Voting matters

To advance the understanding of preferential voting systems

published by

The McDougall Trust

Issue 25   September 2008

Contents

About the McDougall Trust (reg. charity no. 212151)

The McDougall Trust is a charitable trust formed in 1948. The charity's purposes as stated in its governing scheme of 1959 are to advance knowledge of and encourage the study of and research into:

- political or economic science and functions of government and the services provided to the community by public and voluntary organisations; and

- methods of election of and the selection and government of representative organisations whether national, civic, commercial, industrial or social.

The Trust's work includes the maintenance and development of the Lakeman Library for Electoral Studies, a unique research resource, the production and publication of Representation: The Journal of Representative Democracy, and, of course, this publication **Voting matters**, that examines the technical issues of the single transferable vote and related electoral systems.
For further information on the Trust, please contact:

The Secretary,
McDougall Trust,
6 Chancel Street,
London SE1 0UX, UK.
Telephone: +44 (0)20 7620 1080
Facsimile: +44 (0)20 7928 1528
Email: admin@mcdougall.org.uk
Web: www.mcdougall.org.uk

For further information on this publication, please contact B A Wichmann, the Editor at the above address or by email at: `Brian.Wichmann@bcs.org.uk`

Editorial

There are three items in this issue:

- Thomas Hare. This is a reprint of his classic paper to match the one in the previous issue by H R Droop. Both of these articles raise issues about the voting for the House of Commons which have still not been resolved!

  It is hoped that making both of these articles more accessible will enhance the understanding of STV.

- This item is a book review. The editor is now being offered books to review on a regular basis and hence one review per issue is likely to be the norm.

  This review of a book by D Sunshine Hillygus and Todd G Shields has a distinct US perspective but should be of interest to all at this time with the November presidential election. Peter Emerson provides some useful insights into both the book and the political background which I hope will be of interest to all.

- Philip Kestelman's paper is a significant technical contribution to the tricky question of proportionality. This builds upon his previous paper published in *Voting matters* in June 2005. The vexed question with STV elections of considering either the first preferences or final count is overcome by listing both in the tables of the analysis.

Although this issue might appear to have less content than usual, the Editor has a number of papers promised or being processed and hence it may well be a shorter gap to Issue 26.

In two months time, the US will hold an election to appoint the most powerful person in the world. Following the hanging-chad problems, the Federal Government has passed legislation to regulate the software in voting machines. These regulations fall far short of the most rigorous software engineering standards, as applied for instance, in Civil Avionics systems (see DO-178B).

We must therefore hope that the result is not close enough to call into question the quality of such software-enabled systems.

(DO-178B — *Software Considerations in Airborne Systems and Equipment Certification* is the mandated standard for software for the civil avionics industry. It has five levels of compliance according to the severity of the failure of the component in question. At the highest level (A) it is probably the most demanding consensus software engineering standard. A level of the standard could be applied to any item of software.)

On the Application of a New Statistical Method to the Ascertainment of the Votes of Majorities in a More Exhaustive Manner

Thomas Hare.

[Read before the Statistical Society, 19th June, 1860.]

I.—*Introduction.*

Upon an examination of the working of our representative institutions in early times I think we are led to the conclusion that the process of counting numbers was rarely resorted to, either in local elections or in the assembled council of the nation. All important public movements were determined less by any such calculation than by the force and weight of individual character, energy, or power. If there were competent leaders it was not doubted, that the multitude would follow. This is the substance of what Bacon thinks it proper to make known of his views of political science, when, declining to reveal the secrets of high policy and the royal art of government, he refers us to the observation of Cato the Censor, that it is easier to drive a flock than a single sheep; for if only a few are brought into the right path the rest will follow of their own accord. The forms and structure of our early parliaments all tend to show that relative numbers was not the prevailing idea as the measure of representation. Personal influence, and not the number of voices, predominated. The summons to the sheriffs directs them to cause the knights to be sent with full powers (*cum*

plenâ potestate) for themselves and the county; and a statute of 1405 directs the sheriff to return the names of the persons chosen "under the seals of all them that did choose them." The knights, citizens, and burgesses, when elected, were apparently regarded as the proxies of those by whom they were nominated, and as having a relative importance or value in no respect determined by the number of heads. [338] Thierry observes that they acted as diplomatic agents, the number of whom on either side was unimportant to the contracting parties. In those times all kinds of superiority—the qualities of counsel and command—were elicited by the direct and effectual tests of personal contact and recognition. The problem of politics in all times must be the method of making known and giving their due place to such superiorities. In our own day, when society is no longer exposed to its early emergencies, difficulties, and dangers, and people have become self-dependent as well in mind and sentiment, as in their external relations with one another; when the population of a single city is probably equal to that of the kingdom a few centuries ago—when the intercommunication of persons and of material wealth is rapid and incessant, and the interchange of thought almost instantaneous, we should surely be wanting in practical wisdom if, in seeking to elicit and give their due place to all contemporary superiorities, we do not avail ourselves of the new facilities of instruction and communication which have superseded their former manifestations. If the spirit of the age refuses to place in hereditary or in official hands the selection of its political organs, our alternative is to employ, in the service of the constitution, all the means of appealing to thought and judgment which we now possess, especially our ubiquitous literature, and thereby to invoke the aid of all the virtue and knowledge which is dispersed throughout the empire in the task of making known and putting forward, as their fittest representatives, those whom the

concentrated result of intelligence and labour shall shew to be the most worthy.

In adapting our representation to the present state of society it will be found that we need to create very little that is new. Liberation from restrictions no longer suited to our condition is the great necessity. A statute of Henry V, enacted that the citizens and burgesses should be resident, and dwelling in, and free of, the cities and boroughs choosing them. There may have been good reasons in the fifteenth century why this should be, but the restriction gradually fell into disuse, and was repealed. It is in thus removing obstacles whereby every single elector can have more freedom of action that amendment is required. Every scheme of representative constitution will be found to follow one of two leading principles—it mainly regards the powerful action of numbers, masses, or classes of persons, and deals with individuals as purely subordinate to that first object; or, on the other hand, it labours first to give effect and scope to individual action, and trusts to the operation of personal effort to promote the higher interests of all classes, and thereby of numbers and majorities. It is in the latter direction—that of individual effort—that the genius of what we term the Anglo-Saxon race has always been displayed, as the incalculable results of their voluntary association in the old and new world bear witness. [339]

In this paper I propose to explain several applications of a discovery in method whereby the individual electors of representative bodies are relieved from all unnecessary restrictions. I use the word discovery in the sense in which we apply the word to any invention or new process whereby a desired result is better or more effectually obtained, and because I have not found any notice of such a principle earlier than 1839. Perhaps when we consider the peculiarity of our Parliamentary system, and how little it has entered into the consideration of our political men to look for the essential qualities of real representation, it is less extraordinary that so natural a thought should so lately have occurred for the first time. Impressed with the conviction that the vast majority of mankind must be the more uninstructed in mind, and the more liable to be governed by direct sensation and impulse, they have endeavoured to establish compensations and balances to guard against the force of undisciplined, ill-disciplined, or misguided numbers. Instead of looking for these balances and compensations in the better nature and the higher capacities of man, and in a frame of polity by which that nature and those capacities would be evoked, they have been pursued by means of empirical classifications of persons, geographical divisions

of places, and other artificial expedients, which appear on a superficial view to act as a sort of clog on the operation of large masses, and at the same time give increased force and effect to the lower motives by which many are liable to be actuated or controlled. So far from being a security, these clogs are more likely to become dangerous weapons for the numerical majorities, as well as for the nation. To the extent in which every man to whom a vote is given can be induced to engage himself in selecting as his representative his own highest type and ideal of excellence, his own moral and intellectual capacities will be in process of development, and there is just ground for hope that the representative body will contain the real or reputed worth of the age and country, and that ignorance and error will be disabled and disarmed.

II.—*Modern System of Partitioning Districts solely for Electoral Purposes.*

All the important steps taken during the last thirty years in the development of representative government in Europe and America appear to have proceeded on the notion that the only practicable course is that of enabling every elector to vote for all the representatives to be chosen, modifying this power in some cases so as to render them less the nominees of one particular class or of one general paper or ticket, by dividing the city, county, or district into wards or electoral divisions, and assigning a small number of representatives, or even one to each division or ward. [340] This was the system pursued in the Reform Bill of 1832—twenty-five counties, to which additional members were given, were severally divided into two parts, each to return two members, instead of giving the four members to the entire county, and the previously unrepresented portion of the metropolis, instead of being added to ancient divisions, was formed into the distinct boroughs of Marylebone, Finsbury, Tower Hamlets, Lambeth, and Greenwich. Under the Municipal Corporation Act of 1835, corporate towns were divided into wards for the election of town councillors, every ward being entitled to elect a certain number. These divisions were nearly all of them novelties, and perfectly arbitrary, and they, in fact, constitute electoral districts, or districts for electoral objects only.

Since this legislation in England, the principle of the Reform Bill and the Corporation Acts, as to electoral districts, has been adopted and pursued, even more rigidly in the United States of America. In Store's Commentaries, published in 1833, it is

stated, of the laws for the election of representatives in Congress, that "there is no uniformity in the choice, or in the mode of election. In some States the representatives are chosen by a general ticket for the whole State, in others they are chosen singly in districts, in others they are chosen in districts composed of a population sufficient to elect two or three representatives, and in others the districts are sometimes single and sometimes united in the choice. In some States the candidate must have a majority of all the votes to entitle him to be deemed elected, in others it is sufficient if he has a plurality of votes." These diversities which shew how entirely the electoral arrangements had been the result of accident rather than of preconceived design have since given place to uniformity. A law of the federal government of the 5th June, 1842 (c. 47), made in accordance with a power reserved to it in the constitution of the United States, provided "that in every case where a State is entitled to more than one representative, the number to which each State shall be entitled under this apportionment shall be elected by districts composed of contiguous territory, equal in number to the number of representatives to which the said State may be entitled, no one district electing more than one representative." This law must have been carried into effect by Acts of the State legislature, and I accordingly find that in the State of Massachusetts an Act was passed on the 16th of September, 1842, dividing that commonwealth into ten districts, each of which should elect one representative, for the twenty-eighth and each subsequent Congress, until otherwise provided by law. A permanent law for the apportionment of representatives was made by Congress on the 23rd May, 1850, in which I do not find the provision of the law of June, 1842, repeated—whether it was omitted from any change of policy in this respect I am unable to say. [341] As the number of representatives to be elected by each State is subject to variation, the necessity of a geographical re-partition of electoral districts must be a constantly recurring inconvenience, requiring, in fact, something like a new survey of the country every ten years, for the mere purpose of an electoral apportionment, which it will be seen may be accomplished with infinitely greater accuracy and public benefit by a simple arithmetical operation.

A slight consideration of the consequences of the principle thus pursued, is sufficient to shew that it is the cause of most of the evils and infirmities of representative government, or, at least, that most of these evils and infirmities would be obviated if the amendments were made in the direction which has been pointed out by more recent investigation and

discovery.

When a borough, or city, or county has been partitioned into electoral districts within which the choice of representatives must be confined to one or a small number of the aggregate body which is to be elected, and that choice is vested in a sole majority of the electors of the district, the door is immediately opened for all the vices of which political elections are susceptible, and the action of all the more valuable elements of virtue and intelligence to which it is desirable to give the most perfect scope and influence, is in a proportionate degree discouraged and impeded. A few active, unscrupulous, and intriguing persons are able by dealing with the more ignorant, politically indifferent, or corrupt, to forestall or usurp the expression of the popular voice, whilst the more sober, thoughtful, and unconspiring electors are not heard. Bribery, public-house influence, intimidation, false statements, calumny of opponents, and all the arts for gaining the public ear and misleading and inspiring with prejudices the popular mind, are brought into play. The union of numbers sufficient for success is not the result, necessarily, of any mutual sympathy or confidence, except of that noxious sort which arises from a predominant desire to overcome an opponent. The prevailing object is not to secure the approbation of the good and wise, but only of such numbers of the constituency as shall be sufficient to extinguish the voices and opinions of any *apparent* minority or minorities, and therefore it is less necessary, as it is more difficult, to appeal to reason, than to prejudice and the popular cry of the hour. I say any apparent minorities, for it will generally happen that if united, and if it were not for the very qualities which would render their political action more valuable—that critical appreciation of differences which is the common mark of intellectual aptitude and judgment, but which very sense of difference makes it all the more difficult or impossible for them to combine—the apparent minorities would be in truth the real majority. [342] Even if this were not so, if in electing the representative of a constituency of 2,000, the extinction of the judgment, discretion, and will of 999, by a majority of 1,001 was only an extinction of the exact proportions of such qualities as the smaller number contains, when compared with the larger, it might be confidently said that there is a waste of valuable material in the process of the election, to which no operation in modern labour—no application in modern art, affords any parallel—a waste which in physical processes no labour would be spared to avoid, and which would be regarded as still more intolerable if, in the waste, as in this case, were included the very

best of the material which was to be employed.

III.—*Apportioning Representatives to divided Majorities, instead of giving of them to the aggregate Majority only, in each locality.*

Other methods exist of apportioning members to constituencies without disturbing or breaking up any ancient or naturally-formed boundary, and without creating any new or artificial district or division; and these methods are, moreover, not only far more exact in their results than any geographical partition can be, but they accomplish every legitimate object of such a partition more perfectly, whilst they are unaffected by the movement or shifting of population from one site to another. These may be explained by the case of the metropolis. At the time of the Reform Bill it was proposed to add to the eight members for London, Westminster, and Southwark ten other members, for the five other metropolitan boroughs then created. Instead of creating the five new boroughs the ten members might have been added to the existing divisions—those north of the Thames to Westminster, and those South of the Thames to Southwark—or which would have been a still better and more natural arrangement, having regard to the numbers who, resorting to their offices or warehouses in the City, yet reside in the other districts—the whole metropolis might have formed one constituency, returning eighteen members. These eighteen members might have been equitably apportioned amongst the electors by the operation of either of two rules:—

1. That no elector shall vote for more than one candidate in the same constituency. The effect of this rule in the metropolis in the case last supposed would be to ensure the representation of eighteen different classes, or divisions of electors, and therefore possibly of eighteen different sections of thought and opinion, instead of the representation of none other than the eight majorities which arise out of the present distribution. This rule may be distinguished by the name of "single voting." [343]

2. That every elector be at liberty to give eighteen votes, and to distribute them at his will—either one or more to several candidates or all to one candidate. This plan which is said to have been first proposed by Mr. James Garth Marshall, may be called "cumulative voting." Except that this would introduce more figures into the calculation, its effect in permitting the representation of sections of thought and opinion, not

found in the large majorities now predominant, would be nearly the same as in the method of single voting.

A third method should be mentioned—that introduced in the Reform Bill of 1854, whereby, in cases where three members were to be chosen every elector was restricted to a vote for no more than two. This limitation would have been a great improvement on a system which allows every vote to be given for all the members, but without more than one for any candidate. The weakness of the principle is the absence of any sound reason for stopping at two-thirds, or for restricting its application to cases in which the number of members is divisible by three. It will be sufficient at present to confine our attention to the first two methods.

The Reform Bill, it has been observed, divided twenty-five counties, to which it gave additional members. Either of the two rules adverted to would have obviated the necessity of such a division. Cheshire and Cornwall, instead of being separated into east and west, and north and south, might each have returned four members, and four classes or sections of opinion in each county might have been represented.

In all these cases there is no doubt that there would be still minorities, of greater or less magnitude, unrepresented, and the system may therefore be more accurately called that of "the representation of *divided majorities* than of minorities." The minorities which remain after an equitable apportionment of representatives to majorities, are dissentients on the ground of some principle of importance and value, or they are not. If they are not, this exclusion is little to be regretted. If they are, it is open to them to propagate the truth on which they insist, and secure the adhesion of enough to make up at least one majority, and it is in this sense that it may not unjustly be said that "a minority can constitutionally obtain representation only by becoming a majority."

IV.—*Objections to an apportionment amongst divided Majorities, or to any other representation than of the aggregate Majority.*

The propriety and justice of the principle that a representative assembly should, as far as its numbers will permit, accurately express the chief varieties of thought and opinion which are found in the aggregate body it professes to represent, are so obvious that one is surprised that it does not command the immediate assent of every candid mind. [344] That the smaller number should not possess a weight

greater or equal to that of the larger number—except such weight as they may win for themselves by any superiority of virtue or intelligence they may possess—must be admitted, but that the smaller body, even having regard to numbers only, should have a weight proportioned to its relative number, would seem to be a necessary principle and safeguard of public and individual freedom. In fact, it is perhaps impossible to find any publication in which the contrary proposition has been seriously argued. Mr. Mill* says, "I am inclined to think that the prejudice which undoubtedly exists in the minds of democrats against this principle arises only from their not having sufficiently considered its mode of operation. There is no true popular representation if three-fifths of the people return the whole House of Commons and the remaining two-fifths have no representatives. Not only is this not government of the people, it is not even government by a majority of the people; since the Government will be practically in the hands of a majority of the majority."

In addition to the absence of a just conception of the principle itself, I think that another and not unreasonable ground of hostility to it is the uncertainty of action with which its operation might be attended, and to correct which it stands in need of a subsidiary law. I may illustrate this by supposing that in the West Riding of Yorkshire there were four members to be chosen, and that the constituency contained in the aggregate a large majority of one political party. It is possible for that majority, in giving single votes, to concentrate so great a number of votes upon one or two popular candidates that the opposite party might, owing to this waste of strength, acquire a share of the representation out of all proportion to their aggregate numbers in the constituency. No party arrangements would be sufficient to guard against this result where the electors are spread over so large an area; and if this were otherwise, no individual should be left at the mercy of party arrangements. Again, in the City of London, if only one vote be given by each elector, it is possible that out of the 20,000 votes 10,000 might vote for one candidate, 6,000 for another, and the remaining 4,000 votes would then suffice to return two members of opposite political opinions, even, though, as the hypothesis is, such opinions be not held by a fourth of the constituency. Results may, in fact, be supposed, even more extravagant, and yet not impossible. In order to obviate such an injustice, and to enable electors of every party and opinion to act with

a certainty that their votes will be rendered, as far as possible, effectual, another and a subsidiary rule or law is necessary, in addition to a law which should prescribe either single or cumulative voting; and this subsidiary law will be found entirely to obviate the objection by introducing "*contingent votes.*" [345]

V.—*Method of Contingent Voting.*

Any possible waste of votes by the concentration of an excessive number on one or more popular candidates, may be avoided by prescribing a *maximum* of votes to be appropriated to any single candidate, and by enabling every voter to give contingent votes for other candidates. The *maximum* would properly and accurately be the product or quotient of the number of voters who poll at the election, divided by the number of seats to be filled. Applying this subsidiary law to an election of four members, say for the West Riding of Yorkshire, in which we will suppose 27,000 voters to poll, that number divided by four gives a quotient of 6,750, which would be the maximum, and the persons and parties supporting the popular candidates may be certain of not losing a single vote unnecessarily, by being enabled to transfer such of their votes as shall be the surplus of one candidate, to any of the others. The votes might, for this purpose, be recorded by the poll clerk in the form shewn in the Appendix, Table V.

The votes should be recorded in books or on sheets, entering a certain even number on each page, every entry or vote being numbered as in the first column (Table V.), in a series of numbers running consecutively through all the books prepared for and used at the election—the next column contains the names and addresses of the voters, opposite to each of which under the head 1, is placed the name of the candidate for whom the vote is given, and if the elector desires to transfer his vote to the other or either of the other candidates, in case the first should not need it, the names of such other candidate or candidates successively will be placed in the columns, 2, 3, and 4, four being the supposed number of members. If none of the candidates should poll a number of votes equal to the quotient, or as to any of them that fail to do so, the result must be determined as at present, by their comparative majorities, viz., those at the head of the poll will be returned.

In the case which Table V supposes there are eight candidates distinguished by the letters A to H. It exhibits the record of twenty votes, B and F appear to be the popular candidates and have each polled six votes, C and G have polled each two votes, and A and H each one vote. Now as the quotient or maximum produced by dividing twenty voters by four

---

* "Thoughts on Parliamentary Reform," p. 26, 2nd Edit., Parker, 1859.

members, is five, the supporters of B and F, besides returning those two candidates, are able to transfer their surplus votes to other candidates.

The first question is which vote shall be appropriated definitively to B or F, and which shall be transferred to the other candidates, if any, for whom they have respectively been contingently given. [346]

The first rule of appropriation is to take all such votes as are given for that particular candidate, only—such as we now call plumpers—where in the proposed system the voter has not provided for any contingent disposition of his vote. Thus, No. 113, in Table V would be first appropriated to B; then, secondly, the votes which provide for only one other contingency, as No. 104; then, thirdly, the votes which provide for only two contingencies, as Nos. 105, 110, and 116. This makes up the five votes, and it will follow that the vote for B, which will be transferred, is No. 101, which then becomes available for G.

The process of ascertaining the state of the poll, and the particular votes which are to be appropriated or transferred is rapidly worked out by a tabular book (Appendix, Table W), which can be filled up almost contemporaneously by a second or computing Clerk, and in which a column is appropriated to each candidate, according to alphabetical arrangement. In appropriating the votes for F, according to the same rules, it will be immediately seen by referring to the column in which votes for him are entered (Table W), that No. 106 must be taken first, and then Nos. 108, 111, and 117. The principle of this rule of appropriation is that of giving an effect and value to every vote proportioned to the degree of thought and labour which the elector has bestowed upon it, as manifested by the number of contingencies for which he has taken care to provide. We now perceive, in the case of candidate F, that another rule is necessary to determine which of the votes, Nos. 109 and 115, shall be appropriated to him, and which shall be transferred to the next candidate whom each voter has preferred, each having provided for the same number of contingencies, and the vote in one case going on to C, and in the other case to G. All that is necessary is that the order of appropriation, whatever it be, shall be distinctly prescribed beforehand, so that it shall be purely mechanical on the part of the returning officers, and that the rule shall afford to every elector the same chances or probabilities as to the application of his positive and contingent votes. An unexceptionable rule would be this—that the votes shall be taken in rotation, one from each page or sheet of the poll book or the tabular register at each polling place

(which places may be distinguished by consecutive marks or numbers as A, B, C, &c.), and beginning at the last sheet or page taken at each of such places, and at the highest number on each page (as, for example, taking first 115 for F), proceeding thence to the lowest number, and following this rotation until the maximum or quotient of votes necessary for the candidate is completed. It will probably be found that a rule for appropriating, *caeteris paribus*, the later votes first, will be desirable as counteracting any tendency that may otherwise grow up, to hang back from the poll to the later hours, for the advantage of previously ascertaining who are elected. [347] The name of the candidate whose quotient is complete, may then be cancelled by a stamping instrument, on all the remaining votes given for him, and the next contingent votes of such electors become their actual votes.

The change in the state of the poll for the remaining candidates, by the transfer of the surplus votes of B and F, will be exhibited in the further reduction of the tabular book, shewn in the Appendix, Table X.

The entire result is as follows :—

B ... 5 votes (or the maximum) and one surplus.
F ... 5 votes (or the maximum) and one surplus.
C ... 3 votes.
G ... 3 votes.
A ... 1 vote.
D ... 1 vote.
E ... 1 vote.
H ... 1 vote.

And B, F, C, and G are therefore returned. Supposing the twenty votes to be converted into 27,000 votes, distributed in the same ratio, the poll would be thus announced:—

B ... 6,750 (or the maximum) and 1,350 surplus.
F ... 6,750 (or the maximum) and 1,350 surplus.
C ... 4,050
G ... 4,050
A ... 1,350
D ... 1,350
E ... 1,350
H ... 1,350

I have adapted the Tables V, W, and X, in the Appendix, to an exhibition of the process of single voting in large constituencies, with the aid of the subsidiary or correcting rule as to contingent votes. There is, however, much prejudice against single voting in constituencies accustomed to a plurality of votes. Many of such voters, if restricted to

one vote by a new law, will be apt to consider themselves wronged, as those persons did who, in the last century, complained that they were robbed of eleven days of their lives by the adoption of the Gregorian Calendar. Single voting, it has been said, will be unpopular, because it seems to cut down the privileges of the voter, while cumulative voting, on the contrary, extends them. It is yet not improbable that the power of contingent voting for a larger number of candidates would, by most persons, be esteemed an ample compensation; but in case this should not be so, it is desirable to show that the same certainty of action, by means of the subsidiary law referred to, can be obtained in cumulative voting. [348] It requires only an additional column in the Poll Clerks' Record, to insert the number of votes given for each candidate. (See Appendix, Table Y.)

It will be seen by the variety in the manner of distributing the votes (Table Y) that the system affords scope for the manifestation of every degree of preference which the elector may entertain for particular candidates. "Why," observes Mr. Mill, "should the fact of preference be alone considered, and no account whatever be taken of the degree of it? The power to give several votes would be eminently favourable to those whose claims to be chosen are derived from personal qualities, and not from their being mere symbols of an opinion. For if the voter gives his suffrage to a candidate in consideration of pledges, or because the candidate is of the same party with himself, he will not desire the success of that individual more than of any other who will take the same pledges, or belongs to the same party. When he is especially concerned for the election of some one candidate, it is on account of something which personally distinguishes that candidate from others on the same side. Where there is no overruling local influence in favour of an individual, those who would be benefited as candidates by the cumulative vote would generally be the persons of greatest real or reputed virtue or talents."*

A slight modification of the rule for appropriating votes is necessary to this form. After taking the votes of electors who have given no contingent votes, the next votes to be appropriated should be those of electors who have distributed their contingent votes amongst the smallest number of candidates (not the smallest number of contingent votes), the number of candidates measuring, *primâ facie*, the amount of intellectual effort. If the last votes taken for D should be those of Voter No. 105, and

D should require only two of the four votes to complete his maximum, the remaining two would be applicable for C.

Progress has been defined to be the development of order, a maxim which will be admitted by many who do not accept all the philosophy which has assumed this definition for its motto. We see, however, that by the simple process which has been suggested, precision and order in the individual exercise of the franchise is substituted for the uncertainty and confusion which now prevail. The amount of judgment and discretion which each voter may employ is limited only by his own capacity, and his field of choice; and that field of choice, which every geographical division of constituencies more and more narrows, is enlarged by every abolition of the artificial boundaries which prevent union and circumscribe mind. [349] Districts and wards for electoral purposes utterly fail in enabling distinct interests or opinions, to be represented, for at this day people do not reside together in certain quarters, or combine their property territorially according to their opinions. The only way of securing the representation of special interests or opinions is by permitting, as far as possible, those who have or hold them to act together. New forces or motives that tend largely to elevate and purify the representative system are thus introduced. Individual intelligence recovers that power and weight which is lost in the systems which permit individuals to be swamped by numbers. It is in that modification of the electoral power which considers the individual before it deals with the masses, that the true strength and excellence of representation resides. In order to stimulate personal effort, the advantage of the larger areas over the smaller districts or wards is evident. The greater the area and the corresponding number of representatives to be chosen, the greater will be the number of candidates, and the opportunity of every elector to find amongst them one or more with whom he sympathizes, and in whom he can repose confidence. The character of the election is thus entirely changed. It becomes rather an intellectual and generous contest, in which every class and party seeks to put forward the best and noblest exponent of its opinions, and it is no longer the struggle of any assumed majority to exclude the rest. If instead of dividing boroughs into wards under the Municipal Corporation Act, the principle of single voting had been adopted, giving to every voter the opportunity of voting contingently for as many of the town councillors as he might think fit, property and intelligence would have been everywhere represented in the corporations, and it would not have been possi-

---

* "Thoughts on Parliamentary Reform," p. 29, 2nd Edit., Parker, 1859.

ble even for the Act of 1850 (13 & 14 Vict., c. 99) to have produced the ill effects apparent on the Report of the Select Committee of the House of Lords, and the evidence taken before it. (1859-46.)

VI.—*Application of the Method to equal Majorities in all Counties, Cities, and Boroughs.*

I have hitherto adverted only to improvements in our representative system for which the political world seems ripe, and which many statesmen are more or less directly seeking. The method which I have explained is, however, capable of far more extensive development. It is not too much to anticipate that at no distant time statesmen will be shocked at the unmeaning and puerile anomalies in the representation disclosed in the statistical statements in the last volume of the transactions of the Society; that it will be seen that the adoption of population as a basis is impossible, without rectifying an inequality which gives one member to 22,000 inhabitants of boroughs, and only one to 66,000 inhabitants of counties— [350] that it is impossible to assert the value and justice of an impartial distribution of political privileges as the ground of enfranchisement, and assert it in the same breath as the ground of disfranchisement—that such a principle cannot be consistently put forward as a reason for excluding 332 market towns in England and Wales, having an average population of nearly 5,000 persons, from the privileges which are given to 248 boroughs, or far less than half of the towns in the same portion of the Kingdom. The moral evil of creating such monopolies of political privileges with all their consequent temptations to the poor, the weak, and the indifferent, who share in their exercise, may be more generally felt. It may not always be thought that the preservation of constituent bodies varying in numbers from 200 to 20,000 is the depth of profound policy. We may perhaps look forward to a time when, in gathering the exponents of the national opinion, sentiment, and will, the electors may not be encumbered with the difficulties and obstacles of a period when the want of roads almost prevented communication between remote places, when writing and printing were generally unpractised, and their use little known. Instead of considering it a sagacious policy to compel large numbers of voters to travel unlimited distances if they desire to vote, a time may come when they may be permitted to use the post-office near their dwellings. The nation, in its electoral laws, may one day recognize that some knowledge of letters has been generally diffused, and may receive or invite, as valuable aid

in the exercise of electoral powers, by means of papers deposited or transmitted, the votes of its energetic sons, who, having their homes in Britain, are absent, conducting maritime enterprise, expanding commerce, or laying the foundations of colonial empire. Statesmen may endeavour to inspire the political life of the nation with a more comprehensive and noble spirit; they may desire to make it the study and delight of every subject of these realms to discover and attach himself to all that his generation contains of greatness or eminence, to give due play to all his sympathies, whether with historic association, intellectual power, or moral energy, and to this end to afford him a choice of representations as wide as the nation can afford. With this view I have developed the plan of simple and contingent voting into a larger scheme, which combines all the great and essential elements of personal, local, and national representation. The length to which this paper has extended, enables me to do little more than refer to the work in which this scheme is set forth and explained.* I will but simply state its broader features. [351]

It proposes to furnish every elector, at a general election, with a copy of an official gazette, stating the names of all who are candidates for seats in Parliament, and the town or constituency which each especially addresses, each candidate having paid £50 for registering his candidature, and being free from all other pecuniary liabilities. It then enables every elector to nominate *for his own constituency* any of such candidates, on a document or voting paper, in the form shown in the Appendix (Z), adding, in numerical succession, as many candidates as he will, no vote being taken ultimately for more than one person, and all the substituted names being therefore contingent votes, as explained in the foregoing examples.

This wider application of the method requires some additional, but simple, machinery. The quotient, *or maximum*, of voters sufficient for the election of a representative, cannot be determined by local computation, but must be the product of the number of voters who poll throughout the kingdom, divided by the number of members of the House of Commons.† The voting papers must be carried temporarily for computation to some central spot, which should be selected with reference to conve-

---

* Treatise on the Election of Representatives, Parliamentary and Municipal; by Thomas Hare. Longmans, 1859.

† In the Treatise referred to (pp. 29, 30), it was proposed to ascertain the quota by reference to the number of electors *on the Registers.* Subsequent investigation and discussion have led to the substitution of the numbers that actually poll at the election, as the dividend.

nience of access from all the chief seats of population. The returning officers might appoint the most competent of the polling clerks to have charge of the voting papers, assist in the process of computation and appropriation, and to carry back the voting papers to every borough and locality, after every paper has been endorsed by the Registrar-General with the name of the member to whom it is appropriated. The rules for appropriating votes will be substantially the same as I have already mentioned with reference to the first and contingent votes in the Tables V, W, and X (Appendix). The voting papers appropriated to each candidate will be, first, those containing the smallest number of unchosen names, adopting a rotation as to numbers and polling-places corresponding with that which I have already indicated. Another rule of rotation will be necessary in order to determine as well between localities as between polling-places, and this rule would properly be that the votes given for the candidate in the constituency for which he offers himself should be taken first, and then the nearest surrounding constituencies in succession, according to previously-settled tables of proximate localities, thus giving all possible operation to local attachments.* After the number of the House has been as nearly completed as may be possible from the names which stand first in every voting paper, it will be necessary to reduce the number of candidates by stamping out the names of all those who have fewer votes, contingent or otherwise, than (say) half of the maximum or quotient, which will bring up others of the contingent votes, and thereby add to the numbers returned. [352] The Registrar-General, to whom the control of this operation is entrusted, can then proceed, by an alternate or balancing process to complete the House, by expunging one by one the names of the candidates having the smallest number of votes above the moiety of the quotient, and diminishing, as it shall appear to be necessary, the maximum, by withdrawing at each step one vote from every appropriated quotient (taking first, in a rotation the reverse of that previously adopted in the appropriation, the vote which has provided for the greatest number of contingencies), and so proceeding as to leave ultimately the smallest residue or number of unappropriated papers, or in other words of unrepresented voters.†

The effect of this arrangement is to group every town and constituency in the kingdom, and every section of voters, by the just and attractive principle of voluntary association, in which all will have the exact weight to which their numbers and intelligence entitle them, and will not be affected by whatsoever changes may hereafter take place in the seats of population. Every member of the House of Commons will represent an unanimous constituency. The leaders of public opinion will be there, with those who most perfectly express it.* Separate tables or lists would shew the names of the constituents whom every member actually represents. The electoral results exhibiting the various preferences which every county and town has expressed—the electors by whom every member is supported—the numbers which, besides these, have expressed their willingness to vote for him, and the classes of which they are composed, will afford such materials for future statistics, illustrating the condition and progress of society, as the history of mankind has not hitherto supplied.

In this system it will be seen that there can be no swamping of persons, or opinions, or classes, or interests. It leaves every voter to act as his feelings or his interests may dictate. Property will be represented, by representing every possessor of property, far more effectually than by a struggle of one kind of property against another. Education and intelligence will be represented by the representation of every man of education and intelligence. [353] The professional, agricultural, commercial, and working classes may be represented by their chosen exponents. Every locality will have its special representatives in the members who have received the greatest number of votes in the county or borough, but local divisions become rather, as Bacon says, lines and veins than sections and separations. All contribute to the national representation, which will be as perfect as the understanding and patriotism of each succeeding age can make it.

---

* Treatise, pp. 208-210.

† This process slightly differs from that which was proposed by Laws xxv and xxvi (pp.214-21) in the Treatise. The author had then contemplated another mode of completing the numbers of the House. (See Treatise, p. 324).

* On nothing connected with modern political society is it more important that enlightened consideration should be bestowed than on the method of ascertaining "public opinion," as to which the Legislature is liable to such serious illusion. The enquiry upon which the author of this paper ventured (Treatise, p. 276 et seq.), does but touch the margin of the subject.

APPENDIX.

(V).—*Poll Clerk's Record.*

Consecutive Numbers in the Poll Book.	Name and Address of the Voter.	Candidates for whom first and Contingent Votes given.			
		1.	2.	3.	4.
101	...	B	G	H	D
102	...	A	F	G	—
103	...	G	F	B	—
104	...	B	D	—	—
105	...	B	D	E	—
106	...	F	G	—	—
107	...	H	E	D	B
108	...	F	G	C	—
109	...	F	C	A	G
110	...	B	D	H	—
111	...	F	G	A	—
112	...	C	A	F	G
113	...	B	—	—	—
114	...	E	H	—	—
115	...	F	G	C	A
116	...	B	D	E	—
117	...	F	G	A	—
118	...	C	A	F	—
119	...	D	E	—	—
120	...	G	C	F	—

(W).—*Tabular Book.*

A.		B.		C.		D.		E.		F.		G.		H.	
Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes	Vot. No.	Con-votes
102	2	101	3	112	3	119	1	114	1	106	1	103	2	107	3
—	—	104	1	118	2	—	—	—	—	108	2	120	2	—	—
—	—	105	2	—	—	—	—	—	—	109	3	—	—	—	—
—	—	110	2	—	—	—	—	—	—	111	2	—	—	—	—
—	—	113	—	—	—	—	—	—	—	115	3	—	—	—	—
—	—	116	2	—	—	—	—	—	—	117	2	—	—	—	—

NB. In the table above, the columns are the Voter Number and the Contingent Votes.

(X).—*Tabular Book (after the return of Members having Surplus Votes).*

A.		B.		C.		D.		E.		F.		G.		H.	
102	2	—	—	109	2	119	1	114	1	—	—	103	2	107	3
—	—	—	—	112	3	—	—	—	—	—	—	120	2	—	—
—	—	—	—	118	2	—	—	—	—	—	—	101	2	—	—

(Y).—*Poll Clerk's Record — Cumulative Voting.*

Consecutive Numbers in the Poll Book.	Name and Address of the Voter.	Candidates for whom first and Contingent Votes given.							
		1.		2.		3.		4.	
101	...	C	1	C	4	D	4	A	4
		D	1	-	-	-	-	-	-
		E	1	-	-	-	-	-	-
		A	1	-	-	-	-	-	-
102	...	B	2	G	4	H	4	F	4
		G	2	-	-	-	-	-	-
103	...	B	4	H	4	G	4	F	4
104	...	B	1	-	-	-	-	-	-
		H	1	-	-	-	-	-	-
		F	1	-	-	-	-	-	-
		G	1	-	-	-	-	-	-
105	...	D	4	C	4	-	-	-	-

In the above table, the final pairs of columns give the candidate name and the votes for that candidate.

Computing Table, exhibiting instantaneously the state of the Poll, as above, in Cumulative Voting.

A.		Candidates Contingently Voted for.	B.		Candidates Contingently Voted for.
Voters	No. of Votes.		Voters	No. of Votes.	
101	1	3	102	2	3
—	—	—	103	4	3
—	—	—	104	1	—
1	1	—	3	7	—

C.		Candidates Contingently Voted for.	D.		Candidates Contingently Voted for.
Voters	No. of Votes.		Voters	No. of Votes.	
101	1	3	101	1	3
—	—	—	105	4	1
—	—	—	—	—	—
1	1	—	2	5	—

E.		Candidates Contingently Voted for.	F.		Candidates Contingently Voted for.
Voters	No. of Votes.		Voters	No. of Votes.	
101	1	3	104	1	—
—	—	—	—	—	—
—	—	—	—	—	—
1	1	—	1	1	—

G.		Candidates Contingently Voted for.	H.		Candidates Contingently Voted for.
Voters	No. of Votes.		Voters	No. of Votes.	
102	2	3	104	1	—
104	1	—	—	—	—
—	—	—	—	—	—
2	3	—	1	1	—

Z.) *Voting papers on the application of the Method to equal Majorities in all Counties, Cities, and Boroughs.*

Name ————————————————————

Address ————————————————————

Vote No. ———— *Parish of* ———— *Borough of* ————

The above-named elector hereby records his vote for the Candidate named first in the subjoined list, or, in the events provided for by Statute, for the other Candidates successively in their numerical order, viz :—

1	
2	
3	
4	
5	
6	
7	
8	et seq.

Editor: This reprinting uses modern typographical conventions.

Review — The Persuadable Voter

Peter Emerson.
The de Borda Institute

American elections classically involve a two-step: the candidate runs to the extreme in the primary, then back to the centre for the general. *The Economist*, 5.7.2008.

2008 looks exciting — at least for those of us who do not live in the US. In what might be the most expensive election ever, Barack Obama might be able to break through a fairly considerable barrier and go on to achieve much, both domestically and internationally, and not only as he impacts on US foreign policy, but indirectly too, not least in Africa where, from Kenya to Zimbabwe, democracy desperately needs a role model.

On closer inspection, of course, the picture is not so pretty. US presidential elections are won and lost in 'battleground states' by 'persuadable voters'. And, as in any two-party system, only a tiny percentage of the population may swing the result, one way or the other.

Originally, the US presidential electoral system was rather different: the winner of the plurality vote became the president and the runner-up became the vice-president. George Washington and others were fiercely opposed to the (British) two-party system of politics, and they tried to create a more inclusive polity. Alas, by 1804, it was all over; this was not just because political parties had come into existence — in theory, and as often happens in practice, people from different political parties can and do work together — rather it was because of the introduction of party political patronage.

The result is the two-party system we have today. It is still a plurality vote, in theory; in practice, however, while other candidates do indeed put their names forward — Ralph Nader and others — it is basically a two-horse race. This book [1] concentrates on just these two horses: the elephant and the donkey, and the way they both try to woo not so much those who would opt to vote either for neither or even not at all, but rather those whom they regard as indeed 'persuadable', either the "waverers", (p 30), or those of the other side who, on one or more policies, are at odds with their own party.

As is well known, people's political persuasions bear a remarkable resemblance to our other characteristics, and often tend to fall on a normal distribution curve. If the x-axis varies from Democrat to Republican, then there are the relatively small numbers of those committed partisans, who always vote 'this' or 'that', regardless of the campaign and sometimes regardless of events. But a large number of people are in the centre — middle America — and like their counterparts in the UK — middle England — if they swing just a little bit this way or that, the effect can be crucial. Needless to say, both parties tend to woo this centre ground, and the inevitable consequence is that the two political parties sometimes become similar. . . as happened in our own UK election of 1997 between John Major's Tories and Tony Blair's Labour Party. A two-party system, then, can be a form of one-party state. As Mikhail Gorbachev observed, "Today the Republicans stand at the helm. . . tomorrow it will be the Democrats. There is no particular difference."*

The party system in the US is not as rigid as its equivalent in the UK, and voting for a different party — 'voter volatility' is the phrase some politicians use, normally the losers — is perhaps more common on their side of the Atlantic. We are told that 35 per cent of the voting public regard themselves as Republicans, and 32 per cent as Democrats (p 10); and of these, "25 per cent were persuadable partisans, (another 9 per cent persuadable Independents)," (p 8).

If I may express a personal viewpoint, a further feature of life on both sides of the Atlantic is that democracy, which should be a collective exercise, is in fact very individualist. In theory, it is a coming together, a process by which all come to a communal

---

* *Perestroika*, Collins, 1987, p 216.

agreement on who should govern and on what pro-gramme. In practice, however, it has become the op-posite: a win-or-lose contest between two opposing teams in which the individual supporter is motivated by the principle, 'I-vote-for-me'. In a word, people often vote the way they do for selfish reasons; and the more unscrupulous politician will often react by exploiting two of our more basic selfish instincts: greed, or worse, fear.

Greed is often catered for by generous pre-election budgets and promises of tax breaks, and the party in power usually directs these at certain members of society, the ones more likely to vote for them. Fear is even more effective. Little won-der, then, that with but one exception, the winner of the US presidential election throughout the pe-riod of the Cold War was he — it was always a he — who was the more anti-Soviet. It did not mat-ter which party he came from. Whether it was the Democratic Kennedy and his missile gap or, as the authors recall, (p 82), the Republican Reagan and his empire of evil, the winner was always the one who was the more belligerent. Thus the US (and UK) two-party systems, standing as they did sup-posedly to defend democracy, were actually part of the arms race which threatened to destroy it.

The one exception was Jimmy Carter. In the rather introspective mood which prevailed in the US after the disaster of Vietnam, he came to power in 1976 on a ticket of human rights. But even he fell to militarism, the khaki election stuff: and doubt-less, if his attempt to rescue the hostages in Iran had not ended in a fiasco, he might well have been re-elected; when the US helicopters were shot down in the desert, however, so too were his chances of a second term.

I think the main reason why George W Bush won the 2004 contest was related to militarism: the Sept 2001 attack on the twin towers, the war against ter-ror, the US attack on Afghanistan, and the subse-quent invasion of Iraq. These topics get barely a mention in this book even though, "economic and foreign policy issues, in particular, are almost al-ways the centrepiece of presidential campaigns," (p 110). Instead, the authors try to justify the unjus-tifiable. They appear to have no views, one way or the other, on the electoral system itself. Rather, it is a very subjective work, looking only at that percent-age of the population — middle America — and at how they have been used, or abused, by presidential candidates.

Militarism, then, was not covered. Instead, the book concentrates on those topics which were con-tentious in the most recent elections: 'bible belt'

politics on stem-cell research, gay marriage, and abortion; the gun lobby; race or rather affirmative action; the environment, which was dealt with rather glibly; and there was, as always, "the economy, stupid". On such issues, the book argues, "some 2.8 million partisans switched... in the sixteen key bat-tleground states of 2004. Bush's margin of victory over Kerry in those states was just 200,000 votes," (p 8). Now the authors do admit that Bush focused in Ohio, for example, on 'national security' (p 9) — i.e., militarism — and points out, in a footnote, that in one state, "60 per cent of Bush ads mentioned ter-rorism or domestic security compared to 37 per cent for Kerry," (p 167), but reverts in the main to dis-cussing, and basing all its conclusions on, the above domestic matters.

We then enter a land of jargon. A political party is indeed a coalition, (p 50); and in a two-party system, each of the two parties is inevitably a very broad church; so, needless to say, there will be those voters who do not agree with literally everything in their party manifesto (and thank God for that!): these, ap-parently, are "incongruent" or "cross-pressured vot-ers" (p 39) or even "policy-conflicted out-partisans" (p 144), all sorts of facts on whom is not only de-mographic but "psychographic" (p 46). This infor-mation, along with a lot of personal trivia, becomes "hyperinformation" (p 13) which is then available for "data-mining", (p 155). Now while voters may vary from "congruent partisans" (p 85) to "inde-pendent leaners" (p 25), the candidates also vary in their behaviour: they talk in general on TV, but in their e-mails and text messages and more tradi-tional newsletters, they often micro-target very spe-cific "wedge issues" (p 6) to specific groups of peo-ple in a tactic known as "dog-whistle politics" (p 6). Furthermore, such appeals are more likely to be directed at "ticket splitters" (p 45) or "pivotal or swing voters" in "pivotal states" (p 11), while those in safe seats along with any "nonbase voters" (p 149) are less likely to be contacted. And just in case all of this isn't enough, the authors add other bits of jargon which are tautological, phrases like "cross-sectional surveys," (p 35), and "mixed-method re-search," (p 57).

Once all of these terms have been translated, there are the even more tautological sentences: "...the fractures in the Democratic Party are fundamentally rooted in policy differences among different groups in the Democratic coalition," (p 78); "Partisans who are ideologically conflicted with their party are more likely to defect," (p 83); "the decision of a persuad-able partisan to defect depends on the issue con-text of the campaign," (p 128); "Independents and

cross-pressured partisans are much more likely to be undecided...and much more likely to change their candidate selection than are congruent partisans," (p 86); and maybe the prize goes to this one: "campaign responsiveness is a function of psychological tension between the compelling considerations underlying the vote decision," (p 31), whatever that means. Such statements make this work a turgid tome.

Having sizzled their own minds in this sometimes repetitive and verbose gobbledegook, the authors then try to make some sense of it all by stating the blindingly obvious: "our findings reinforce the conclusions of earlier research that shows political context helps to show how voters make up their minds," (p 91). Eventually, however, we have something definite, even if rather predictable: "we find compelling evidence that mail sent to persuadable voters was more likely to contain wedge issues than that received by the partisan base," (p 175), and "wedge strategies were more often used when the cleavages within a party coalition were readily apparent and when the issue not only divided the opposition but also created consensus among the candidate's own supporters," (p 151). Little wonder, then that in 2004, "thirty-three states received no television advertising dollars...while battleground states received more than \$8 million, and Florida alone received \$36 million," (p 11). Consolation comes, perhaps, when the authors tell us that the voters "appear to judge the policy positions of the candidates and to support the candidate that most closely matches their preferences on the salient issues of the campaign, even when that candidate is not their party's nominee, (p 93)." But I do not think we needed this book to tell us that!

There is some meat in these pages, however, albeit of a disturbing taste. Needless to say — but this book says it *many* times —advances in modern technology have allowed politicians to run a very different campaign from that of yesteryear. The worrying trend comes in the 'big brother' side of things: today, candidates have "enormous databases that include information about nearly every one of the roughly 168 million registered voters..." (p 157) "in which they have mapped consumer data, individual party registration, vote history, and other information from voter registration files," (p 47), "...your age and the age of your children, whether you smoke cigars, where you shop, where you attend church, what kind of car you drive, how old it is, whether you're on a diet, and what type of pet you have," (p 46), not to mention "your hobbies and habits, vices and virtues, favourite foods, sports

and vacation venues," (p 151), and even "criminal records," (p 159). When all of this is on the computer, it is of course all too easy to micro-target specific groups of voters on very specific issues. A further worry lies in the fact that this practice is now spreading to our side of the pond and to "the British Labour party in particular," (p 195).

I suppose there is little that we can do to prevent the spread of relevant (and much of what should be regarded as irrelevant) information. But "vote history"? At a recent seminar run by the (Northern Ireland) Electoral Commission, I suggested that while political parties should indeed have access to the *unmarked* register, the *marked* register should definitely be regarded as sensitive material, in the same way as are used ballot papers and so on. The idea that Mugabe or Milošević, to take two extreme examples, should be able to see who has voted and who has not, is obviously unwise. In like manner, any information on "vote history" should be classified; the book does not say whether this refers to, not just whether or not the voter has voted, but also *for whom* he/she voted and how this information was gleaned. "Voters' registration records," however, "include [this] history...[and] are available to political parties and candidates (twenty-two states have no restriction on who can access these files)," (p 158).

There are, then, two underlying questions: one concerns the electoral system itself, the other covers the conduct of the campaign. It states somewhat dogmatically that "political parties should present distinct policy alternatives, so that a vote cast for one candidate over the other provides a clear signal of the voters' preferred policy direction," (p 188). As mentioned above, however, the very dynamics of the two-party system mitigate against this and work instead towards 'middle America'. Admittedly, the politicians try to paint the picture that the two candidates represent diametrically opposed alternatives, and it quotes J F Kennedy who suggested, "the two parties are wholly different," (p 44). Well he would, wouldn't he? It is what many UK politicians call the politics of clear blue water. The fact remains, however: the US presidential electoral system is "a blunt instrument," (p 13).

So while the authors do not constructively criticize the system let alone suggest alternatives, they do accept that it has its limitations. "In a complex and pluralistic society, a two-party system ensures the parties will be coalitional in nature," (p 50). Therefore, as noted above, both parties are broad; the Republican Party, to quote Robert Dole, "represents many streams of opinion and many points of

view," (p 27). No wonder there is much "cognitive dissonance" (p 27) and umpteen wedge issues, but this is an inherent weakness of such a simplistic voting system, the defects of which have rather worrying implications for both the candidate and the voter. The former "should focus on moderate, middle-of-the-road policies rather than taking ideologically extreme positions on divisive issues *because these are the preferences of the median voter*," (p 39). And for the voter? "By forcing a choice between only two alternatives...casting a ballot for one candidate or the other masks the complexity of attitudes that might motivate [such] behaviour," (p 24). Granted, the "choice of only two major parties ensures that some partisans will be cross pressured on some issues," (p 73). And hence this book. If, however, "candidates had been purely policy motivated, there would have been less reason to communicate different messages to different audiences," (p 169). This all rather suggests, not only that the system is pretty rotten, but that this book is researching the rotten.

The authors' references to other electoral systems are minimal. "We might expect," they suggest, "that campaigns in proportional electoral systems, by lowering the hurdles to office, would see fewer divisive issues used in the campaign," (p 195). I think the logic of the argument, however, is rather different: the word 'divisive', after all, implies a binary comparison; so if there are more than two parties debating the issue, it will be seen as controversial perhaps, but not so starkly divisive. Furthermore, it would seem that the authors' knowledge of PR is a little suspect, not least because their only example of a country which "maintains a proportional electoral system" is Australia, (p 196).

Then comes the question of the campaign. It is perhaps regrettable that Obama has opted out of public finance, which would have limited his campaigning to a ceiling of $84.1 million. This policy shift may have been motivated by self-interest, but it already seems to have backfired, as John McCain is now "attracting millions more dollars than expected," (*The Guardian*, 12.7.2008.) On this theme, the book has little to say, except to report some "potentially grim prospects," (p 186). The first is that the practice of micro-targeting will turn democracy " 'of and by' the people" into one " 'of and by' a myriad of swing voters," (p 187). I rather think the conduct of the 2004 contest shows that it has already achieved that definition. Unfortunately, of course, the system is self-perpetuating, as winning candidates often ignore any deficiencies of the system, without which they might not have won. The book quotes George W who said that the 2004 elec-

tion had given him, "political capital," (p 188) and yet, under the existing system, "what 'the people' said they wanted was not very clear at all," (p 189); but that, too, is just another inevitable defect of the system.

Democracy in the US (and elsewhere) is already in a fairly weak state of health, as declining turnout figures over the years have demonstrated. Granted, the numbers went up a little in 2004, and they might do the same with McCain and Obama, but overall, the trend is still downwards. This again is partly because of the weakness of the two-party system; and partly due to the often unscrupulous behaviour of the candidates, not only in the way they whip up the voters' emotions, but also in the almost uncontrollable way they are allowed to conduct their campaigns. At the very least, spending should indeed be capped. And maybe, just a personal thought, advertising should be banned. Again, the book does not comment.

To a large extent, then, the conclusions of the book are subjective, and not a little self-evident. The research which underlies this book, however, should be scrutinised. Many scholars — the authors often refer to these 'scholars', hoping no doubt that they too will be counted as such — consider "open-ended questions the gold standard for gauging attitude strength and importance," (p 65). That said, the book uses a series of *closed* questions. One classic example is the following: "Do you agree or disagree that it should be legal for a woman to have an abortion?" (p 209). Well, even the Pope allows for ectopic abortions. (Admittedly, the question also asks a multi-option question — 'multi' on a scale of three — as to the circumstances under which an abortion should be considered legal. This, too, is a very inadequate degree of sophistication.)

Part of the whole problem lies in the very concept of the book, and in the simple fact that "it is a simplification to label someone as persuadable or not — persuadability is undoubtedly a continuum," (p 68). The authors have only made the problem worse: "being undecided about candidate preference is a behavioural consequence, rather than a determinant, of persuadability," (p 24), even if the candidate will sometimes be "ambiguous on policy issues in an attempt to vie for the pivotal voter," (p 39). They are lost in a bowl of candy-floss.

Other aspects to the research are also a cause of concern. The authors "classify voters as cross-pressured or not...in order to make a rough estimate," (p 93), although, to be fair, they also say, "we must be careful about generalising these results," (p 104), and "we want to recognise some of the lim-

itations of our analysis," (p 109). At the end of it all, on micro-targeting for example, they say, "it remains unclear whether these messages are. . . more effective," (p 155), and "It is likely the case. . . that we actually underestimate the extent to which divisive issues were prevalent in the 2004 campaign," (p 163); instead, they ask rhetorically, "Did microtargeting bring 4 million lost evangelicals to the polls in 2004?" (p 181).

Indeed, the book seems to fail, even in its own limited purpose, in many regards. It announces in the beginning that it will concentrate on the most recent presidential campaigns, yet it bounces around, referring to campaigns from earlier times, some from the first half of the 20th century, some even from the 19th. In addition, there is a huge section on Nixon's campaign, which seems a little out of place.

Finally, the conclusions of the book are as suspect as the content. In earlier pages, it points out that elections are won and lost on "razor-thin margins," (p 7), and in "a handful of states," (p 144). It is concerned that, "More than ever before, presidential candidates can now ignore large portions of the public — non-voters, those committed to the opposition, and those living in uncompetitive states," (p 179). And yet, despite this, it comes to a seemingly bold conclusion: "the balance of power in American democracy is still held by its citizens. And our analysis suggests that these citizens have the capacity and motivation to deliberate about their vote decision. It is still in the interaction of citizens and government during an American presidential election campaign that we find the basic structure, however imperfect, of a democratic process," (p 201).

However imperfect. Alas, I fear these imperfections will stay and, if it does anything at all, this book will only help the system last longer than it should.

1   References

[1]   D Sunshine Hillygus and Todd G Shields. The Persuadable Voter. Princeton University Press. ISBN 0691133417 2008.

On Measuring Transferable Voting Proportionality

Philip Kestelman

Abstract

Following [16], this paper applies four measures of Party Disproportionality to both categorical and transferable voting (SMP, 2003; and STV, 2007) in Scotland. By the standard of the Sainte–Laguë Index (SLI), the Gallagher Index (GhI) appears less reliable than the simplest Loosemore–Hanby Index (LHI), or the Gini Index (GnI). The proportionality of SMP should not only be compared with that of first preference AV, which proves no less proportional than SMP.

1 Introduction

For comparison between categorical, non-transferable voting (notably Single Member Plurality SMP, — 'First-Past-The-Post') and preferential, transferable voting (especially STV, including Alternative Voting, AV), precision tools are needed to measure proportionality. Despite a generation of sporadic discussion of the best measure of disproportionality, there is still remarkably little discussion of its application to transferable voting.

Substantial references are few and far between. Thus McLean [19, p22] observed:

> The most theoretically defensible definition of proportionality would be one which compared the vector of seat shares with the full matrix of voting preferences ... only STV even attempts to tap voters' preferences below their first. The incompleteness of extant measures of proportionality is therefore less than fair to STV.

More boldly, Lijphart [18, p19] recommended:

> Because first-preference and final-count votes can differ substantially, the index

of proportionality calculated on the basis of first-preference votes may present a distorted picture of the actual extent of disproportionality. It is therefore advisable to use the final-count percentages for the calculation of the index of disproportionality.

On the other hand, Gallagher [8, p255] argued that "using later-stage figures overstates the proportionality of STV". Indeed, between STV first and final counts (excluding non-transferable votes), Party Disproportionality may be expected to decrease steeply.

2 Definitions

Around 20 Party Disproportionality indices have been proposed [20]. The simplest measure remains the Loosemore–Hanby Index,

$\textbf{LHI} \% = 0.5 \Sigma \mid V_P\% - S_P\% \mid$,

where $V_P\%, S_P\% = P$-th Party Vote–, Seat–fraction (percent).

Notice that LHI $\% = 0.5 \Sigma \mid 1 - (S_P\%/V_P\%) \mid \times V_P\%$: that is, half the total absolute differences, between each Party's *exact* proportionality ($S_P\%/V_P\% = 1$) and its *actual* $S_P\% / V_P\%$ ratio, weighted by its Vote–fraction ($V_P\% / 100$). Compare the Gini Index, $\textbf{GnI}\%$

$= 0.005 \Sigma \Sigma \mid (V_P\% \times S_Q\%) - (S_P\% \times V_Q\%) \mid$
$= 0.005 \Sigma \Sigma \mid (S_P\% / V_P\%) - (S_Q\% / V_Q\%) \mid$
$\qquad \times V_P\% \times V_Q\%$:

that is, half the total absolute differences, between the $S_P\% / V_P\%$ ratios of each pair of parties, weighted by the product of their Vote–fractions [16, p15].

In a much-cited discussion of various measures of proportionality, Gallagher [9, p40] proposed his own 'Least Squares Index',

$\textbf{GhI}\% = [\ 0.5 \Sigma (V_P\% - S_P\%)^2\ ]^{0.5}$.

At least in academic circles, the Gallagher Index (GhI) has become the most widespread measure of Party Disproportionality [10, p602].

Nonetheless, because Sainte–Laguë (Webster) is the least biased Divisor method of seat *apportionment*, and invulnerable to the paradoxes to which LHI (and GhI) are susceptible, Gallagher [9, p47–9] recommended a Sainte–Laguë Index "as the standard measure of disproportionality ... probably the soundest of all the measures":

$$\mathbf{SLI\%} \quad = \Sigma\,(\,V_P\,\% - S_P\,\%\,)^2\,/\,V_P\,\%$$
$$= (\,\Sigma\,S_P\,\%^2\,/\,V_P\,\%\,) - 100\,.$$

(All four disproportionality indices are recapitulated in Table 3.3 on page 23.)

3 Previous Findings

Between first and final counts at 13 Irish general elections (multi-member STV, 1961–2002), mean LHI decreased from 7.3 to 3.1 percent overall; remarkably invariant with District Magnitude (M = Seats per Constituency): decreasing from 7.6 to 4.6 percent (M = 3); from 9.3 to 4.3 percent (M = 4); and from 7.6 to 3.6 percent (M = 5). And averaging two Northern Ireland Assembly elections (multi-member STV, 1998–2003: M = 6), LHI decreased from 6.2 to 4.6 percent [16, p21–2].

4 New Findings

Between first and final counts, the 2007 Irish General Election STV LHI decreased steeply, from 12.0 to 4.3 percent overall: and from 16.0 to 6.4 percent (M = 3); from 13.0 to 8.9 percent (M = 4); and from 10.1 to 4.8 percent (M = 5)[3]. And the 2007 Northern Ireland Assembly (NIA) STV LHI decreased from 7.0 to 3.3 percent (M = 6: Table 3.1).

Taagepera and Grofman [20, p671] sustained five Disproportionality indices, including: LHI; GhI; GnI; and SLI ('chi-square'). Between STV first and final counts, all four indices decreased at each of the last 14 Irish general elections (1961–2007) overall.

However, between STV first and final counts at the 2003 NIA Election, LHI, GnI and SLI decreased; but GhI actually *increased* (2.9 → 3.4 percent). And between the 1998 and 2007 NIA elections, *first* count LHI, GnI and SLI increased, but GhI decreased; while *final* count LHI, GnI and SLI decreased, but GhI increased (Table 3.1).

Further scrutiny reveals that, at the 1965 (M = 4) and 1981 (M = 5) Irish general elections, LHI, GnI

and SLI decreased, but GhI increased, between STV first and final counts. Again, in two out of 32 Councils at the 2007 Scottish local elections, LHI, GnI and SLI decreased; but GhI increased. Table 3.2 summarises these findings.

Nonetheless — regardless of measure — Table 3.3 shows that the 2007 Scottish Council Elections (STV: M = 3–4) proved significantly more proportional than their 2003 predecessors (SMP). Indeed, Party Disproportionality proved substantially higher in 2003 (SMP mean LHI = 24.9 percent: non–PR) than in 2007 (STV First → Final Count mean LHI = 14.9 → 8.7 percent: semi–PR → full PR).

Calculating 'exact' GhI proves exceptionally tedious: necessitating the disaggregation not only of the votes for each elected independent candidate (also needed in calculating SLI); but also of every single *unelected* independent. Both GhI and LHI are often miscalculated; mainly by aggregating minor parties and/or independent candidates (as if they represented a single party).

Another complication was the protraction of Scottish STV counts [11, p227]:

> "The requirement to continue transferring votes when there [are] two continuing candidates and only one place remains to be filled is unnecessary and its effects are undesirable".

All STV final count Disproportionality measures presented here exclude those superfluous transfers; following the long-established Irish convention.

5 Controversy

The Independent Commission on the Voting System [13, p26] contended that AV "is capable of substantially adding to [SMP] disproportionality"; while the Independent Commission on PR [12, p118] also maintained that "AV can produce a hugely disproportionate result". And according to the Electoral Reform Society (www.electoral-reform.org.uk), AV "can be less proportional than" SMP; a view echoed in the long-awaited desk review by the Ministry of Justice [14, 155] — disclosing neither evidence nor reference.

Moreover, the Electoral Reform Society [7, p42] argued that AV would *actually* have proved less proportional than SMP at all of the last three UK general elections:

"In the 1997 election feeling was running so strongly against the Conservatives that AV would simply have helped several more Lib Dem and Labour voters swap preferences and defeat Conservatives in seats where the Tories were ahead under FPTP. In 2001 it would also have swollen the Labour majority. In 2005 the evidence from opinion polling suggests that Labour would have once again had a larger majority under AV than FPTP" [SMP].

So it is of some interest to look more closely at recent UK general elections; mainly supposing that SMP Party Votes = AV first preferences; and that, from third-placed LibDem candidates, two-thirds of votes transfer to Labour candidates, and one third to Conservative candidates.

Table 3.4 attempts such a crude estimation for the three main parties in 2005 in England (where Conservative exceeded Labour votes, but Labour much exceeded Conservative Seats). Between AV first (SMP) and final counts, Vote–fractions increase for both the Conservatives (by 1.7 percent) and Labour (by 2.6 percent); and decrease for the LibDems (by 4.3 percent); while Seat–fractions increase for both Labour (by 2.1 percent) and the LibDems (by 2.3 percent); and decrease for the Conservatives (by 4.4 percent).

Consequently, between AV first and final counts, absolute deviations $| S_P \% - V_P \% |$ increase for the Conservatives (by 1.7 percent); but decrease for both Labour (by 2.6 percent) and the LibDems (by 4.3 percent). Under AV, Labour become less over–represented; the Conservatives become more under–represented; and the LibDems — far more under–represented than the Conservatives under SMP — become less under–represented. As a result, SMP Disproportionality (LHI = 16.6 percent) — much as expected — lies somewhere between AV first and final counts (LHI = 18.7 → 16.1 percent). Thus in 2005, AV would have been more-or-less as disproportional as SMP — *despite increasing the Labour majority!*

Estimated AV results for the 2001 General Election were similar. Even in 1997, when SMP Disproportionality, as measured by LHI and GhI, fell below that of both AV first and final preferences, SMP approximated AV first count GnI and final count SLI (Table 3.4).

Despite the crudity of these estimates (and their assumptions), only trifling differences in Party Disproportionality separate SMP from AV. It remains possible to devise artificial examples of AV exceeding SMP Disproportionality; and real countries differ in their political arrangements, perhaps weakening international comparisons.

Nonetheless, it is of interest to compare the last 10 general elections in the UK (SMP, 1970–2005) and Australia (AV, 1983–2007); with similar numbers of parties (in terms of voters). SMP seats have proved less proportional to party votes (mean LHI = 19.0 percent) than AV Seats to *first* preferences (mean LHI = 16.0 percent); and significantly less proportional than AV Seats to *final* preferences (mean LHI = 11.9 percent). Table 3.5 gives the details.

6 Discussion

What can be made of the new findings? By Gallagher's "standard measure of disproportionality" [9, p49], SLI (like both LHI and GnI) decreased — as expected — in five cases, between aggregate STV first and final counts; whereas GhI increased (Table 3.1 and Table 3.2). Thus GhI appears a less reliable Disproportionality index, at least for transferable voting.

Lijphart [17, p59–60] recommended GhI as steering "a middle course between the Rae and Loosemore-Hanby indices. Its key feature is that it registers a few large deviations much more strongly than a lot of small ones". (The Rae and Loosemore–Hanby indices measure party *average* and *total* Disproportionality, respectively; but the merit of any hybrid measure remains unclear). Comparing two hypothetical election results, with the same LHI (and GnI = 5.0 percent), his intuitively "much more proportional situation" returned a "much lower" GhI (2.2 < 5.0 percent); but a slightly higher SLI (1.3 > 1.0 percent) [15, p9] — prefiguring the real GhI anomalies reported here.

Calculating GhI is complicated by the problem of 'lumped residuals' [10, p603–5]. Table 3.3 compares 'exact' LHI, GhI, GnI and SLI, between 2003 SMP and 2007 STV first and final counts, in Scottish Council elections.

LHI detects proportionality changes between STV first and final counts more reliably; and simply quantifies overall party over– (or under–) representation. LHI also proves highly correlated with the theoretically preferable GnI (satisfying Dalton's Transfer Principle), analogous to the widely used *Gini Coefficient* of income or wealth inequality.

The definitive Sainte–Laguë Index is easily calculated, but may exceed 100 percent [16, p8]. That

problem may be solved by transforming SLI into a Borooah Index,

$$\mathbf{BrI\%} = 100 - 1 / [\Sigma (S_P\% / 100)^2 / V_P\%]$$
$$= \text{SLI } \% / (\text{SLI}\% + 100) .$$

BrI is analogous to another measure of income or wealth inequality [16, p15].

Preferential, transferable voting (including AV) liberates voters from the tactical constraints of non-transferable, categorical voting (like SMP). Accordingly, comparing categorical voting party Disproportionality with transferable *first* preference Disproportionality is both artificial and unfair. Transferability allows voters to designate sincere *first* preferences for a much wider spectrum of less popular parties (and independents); reassured that lower preferences are *transferable* to more popular parties.

Consequently, seats may well prove less proportional to AV *first* preferences than to SMP Votes; and SMP should also be compared with AV *final* preference Disproportionality. Any fear that AV for British MPs may prove less proportional than SMP may be reasonably disputed on the basis of crude estimates for England, 1997–2005 (Table 3.4); and of comparing the UK (SMP, 1970–2005) with Australia (AV, 1983–2007: Table 3.5).

7 References

[1] Bochel HM & Denver DT (2007): Scottish Council Elections 2007. PSRC, Lincoln.

[2] Chief Electoral Officer for Northern Ireland (1998): The New Northern Ireland Assembly Election 25 June 1998.

[3] Dáil Éireann (1962–2007): Election Results and Transfer of Votes in General Election: October 1961–May 2007.

[4] Electoral Commission (2001): Election 2001: The Official Results.

[5] Electoral Commission (2005): Election 2005: The Official Results.

[6] Electoral Office for Northern Ireland (2004): Northern Ireland Assembly Elections 26 November 2003 Results.

[7] Electoral Reform Society (2005): The UK general election of 5 May 2005: Report and Analysis. ERS, London.

[8] Gallagher, M (1986): 'The Political Consequences of the Electoral System in the Republic of Ireland': Electoral Studies 5, 253–275.

[9] Gallagher, M (1991): 'Proportionality, Disproportionality and Electoral Systems': Electoral Studies 10, 33–51.

[10] Gallagher, M and Mitchell, P (2005): The Politics of Electoral Systems. Oxford University Press.

[11] Gilmour, J (2007): 'Detailed Description of the STV Count in Accordance with the Rules in the Scottish Local Government Elections Order 2007': Representation 43, 217–229.

[12] Independent Commission on PR (2004): Changed Voting Changed Politics. Lessons of Britain's Experience of PR since 1997. Constitution Unit, School of Public Policy, UCL, London.

[13] Independent Commission on the Voting System (1998): The Report of the Independent Commission on the Voting System. Cm 4090–I. The Stationery Office, London.

[14] Justice, Ministry of (2008): Review of Voting Systems: The Experience of New Voting Systems in the United Kingdom since 1997 (Cm 7304).

[15] Kestelman, P (1999): 'Quantifying Representativity': Voting matters 10, 7–10.

[16] Kestelman, P (2005): 'Apportionment and Proportionality: A Measured View': Voting matters 20, 12–22.

[17] Lijphart, A (1994): Electoral Systems and Party Systems. Oxford University Press.

[18] Lijphart, A (1997): 'Disproportionality under Alternative Voting: the Crucial – and Puzzling – Case of the Australian Senate Elections, 1919–1946': Acta Politica 32, 9–24.

[19] McLean, I (1992): 'Why does nobody in Britain seem to pay any attention to voting rules?': British Elections and Parties Review 2, 13–24.

[20] Taagepera, R and Grofman, B (2003): 'Mapping the Indices of Seats–Votes Disproportionality and Inter-Election Volatility': Party Politics 9, 659–677.

Table 3.1: Party Disproportionality Index: Northern Ireland Assembly Elections, 1998–2007.

Election	STV First → Final Count Disproportionality Index			
	LHI%	**GhI%**	**GnI%**	**SLI%**
1998	6.0 → 3.8	3.6 → 2.4	9.3 → 5.7	4.7 → 1.8
2003	6.4 → 5.4	2.9 → 3.4	9.4 → 7.0	6.1 → 2.0
2007	7.0 → 3.3	3.1 → 2.6	10.3 → 5.2	7.3 → 1.2

Data Sources: Chief Electoral Officer for Northern Ireland (1998);
Electoral Office for Northern Ireland (2004); and
Electoral Office for Northern Ireland (2007).
`http://www.eoni.org.uk/index/elections/assembly-election-2007`

Table 3.2: Party Disproportionality Index: Country, Year and District Magnitude (selected), 1965–2007.

Country, Year : District Magnitude (M) [Aggregate Seats (S)]	STV First → Final Count Disproportionality Index			
	LHI %	**GhI %**	**GnI %**	**SLI %**
Irish Republic, 1965 : M = 4 [S = 44]	6.0 → 5.8	4.4 → 5.4	8.1 → 7.6	3.6 → 2.2
Irish Republic, 1981 : M = 5 [S = 75]	5.3 → 4.1	3.4 → 3.5	7.9 → 4.3	5.7 → 0.7
Northern Ireland, 2003 : M = 6 [S = 108]	6.4 → 5.4	2.9 → 3.4	9.4 → 7.0	6.1 → 2.0
Scotland (Moray), 2007 : M = 3–4 [S = 26]	21.3 → 14.4	6.2 → 6.5	32.5 → 17.5	37.3 → 12.7
Scotland (Stirling), 2007 : M = 3–4 [S = 22]	12.9 → 11.1	8.3 → 9.1	16.2 → 13.1	10.7 → 6.6

Data Sources: Dáil Éireann (1962–2007);
Electoral Office for Northern Ireland (2004);
Bochel & Denver [1]; and
32 Scottish Council Websites or Personal Communications.

Table 3.3: Party Disproportionality Index: Scotland: SMP (2003); and STV (2007).

Council	LHI%		GhI%		GnI%		SLI%	
	SMP	STV	SMP	STV	SMP	STV	SMP	STV
Aberdeen City	19.5	8.8 → 4.9	13.2	6.2 → 3.2	20.8	12.1 → 5.8	16.7	7.0 → 2.4
Aberdeenshire	14.6	14.6 → 8.0	7.1	8.2 → 3.9	21.5	22.1 →10.7	20.2	20.0 → 7.5
Angus	28.7	12.2 → 7.4	16.2	6.4 → 4.1	35.1	17.1 → 9.3	42.7	11.6 → 3.0
Argyll + Bute	32.7	19.4 → 7.9	9.5	7.2 → 3.2	41.5	27.7 →12.0	55.6	26.5 → 6.7
Clackmannanshire	13.7	7.8 → 5.1	10.2	6.1 → 3.8	16.9	10.9 → 6.0	11.7	6.1 → 1.3
Dumfries+Galloway	17.6	11.4 → 6.7	8.2	5.3 → 3.7	23.3	14.7 → 8.2	20.8	12.1 → 6.0
Dundee	7.6	10.6 → 6.3	4.7	6.3 → 4.3	10.6	12.3 → 7.0	6.6	7.7 → 2.8
East Ayrshire	22.7	9.1 → 4.3	18.8	5.3 → 3.2	25.5	12.4 → 5.0	23.5	8.9 → 1.7
E Dunbartonshire	23.7	15.1 →10.9	15.8	11.7 → 8.2	27.7	22.1 →14.1	28.5	20.1 → 6.5
East Lothian	33.3	16.3 →10.0	27.2	10.5 → 6.4	37.9	23.7 →13.8	49.8	19.6 → 7.8
East Renfrewshire	17.1	10.4 → 8.1	9.8	6.6 → 4.9	22.2	15.5 →10.2	20.6	10.0 → 4.8
Edinburgh	24.3	10.6 → 5.1	20.7	6.5 → 4.3	34.9	15.1 → 6.7	43.0	8.8 → 1.7
Falkirk	14.0	15.9 →12.2	6.0	8.7 → 8.0	20.9	18.3 →13.0	21.1	16.6 →10.6
Fife	19.7	9.7 → 3.6	12.1	5.0 → 2.1	24.5	12.8 → 5.6	22.1	8.7 → 2.6
Glasgow	42.3	17.1 → 8.0	34.1	11.5 → 5.1	44.1	21.2 → 8.8	72.7	18.4 → 4.2
Highland	29.4	23.2 →10.9	4.6	7.9 → 4.0	41.5	33.4 →16.0	56.4	39.4 →12.9
Inverclyde	25.3	11.7 → 7.3	19.8	6.6 → 4.9	33.3	14.8 → 9.7	39.8	11.6 → 6.3
Midlothian	43.4	17.2 →14.7	34.3	12.3 → 9.8	48.4	23.2 →17.1	82.5	23.2 →15.6
Moray	29.7	21.3 →14.4	12.2	6.2 → 6.5	37.1	32.5 →17.5	44.1	37.3 →12.7
North Ayrshire	29.0	14.6 → 5.8	22.9	6.9 → 3.0	32.9	19.9 → 8.6	37.6	15.4 → 3.8
North Lanarkshire	23.3	11.2 → 8.1	18.5	7.2 → 5.3	25.6	15.6 → 9.6	25.1	14.6 → 7.9
Orkneys	41.5	29.4 →17.3	11.9	7.4 → 5.8	48.0	41.7 →21.6	77.5	58.9 →22.7
Perth + Kinross	5.9	7.9 → 6.7	3.8	5.2 → 4.5	9.6	11.3 → 8.6	7.9	8.0 → 4.5
Renfrewshire	15.7	13.1 → 4.7	12.6	8.1 → 2.9	21.7	15.0 → 7.2	17.2	12.5 → 3.9
Scottish Borders	22.9	14.3 →10.3	8.2	6.0 → 4.4	35.3	18.8 →14.1	46.3	17.2 →11.0
Shetlands	34.9	32.6 →19.2	14.7	7.8 → 6.1	42.7	45.6 →23.6	60.2	68.8 →24.8
South Ayrshire	21.8	6.2 → NA	16.6	3.2 → NA	24.1	7.0 → NA	28.3	6.7 → NA
South Lanarkshire	30.2	13.1 → 6.2	23.9	7.0 → 4.0	32.7	17.0 → 9.3	38.6	14.1 → 5.0
Stirling	36.1	12.9 →11.1	25.2	8.3 → 9.1	37.5	16.2 →13.1	56.7	10.7 → 6.6
W Dunbartonshire	32.2	20.1 → 6.9	26.2	10.0 → 4.4	33.6	24.4 →10.2	42.4	30.1 → 7.6
Western Isles	28.0	23.3 →14.5	8.5	6.0 → 4.5	38.7	34.6 →20.0	47.8	39.1 →18.0
West Lothian	16.0	15.6 → 3.9	11.4	8.7 → 2.7	21.8	19.1 → 5.8	21.3	17.6 → 2.5
Mean	24.9	14.9 → 8.7	15.3	7.4 → 4.8	30.4	20.3 →11.2	37.0	19.6 → 7.6
95%CLmean Upper	28.3	17.1 →10.2	18.2	8.1 → 5.5	34.0	23.5 →13.0	44.2	25.0 → 9.8
Lower	21.5	12.7 → 7.3	12.3	6.6 → 4.2	26.7	17.0 → 9.4	29.8	14.2 → 5.4

Notes: NA = Not Available.   First → Final Count

Loosemore-Hanby Index,	**LHI%**	$= 0.5 \Sigma \mid S_P\% - V_P\% \mid$;
Gallagher Index,	**GhI%**	$= [\, 0.5 \Sigma \, (S_P\% - V_P\%)^2 \,]^{0.5}$;
Gini Index,	**GnI%**	$= 0.005 \Sigma \Sigma \mid (S_P\% \times V_Q\%) - (S_Q\% \times V_P\%) \mid$; and
Sainte–Laguë Index,	**SLI%**	$= \Sigma \, (S_P\% - V_P\%)^2 / V_P\%$:

where $V_P\%, S_P\%$ = *P–th* Party Vote–, Seat–fraction *(percent)* .

Data Sources: Rallings C & Thrasher T (2003): Local Elections Handbook 2003. LGCEC, Plymouth;
          Bochel & Denver [1]; and
          32 Scottish Council Websites or Personal Communications.

Table 3.4: Party Disproportionality Index: Three General Elections, England, 2005–1997.

Actual SMP and Estimated AV for the three main parties.

Year: System Count (Basis)	Vote / Seat Fraction	Party: Fraction *(percent)*		
		Conservative	Labour	Lib Dem
2005: SMP (Actual)	V% S% S% – V%	38.0 36.8 −1.2	37.7 54.3 +16.6	24.3 8.9 −15.4
2005: AV First (Estimate*)	V% S% S% – V%	38.0 32.4 −5.6	37.7 56.4 +18.7	24.3 11.2 −13.1
AV Final (Estimate*)	V% S% S% – V%	39.7 32.4 − 7.3	40.3 56.4 +16.1	20.0 11.2 − 8.8
Disproportionality	**LHI**%	**GhI**%	**GnI**%	**SLI**%
2005: SMP	16.6	16.0	22.2	17.1
2005: AV First → Final*	18.7 → 16.1	16.6 → 14.0	22.3 → 18.2	17.2 → 11.7
2001: SMP	18.1	16.1	21.6	16.3
2001: AV First → Final*	18.8 → 18.0	16.3 → 15.7	20.3 → 18.6	14.9 → 13.2
1997: SMP	16.5	14.9	20.1	14.6
1997: AV First → Final*	19.5 → 19.0	17.0 → 17.0	20.0 → 19.3	15.4 → 14.5

* Estimate, based on following Main Assumptions:

Constituency Party SMP *(actual)* Votes = AV *first* preference votes ;

Third–placed LibDem: $\frac{2}{3}$ Votes → Labour; $\frac{1}{3}$ Votes → Conservative ;
Third–placed Labour: $\frac{2}{3}$ Votes → LibDem; $\frac{1}{3}$ Votes → Non–transferable ;
Third–placed Conservative: $\frac{2}{3}$ Votes → LibDem; $\frac{1}{3}$ Votes → Non–transferable .

Data Sources: Rallings, C and Thrasher, M *eds* (1998): Britain Votes 6: British Parliamentary Election Results 1997. Ashgate, Aldershot; and Electoral Commission (2001, 2005).

Table 3.5: Single Member Plurality: UK, 1970–2005 and Alternative Voting: Australia, 1983–2007.

United Kingdom (SMP)			Australia (AV)				
Election	Parties	**LHI%** †	Election	Parties	Count: **LHI%** †		
(Year)	(N_P) *		(Year)	(N_P) *	First	Final	TCP ‡
1970	2.46	8.8	1983	2.68	15.2	14.3	11.2
1974 (Feb)	3.13	19.9	1984	2.81	11.8	10.9	7.9
1974 (Oct)	3.15	19.0	1987	2.90	13.6	12.7	9.8
1979	2.87	15.3	1990	3.37	17.1	9.9	5.1
1983	3.46	24.2	1993	2.91	14.1	11.4	7.4
1987	3.33	20.9	1996	3.23	18.8	16.2	12.6
1992	3.06	18.0	1998	3.46	20.5	10.4	6.4
1997	3.22	21.2	2001	3.43	18.2	10.6	4.9
2001	3.33	22.1	2004	3.26	15.8	11.3	6.6
2005	3.59	20.7	2007	3.10	15.0	10.9	5.2
Mean	3.16	19.0	Mean	3.12	16.0	11.9	7.7
(95%CI)	(2.9–3.4)	(16–22)	(95%CI)	(2.9–3.3)	(14–18)	(10–13)	(6–10)

Notes

*	Parties (Number), N_P	$= 1 / \Sigma \, (\, V_P \, \% \, / \, 100 \,)^2$,
	where V_P %	$= P\text{-}th$ (SMP / AV First Count) Party Vote–fraction *(percent)*.

†	Loosemore-Hanby Index, **LHI%**	$= 0.5 \, \Sigma \, | \, S_P \, \% - V_P \, \% \, |$,
	where S_P % , V_P %	$= P\text{-}th$ Party Seat–, Vote–fractions *(percent)*.

‡   TCP = Two–Candidate Preferred (Exhaustive Vote Distribution).

Data Sources: Rallings, C and Thrasher, M *eds* (2000): British Electoral Facts 1832–1999. Ashgate, Aldershot;
Electoral Commission (2001, 2005);
Australian Electoral Commission (`www.aec.gov.au`); and
Psephos Website (`http://psephos.adam-carr.net/countries/a/australia`).