional, national). Sometimes the upper tier is like an additional district, but frequently it is compensatory, restoring nationwide PR and thus overriding the deviation from PR that may have occurred at district level (for example, in Germany). This is one example of how one stipulation in a complex electoral system may undo another, and oftentimes it is not clear upon reading the rules which parts predominate. Additional and compensatory impacts have often been confused when discussing multi-tier systems. In response, attempts have been made to operationalize an 'effective magnitude' (M_e) or 'effective threshold' (T_e) that would express the gist of the given electoral system regarding their permissiveness toward small parties and hence the deviation from PR and the number of parties.⁸

As long as some PR or semi-PR seat allocation formula is used, the specific formula plays a minor role when M is large. The formula makes the most difference in low-magnitude multi-seat districts and boils down to single-member plurality for most allocation rules (d'Hondt, Sainte-Laguë, Largest Remainders and so on) when $M=1$. If the plurality rule is used, the effect of M is reversed. With plurality, larger M is less favourable to small parties.⁹

Another important feature is ballot structure. It can be 'categorical' (asking the voter to make a single choice), 'ordinal' (asking the voter to rank all candidates or lists), or intermediary (in many different ways). Ordinal ballot may have a weakening effect on party cohesion, because it forces candidates of the same party to compete with each other.

A similar weakening may arise with categorical ballot, if it is 'open', meaning that the voter is allowed to vote not only for a list but also a specific candidate within the list. In contrast, a 'closed list' allows only a vote for the entire list, with prearranged ranking of candidates. Open lists maximize the likelihood that a voter obtains the representative of his/her choice. Single-member districts (SMD) offer the voter one-candidate lists which are formally open (voting for a candidate) but effectively closed (no choice between candidates of the same party, unless a primary is held).

The time-honoured philosophical dichotomy between majority and proportional systems becomes a quasi-continuum in view of these varied combinations. Even those who claim mutual exclusivity for majoritarian and proportional principles have been forced to admit that low- M systems represent an 'impure' PR or semi-PR. In the other direction it might be argued that the only 'pure' majority system is countrywide plurality, where the largest party gets all the seats in the assembly (as has been practised in some African countries). In comparison, SMD plurality already represents a long step toward PR in that average D is no higher than 25 per cent. In this sense, if multiseat PR systems with $M < 5$ qualify as 'semi-PR', then SMD plurality should qualify as 'semi-majoritarian'! A common feature of 'pure' PR and 'pure' majoritarianism is that they both require a single nationwide district and hence make for nationwide politics. In contrast, $M=1$ maximizes the survival of local politics.

Some Other Measurable Inputs to Party Systems

The number of parties, the duration of cabinets and various other aspects of political system depend at least as much on political culture as on electoral rules (which themselves reflect political culture). Political culture in a broad sense involves historical experience, socio-political heterogeneity, informal rules of behaviour and so on. Even parts of it are hard to operationalize. *Socio-political heterogeneity* comes closest, and it might be expected to tie

into the number of parties. As a proxy for heterogeneity, Cox has used the effective number of ethnic groups, while Lijphart prefers an estimate of the 'number of issue dimensions' (I).¹⁰ Both are problematic.

The number of ethnies might be definable and operationalizable, but all ethnic differences are not politicized, and most political issues are not ethnic. The number of issue dimensions catches all of them but is impressionistic, and its connection to the number of parties may involve circular reasoning. But this is all we have, as a measure of political culture, and we should keep it until something better is devised.

The size of legislative assembly (S) is usually not considered a part of the electoral system, but it is. An assembly with more seats can accommodate more parties. In this respect, increasing S has the same effect as increasing M. And the total number of seats is usually well operationalized.

Some Relationships between Inputs and Outputs

Defining operationalized variables is useful to the extent that we can find quantitative relationships among them. Then, if we can alter one feature, we can hope to estimate the impact on other features. Empirical relationships are good, but it is even better if a rational model can be found that tells us why the relationship has the observed form. When we have a rational model that predicts the average relationship empirically observed, then (and only then!) can we say we have a 'law' in the scientific sense.

The number of parties: One of the earliest relations noted was *Duverger's rule* regarding district magnitude and the number of parties: $M=1$ favours a two-party system and $M>1$ (with some PR formula) a multi-party system. This dichotomous statement was given a continuous form by Taagepera and Shugart, based on a rational model. The model considers the extreme values the number of parties could take in a single district and then takes the average. Extension to the entire country also introduces assembly size and results in

$$N_s = .85(SM)^{3/16},$$

which for average-sized assemblies can be approximated as

$$N_s = 2.15 M^{3/16}.$$

Most actual values of N are within a factor of 2 from this estimate. Discrepancies arise in low-magnitude districts when open-list rules motivate parties to present large bloc lists, as is the case in Chile (where $M=2$). The total votes for the bloc determine the number of seats the bloc

obtains. These seats then go to the candidates with the most personal votes, so that on that level the allied parties compete with each other. Under such conditions the number of parties becomes difficult to define. To the extent that same-bloc parties continue to co-operate in the assembly (so as to preserve the alliance for future elections) the electoral blocs represent super-parties – and their number is adequately predicted by the equations above. To the extent that the individual parties preserve autonomy, their number can be much larger than given by the equations above – unless an effective magnitude is defined to take into account the two-level allocation procedure.¹¹

Cox has recently elucidated various qualifications regarding the conditions under which Duverger's rule applies. Yet Lijphart's analysis shows a weak overall correlation between the number of parties and the effective threshold, which includes the impact of M .¹²

This is so, because the number of parties also depends on sociopolitical heterogeneity. Lijphart found a high correlation ($R=.75$, hence $R^2=.56$) between the effective number of assembly parties and the number of issue dimensions, and Taagepera and Grofman proposed on the basis of Lijphart's data that

$$N_s = I + 1.$$

The model behind this equation is that each new issue comes with one new major party, rather than splitting several of the existing ones. The effects of M and I are combined semi-empirically in a single equation as

$$N_s = I \cdot 6M \cdot 15 + 1.$$

The underlying model is patchy. Heterogeneity and electoral rules may impose separate ceilings on the number of parties, as proposed by Amorim Neto and Cox. Indeed, there is an incentive to form new parties only when there are issues, and they can win seats only if the electoral rules allow it. The equation above expresses the same idea, but assumes that the ceilings are elastic. Strong new issues can nudge the number of parties up despite the resistance of the electoral rules, while restrictive electoral rules can goad distinct issues to find a common home and become fused in the public mind (for example economic freedom and abortion limitations in the Republican Party in the US).¹³

Deviation from PR: Disproportionality is strongly affected by effective threshold and also by assembly size. Lijphart's corresponding regression equation ($R^2 = .63$) is

$$Gh = .82 T_e - .15 \log S + 5.31,$$

while Taagepera and Shugart find, using D and effective magnitude, that

$$D = 25 \text{ per cent}/M_e^{.5}.$$

The theory behind these average relationships is still weak.¹⁴ Political culture plays a lesser role here than for the number of parties, but it is still present. For the same effective threshold or magnitude, if heterogeneity should produce more parties, then deviation from PR is likely to increase, especially when measured by D rather than Gh.

These equations for deviation from PR imply that representation of dispersed minorities is improved when effective threshold is low and effective magnitude is high. The same way, woman candidates are favoured by high M, but it also depends on the number of parties involved. Women tend to get seats when the same party obtains more than one seat in the given district.¹⁵ A formal model remains to be worked out.

Cabinet duration: Whatever determines the number of parties also affects the duration of cabinets (and hence an aspect of stability) through an inverse square law:

$$C = 400 \text{ months}/N_p^2.$$

The equation is derived from a model based on the number of communication channels. As the number of actors increases the number of possible disputes increases roughly as the square of the number of actors. Agreement is within a factor of 2 when using long time periods. Obviously, the equation cannot predict the duration of one specific cabinet (which a scandal can bring down at any time). But it expresses the average effect of the number of parties, however it may be determined by electoral rules and culture.¹⁶

Moderately Predictable Changes in Outputs, When Electoral Rules Change

We can predict the effects of a change in electoral rules with some confidence, if the political culture is stable and both the previous and the new rules are simple. If the rules are altered in the midst of a more general crisis (like France in the late 1950s), then political culture (and the number of issue dimensions, in particular) may change and cancel out or magnify the impact of electoral rules on, say, the number of parties. If the rules are complex, it may be hard to locate the predominant factor in the given cultural context.¹⁷

New Zealand in 1996 satisfied these conditions, as it shifted from SMD

plurality to reasonably simple mixed rules amounting to nationwide PR subject to a legal threshold. The number of parties increased by the expected amount, and deviation from PR decreased. It is still too early to measure the duration of cabinets (which should decrease).

Italy supplies a recent counter-example, as it shifted from highly proportional rules to moderately proportional ones vaguely similar to the new set-up in New Zealand. Contrary to many expectations, the number of parties did not decrease appreciably, and the cabinets did not become more stable. What happened with $N_s = I^{.6}M^{.15} + 1$? The modest reduction in effective magnitude hardly reduced the ceiling on N , while the number of issue dimensions actually may have increased (for example, rise of northern regionalism).

In sum, we must be modest about our ability to predict the effect of change in electoral rules. Even for stable systems, one finds considerable variability of data and disagreement of opinion. Extension to newly democratizing countries must be even more cautious, in view of different and unstable political cultures. Moreover, it is not a question there about a change in electoral rules but change from non-elections (or fake elections) to elections. Some observations established for stable electoral systems do not apply to the first elections under newly established electoral rules, by definition. In particular, Duverger's law ($M=1$ leads to $N_s=2$) is based on 'psychological effects' that set in only over several electoral cycles. In the early elections independents or regionally based parties may fill the stage, and the incentive to conglomerate may work very slowly.

How Electoral Rules Matter in Early Democratization

How Electoral Rules Are Chosen

It may look hard-boiled realism to declare that self-interest of original decision-makers determines the choice of electoral rules, but it retroactively explains every possible outcome and hence nothing. People decide what is in their interest on varied and often fleeting grounds. Winning the next election can conflict with long-term interests (including preservation of stability), ideological preferences (including advice by foreign advisers belonging to the same philosophical strain), and the force of habit. Which of these will overrule the others in defining 'self-interest'?

Moreover, the means used to achieve one's presumed self-interest can be misinformed and counterproductive. Thus the old regimes in the Soviet-dominated area preferred keeping the Soviet electoral rules (which favour the largest party) not only by force of habit but also because they expected to be the largest party. It turned out to be a catastrophic misjudgment for them in many countries.

The predominant forces may stick to the rules inherited from the preceding political regime either by ignorance of alternatives or by rationally balancing the merits of the existing rules against the costs and risks of innovation. Thus most ex-British colonies adopted SMD plurality without realizing that $N_s = .85(SM)^{3/16}$ predicts 2.8 effective parties in the large parliament of UK but only 1.4 effective parties in the 15-seat assembly of a small island nation like the Seychelles. This means that instead of a healthy two-party system they often ended up with a completely decimated parliamentary opposition. Ukraine is the only post-Soviet state to keep intact the Soviet Two-Round rule, which allows voting against all candidates and yet requires an absolute majority. What formerly worked with Soviet one-candidate pseudo-elections now leads to interminable repeats, and some seats remain vacant almost permanently.

Other countries may return to pre-occupation or pre-dictatorship tradition. Thus Zambia's Third Republic persisted with the rules of the multi-party First Republic, after the *de jure* one-party state of the Second Republic. Such earlier democratic tradition itself may be mixed. Thus Estonia's choice in 1992 was influenced both by its ultra-proportional rules of the 1920s and the SMD plurality adopted in 1938 in reaction to excessive multipartism.

The role of random events should not be underestimated. As Nigel Roberts asks regarding New Zealand: 'What would have happened if David Lange had not made an inadvertent pledge during the 1987 election to hold a binding referendum on the question of electoral reform?'¹⁸ But for this irretrievable slip of the tongue, the ball might not have started rolling. If this could happen in stable New Zealand, then how often may the choice of the initial electoral rules in new democracies have been decided by who happened to be at what meeting and in what mood?

With 20:20 hindsight, one can always harness 'self-interest' to perfectly explain away this conglomeration of desire to win, yet follow tradition, avoid rethinking and gathering information, satisfy foreign ideological sponsors, and keep some idealism about future stability, combined with miscalculations and pure chance.

What opportunity does all that leave for supposedly rational advice by neutral experts in electoral rules? It is not up to the experts to decide on the motivational basis of the choice. They can only help avoid misconceived ways to reach the stated goals. They can ask 'What results do you want?' and then point out to what extent the rules under consideration may ensure or defeat the intended purpose. For instance, if low population imposes a small assembly and you still want to have single-party cabinets plus vigorous opposition, British-style, then you are not likely to get it with British-style $M=1$ but should consider $M=3$ instead.

How Early Electoral Rules Matter

The rules chosen at the beginning of democratization make a difference, but sometimes in unexpected directions, because of unsettled political culture and party constellation. Compromises between various proposals all too often lead to complex rules, but complexity enhances unpredictability and potential for getting the worst of both worlds.

A main decision concerns the balance between governability and representation of minority views. Governability may be promoted by having only two major parties and one-party cabinets, which in turn often results from SMD plurality rule. Proportional representation, on the other hand, is best obtained by a single nationwide district. One can have both, if political culture spontaneously develops only two parties, as was the case in Austria after the Second World War, despite PR electoral rules. Another political culture may miss out on both accounts, as in present-day Russia, which has huge deviations from PR and yet a large number of parties.

Apart from the governability–representation balance (which I have oversimplified), many other considerations enter, such as party cohesion and having a personal representative. In the new democracies two aspects emerge stronger than in the established ones. One is legitimacy of electoral rules, or rather perception of it. If for whatever reason, right or wrong, these rules are perceived as illegitimate, then democracy is in trouble. The other aspect is cost of elections, both in money and expert labour. New democracies often are strapped for funds and skilled administrators, so that too much of these resources spent on execution of elections may leave gaps elsewhere.

In their recent *Handbook of Electoral Design*, Andrew Reynolds and Ben Reilly have presented a dispassionate overview of the various electoral systems and their components throughout the world. They list both the claimed advantages and shortcomings of the various approaches.¹⁹ They stress the issue of the cost of elections – both in money and perception of legitimacy. Simple rules may be expected to keep the costs down, but what looks simple on the surface may involve costs elsewhere.

Plurality in single-member districts might look like the simplest of all allocation rules. Yet the initial drawing of electoral boundaries requires appreciable time and effort. Voter registration has to be much more meticulous than in the case of nationwide PR, because each voter must be registered in a specific district. During voting, voter rolls must be checked (rather than, say, just entering the fact of voting in one's passport), because the outcome depends very much on *where* a given voter votes. With PR in multi-seat districts, this is much less important. In the light of these considerations SMD plurality may not be one of the simplest electoral rules, especially in the beginning.

Two-round rules in single-member districts share the same costs. In addition, the second round doubles the cost of ballot papers, polling stations and vote counting. There is also voter fatigue, plus disappointment, if a crowded first round leaves later only a choice between two poorly supported finalists. The sequences of alliance combinations may be mixed, confusing and destabilizing.

Multi-seat districts, on the other hand, may be costly in terms of voter education. This is especially so in the case of ranked ballots such as Single Transferable Vote (STV), which also multiply the cost of vote counting. Mixed and parallel rules share the same costs. Voter dissatisfaction may impair stability, if too many ballots are spoiled because of ballot complexity or the outcomes look mysterious because of a complicated allocation formula.

In an admittedly coarse count by Reynolds and Reilly,²⁰ the total cost handicap of various rules is the following:

Two Rounds	10
Mixed Member Proportional	9
Parallel	8
STV and Alternative Vote	7
Block Vote	5
Single-Member Plurality	4
Single Non-Transferable Vote	4
List PR	2

Needless to say, cost should not be the main determinant in the choice of electoral rules. But all other things being equal, a less costly choice is preferable, and extremely costly rules should be avoided. Excessive financial cost may boost the risk of irregularities, because it increases the temptation to cut corners. Complexity may multiply the entry points for fraud or, even in the absence of it, suspicions of fraud. (This was the case for STV in Estonia 1990.)

Doubts about legitimacy of election results can focus solely on the electoral rules and the political operators specifically held responsible for the purportedly unfair or inappropriate rules. But such doubts can also extend to the entire ‘political class’ or even democracy as such, risking breakdown of democratization.

How the Impact of Early Electoral Rules is Evaluated

Understandably, there is an urge to evaluate the rules after the very first elections, but it might be too early. Political culture and party constellation are still in flux. The stable characteristics of the outputs of electoral rules

can not yet be measured, because politicians and voters are still learning how to use these rules to their best advantage. There is temptation to alter the electoral rules rather than wait for this learning process to take place. But if rules are continuously altered no such learning can ever occur.

For scholars the temptation is to prematurely claim failure of regularities such as Duverger's law, which were developed on the basis of stable electoral systems and meant to apply only to them. In Duverger's case a major mechanism is the psychological effect of under-representation, which by definition requires several electoral cycles to play itself out.

Have Any New Democracies Failed because of Deficient Electoral Rules?

A major criterion for whether electoral rules matter is whether inadequate rules have demonstrably led to collapse of democracy, or at least a severe crisis. Rarely have electoral rules been the only reason in the past, but they have contributed to crisis.

The Seychelles of the 1970s is a case to the point. In 1974, the British-style plurality rule applied in mainly two-seat districts, plus a very non-British small assembly of only 15 seats gave the second-largest party 47.6 per cent of the votes but only 13 per cent of the seats (two seats). An ad hoc correction later allowed both party leaders to add five members, leading to a still lopsided 18:7 ratio. A 1977 coup by the minority leader introduced a long spell of one-party rule, punctuated by practically choiceless elections. There is no proof that more proportional representation would have held back an ambitious leader, but the unintended short-change certainly outraged one-half of the voters and delegitimized the regime in their eyes.

While in the Seychelles an overly small effective magnitude was a problem,²¹ an overly large M may have contributed to the collapse of democracy in Germany, Latvia and Estonia in the 1930s, by allowing too many parties to survive. Or was political culture responsible? Imperial Germany (SMD, two-rounds) already had a multiplicity of parties. In Lithuania, with fewer parties than its northern neighbours, democracy collapsed even earlier. And next door to Germany, multi-party democracy in the Netherlands survived quite nicely the shocks of world depression.

Among the 'Third Wave' democracies none have failed as yet, for any reason. There have been non-starters (such as Belarus and Central Asia), but no real failures following a promising start, if we take the latter to mean three successive free elections. However, the critical times are still ahead.

The crunch will come with the next world-wide economic squeeze. Worsening economic conditions may be blamed on various components of democratization. Among these, electoral rules may contribute to a perception of lack of legitimacy. Prime candidates are the countries where the pre-democratic electoral rules have been uncritically preserved, such as

Ukraine, or excessively complex rules were adopted, such as Hungary and Estonia. In the latter country the expression 'The politicians elect themselves' is heard all too frequently, because of an unholy mix where closed nationwide lists override the candidate preferences expressed in district-level voting.

Another slow build-up for crisis comes from accumulating dissatisfaction among groups who observe that electoral rules seem to operate permanently against them. This was the case in Northern Ireland, where the single-member districts whittled down the Catholic representation. Once some of them shifted from ballots to bullets, the 1973 introduction of PR came too late to defuse the situation. Recently, Slovakia has redrawn its electoral districts so as to dilute the ethnic Hungarian vote. Such games are shortsighted.

Once more, many other factors intervene, plus random events. Democracies with sound electoral rules may collapse, while others with flawed electoral rules may survive. The same can be said about any single factor. This is no reason to knowingly adopt electoral rules that add to the total load.

Some Recommendations for Newly Democratizing Countries

In view of our modest grasp of the effects of electoral rules in stable democracies and even greater ignorance of their interaction with culture and learning processes in new democracies, it might seem that no advice can be given, apart from 'Pick anything and try to muddle through'. This is not quite so. Even recognition of ignorance is a positive step compared to cocksure application of pseudo-knowledge. Here are some very general suggestions.

Keep the Electoral Rules Simple

This is basic. Whatever we know about the impact of electoral rules applies mainly to simple systems. If simple rules produce undesirable outcomes in the given cultural context, we may at least know in retrospect what caused them, and then we can try incremental changes.

Are there too many parties? Cutting the district magnitude by half should reduce the effective number of assembly parties by about 12 per cent, according to $N_s = .85(SM)^{3/16}$. It's very approximate. You may well end up with a reduction of five or 20 per cent. But it still tells you about how much change in M is needed. For instance, don't expect any detectable impact upon a mere ten per cent change in district magnitude! Reducing the legal threshold works in the same direction, but the extent of change is harder to calculate.

Is there too much disproportionality? This was the problem in Seychelles in 1974. Shift to PR and larger assembly size. Once more, a ballpark figure for the resulting change can be calculated.

In the case of highly complex electoral rules, in contrast, any degree of rational predictability vanishes. If the seat allocation produces unwelcome surprises, incremental adjustment becomes impossible, because one cannot even be sure which component of the rules was the major factor. Hence attempts at correction may make it worse.

Trying to obtain very specific outcomes by making new electoral rules complex assumes much better knowledge of the functioning of electoral rules (and their interaction with political culture) than we presently have. It is all too easy to discard the correlation equations presented above, because they work only within a factor of two (and worse for new polities) – and then fall for completely impressionistic voodoo.

Complexity increases unpredictability of results, and also makes elections costlier. On the other hand, one should also beware of apparent simplicity of rules that may hide complications elsewhere. Thus the simple single-member plurality rule involves relatively high districting and voter registration costs. It has embroiled the United States in complex and interminable gerrymander and redistricting issues, which vanish rapidly as district magnitude is raised. When this entire package is considered, even Single Transferable Vote looks simple in comparison.

A further reason to start out with simple rules is that later corrections invariably go in direction of further complexity, anyway. It is easier to add to than to subtract from existing laws and rules in any field. When the electoral rules are complex to begin with, attempts to correct them may make them unmanageable – or be seen as underhand by the voters.

Unfortunately, the reality during the selection of electoral rules often is that a recalcitrant player with some veto power agrees to go along with a simple electoral setup only if some apparently tiny addition is made. Though looking innocuous, it may actually change the picture appreciably. The danger is that some other player will offer a supposedly minor counter-correction – and the race toward complexity is on.

Make Use of Worldwide Experience

Do not be afraid to innovate upon the electoral rules inherited from colonial rule or dictatorial sham elections. While innovating, do not think that your society is such a special case that it needs a unique set of rules. You would most likely end up reinventing the wheel, something that has been tried in a very different society and given up. On the other hand, do not expect either that rules borrowed from another single country would lead to the same outcomes in a different culture.

World experience includes not only that of different countries as packages but also the analytical results that cover the same features in many countries. They give some idea to what degree a change in input (such as district magnitude) affects an output (such as number of parties). And the scatter around these average trends also indicates to what degree a given feature may lead to different outcomes in various cultures.

Once Chosen, Keep the Same Rules for at least Three Elections

Don't think the first election outcomes are characteristic of the properties of the given electoral rules. Parties and voters need time to learn how to use them to their best advantage. An electoral system consists of rules and skills in using these rules. If the rules are continuously altered, no stable electoral system can emerge.

Of course, no advice is absolute. There may be disastrous sets of rules to be given up in a hurry. But in nine cases out of ten, when electoral rules are altered, it is done too early in two respects. First, the existing rules may not be so dysfunctional after all, once people learn to use them. Second, if you messed it up the first time, what guarantees that you now can do a better job, rather than flipping from flaws discovered to flaws as yet unknown? A couple of examples will illustrate the point.

Estonia shifted away from STV after a single election in 1990, because it supposedly did not allow parties to coalesce. The actual flaw was that, under Communist pressure, the ballots did not show unambiguously the candidates' party affiliations. Rather than simply adding party labels, as Ireland and Malta do, Estonia scrapped STV and got a messy mix that everyone now disavows. However, the second election under those new rules produced less protest than the first one. The flaws at least no longer surprised and shocked.

Argentina went through an almost spasmodic alternation in 1957–65: one election with d'Hondt, two with 'list plurality with limited vote', another two with d'Hondt – and then eight years with no elections. The country did not even experiment with new rules but returned to rules felt unsatisfactory just a few years earlier, without ever learning to make full use of the opportunities inherent in these rules.

The results of post-communist elections in Poland, Russia, Lithuania and elsewhere have produced a veritable scholarly cottage industry expressing doubts about the validity of previously observed regularities. Duverger's rule has been a special target. In parallel setups (such as in Russia), the part with single-member districts is sometimes observed to yield not two parties but actually a larger number of seat-winning parties than is the case with the part using nationwide PR! In Poland 1993 an increase in legal threshold did not appreciably reduce the large number of

parties competing (N_v down from 10.6 to 9.8) but merely boosted the deviation from PR to huge levels: $D=37$ per cent, $Gh=17$ per cent. The effective number of assembly parties did drop (from 10.5 to 3.9). The critique of Duverger's rule served a useful purpose in reminding us that steady state rules need not apply during the first election, but reports of the demise of general regularities were overly hasty. Take Poland.

The 1993 electoral rules were maintained in Poland for the 1997 elections, but the outcomes were quite different – and edging closer to expectations, because the politicians learned how to best advance their interests.²² The huge deviation from PR in 1993 was largely due to the splintering of Solidarity to the point where their combined total of more than 30 per cent votes won them zero seats, because none of the splinter parties surpassed the five per cent threshold. They learned their lesson, presented a joint list in 1997 and, with hardly any increase in combined votes (33.8 per cent), won 43.7 per cent of the seats. The effective number of electoral parties dropped from 9.8 to 4.6, the effective number of assembly parties from 3.9 to 3.0. Deviation from PR returned to the normal range: D plummeted from 37 per cent to about 18.6 per cent, and Gh went from 17 per cent to 11 per cent.

It would have been a pity if Poland had changed its electoral rules after 1993, thinking they would always produce a large number of electoral parties and a large disproportionality. It takes many elections with the same electoral rules before their systematic effects stabilize.

Consider Incremental Changes

When rules are altered so as to correct for specific flaws, avoid going overboard. Do not flip to a totally different set-up that may include new weak points. Fine tuning may achieve the desired results more safely. Consider minor changes in district magnitude, legal threshold and the like.

Sometimes the change needed may lie outside the electoral rules. Do parties strike election-time alliances but part ways once in the assembly? The gut response might be higher legal thresholds for alliances, but this may be hard to police and would complicate the electoral rules. In contrast, parliamentary rules that deny material benefits to groupings that did not appear in elections may be self-policing.

In general, do not think of electoral rules as a panacea for all ills, but also don't underestimate their influence. Reynolds and Reilly have further recommendations.²³

If I Had to Recommend Electoral Rules

If asked for advice, I would in *general* stick with the recommendation made in *Seats and Votes* a decade ago: all seats allocated in three or five-seat

districts, by open-list PR or Single Transferable Vote. These rules might combine the strong aspects of SMD plurality (fairly few parties, fairly stable cabinets, some personal tie between representative and constituents) and those of PR (fair representation of important nationwide or local minorities). At the same time, it would hopefully avoid the less desirable aspects of either – in the case of SMD plurality, two-party straitjacket (even when both go stale), gross under-representation of various minorities, and gerrymander potential; in the case of PR, excessive number of parties and unstable coalitions.

These would be my average recommendations for the average country. Other knowledgeable scholars may favour different average packages, but most would agree that the devil is in the detail. With the same electoral rules, the inherited political culture and its modification during the experience of democratization may turn the parties excessively weak or strong. The choice of magnitude (or threshold) depends on how many parties one wishes to support, but the latter in turn depends on the parties' willingness to co-operate in coalition governments. In a culture where such co-operation is low, minimal stability requirements may impose a need for very low district magnitude ($M=2$ or even 1) so as to assure a parliamentary majority for the largest party. On the other hand, if inter-party co-operation is extensive, one can afford highly proportional rules (nationwide PR) and the large number of parties that may result.

Adjustments to correct one particular aspect may have unintended side effects elsewhere. Suppose, for instance, that one wishes to reduce intraparty competition for seats and reinforce the hand of party leaders by switching from open to closed lists. If this means that some personally popular politicians who are poor team players are placed low on the closed list, so that they have little chance to win, they may bolt the party and start a new one. The unintended result may be proliferation of separate parties. Many such examples could be given.

Lessons from the Experience of the Newly Democratizing Countries of the 1990s

For the students of electoral systems the main lesson is modesty in claiming generality for relationships observed earlier. We are reminded that observations made for stable democracies need not apply in recent ones.

All scientific laws and rules apply only within certain limits. For example, Newton's Second Law works only at speeds much lower than the speed of light. Establishing the limits of applicability is an important part of such laws. One limit to be considered is the one between static and dynamic. Change is more complex than steady state. We should not uncritically

extend to young electoral rules the conclusions based on performance of stable electoral rules. Recommending complex electoral formats to newly democratizing countries, in particular, implies pretension of knowing more than we do.

Indeed, one cannot even take it for granted that the eventual steady states of the present new democracies would be similar to those of the present mature democracies, because political cultures may remain different. Regularities that are backed up not only by empirical observations but also by rational models should be more universal. But what goes into a rational model is also affected by previous experience.

The laws of change cannot be fruitfully tackled before the laws that prevail in steady state are reasonably well established. To that end, the newly democratizing countries can contribute little, before they mature to have stable electoral systems.

Non-steady state theory, of course, is also of interest – indeed, of more interest, because it's the newly democratizing countries that are in most need of theory-supported assistance. However, non-steady-state theory is even more difficult to build than steady-state theory. It cannot be expected to develop in a serious way before steady-state theory is put on a much firmer basis than is presently the case. We have made a good start in this direction.

Forty years ago W.J.M. Mackenzie maintained that 'The only thing that can be predicted with certainty about the export of elections is that an electoral system will not work in the same way in its new settings as in its old.' Harry Eckstein commented that in this case one would be reduced to 'descriptive surveys of particular electoral processes, interpreted in offhand ways according to the particular inspiration of the interpreter,' but that it would then be difficult to see 'what findings useful to political science (not cultivated conversation and BBC talks) might emerge.' At the same time Eckstein agreed that 'electoral systems can manifest their inherent tendencies only if politics and politicians are predominantly of a certain kind.'²⁴ When distinguishing between 'electoral rules' and 'electoral system', the preceding could be reworded as follows: An electoral system depends on electoral rules, which can be imported instantaneously, and on the surrounding political culture, which adjusts itself only slowly.

NOTES

1. Harry Eckstein, *Division and Cohesion in Democracy: A Study of Norway* (Princeton: Princeton University Press, 1966) and 'Congruence Theory Explained', in Harry Eckstein, Frederic J. Fleron, Erik P. Hoffmann and William M. Reisinger (eds.), *Can Democracy Take Root in Post-Soviet Russia?* (Lanham, MD: Rowman & Littlefield, 1998); Rein Taagepera, 'The Tailor of Marrakesh: Western Electoral System Advice to Emerging Democracies', in

- Jørgen Elklit (ed.), *Electoral Systems for Emerging Democracies: Experiences and Suggestions* (Copenhagen: Danida, 1997), pp.49–62.
2. On these aspects, see Matthew S. Shugart and John M. Carey, *Presidents and Assemblies: Constitutional Design and Electoral Dynamics* (Cambridge: Cambridge University Press, 1992); Mark P. Jones, *Electoral Laws and the Survival of Presidential Democracies* (Notre Dame, IN: University of Notre Dame Press, 1995); George Tsebelis and Jeannette Money, *Bicameralism* (Cambridge: Cambridge University Press, 1997); Malcolm E. Jewell and David M. Olson, *Political Parties and Elections in American States* (Chicago, IL: Dorsey, 1988).
 3. The effective number of parties ‘has become the most widely used measure’ of the number of parties according to Arend Lijphart, *Electoral Systems and Party Systems* (Oxford: Oxford University Press, 1994), p.70. ‘It is now the standard measure’, according to Gary W. Cox, *Making Votes Count: Strategic Coordination in the World’s Electoral Systems* (Cambridge: Cambridge University Press, 1997), p.29. N was introduced into political science by Markku Laakso and Rein Taagepera, ‘Effective Number of Parties: A Measure with Applications to Western Europe’, *Comparative Political Studies*, Vol.12, No.1 (1979), pp.3–27. More complex expressions have also been formulated. $N_1 = \exp[-\sum p_i \ln p_i]$ was first used by C.A.D. Soares and A.M.C. De Noronha, ‘Urbanização e dispersão eleitorae’, *Revista de Direito Publico e Ciencia Politica*, Vol.3 (1960), pp.257–70. The equivalent of $NP=1+N[1+p_1^2N]$, where N is the effective number and p_1 is the largest share, was proposed by Juan Molinar, ‘Counting the Number of Parties: An Alternative Index’, *American Political Science Review*, Vol.85 (1991), pp.1383–91.
 4. Long used in demography, D was introduced into electoral studies by John Loosemore and Victor J. Hanby, ‘The Theoretical Limits of Maximum Distortion’, *British Journal of Political Science*, Vol.1, No.4 (1971), pp.467–77. Gh was introduced, as ‘least-squares index’, by Michael Gallagher, ‘Proportionality, Disproportionality and Electoral Systems’, *Electoral Systems*, Vol.10, No.1 (1991), pp.33–51. It was already the preferred index in Lijphart, *Electoral Systems*. The analogue of D has been used for volatility at least since A. Przeworski, ‘Institutionalization of Voting Patterns, or Is Mobilization a Source of Decay?’ *American Political Science Review*, Vol.69 (1975), pp.49–67. However, Gh may well be preferable for volatility too, for the same reasons as illustrated in examples A and B.
 5. Rein Taagepera, ‘Empirical Thresholds of Representation’, *Electoral Studies*, Vol.8, No.1 (1989), pp.105–16. The number of seat-winning parties (n_s) is related to the empirical threshold approximately as $n_s = (60 \text{ per cent}/T)^5$.
 6. Arend Lijphart, *Democracies: Patterns of Majoritarian and Consensus Government in Twenty-One Countries* (New Haven, CT: Yale University Press, 1984), pp.60–66. A very different strategy-oriented approach is used by Michael Laver and Kenneth A. Shepsle, *Making and Breaking Governments: Cabinets and Legislatures in Parliamentary Democracies* (Cambridge: Cambridge University Press, 1996).
 7. Lijphart, *Electoral Systems*, p.12. This broad correspondence should not be driven to absurd lengths, with the purpose of denying any similarity. Everyone recognizes, for instance, that a legal threshold means a sharp cutoff, while decreasing magnitude means a gradual increase in small-party penalty. Many details of electoral rules may blur the M- T_L correspondency, without abolishing it.
 8. Effective magnitude was proposed as the unifying measure by Rein Taagepera and Matthew S. Shugart, *Seats and Votes: The Effects and Determinants of Electoral Systems* (New Haven, CT: Yale University Press, 1989). Lijphart, *Electoral Systems*, preferred effective threshold. The two are approximately convertible into each other, but one must exert caution not to confuse the district-level and nationwide indicators; see Rein Taagepera, ‘Effective Magnitude and Effective Threshold’, *Electoral Studies*, forthcoming. These overarching indicators need further refinement, in view of the enormous variety of detail in electoral rules. Relatively recent overviews and discussions of specific aspects include Bernard Grofman and Arend Lijphart (eds.), *Electoral Laws and Their Political Consequences* (New York: Agathon Press, 1986); Arend Lijphart and Bernard Grofman (eds.), *Choosing an Electoral System: Issues and Alternatives* (New York: Praeger, 1984); Dieter Nohlen, *Elections and Electoral Systems* (New Delhi: Macmillan India, 1996); Richard S. Katz, A

- Theory of Parties and Electoral Systems* (Baltimore, MD: Johns Hopkins University Press, 1980).
9. An illustrative graph of N vs. M, using various allocation rules, is given by Rein Taagepera and Edgar Kaskla, 'Effect of District Magnitude on the Number of Parties: A Quasi-Experiment', unpublished; reproduced in Taagepera and Shugart, op. cit., p.265.
 10. Cox, op. cit., pp.203–21; Octavio Amorim Neto and Gary W. Cox, 'Electoral Institutions, Cleavage Structures, and the Number of Parties', *American Journal of Political Studies*, Vol.41, No.1 (1997), pp.149–74; Lijphart, *Democracies*, pp.127–49.
 11. Maurice Duverger, *Political Parties: Their Organization and Activity in the Modern State* (New York: Wiley, 1963); Rein Taagepera and Matthew S. Shugart, 'Predicting the Number of Parties: A Quantitative Model of Duverger's Mechanical Effect', *American Political Science Review*, Vol.87, No.2 (1993), pp.455–64. Assembly size itself depends heavily on population (P) represented, through a cube root law which is observed empirically and supported by a model, based on minimizing the number of communication channels: $S = P^{1/3}$. See Rein Taagepera, 'The Size of National Assemblies', *Social Science Research*, Vol.1 (1972), pp.385–401, and Taagepera and Shugart, *Seats and Votes*, pp.173–83. The difficulty of defining parties in the Chilean context has been addressed by Shugart and Carey, p.220; Peter Siavelis, 'Continuity and Change in the Chilean Party System', *Comparative Political Studies*, Vol.30, No.6 (1997), pp.651–74; and Peter Siavelis, 'Executive-Legislative Relations in Post-Pinochet Chile: A Preliminary Assessment', in Scott Mainwaring and Matthew S. Shugart (eds.), *Presidentialism and Democracy in Latin America* (Cambridge: Cambridge University Press, 1997), pp.321–62. Siavelis maintains that Chile's traditional multi-party constellation has re-emerged despite the two-seat districts, but he also recognizes that at most two blocs can hope to receive significant seat shares, so that the system's operational characteristics 'more closely approximate a single-member system precisely because the magnitude is so low' (p.358).
 12. Cox, op. cit., especially pp.13–33; Lijphart, *Electoral Systems*, pp.78–94. For previous discussion of Duverger's rule, see in particular three articles in Grofman and Lijphart: William H. Riker, 'Duverger's Law Revisited', pp.19–42; Giovanni Sartori, 'The Influence of Electoral Systems: Faulty Laws or Faulty Methods?' pp.43–68; and Maurice Duverger, 'Duverger's Law: Forty Years Later', pp.69–84.
 13. Lijphart, *Democracies*, p.148; Rein Taagepera and Bernard Grofman, 'Rethinking Duverger's Law: Predicting the Effective Number of Parties in Plurality and PR Systems – Parties Minus Issues Equals One', *European Journal of Political Research*, Vol.13 (1985), pp.341–52; Rein Taagepera, 'The Number of Parties as Function of Heterogeneity and Electoral System', *Comparative Political Studies*, forthcoming; Amorim Neto and Cox, op. cit.
 14. Lijphart, *Electoral Systems*, p.108; Taagepera and Shugart, *Seats and Votes*, p.141.
 15. Wilma Rule and Joseph F. Zimmerman (eds.), *Electoral Systems in Comparative Perspective: Their Impact on Women and Minorities* (Westport, CT: Greenwood, 1994); Richard E. Matland and Michelle M. Taylor, 'Electoral Systems Effects on Women's Representation: Theoretical Arguments and Evidence from Costa Rica', *Comparative Political Studies*, Vol.30, No.2 (1997), pp.186–210.
 16. Taagepera and Shugart, *Seats and Votes*, p.100.
 17. The actual testing is difficult. On the one hand, the election results immediately preceding and following the change in rules are affected by the learning process. On the other, if one takes into consideration elections much before and after the change, many other factors also may have shifted. Still, effects in the expected direction can be observed. See Matthew S. Shugart, 'Electoral Reform in Systems of Proportional Representation', *European Journal of Political Research*, Vol.21 (1992), pp.207–24.
 18. Nigel S. Roberts, "'A Period of Enhanced Surprise, Disappointment, and Frustration'? The Introduction of a New Electoral System in New Zealand', in Jørgen Elklit (ed.), *Electoral Systems for Emerging Democracies: Experiences and Suggestions* (Copenhagen: Danida, 1997), pp.63–74.
 19. Andrew Reynolds and Ben Reilly, *The International IDEA Handbook of Electoral System Design* (Stockholm: International Institute for Democratic and Electoral Assistance, 1997).

20. Reynolds and Reilly, *op. cit.*, p.119.
21. In view of multi-seat plurality rule in two-seat districts, $M_e=5$. The effective number of assembly parties predicted by $N_s=.85(SM)^{3/16}$ is 1.26. The actual value is 1.30.
22. See Krzysztof Jasiewicz and Andrzej Tymowski, 'Poland's New Political Landscape', *ACE Analysis of Current Events*, Vol.10, No.1 (1998), pp.6–10. For a typical view sceptical of Duverger, barely one month prior to the Polish September 1997 elections, see Katarzyna Stanclik, 'Electoral Law and the Formation of Political Party Systems in the New Eastern European Democracies', Annual Meeting of the American Political Science Association, Washington, 28–31 Aug. 1997.
23. Reynolds and Reilly, p.125.
24. W.J.M. Mackenzie, 'The Export of Electoral Systems', *Political Studies*, Vol.5, No.3 (1957), pp.240–57; Harry Eckstein, 'The Impact of Electoral Systems on Representative Government', in Harry Eckstein and David E. Apter (eds.), *Comparative Politics: A Reader* (New York: Free Press, 1963), pp.247–54.