The Role of Electoral Systems in the Resolution of Ethnic Conflict

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The difficulty of establishing democracy in ethnically divided countries can be traced to the tendency of parties to divide on ethnic lines, and to become more or less mono-ethnic. To overcome this problem, a range of eleven new electoral systems is put forward, designed to provide each party with strong electoral incentives to become pan-ethnic, that is, to seek the votes of each ethnic group, and to respond to the concerns of each ethnic group. Each new system is a modified form of proportional representation, which allocates one-half of the seats in proportion to each party's first-preference votes, as a guaranteed minimum, and allocates the remaining half of the seats as a pan-ethnic incentive, to reward parties for obtaining votes from each ethnic group. Each new system uses, to provide this pan-ethnic incentive, one or both of the following two basic principles: Two-Party Competition and the Distributed Vote. Systems using the first principle set up any number of two-party competitions, in each of which the two parties compete for the votes of the whole electorate. A party gets more seats not only by getting more first-preference votes, but also by getting a higher non-first ranking from electors who give their first preferences to some other party. This gives the party the incentive to appeal more widely, to electors of ethnic groups and other groups to which it did not appeal before, in order to obtain a higher non-first ranking from them. Systems using the Distributed Vote operate by rewarding a party with more seats for getting an even distribution of its votes between the different ethnic groups. Should a system become acceptable, the dominant parties will share their influence with the previously excluded minority, resulting in a more stable and peaceful political system.

Introduction

In ethnically divided countries, democracy rarely functions well. Under the usual types of electoral system, parties tend to divide on ethnic lines, and to become more or less mono-ethnic, that is, they appeal to and draw votes from only one ethnic group. This makes it difficult to create a stable government which is responsive to all ethnic groups. If one party gets a majority of seats and forms the government, as in pre-1972 Northern Ireland, this government will tend to be unresponsive to the ethnic minority.

If no party has a majority of seats, and a majority coalition is formed in the normal manner, then again there is likely to be an ethnic minority which is excluded, and to which the government is unresponsive. On the

other hand, the consociationalist solution, a power-sharing coalition of parties of all ethnic groups, is likely to be unworkable and prone to deadlock, especially when the ethnic conflict is severe, and power-sharing and compromise are most needed.

What therefore seems to be required is an electoral system which discourages ethnic nationalism, and gives each party the incentive to become pan-ethnic, that is, to become a party which draws its candidates from each ethnic group, and which responds to and seeks votes from each ethnic group. With such pan-ethnic parties, the ethnic power-sharing would take place not between the parties, as under consociationalism, but instead within each party. Instead of the consociationalist scheme where mono-ethnic parties negotiate after the elections in the attempt to reach a compromise, the system would give each party the incentive to draw up before the elections its own compromise policy which responded to the concerns of each ethnic group.

If such a system could be achieved, the ethnic minorities would be well protected: whatever parties won the election and formed the government, they would always be pan-ethnic parties, and the government would be responsive to the needs of the ethnic minorities, as well as to those of the majority.

This paper therefore puts forward a range of new electoral systems, in fact eleven of them, designed to provide each party with strong incentives to seek the votes of and respond to each ethnic group. This pan-ethnic incentive is achieved in various ways, as follows.

Each new system is a modified form of proportional representation, which allocates one-half of the seats in the normal way, in proportion to each party's first-preference votes, and allocates the remaining half of the seats as a pan-ethnic incentive, to reward parties for obtaining votes from each ethnic group. Thus a party receives a one-half share of seats as a guaranteed minimum, and has the opportunity of increasing its seats above the minimum by extending its appeal, especially to those ethnic groups from which it has previously obtained few votes.

All the new systems use one or both of the following two basic principles for providing this pan-ethnic incentive: Two-Party Competition, and the Distributed Vote. Systems using the first principle set up any

number of two-party competitions, in each of which the two parties compete for the votes of the whole electorate. A party gets more seats, or (in some systems) an increased chance of government office, not only by getting more first-preference votes, but also by getting a higher non-first ranking from electors who give their first preferences to some other party. This gives the party the incentive to appeal more widely, to electors of ethnic groups and other groups to which it did not appeal before, in order to obtain a higher non-first ranking from them. Systems using the Distributed Vote operate by rewarding a party with more seats or increased chance of government office, for getting an even distribution of its votes between the different ethnic groups. For example, in Northern Ireland, a party which gets votes from both the Catholics and the Protestants, will be given more seats than a party which gets the same number of votes, but only from the Protestants.

Association System

The basic structure of the Association System, is that parties join together into two-party "associations". (A party does not have to join an association, but if it does not, it effectively loses half of its seats, that is, it gets a percentage of seats equal to one-half of its percentage of first-preference votes.) Any association thus formed gets seats according to the total of first-preference votes of the two parties it contains. Each party in the association then gets a share of the association's seats in proportion to the number of voters who prefer it to the other party in the association (except that the party cannot get less than a certain guaranteed minimum, which again is a percentage of seats equal to one-half of the party's percentage of first-preference votes).

For example, let us suppose that in Northern Ireland, the two main Protestant-oriented parties, the DUP and the UUP, form an association. How big a share of the association's seats the DUP will get, will depend on how many of the Catholics, and of those Protestants who give their first preferences to neither of these two parties, prefer the DUP to the UUP. Thus the DUP (and also the UUP) will have an incentive which it did not have before, to appeal to Catholics and to moderate Protestants.

Thus the operation of the Association System has these two main features: (1) it gives each party, whether in an association or not, a guaranteed minimum percentage of seats equal to one-half of its

percentage of first-preference votes; (2) it gives any party which joins an association, the chance of greatly increasing its seats above its minimum (normally to about twice its minimum, but possibly to about three times its minimum), by competing with the other party in the association, for the non-first-preference votes of the rest of the voters, the ones who do not vote first preference for either party in the association. Thus each party is given the incentive to appeal more widely, and in particular to appeal to those ethnic groups to which it did not appeal before, since under the new system it is now able to increase its seats by doing so. A more detailed account of the Association System is as follows. The parties join up into two-party associations as described above. The ballot paper carries the names of the parties, and any two parties which are in the same association are indicated, and placed next to each other on the ballot paper.

The elector is asked to give an XX-vote (that is, by writing in an "XX") to the party which he or she most prefers. The electors are also asked to give an X-vote (by writing in an "X") to that party they prefer, in any other association in which they have a preference between the two parties in it. (If an elector X-votes for both parties in the same association, then both these X-votes are disregarded. If an elector XX-votes for one party and X-votes for the other party in the same association, then the X-vote is disregarded.)

The seats are allocated between the parties by a two-stage process: (1) each association gets seats according to the first-preference votes (that is, XX-votes) cast for the two parties in it; (2) in each association, each of the two parties in it gets a share of the association's seats in proportion to the number of voters who prefer it to the other party in the association.

The first stage, the allocation of seats between the associations, is as follows. If in any association the party with fewer XX-votes has at least two-thirds as many votes as the party with more votes, then the association gets seats in proportion to the total XX-votes of the two parties. If the smaller party has less than two-thirds as many votes as the other party, then the association is penalized by getting seats in proportion to 2.5 times the votes of the smaller party.

However, there are three exceptions to this. First, if, for any association, there are any areas of the country in which one or both of the parties have not run a candidate, then the seats of the association are reduced proportionately (for example, if these areas without candidates contain one-third of the electorate, the association loses one-third of its seats). Second, there is a maximum limit on an association's number of seats: it must not get more than one-half of the total seats. Third, there is a minimum limit to an association's seats: it must not get less than the sum of the two parties' guaranteed minimum percentages of seats, that is, one-half of the sum of the two parties' percentages of XX-votes.[1]

The second stage of the process is the allocation of the seats of each association between its two parties. Each party gets a share of the association's seats in proportion to the total of votes cast for it, both its XX-votes and its X-votes. However, there is one exception to this: if this formula would give one or other of the two parties less than its guaranteed minimum (its minimum being a percentage of the total seats equal to one-half of its percentage of the total XX-votes), then that party gets its guaranteed minimum, and the other party gets the remaining seats of the association.

Let us consider a possible scenario of how this Association System might operate if used in Northern Ireland. To avoid losing half its seats, any party (let us call it P) must join an association. To maximize its seats, P therefore seeks as an "associate," a party which (1) is unlikely to get less than two-thirds as many XX-votes as P does itself, and (2) is unlikely to be preferred to P by any more than a bare majority of voters. If P cannot find an acceptable associate, then P is likely to split itself into two parties of similar size, which can then form an association.

The extreme Catholic Sinn Fein expects that, if it joins an association with any other party, few electors will prefer it to its associate and give it X-votes, and so it splits into two parties, which form an association. The moderate Catholic SDLP would probably lose seats if it joined in an association with the much smaller non-sectarian Alliance Party, and so it splits into two parties which form one association. A new Center Party is formed by moderate politicians from both communities, and forms an association with the Alliance Party. A somewhat reduced UUP (having lost support to the Center Party) forms an association with the DUP.

In each association, the two parties will be competing strongly for the X-votes of those electors who give neither of them first preference, since a party which does not compete, is likely to lose about half of its seats to the other party. Thus formerly mono-ethnic parties will need to appeal to, and adopt a policy responsive to, the other ethnic group-the UUP and DUP to the Catholic electors, the ex-Sinn Fein and ex-SDLP parties to the Protestants. Even the already pan-ethnic Alliance and Center parties will need to broaden their appeal, to be more responsive to the concerns not only of the moderate voters, but also of the voters more to either extreme, both those who are Catholics and those who are Protestants. A majority coalition of the most moderate parties will then be formed. This coalition is likely to include at least one formerly pro-Protestant party, and at least one formerly pro-Catholic party, since in order to attract Catholic votes, a formerly pro-Protestant party will publicly support the inclusion of a pro-Catholic party rather than another pro-Protestant party, and vice versa.

Thus in conclusion, the Association System has the following effects. (1) It gives each of the two parties in an association the incentive to broaden its appeal, and in particular to appeal to that ethnic group to which it did not appeal before. (2) It gives the parties of different associations an incentive to converge towards each other in policy, that is, towards a similar moderate policy responsive to each section of electors and to each ethnic group. (3) The Association System tends to increase the number of parties, since sometimes a party will be motivated to form its own association by splitting into two parties.

In most electoral systems, greater fragmentation should be regarded as a disadvantage, since it tends to increase the sectionalism of parties, and the divergence between parties in policy. However, under the Association System, this fragmentation has the opposite effect-the party competition within associations promotes wider and more pan-ethnic responsiveness, and convergence in policy between parties. Hence the disadvantage of this fragmentation is greatly mitigated, if indeed it remains a disadvantage at all.

Territorial List Scheme

The Association System as so far described, has done no more than determine each party's number of seats. But to qualify as a complete electoral system, it must also allocate the seats won by a party between

its candidates, and allocate these candidates to the areas of the country for which they are to have responsibility. It would be possible to do this by means of party lists in multi-member constituencies, just as in the usual forms of Party List PR. However, this paper proposes an alternative scheme of party lists combined with single-member territories, which will be referred to as the Territorial List Scheme. The advantages claimed for this scheme are (1) that it would give much better contact between the individual MPs (Members of Parliament) and the electors each one represents, and (2) that it would promote greater unity and cohesion in each party. This party cohesion is important for the Association System, which aims to transform the currently more or less mono-ethnic parties, into pan-ethnic parties, responsive to each ethnic group. This transformation is more likely to be achieved, if each party can be made to function as a coherent and disciplined team of MPs, united behind the objective of obtaining votes from each ethnic group, and so maximizing the party's seats. Thus the Territorial List Scheme is put forward as an important part of the Association System, and its rules are as follows.

Shortly before the general election, each party registers its provisional list of candidates, which normally will include the party's elected MPs of the immediately previous term. A separate candidate selection ballot is then carried out for each party, under the auspices of the electoral authority. In this ballot, all persons on the party's provisional list are placed as candidates on the ballot paper, and only persons on this provisional list may vote, voting for as many candidates as they like. The ballot is secret. To be accepted on to the party's final list, a person must obtain votes from at least one-half of the members of the provisional list. Further persons may be voted on to the final list, by the assenting vote of a majority of those already on the final list, in secret ballot. The final list of candidates is then placed in the order in which they are to receive seats, again by vote of the candidates on that list, in another secret ballot. In this, the voting is preferential, that is, the person votes by writing "1" for a first preference, "2" for a second preference, and so on, for as many candidates as they wish. The candidates on the list are then placed in order by successive applications of the Alternative Vote method.[2] That is, one candidate is chosen by AV, to occupy the first place on the list. From the remaining candidates, one is chosen by AV to occupy the second place, and so on.

Under the Territorial List Scheme, the country is divided into small electoral areas referred to as "tracts," there being let us say twice as many

tracts as there are seats in the parliament to be elected. From these tracts, each party creates a number of "territories," a territory being a cluster of tracts, as many as the party chooses, in which the party places one of its candidates. The party may not put more than one candidate in the same tract, that is, its territories may not (but they will, of course, overlap the territories of each other). But the territories may be of any size, as is decided by the party. The party may elect only one MP for each territory it has created. Thus each will be careful to create at least as many territories as the number of seats it thinks it is going to get, and in order not to lose potential and seats, it will create them of such size that together they cover the whole country.

The territories are filled by the candidates at the top of the party's list. The decision about the size and number of territories, about which candidate is to be placed in which territory should be by the MPs of the party. The procedure suggested is that they elect a candidate to draft a territory plan for the whole country, which is finalized by a vote of the MPs of the party, in secret ballot. There is a separate ballot paper for each tract, which carries the name of the candidate standing in the tract. The candidates are placed on the ballot paper in order of the votes in the previous elections, the candidates of the largest being placed at the top. In the case of new parties, the more their territories contain, the lower down their candidates are.

Thus it is quite possible that the party will get fewer seats than the number of territories it has created. If so, those two adjacent territories in which it has the fewest votes are considered to be merged into one territory. If necessary, a further merger out of the two adjacent territories which then have fewest votes, and so on, until the party has as many territories as it has seats, and one candidate (the one who obtained votes) can be elected from each territory. When an MP dies or retires during the legislative term, then a candidate is taken from the top of the party's list of non-elected candidates.[3]

Thus the general effect of the scheme will be that large parties will create small territories, and many of them, and small parties will create large territories. Each tract of the country will have an elected MP of each party to take responsibility for it, while the territory of each MP will not be any bigger than is necessary for the MP's party to be sure of covering the

whole country. Thus this scheme would appear to maximize the degree of contact between the individual MPs and the electors each one represents.

In order to strengthen the parties, it is important that a substantial amount of state funding should be paid to the parties as a regular income throughout the legislative term, each party getting a share in proportion to its seats. This party income should be paid, not to the individual MPs of the party, but to the party's team of MPs as a whole, or to an organization they set up to receive it. The object of this subsidy is to help establish each party as an independent team of MPs, able to finance its own campaigning, and as far as possible without financial or other ties to outside groups, in particular without ties to any one ethnic group. Such an independent team will be better able to seek and attract votes from each ethnic group, and so retain or increase its seats.

Another factor helping to establish each party as an independent and coherent team, is the procedure for drawing up the party list. For the individual MPs of a party will be fully aware that they will face a candidate selection ballot before the next election, at which the other MPs of the party can, in secret ballot, with no risk to themselves, and without need to explain or justify, simply expel them without appeal from the party's list, or place them so low down on the list that they are very unlikely to get a seat. Thus any MP who wants to be reelected will have a strong incentive to cooperate with the rest of the party team, in their efforts to develop and promote a policy which will get votes from each section and from each ethnic group, and so retain or increase the party's seats. Any MP who refuses to abandon the traditional ethnocentric policy and rhetoric which presumably was used by the party under the previous systems, is likely to be expelled from the party list. If a party has split into two parties to form its own association (as Sinn Fein and the SDLP were assumed to do in the above scenario), then this factor, and also the party subsidy, will enable each of the two new parties to establish itself as an independent team, competing strongly with the other party in the association for votes and seats.

Thus in conclusion, the provisions of the Territorial List Scheme can be expected to strengthen and unify each party, building up its independence, and encouraging its MPs to cooperate as a team, one which is responsive to each section of electors and to each ethnic group. Thus the Territorial List Scheme will reinforce the effectiveness of the

Association System, in transforming the currently more or less mono-ethnic parties, into pan-ethnic parties, responsive to each ethnic group.

Distributed Vote

The Association System is one general method for protecting the ethnic minorities. Another is that of the Distributed Vote. The principle of the Distributed Vote is that it rewards a party for getting an even distribution of votes as between the different ethnic groups, and penalizes it for getting an uneven distribution. For example, suppose that in Northern Ireland, party A gets the votes of 20% of the Catholics, and 24% of the Protestants, while party B gets the same number of votes as A, but gets them all from the Protestants. The Distributed Vote principle requires that A should get more seats than B, thus providing an incentive for any party to get votes from each ethnic group. There are three systems, referred to as Tract DV, Set DV, and Ethnic-Roll DV, which could be used to implement this Distributed Vote principle. The way in which, under each system, the number of seats of each party is determined, is set out below. (The way in which, under each system, a party's seats are to be allocated to its candidates, is not set out, but it is proposed that this should be done by means of the Territorial List Scheme, as described in Section 3.)

Tract Distributed Vote

Under Tract DV, the country is divided into small "tracts," as with the Territorial List Scheme, except that the tracts will tend to be smaller, and of irregular size and shape. The reason for this is that the boundaries of each tract are drawn so that it contains as high as possible a percentage of electors of one or other of the ethnic groups, that is, so that the tract is as mono-ethnic as possible. For example, in Northern Ireland, each tract should be drawn up so as to consist of as high a percentage as possible, either of Protestants, or of Catholics.

Then, in order to determine each party's number of seats, the following procedure is carried out. For each tract, each party's percentage of the votes is calculated, according to the following formula: the party's votes in the tract, divided by the sum of all parties' votes in the tract, multiplied by 100. From these tract percentages, each party's "distributed percentage" is calculated, this being its percentage of the votes in that one-fifth of tracts in which the party obtains its lowest percentages of

votes. (For this purpose, one-fifth of tracts is defined as a set of tracts containing one-fifth of all electors.) Each party then receives a share of the seats in proportion to its distributed percentage (except that, as under the Association System, no party must get less than its guaranteed minimum, which is a percentage of total seats equal to one-half of its percentage of total votes).[4]

The effect of Tract DV can be seen by considering its use in Northern Ireland. If for example a party gets very few votes from the Catholics, it will get a very low percentage in those tracts which are mainly or entirely Catholic. Thus its "distributed percentage"-its percentage in its worst one-fifth of tracts-will be very low, and it will lose seats, perhaps as many as one-half of its seats, if its distributed percentage is low enough, compared to that of the other parties.

Tract DV thus gives each party the incentive to get votes as evenly as possible from all tracts, and hence, in so far as each ethnic group has tracts in which it is concentrated, it gives each party the incentive to get votes from each ethnic group. Thus Tract DV is suitable for a country where the ethnic minority or minorities are fairly large, and where it or they tend to be concentrated in particular localities.[5]

However, if one (or more) of the ethnic groups is small, and/or is dispersed more or less evenly over most tracts, Tract DV will provide little or no extra incentive above the normal, for a party to seek its votes. For this reason, the other two forms of the DV system, Set DV and Ethnic-Roll DV, are put forward, which are likely to be more effective in protecting such small or dispersed ethnic groups.

Set Distributed Vote

In Set DV, the electors are registered on separate ethnic electoral rolls, each roll containing one ethnic group.[6] The country is divided into tracts, but in this case, unlike under Tract DV, the tracts are given any convenient boundaries, and no attempt is made to make them mono-ethnic. A "set" is defined as a set of electors in one or more tracts, who are all registered on the same ethnic roll. (If an ethnic roll has only a small percentage of the electors in some area, then for that roll electors from several tracts will need to be included in one set.) A party's "distributed percentage" is then defined as its percentage of the votes in that one-fifth

of sets in which the party obtains its lowest percentages of votes. Each party then receives a share of the seats in proportion to its distributed percentage, except that here again no party must get a percentage of seats which is less than one-half of its percentage of votes.

The effect of Set DV is that if a party gets a much lower percentage of votes from any one ethnic roll than it gets from the electors as a whole, then it will get a low percentage in the sets of that roll. Thus it will get a low distributed percentage, and so will lose seats, perhaps as much as one-half of its seats, if its distributed percentage is low enough, in comparison with the distributed percentages of the other parties. This gives the party the incentive to appeal to each ethnic group, irrespective of whether the group is concentrated in some localities, or is spread out widely over the country. Thus Set DV should be used rather than Tract DV, in a country where one or more of the ethnic minorities is widely dispersed, or is a small minority, with a low percentage of votes even in those areas where it is concentrated. For example, in several East European countries, the Roma (or Gypsies) might be such a minority.

Ethnic-Roll Distributed Vote

In Ethnic-Roll DV, as in Set DV, the electors are registered on separate ethnic electoral rolls, each roll containing one ethnic group. In order to allocate the seats, each party's number of "points" is calculated. A party's number of points is whichever is less, either one-half of its percentage of the votes in all rolls, or its lowest percentage of votes in any one roll. Each party then gets a share of the seats in proportion to its points, except that, as before, no party must get a percentage of seats which is less than one-half of its overall percentage of votes.

The effect of Ethnic-Roll DV is that if in each roll a party gets at least half its overall percentage (that is, if it gets what might be regarded as adequate support in every roll), then it is given seats in proportion to its votes, and loses no seats at all. A party loses seats only if in any roll it gets less than half its overall percentage, but it can lose as much as one-half of its seats if its lowest percentage in any one roll is low enough, in comparison with the lowest percentages of the other parties. This gives the party the incentive to appeal to each ethnic group, and especially to that group from which it formerly obtained the lowest support.

But the most important point is this: a party loses the same number of seats by getting a given lowest percentage, however few electors there might be in the ethnic roll concerned. Thus Ethnic-Roll DV offers the strongest protection to a numerically small ethnic minority. Provided the minority can be put on a separate roll, each party will be motivated to respond to its needs, however few electors the group contains. Nevertheless, this system does not give a small ethnic group excessive influence over the policy of each party, but only the capability of preventing discrimination against it. For a party only loses seats if its percentage of votes from a group is less than half its overall percentage, which indicates that the party is discriminating against that ethnic group. Thus the use of Ethnic-Roll DV should be considered, in a country where there are small ethnic groups which need protection.

Distributed-Vote Association System

The Distributed Vote can be used on its own, as another distinct electoral system, as was described in Section 4. However, this system is very strong in its effects on each party, since it is possible it could cause a party to lose all its seats. It might therefore be necessary to reduce the risk to the parties by using the Distributed Vote in combination with the Association System. In this combined system, let us say two-thirds of the seats could be divided between the parties by means of one or other of the three forms of the Distributed Vote. This system will guarantee to each party a percentage of the seats equal to a third of its percentage of first-preference votes. At the same time it will increase the probability that each ethnic group will receive, above what would be obtained by the use of either system used.

Which of the three forms of the Distributed Vote should be used on the size of the minority ethnic group, and on the degree to which it or they are concentrated in locations, or are spread out more or less evenly over the country? With this combined system, the country is divided into tracts, as for the Distributed Vote, and the ballot paper and the method of voting is that of the Association System.

For the purpose of determining the Distributed Vote, only the first-preference votes (that is, "XX" votes) are counted. Thus a party will have two reasons to seek votes from any ethnic group. One is not to get a low percentage of first preferences from the group, since it could give the party

a low distributed percentage and would lose it. The other is to get more members of the group to prefer it over the party in its association, whether the first and non-first, in order not to lose seats to this other party. Thus, as with either the Distributed Vote or the Association System used, the combination of the two systems can be expected to give each party a more certain and reliable incentive to seek votes from and respond to each ethnic group, and to give each ethnic group a surer degree of representation.

Coalition Government

So far in this paper, seven alternative electoral systems have been put forward: the Association System, three forms of the Distributed Vote, and the Association System combined with each of the three forms of the Distributed Vote. With the Association System or its combined forms, it is impossible for any one party to get a majority of the seats, and with the Distributed Vote, it does not appear to be likely. Hence with the Association System there will always be coalition government, and with the Distributed Vote, it will at least be probable. How far then will the parties produced by these systems be able to cooperate in a coalition government, and how far will this government be stable and effective?

Now any of these new systems can be expected to exert over time on each party and each candidate a steady incentive towards moderation, towards a policy responsive to the needs of each ethnic group, and towards a center position, not only on the ethnic dimension, but also on any other dimension—such as the left-wing/right-wing dimension—which is of importance to the electors. Thus these systems encourage the parties to converge towards each other, both in policy (towards this moderate center position), and (in that each party appeals to all groups) in the groups to which they seek to appeal. Thus these systems are very different in their effects from the usual forms of proportional representation, which tend to encourage in each different party a narrow focus on the interests of one segment of the electorate, and provide the incentive for parties to diverge in policy, rather than to converge.

Even in the first parliament elected under the new system, an extremist party will have an incentive to become more moderate and broaden its appeal, in order to get more seats in the next election. It thus seems likely that, even in this first parliament, there will be at least a majority of the MPs from moderate pan-ethnic parties, so that a coalition

of these parties can be formed. Thus although under the Association System there might be more parties than before, it can be expected that, since these parties would tend to be moderate and similar to each other in policy, a stable and effective coalition government could be formed, one which was widely acceptable to the electorate, and responsive to each ethnic group.

Direct Election of Government

The new electoral systems so far described, have been ones which will require government by coalition. In contrast, this section puts forward a new system which also is designed to encourage pan-ethnic parties, but which actually guarantees that the government will be a single party. This new system, which is referred to as Direct Election of Government or DEG, uses the same basic mechanism as does the Association System, for providing this pan-ethnic incentive, that is, it uses the mechanism of Two-Party Competition. But the difference is that, under DEG, the election serves two functions, not only the usual function of determining each party's number of seats, but also that of electing one of the parties to be the sole government party.

The government party is thus elected by direct vote of the whole electorate, which votes preferentially, each voter placing the competing parties in order of his or her preference. The method proposed for electing the government party is a variant of the Condorcet method.[7] This can be expected to provide the competing parties with the incentive to follow a moderate center policy, equitably responsive to each section of the electors, and to each ethnic group.

But how is the party thus elected, which will normally be far short of a majority of seats, enabled actually to govern? This is achieved by the following two provisions: (1) if the government party has fewer than 30% of the seats, extra seats are created and given to it, equal to the number by which it fell short of 30%; (2) each of its MPs is given a weighted vote, sufficient to provide the party as a whole with a 55% majority of the votes in the parliament.[8]

One possibility is to combine this scheme for the election of the government party, with some form of proportional representation, which would give each party seats in proportion to its first-preference votes.

However, PR has the drawback that it tends to give parties the incentive to become more sectionalist, and to diverge from each other in policy, as each party seeks the votes of and responds to a different section of the electors, or a different ethnic group.

It is desirable that, in contrast, the electoral system used to give each party seats, should reinforce the incentive which is provided by Condorcet in electing the government party, for each party to be responsive to each section of electors. This paper therefore puts forward a new electoral system, All-Preference Representation (APR), which resembles the Association System, except that a party's seats depend not, as in the latter system, on a competition with one other party, but on a series of two-party competitions with each of the other parties. APR thus gives a party seats, not only according to its number of first-preference supporters, but also according to the rankings given to it, by all the other voters, the ones who do not give it first preference. Under APR, as with the Association System, a party can lose up to one-half of its seats, by getting a low ranking from these latter non-first-preference voters. This gives each party the incentive to appeal more widely, to sections of electors and to ethnic groups to which it did not appeal before, in order to obtain a higher non-first ranking from them. Thus the use of APR to determine each party's seats, reinforces the incentive provided by the Condorcet election of the government, for each party to be responsive to each section of electors and to each ethnic group.

But with APR, how are the seats won by a party allocated between its candidates, and how are these candidates allocated to the areas of the country for which they are to have responsibility? Just as with the Association System, this is done by means of the Territorial List Scheme, as described in Section 3.

Incumbency Condorcet

To elect the government party, a method of election is required, which gives the government thus elected the incentive to be responsive to each section of electors, and to each ethnic group. Perhaps the best way of providing this incentive to all-round responsiveness, is to use one of the variants of the Condorcet method. The incentives which Condorcet provides can be seen by considering an example where there are three parties A, B and C, in more or less equal competition. Then any one of

these parties, let us say A, will need to appeal to the first-preference supporters of B in order to get a majority over C, and to the first-preference supporters of C in order to get a majority over B. Thus in order to get itself elected under Condorcet, party A will have the incentive to appeal to all sections of the electorate, and to all ethnic groups.

But although Condorcet gives very desirable incentives, it has the drawback that sometimes there is no Condorcet winner to elect. For example, if 39% of voters vote ABC, 31% BCA, and 30% CAB, then there will be a cycle of parties, where A beats B by 69 to 31, B beats C by 70 to 30, and C beats A by 61 to 39, so that there is no party which beats each other party. Thus Condorcet needs to be supplemented by some other rule of election, such as the Alternative Vote, to use when there is no Condorcet winner, so as to ensure that some party will be elected.

However, this only leads to another problem. Consider the following example, where the percentages of votes are: 40 ACB, 25 CAB, 35 BCA. Then C is the Condorcet winner, and A is the party which would win under the Alternative Vote. This gives the supporters of A the incentive to vote strategically, by voting ABC, or just by voting for A alone without expressing any more preferences. This will create a cycle, where A beats B beats C beats A, so that the Alternative Vote comes into use, and A is elected instead of C.

This possibility of strategy has important implications. As a result, the fact that a party has become the Condorcet winner, genuinely preferred by a majority to each other party, is no longer a guarantee that it will be elected. There is thus no guarantee that parties will always strive to become the Condorcet winner, or that the system will give them the desirable incentives to all-round responsiveness which we originally associated with Condorcet. What then can be done to modify the system, so as to guarantee these desirable incentives? The solution to the problem is to narrow down our focus, from the attempt to provide all parties with the required incentives, to the more manageable task of providing these incentives to only one party.

Now the party in which it is important to ensure all-round responsiveness, is clearly the government party, since it is on the actions of this party, not those of the opposition parties, that the welfare of the electors depends. And for such an incumbent government party, the

election which provides it with these incentives to respond, is not the past one at which it was elected, but the future one at which it may or may not be reelected. Thus in any election, what is important is the incentives which that election provides to that party which has been the government party in the immediately previous term. Let us refer to this party as "the incumbent."

A method of election is therefore put forward, which provides the required Condorcet-type incentives to the incumbent party. That is, the incumbent can be reelected only if it is truly the Condorcet winner (that is, it is sincerely preferred by a majority to each other party), and it cannot be reelected if it is not the Condorcet winner. The rules of this method of election, which will be referred to as Incumbency Condorcet, are as follows.[9]

(1) The incumbent is defined as that party which contains the largest number of candidates who were MPs of the government party or parties in the term immediately preceding the election, and which contains enough such candidates to fill at least 20% of the seats.

(2) If no party beats the incumbent, then the incumbent is elected. (A is said to "beat" B if more voters prefer A to B than prefer B to A.)

(3) If only one party beats the incumbent, then this party is elected.

(4) If more than one party beats the incumbent, then the party which beats the incumbent by the largest margin is elected. (The margin by which A beats B is defined as: the number of voters who prefer A to B, minus the number of voters who prefer B to A.)

(5) If there is no party which conforms to the definition of incumbent, then one party is elected as the government party by means of the Alternative Vote method.

It will be clear from these rules that if the incumbent is the Condorcet winner (CW), then the incumbent must be reelected, and no strategic voting, or indeed sincere voting, by the supporters of some other party P, can prevent it from being reelected, and elect party P instead. The reason is of course that the supporters of P are only a minority, so that nothing they can do will elect P.

Similarly, if some other party is the CW, then the incumbent cannot be reelected, and there is no strategy by which its supporters can prevent its defeat. For let us suppose that it is expected that, on sincere voting, a party P will beat the incumbent and will be elected. Only those who prefer the incumbent to P will wish to elect the incumbent instead, but as a minority they will be unable to do it. But what if the incumbent is not the CW, not because some other party is the CW, but because preferences are cyclical, and no CW exists? In this situation, the party which beats the incumbent is elected. There is then no strategy by which the incumbent can be elected instead, because again, only a minority of voters prefer the incumbent.[10]

Thus the only way the incumbent party can get reelected is to become, or continue to be, the CW, that is, the party sincerely preferred by a majority over each other party, and there is no strategy by which its supporters can get it reelected if it is not the CW. In order to beat any one opposition party, and get itself preferred by a majority over it, it will need to appeal to the first-preference supporters of each other opposition party. Thus the system provides the government party with the incentive to be responsive to each section of the electorate, and to each ethnic group.

Similarly, the system gives the government party the incentive, in order to have a better chance of beating each opposition party, to move towards the center of the left-to-right policy dimension, or any other policy dimension which is of interest to the electors. What then can be said in conclusion, about the DEG system, this device of electing the government party by means of Incumbency Condorcet? First, however fragmented the legislature has been before the system is adopted, the system will provide government by a single party with at least 30% of seats, and with a majority of parliamentary votes. Second, this government party will tend to be a moderate center party, with strong incentives to be responsive to each section of the electorate and to each ethnic group. Third, even if the opposition has previously been extremely fragmented, it is likely that, probably by merger of smaller parties, one or more substantial opposition parties will be formed, in order to get a better chance of achieving a majority over the government party.

All-Preference Representation

As was explained above, APR gives a party seats, not only according to its number of first-preference supporters, but also according to the non-first rankings given to it, by all the other voters. The rules of APR are as follows.

If any party has more than 35% of first preferences, then the value of each of the votes giving it first preference is reduced, so that it has 35% of what is then the total of first preferences.[11]

Basically, APR is proportional representation, plus a correction for each party's lower preferences. Thus each party is given an initial allocation of a percentage of seats equal to its percentage of the first-preference votes in the whole country, just as under proportional representation. Each possible pair of parties is then considered, and for each pair, if one party is preferred to the other by more voters than the other is preferred to it, an appropriate percentage of seats is transferred from the party preferred by fewer voters to the party preferred by more voters.

This can be expressed more precisely as follows. In any pair of parties, let A be the party which is preferred by more voters, and B be the party which is preferred by fewer voters. The percentage of seats to be transferred from B to A, is calculated as follows. Let us call the percentage preferring A minus the percentage preferring B, the "preference difference" between A and B. (Note that these are not percentages of all voters, but only of those voters who are not indifferent between A and B.) The percentage of seats to be transferred from B to A is equal to whichever is less: either (1) B's % of first preferences, multiplied by A's % of first preferences, multiplied by twice the preference difference between A and B; or (2) B's % of first preferences, multiplied by A's % of first preferences, divided by twice the total % of first preferences of all parties other than B. In other words, (1) is transferred from B to A, except when (1) exceeds the maximum limit on seats transferable from B to A, which is (2).[12]

This APR formula guarantees each party a minimum percentage of seats, equal to one-half of its percentage of first preferences, however few lower preferences it obtains.[13]

Note that unlike Incumbency Condorcet, APR is completely strategy-proof, in that there is no way in which the supporters of a party can increase its seats above what they can obtain by voting sincerely. For example, if voters whose true preferences are ABC, instead vote ACB, this does not affect the seats of A, their first-preferred party, but only transfers seats from B to C, contrary to their true preferences.

What then will be the general effect of APR on a party's seats? First, let us suppose that all parties are moderate center parties, responsive to all sections of the electorate. Then any one party will be preferred to any other party by about 50% of the voters. Thus few or no seats will be transferred from one party to another, and each party will get a percentage of seats about equal to its percentage of first preferences. But if one of these parties moves away from a center position, let us say to the right (while the other parties stay at the center), the percentage of voters preferring it to any other party will be reduced, and it will lose seats to the other parties.[14]

Thus in conclusion, APR gives each party the incentive to appeal to electors of all sections and all ethnic groups, even to those who previously have given it their lowest preference, since if it gets a low ranking from enough of them, it could lose half its seats. Similarly, APR gives each party the incentive, in order not to lose seats, to move towards the center of the left-to-right policy dimension, or any other policy dimension which is of interest to the electors. APR thus strongly reinforces the incentives provided by Incumbency Condorcet, to be or become a moderate center party, and to be responsive to each section of the electorate, and to each ethnic group.

DEG Overview

This new system, Direct Election of Government (DEG), has the following properties. (1) It guarantees a single-party government with an adequate majority of parliamentary votes, however fragmented the legislature has been before the system is adopted. (2) This government party, and indeed each opposition party, is likely to be internally unified, functioning as a strong and coherent team. Thus the system can be expected to provide stable and effective government. (3) However uncompromising has been the political culture of the country which has adopted it, each party, and especially the government party, will be subject

to powerful incentives to adopt a moderate center policy, which is equitably responsive to the concerns of each section of the electorate, and of each ethnic group. This responsiveness to each ethnic group will be greatly strengthened, if the DEG system is modified to incorporate the Distributed Vote. (4) Any party which consistently follows such a moderate policy, can expect to achieve considerable stability in its number of seats, and so will be able to provide relatively safe seats for all but a small proportion of the individual MPs on its list. Thus the new system may well prove to be politically acceptable to the present power-holders.

However, the system may not be suitable for introduction in a country where the parties have already divided on ethnic lines, and become mono-ethnic, as for example is the case in Northern Ireland. For then at the first election, it is very likely that one of these mono-ethnic parties will be elected as the single-party government. Admittedly, the government party, and all the other parties, will be subject to powerful incentives towards moderation, and towards pan-ethnic responsiveness. Nevertheless, it may take some time for the parties to transform themselves into ones which are seen as truly pan-ethnic. Hence it may not be acceptable that the government should be entrusted to one party which might still be primarily associated with one ethnic group. For example, if DEG were used in Northern Ireland, in the first election, then probably the UUP, which so far has been a Protestant-oriented party, would be elected as the single-party government. No doubt, in order to increase its chances of being reelected, it would move towards a much more pro-Catholic policy, and adopt Catholics on to its list of candidates. But it still might not be acceptable to the Catholics to have as government a single party which they continued to regard as belonging to the other community.

The DEG system might therefore be more suitable for an ethnically divided country where not yet all the main parties have become mono-ethnic. In particular, DEG might be useful where a pan-ethnic main party is threatened with the loss of votes to one or more mono-ethnic parties, as appears to be the case in such countries as India and Malaysia. If DEG were adopted, the likely effect in such a situation would be that a pan-ethnic party would be elected as the government, and that the pan-ethnic party or parties would gain seats at the expense of the mono-ethnic parties, at least until the latter were able to convince the electors that they had changed to a more pan-ethnic position. Thus DEG might well be

introduced by such a pan-ethnic main party, not so much on the merits of the system, but out of self-interest.

Discussion

A range of eleven new electoral systems has been put forward in this paper, designed to protect the ethnic minorities, by giving each party the incentive to be responsive to each ethnic group. The systems differ in the strength of the pan-ethnic incentive they provide. The combined systems, the Distributed-Vote Association System and Distributed-Vote DEG, and of the three types of Distributed Vote, Ethnic-Roll Vote provides the strongest incentives. Whether a system is the most suitable, or is good enough, for a particular situation, will depend on the intensity of the ethnic conflict, on how far the parties have become mono-ethnic, on the size of the ethnic groups which need to be protected, and on the degree to which the ethnic groups are widely dispersed, or are concentrated in particular localities.

A number of questions have been raised about these systems, in previous presentations of them. Perhaps the most frequent question concerns the possible complexity of the systems, either for the voter, or for the officials counting the votes. Let us first consider the different systems from the point of view of the voter. With the Association System and its variations, the voters mark their first-preferred party with a double "XX", and mark any others of whom they approve with a single "X". With DEG, the voters put the parties in order of preference. This is simple enough. But will the voters understand what is being done with their votes? As with STV, the system used in Ireland and Malta, few will understand the details, but most will understand that the higher the preference they give to a party, the more likely is the party to get an extra seat, and under DEG, the more likely it is to be elected as government

With the Distributed Vote systems, the general principle of the systems, that a party should be rewarded for an even distribution of votes between the different tracts or ethnic groups, might or might not be understood, or if understood, be approved of by the voter. But this understanding or approval is not necessary for the voters to participate effectively in the system. Provided they vote, the parties will respond to their needs and concerns, more so than they would have done under systems that do not use the Distributed Vote.

Concerning the counting of the votes, under any of the proposed systems, this need not be excessively complex. A suggested method of counting, applicable to any of these systems, is as follows.

The votes in each tract, and in each ethnic roll if they are used, are counted separately. To count the votes in a tract, the ballot papers are first sorted into batches of papers with the same votes on them. For example, under DEG, where voting is preferential, papers are sorted into batches voting first preference for the same party, then each batch is sorted into batches according to second preferences, and so on. Then the number of papers in each batch is counted. Thus each paper will be sorted several times, once for each vote on it, and it will be counted once. On the basis of the number of papers in each batch, all the calculations to determine each party's seats and which party gets elected as government, can be carried out, either on paper or by computer, without any further counting.

Especially if it is carried out in this way, the counting of the votes for these systems appears to be no more complicated than for the Single Transferable Vote system, which is used for many years by various countries, and is clearly quite manageable.

Another criticism of the proposed systems is that they constitute a form of affirmative action, or positive discrimination, in favor of the ethnic minorities. However, this seems to be based on a misconception of the nature of the systems. In fact, the systems simply provide an incentive for a party to level up its appeal to the different ethnic groups, and to cease discrimination against any group, as indicated by getting a low vote from it. The systems do not favor minority groups as such, but favor any group, minority or majority, from which the party has been getting a low percentage of votes, and give the party the incentive to raise this percentage.

Another point which should be made clear, is that the proposed systems do not achieve their protection of the minorities by giving them some kind of veto, as in a consociationalist scheme. The parliaments elected by these systems will make their decisions by simple majority vote, not by special majority, and there will be no minority veto. Thus there seems no reason to expect any greater tendency to deadlock. Indeed, since the parties which the systems produce are likely to be more similar

in policy, the government can be expected to be less subject to deadlock than coalition governments formed under one of the usual systems.

It has been objected that these systems might sometimes deviate considerably from strict proportionality of representation. This is true, but they deviate for a purpose—in order to penalize a party by loss of seats for neglecting some group or other. But if a party responds to the incentives of the system, and draws votes about equally from each group, it will get seats about in proportion to its total of first-preference votes. What then is the likelihood that one of these new systems will be adopted? This depends to a great extent on its acceptability to the present parties and politicians of the country concerned. The more pan-ethnic parties will gain seats under the new system, and the more mono-ethnic parties will lose. If the parties can adjust to become about equally pan-ethnic and moderate, then the parties will get seats about in proportion to their first-preference votes, as under ordinary proportional representation. As with ordinary PR, there will probably be little change from election to election in each party's number of seats. If so, the system will provide safe seats for all but a small proportion of the MPs of the party, that is, those at the end of the party's list. Thus the system may well be acceptable on these grounds to most of the parties and most of the MPs. It is also possible that a considerable number of politicians will welcome the opportunity to change to a more pan-ethnic and inclusive policy, without risk of losing seats by doing so.

But will the new system be acceptable to the ethnic group (or groups) which have been dominant under the present system? Such a group will still have influence under the new system, indeed, it will probably have the major influence. Also, its politicians will still have office, but they will share it with the politicians from the previously excluded minority. Thus they may well prefer to exchange a not very important reduction in their influence, for greater security in a more stable and peaceful political system. The final question is whether these systems are too specialized, whether they are systems designed to deal with the problems of ethnic division. The answer is that the systems are designed to deal with any division of ethnicity in the electorate, whatever its basis, and to give each party the option to adopt a compromise policy responsive to the needs of the electorate.

These new systems can be expected to exert over time each party and each candidate a steady incentive towards moderation, a policy responsive

to the needs of each group, and towards a position, not only on the ethnic dimension, but also on others -- such as the left-wing/right-wing dimensions. It is therefore argued that the proposed new systems, though designed for situations of ethnic division, can provide an effective government, responsive to each section of the electorate, both when ethnic divisions exist, and in more normal situations where ethnic divisions are absent. ❁

Endnotes

1 The purpose of these provisions is as follows: (1) to give each party the incentive, if it is to avoid losing seats, to stand as a nation-wide party, placing its candidates in all areas of the country, and in particular, competing with the other party in the association in all areas of the country; (2) to give a large party the incentive to split (perhaps into two roughly equal parties which come together to form one association), so that it can avoid the one-half maximum limit on an association's seats; (3) to give each party the incentive to join in association with another party which is expected to get at least two-thirds as many XX-votes as it gets itself, and which therefore is likely to be able to compete effectively with the first party for X-votes as well.

2 By the Alternative Vote, the candidate with fewest first-preference votes is excluded, and his or her votes are transferred, each vote going to its next preference. The candidate then with fewest votes is similarly excluded, and his or her votes are transferred, and so on, until one candidate has more than half the total votes held by all the non-excluded candidates, and is elected.

3 However, if it did happen that a party over-estimated the seats it would get, and so had some territories in which its candidate was not elected, it could assign each tract of these territories to one of its elected representatives, as an additional responsibility, so as to ensure that its representatives covered all tracts in the province.

4 For example, suppose that parties A, B and C respectively have overall percentages of votes of 30, 40 and 30, and distributed percentages of 20, 15 and 5. If all got seats in proportion to their distributed percentages, seats would be 50%, 37.5% and 12.5%, giving C a percentage of seats which was less than half its percentage of votes. Therefore C gets 30/2 = 15% of the seats, and A and B share the remaining 100 - 15 = 85% in proportion to their distributed percentages, getting 48.6% and 36.4% of seats respectively. Thus B, the party with most votes, gets fewer seats than A because in its worst one-fifth of tracts it gets a lower percentage than A does, while C effectively loses half its seats by getting a very low percentage in its worst tracts.

5 It thus appears that Tract DV would be effective in Northern Ireland, since the ethnic minority, the Catholics, is large, being over 40%, and since surveys have shown that "about one-half of the province's 1.5 million people live in areas more than 90 per cent Protestant and 95 per cent Catholic. Fewer than 110,000 people live in areas with roughly equal numbers of Catholics and Protestants." (A. Pollak, A Citizen's Enquiry: The Opsahl Report on Northern Ireland, Lilliput Press, 1993, page 42). Thus it should not be difficult to draw up tracts such that about half the electors are in tracts which are either nearly all Catholic, or nearly all Protestant.

6 This has already been done in some countries, for example in Fiji, where there is a Fijian roll, an Indo-Fijian roll, and a "general" roll for other races. In a country where such ethnic rolls need to be created, the necessary procedure should be started well before the election, let us say at least a year before. Electors would indicate which roll they wished to be placed on, and a provisional list of names for each roll would be made public. Any elector's registration could then be contested by other electors, on the grounds that they did not belong to the ethnic group with which they had registered. To decide any contested cases, local tribunals would need to be set up, consisting of well-known members of each ethnic group of high standing in the area.

7 A Condorcet method of election is one which elects the Condorcet winner, if there is one. The Condorcet winner is that party which, when all parties are compared in two-party comparisons, is preferred to any other party by a majority of voters. For example, suppose the percentages of voters with each preference ordering are: 40 ACB, 21 CAB, 39 BCA. Then although C has fewest first preferences, C will be the Condorcet winner, because C beats A by 60 to 40, and beats B by 61 to 39.

8 For example, if there are 600 seats, and the government party has 175, then five extra seats are created, and given to it. Each MP of the government party is given a weighted vote in the parliament, equal to (425 x 55)/(180 x 45) = 2.886. Thus the government has 180 x 2.886 = 519 votes out of a total of 519 + 425 = 944, which is a 55% majority.

9 An alternative version of Incumbency Condorcet, which would have much the same properties, is as follows. If there is a CW, elect it. Otherwise, elect that one of the parties in the cycle which beats the incumbent, or (if more than one in the cycle beat the incumbent) which does so by the largest margin.

10 However, if not the incumbent party, but some opposition party, is the CW, the system cannot guarantee that the CW will be elected. This is demonstrated by the following example, where N is the incumbent, and A and B are two opposition parties, and where the percentages of votes are: 17 ABN, 19 ANB, 13 NAB, 17 NBA, 17 BNA, 17 BAN. Thus B is the CW, since B beats N by a margin of 51 - 49 = 2, and B beats A by 51 to 49. But A is elected, since A beats N by a larger margin, one of 53 - 47 = 6. Similarly, the strategy-proofness which applies in respect of the incumbent, does not apply in the case of the competition between opposition parties. For example, if 3% of B supporters were to change from voting BAN to voting BNA, this would reduce A's margin over N to 50 - 50 = 0, thus electing B. How far then does it create a problem, that there is at least a possibility that, if the CW is an opposition party, it will not be elected, or that an opposition party can be elected by strategic voting? In this context, the following considerations should be borne in mind. First, strategy will be possible only between opposition parties, where supporters of one opposition party seek to get it elected instead of the other. Second, this strategy, or this non-election of the CW, is possible only if there are two or more opposition parties which beat the government party, which situation is not itself a very likely one. Third, if in fact an opposition party which is not the CW is elected to government, or if an opposition party is elected by strategic rather than sincere voting, this will do little or nothing to distort governmental incentives, since the only way that the new government party can get itself re-elected, is itself to become the Condorcet winner before the next election. Thus however the new government party won the last election, the need to win the next election will still provide it with the required incentives, that is, ones to be responsive to all sections of the electorate.

11 For example, if the party has 51% of first preferences, each of the votes giving it first preference is given a value of (35 x (100 - 51))/(51 x (100 - 35)) = 0.5173. The party will then have (51 x 0.5173)/((51 x 0.5173) + 49) = 35% of the first preferences. The intention of this provision is to give any large party with significantly more than 35% of first preferences the incentive to split itself into two smaller parties, to avoid losing seats. This is likely to achieve a party system where the parties are more equally competitive, and where most probably there are three major parties rather than two.

12 For example, if party B has 30% of first preferences, and party A 35%, and 40% of voters prefer B to A, then the proportion of total seats transferred from B to A, is equal to whichever is less, either 0.3 x 0.35 x 2 x (0.6 - 0.4) = 0.042, or (0.3 x 0.35) /(2(1 - 0.3)) = 0.075. That is, the proportion of total seats transferred from B to A, is 0.042, or 4.2%.

13 This can be shown as follows. The maximum total loss of seats a party B can incur, that is, the maximum amount of seats which can be transferred from party B to all other parties, is shown by the above formula (2), but substituting in it "all parties other than B" for "party A". Thus B's maximum seats loss will be: B's % of first preferences, multiplied by the total % of first preferences of all parties other than B, divided by twice the total % of first preferences of all parties other than B; which cancels out to: B's % of first preferences, divided by two. In other words, the maximum amount of seats a party can lose by getting a low preference from the first-preference supporters of other parties, is one-half of its initial allocation of seats, the allocation in proportion to its first-preference votes. Thus whatever its performance in respect of lower preferences, the party is guaranteed to get a final percentage of seats which is at least half of its percentage of first-preference votes.

14 Thus a party which has 30% of first preferences will lose 0.84% of seats, for each 1% of reduction in the percentage of voters preferring it over the other parties. If a party has 31.7% or less of first-preference supporters, it can lose up to half its initial allocation of seats by not getting high enough non-first rankings from the other voters, and if it has 35% (the maximum possible) of first preferences, it can lose up to almost two-fifths of its initial seats. If there are two parties A and B, each with 30% of first preferences, and A moves up past B on the ballot papers of 1% of voters, who change from voting CBA to voting CAB, then this gains A 0.36% of seats, at the expense of B.