Review — Elections in split societies

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1 Confrontation or cooperation?

Plurality election in a single seat constituency ("first-past-the-post") is the common election method both in USA and Britain. In their presentation and promotion of various methods of preferential election, i.e. of methods based on a ranking of the candidates from each voter, most American and British writers choose the Plurality election as the target for their first shots. It is considered to be too competitive, confrontational and "majoritarian". Democracy should be cooperational and all-inclusive. This is also a basic attitude behind "Designing an All-Inclusive Democracy" by Peter Emerson *et al* [1].

Seeing it from the outside, this writer still thinks that the Plurality election serves democracy at least tolerably well. After a series of elections, the mechanism behind "Duverger's law" has a noticeable effect. Two dominating parties emerge, a ruling party and a serious challenger. Then the Plurality method does in fact work like a majority method. As main criterion for an election method serving tolerably well, I have in mind that elections occasionally lead to a transfer of power. Lord Acton's words, that "Power tends to corrupt; absolute power corrupts absolutely", may be over-quoted, but they contain a basic truth. Election methods that, perhaps in the name of consensus, leave the power with a slowly changing coalition in the political center, should be compared to methods that occasionally let a fresh wind blow through the offices of power.

Where plurality elections seem to work tolerably well, the political landscape has one important feature: There is a "median segment" of voters that are not permanently committed to any of the two major parties. Since the main purpose of an election campaign then is to obtain support from the median segment, this purpose is likely to impose bounds on a ruling majority's abuse of power. But of course, seen from the outside, over the fence, both the grass and the political system may look greener than when seen from the inside. Moreover, significant improvements that also preserve the best sides of the election methods in use may well be possible.

Emerson is primarily concerned with societies that are deeply split politically along ethnical, cultural, or religious lines. There is no median voter segment, and some parts of the society are in reality never included in political decisions. The book is dedicated "To the victims of majoritarianism, everywhere, and especially to those who died in such conflicts in Northern Ireland 1969-94, Rwanda 1994, and the former Yugoslavia, 1991-99". May suitable methods of voting and election create an "all-inclusive democracy" which harnesses the democratic forces from all parts of the society and avoids conflicts or handles them in a non-violent way? Peter Emerson *et al* are optimistic enough to think so. Their search for methods that will work in split societies deserves to be taken seriously.

2 Some criteria for assessing election methods

In order to discuss the proposals of Emerson *et al*, I will refer to some facts and viewpoints concerning

- what preference profiles are realistic;
- how some main voting/election procedures behave under straightforward (i.e. non-strategic) voting when an extra candidate is nominated;
- how annoying the most common methods of strategic voting really are.

2.1 What is a realistic profile?

Choose 3 candidates, A, B, and C in a real preference profile. The sizes of the 6 ranking categories ABC, ACB, CAB, CBA, BCA, BAC are usually quite well described with a spatial "pie-sharing"

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model. In Figure 1a, imagine 10000 voters are uniformly distributed inside the unit circle, and let the candidates be represented by their "ideal points", the corners in the "candidate triangle":

A: (-0.15, 0.30), B: (0.1, 0.55), C: (-0.15, -0.40).

The voters rank the candidates according to distance, which means that e.g. the mid-normal between A and C separates the AC-voters from the CA-voters. In Figure 1a) the profile is
ABC=1630, ACB=0862, CAB=4284, CBA=0275, BCA=0123, BAC=2826:

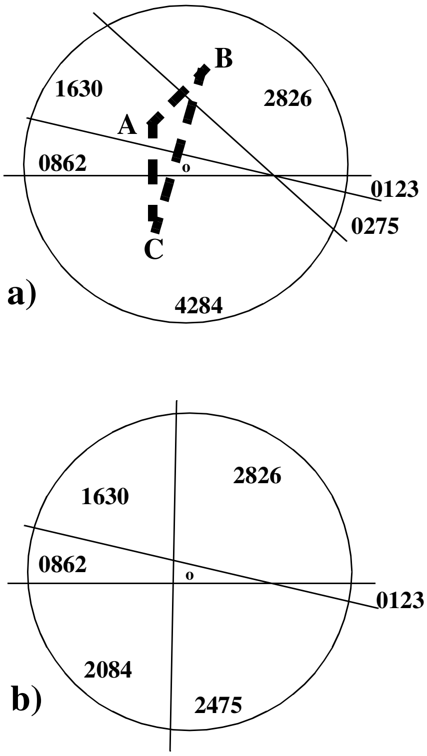


Figure 1 The pie-sharing model fits well in a) with a clearly shaped candidate triangle $\triangle$. It does not fit so well in b) with a relatively large triangle T without voters (and a Condorcet cycle).

A unique "pictogram" may always be fitted exactly when 3 secants are used without the restriction that they be concurrent like the mid-normals [5]. In Figure 1b) 2200 voters have moved from CAB to CBA, and in the pictogram the secants form a triangle T covering 1.44% of the circle area.

In the exact pictogram of the profile in Figure 1a) T covers 3×10^{-9} of the circle area; because of the roundoff to integers, the pie-sharing model does not fit exactly.

In real election profiles with straightforward voting from a large number of independent voters, we should expect a much smaller T than in Figure 1b). There T also contains the circle center, which is a necessary condition for a Condorcet cycle. Generally T is small and the pie-sharing model fits quite well. Therefore Condorcet cycles are very rare in elections with many independent voters.

The single-peak condition, e.g. that no voter ranks A last, means perfect pie-sharing with the secants intersecting on the circle periphery. In Figure 1a) the profile is reasonably close to single-peak, with very small voter groups ranking BCA or CBA. Only a major change of the profile may make it cyclic.

When T shrinks to a point, i.e. under perfect pie-sharing, the shape of the *"candidate triangle"* $\triangle$ in Figure 1a) is uniquely determined by the profile, but $\triangle$ may be scaled up or down. For a meaningful interpretation of the location of the ideal points of A, B, and C, we therefore need more information from the voters than what is conveyed by their ballot rankings. Given adequate additional information, $\triangle$ is an average of the voters' perceptions of the political landscape, and thereby itself a feature of the landscape.

If the candidate triangle $\triangle$ is chosen so that the mid-normals intersect outside the circle, the figure is not a "pictogram" according to the definition [5]. However, the profile still allows a unique pictogram with secants intersecting on the circle, i.e. perfect pie-sharing, but with a differently shaped $\triangle$.

In the profiles considered above, there are no cases of equal preference or incomplete ballots. I agree with Emerson *et al* that it is too strict to demand all ballot rankings to be both complete and antisymmetric. All voting methods considered here may well be extended to include all transitive ballot rankings through the principle of symmetric completion; candidates not mentioned are then considered as sharing last rank, and the ballot is counted as N miniballots of weight 1/N, one miniballot for each possible consistent extension of the submitted ballot ranking to a linear ranking.

2.2 What happens to A and C when B enters the election?

To explore the properties of an election method we pick 3 candidates A, B, and C, fix the ideal points of A and C, and let the ideal point of B vary over the unit circle. Based on the empirical fact that profiles from real elections are pretty close to perfect pie-sharing, we focus on cases like Figure 1a), and determine the profile by drawing the 3 mid-normals.

In Figure 2abcd) the ideal points of A and C are as in Figure 1a). Thus in an A vs C contest A always wins 5318 - 4682. We look at how the location of the ideal point of B influences this outcome in an election with the rules of

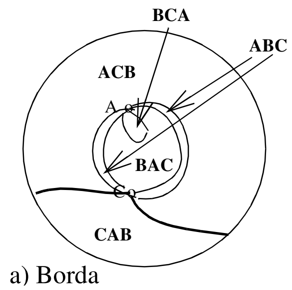
a) Borda; b) Condorcet; c) AV (=Instant Runoff); d) Plurality (=First past the post).

Compare first Borda and Plurality. The CAB area of Figure 2a) shows that if B enters the race in the "South", then C becomes Borda-winner instead of A. The CAB- and CBA-areas of Figure 2d) shows the opposite effect. By entering in the "North", B becomes a "spoiler" for A, turning C into Plurality winner instead of A. Figure 1a) is an example: the ideal point of B is chosen in the CBA-area of Figure 2d). With the chosen ideal points for A and C, no location of the ideal point for B can turn B into a Plurality winner.

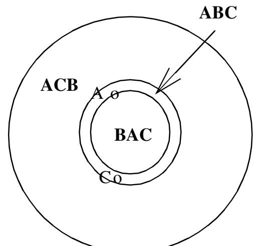
Figure 2b) shows Condorcet's relation. (In order to get an election method, one needs a rule to straighten out cycles. A cyclic triple instead of a winner is a rare event in real election profiles, Several overlapping cyclic triples will be extremely rare.) In a pairwise contest the winner is the candidate with ideal point closest to the circle center; thus the ideal point of a third candidate is irrelevant for a pairwise contest. The Condorcet winner [loser] changes when the ideal point of B crosses the circle through A [C].

Figure 2c) shows what happens in AV. The candidate who is last in Plurality (i.e. has the smallest number of first ranks) is eliminated and given third place. The critical curves are the closed curves through the ideal points of A and C in Figure 2d). Location inside the CBA-area means that A becomes eliminated, and B may win, but there is still an area in the North where C wins. Figure 1a) is an example of C becoming AV-winner.

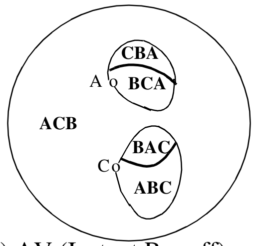
Choosing other ideal points for A and C may lead to more complicated graphs in 2c) and 2d), but one main feature is common: In Borda it is an advantage for a side to have two or more candidates. In Plurality the spoiler effect makes it dangerous for a party to have two or more candidates; in AV the danger is reduced but not completely eliminated.



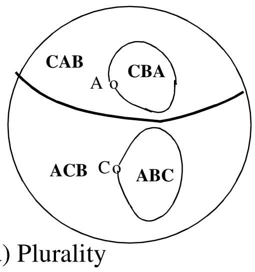
a) Borda



b) Condorcet



c) AV (Instant Runoff)



d) Plurality

Figure 2 The ideal points of A and C are fixed. If B does not enter, A beats C 5318 - 4682. The figures show the rankings under 4 election methods according to the location of B's ideal point. Thus, in Figure 1a) it is at (0.1, 0.55) and belongs to the ACB-regions in Figures 2a) and 2b) and to the CBA-regions in Figures 2c) and 2d); A is then Borda-winner and Condorcet-winner but Plurality-loser, and after elimination of A, C becomes AV-winner.

Borda and Condorcet elections may be arranged with matrix ballots that are added. In a 3 candidate election a voter may choose between 6 3×3 matrices. In Figure 1a) the profile has 1630, 0862, 4284, 0275, 0123, 2826 respectively of the following matrix ballots

	A	B	C
A	**0**	1	1
B	0	**0**	1
C	0	0	**0**

	A	B	C
A	**0**	1	1
B	0	**0**	0
C	0	1	**0**

	A	B	C
A	**0**	1	0
B	0	**0**	0
C	1	1	**0**

	A	B	C
A	**0**	0	0
B	1	**0**	0
C	1	1	**0**

	A	B	C
A	**0**	0	0
B	1	**0**	1
C	1	0	**0**

	A	B	C
A	**0**	0	1
B	1	**0**	1
C	0	0	**0**

Adding them together, we get the totals for all pairwise contests. The matrix sum is all the information that is needed for a Condorcet or Borda tally. From Figures 1a) and 1b) we get respectively the two following matrix sums in Table 1:

a)	A	B	C	Borda
A	**0**	6776	5318	12094
B	3224	**0**	4579	07803
C	4682	5421	**0**	10103

b)	A	B	C	Borda
A	**0**	4576	5318	09894
B	5424	**0**	4579	10003
C	4682	5421	**0**	10103

Table 1 Borda and Condorcet counts with the profiles of Figures 1ab). The Borda sums are the row sums; each of the 1630 ABC-voters in Figures 1ab) contributing 2 points to A and 1 point to B etc.

Borda and Condorcet elections may both be arranged as a series of pairwise elections in a round-robin tournament. Both methods also include two cyclic ballots ("ABCA" or "ACBA") in their natural domain, but noncyclic ballots may of course be prohibited by an ad-hoc rule. A cyclic preference is not necessarily irrational: consider e.g. a TV-station arranging a round-robin tournament of pairwise discussions between party leaders and inviting the viewers to vote each time on who was best! It is different if I am asked to measure the candidates by a common "yardstick", e.g. how good I think each one would be as a president. Then I should be able to submit a transitive ballot preference.

The 3×3 matrix sums do not reflect whether the ballot rankings are transitive or not. The high aggregation level of Borda makes it so insensitive to profile structure that it would give a transitive result even if a majority should have voted cyclically "ABCA".

In an AV election it is essential for the tally (counting process) that each ballot ranks the candidates, because when the (current) top candidate of a ballot is eliminated, the ballot must tell what candidate the voter's support should be transferred to. Because of the reduced spoiler effect, AV is visibly an improved version of Plurality. There is also a trace of the Condorcet in Figure 2c): the areas CBA and ABC from Figure 2d) are cut in two by circles from Figure 2b).

Both Borda and Condorcet are in fact based on pairwise comparisons. A Condorcet method chooses the Condorcet winner when one exists, and is otherwise characterized by how it handles the rare event of cycles. It will favor the candidate closest to the political center. In a deeply split society, say in groups of 40% and 60%, the real competition is between the majority candidates, but if candidate X is more acceptable to the minority than Y, X will get a huge lead on Y even before the majority votes are considered. This creates an incentive for majority politicians to appear as tolerable to the minority. That appears to me as an argument for Condorcet, i.e. for any Condorcet method. Borda may have a similar effect but distorts it in favor of clusters of candidates that are politically close, and it is wide open to strategic voting (cf section 2.3 below).

I think Condorcet is not the best choice in a society with a large median voter segment. It discourages diversity by picking the most central candidate, thus giving all candidates an incentive to appear noncontroversial by avoiding difficult topics. However, Condorcet may be useful in split societies where diversity is firmly established.

AV (Instant runoff) is based on the voters' rankings and works through eliminations, gradually concentrating the voter support on candidates that are central to a growing section of the electorate, until one candidate obtains 50% support. Figures 2cd) show that a central candidate has a much better chance to win with AV than with Plurality. To win with AV it is important to be a balanced candidate who attracts a primary following large enough to avoid elimination but who also is considered tolerable enough to obtain subsidiary support from other parties; B may be eliminated for being too central or too peripheral!

With AV in a deeply split society, the minority voters support their own candidates until they are all eliminated, and in the meantime the most tolerable majority candidates may also have been eliminated. AV in itself appears neutral with respect to bringing the two sides together or taking them further apart. The prevailing attitudes in the majority will decide: If the transfer of votes within the majority is generally towards candidates more acceptable to the minority, AV should serve unification better than Plurality. Similar considerations apply to STV (multiseat), where both sides may influence the outcome.

2.3 Strategies

Figure 2a) shows how the outcome of a Borda election with two candidates, where A would win over C, can be turned into a win for C by "strategic" agenda manipulation from C's party: The recipe is to introduce a third candidate B in the South, so that there will be a large number of CBA-votes but few ABC-votes. Dummett [3] considered modifications of the Borda Count in order to neutralize this effect. If one could move the curve separating ACB and CAB in Figure 2a) so that ACB grows and CAB is reduced one would get closer to Figure 2b). It is natural to ask why such modification of Borda should have any advantage over Condorcet.

Here the voters are supposed to vote in a straightforward way, according to their own assessment of their "political distance" to the candidates. However, inside the Arrovian framework of a fixed voter set and a fixed candidate set, voting strategies may be available to a voter or voter group: according to Table 2, straightforward voting causes OW to win, but by deviating suitably from the straightforward ballot preference, a voter group may cause NW to win, although NW is preferred to OW in the group's straightforward preference.

The debate on strategic voting often concerns three particular types of such voting strategy. In a 3-candidate election they are as follows:

	Straightforward vote	OW	Strategic vote	NW
Strategy 1	XYZ	Z	YXZ	Y
Strategy 2	XYZ	Y	XZY	X
Strategy 3	XYZ	Z	YXZ	X

Table 2 Three voting strategies that all exploit a violation of Arrow's IIA-axiom: the original winner OW is replaced by the new winner NW without NW passing OW in any ballot.

Among the strategies in Table 2, only strategy 1 is available in Plurality elections. The voter's problem in a Plurality election is often whether to vote "expressively" for X, who has no chance to win, or to vote "instrumentally" for Y, who has a chance to beat Z. The choice may be difficult. Two popular names for strategy 1, "favorite betrayal" and "compromising" indicate what cross-pressures many voters are exposed to.

For XYZ-preferrers who actually vote YXZ there is no clear distinction between straightforwardness and strategic behaviour since they vote YXZ in an attempt to get Y elected. Thus strategy 1 is very different from strategies 2 and 3. Strategy 1 counts as a strategy because of a very wide definition of the term "strategic voting". The Gibbard-Satterthwaite impossibility theorem rests on this wide definition.

Preferential methods are intended to remove, or at least reduce, the incentives for strategy 1. However, the main benefit of a preferential method may be the changed incentives for the parties involved: In an election campaign mutual charges of "spoiling" may be replaced by mutual appeals for second ranks. Some of the hidden intra-party struggle over platforms and nominations may be replaced by an open inter-party discussion. It is then important to reassure voters that they cannot harm their top candidate with their choices in the rest of the ballot.

For an XYZ-preferrer it will be natural to vote XYZ if it is clear that the preferential method "respects ballot rankings" in the sense that voting XYZ and XZY would have exactly the same consequence for X, i.e. that strategy 2 is not possible. In theory, every Condorcet method allows strategy 2 in some profiles, but there are practical difficulties. If straightforward voting leads to a Condorcet ranking XYZ, it is Y who may vote strategically, and that involves creating a cycle.

Thus in the profile of Figure 1a), 2200 C-supporters move from CAB to CBA, and create a cycle of 3 candidates in Figure 1b). Many Condorcet methods break the cycle where the pairwise defeat is smallest; in that case A's win over B is ignored and B wins the cycle-break. In the profile of Figure 1a) the same strategy works with a Borda Count. But a strategy campaign that requires massive moves of voters will be hard to organize.

In profiles with two strong candidates (A and C), and one chanceless candidate (B), the Borda strongly urges the A- and C-parties to use strategy 2. Consider e.g. the ideal point of B along the border between ACB and CAB in Figure 2a). Small transitions from ACB to ABC (or from CAB to CBA) are then important, and small-scale campaigns to apply strategy 2 may escalate until B becomes the winner.

With the Condorcet, a small-scale campaign for applying strategy 2 may work only if all pairwise contests are quite close to 50-50. Moreover, in that case an attempt at strategy 2 is probably too risky because of the inevitable stochasticity in any election result: The triangle T (cf Figure 1b)) is more likely to miss the circle center than to cover it, and a strategy attempt is more likely to harm than to help.

In AV (Instant runoff), strategy 2 is simply never available, because an XYZ-voter can be assured that only the ballot's top rank to X is used in the tally until X either wins or is eliminated. The unfortunate price is that strategy 3 becomes available in some profiles.

As an example, choose the ideal point of B at (0.1, 0.65), just North of the CBA-area in Figure 2c). In the CBA-area A is eliminated and C beats B in the second round. But now the profile is
ABC=1633, ACB=1085, CAB=4594,
CBA=0057, BCA=0031, BAC=2600;
thus B is eliminated, and the Condorcet winner A also becomes AV-winner. However, C still has a huge lead on B, and can well afford to sacrifice a few votes to keep B as opponent in second round. B needs 88 more top ranks to pass A. Clearly C has enough voters in the CAB- category: we may decompose the transition of voters first from CAB into CBA and then into BCA; the first step cannot help C, so it is the second step (strategy 3) that works. Since C has a large lead on B (5736-4264), which even will grow when the ideal point of B moves further North, C can afford this strategy for a while. However, the BAC-preferrers may avoid C by applying strategy 1 and vote ABC.

The possibility of strategy 3, called non-monotonicity, is perhaps mainly theoretical. An attempt to use it may backfire because of the profile stochasticity or because of counter-strategic measures. But it may well happen that a post-election analysis finds that a strategic opportunity was missed. Perhaps that does not sound too bad, but the same reality may be phrased differently. Suppose that some XYZ-voters could have voted YXZ and changed the winner from Z to X. Then those who actually did change from YXZ to XYZ because of X's great speech on the last campaign day may feel victimized. It is upsetting that they have harmed X by moving X upwards.

How often will this happen? That depends on what is a realistic distribution of the election profiles. In a political landscape shaped according to Duverger's law by a series of Plurality elections and election campaigns, the possibility may well be disregarded. But if small parties are left to grow under better conditions, i.e. reduced pressure to apply strategy 1, this may change. With 3 candidates, the danger signals that strategy 3 is available to the X-party, are: There is a clear plurality winner X, a Condorcet winner Z, and a clear Condorcet loser Y just after Z in top-ranks. Then the X-party may let some of their supporters vote YXZ in order to get Z eliminated instead of Y.

Both strategies 2 and 3 may be avoided completely with "conditional AV": With 3 candidates, number 2 in Plurality must qualify for round 2 by meeting another condition, i.e. having $> 1/3$ of the top-ranks. In general, it suffices to be closer to the Plurality winner than to number 3 in terms of top-ranks. Then there is an instant runoff between the two best, but if number 2 does not qualify, the Plurality winner is declared as winner of the conditional AV.

Profiles of non-monotonicity will certainly occur also in the multi-seat STV. I don't know of any convincing studies, but I believe that generally, it has less severe effect for the victims since their votes are likely to help elect some tolerable candidates anyway.

3 Election methods for deeply split societies

For readers of *Voting matters*, the technical topics are probably the most interesting parts of "Designing an All-Inclusive Democracy" [1]. In chapters 1, 2, 3 Emerson describes three voting methods particularly intended to promote cooperation between the segments of deeply split societies. The presentations should have been both clearer and shorter. In chapter 4 he discusses some aspects of manipulation. Various experts have written the "Critique" of chapters

5-8; from the technical point of view chapter 5 by Maurice Salles and chapter 6 by Hannu Nurmi are the most important. There is also a foreword by Sir Michael Dummett.

3.1 The modified Borda Count (MBC)

For voting over proposals in a national assembly, Emerson suggests a Borda Count where incompleteness is allowed. If there are 6 proposals, A-F, and a member just ranks ABC, the general idea of symmetric completion would let D, E, and F share $2 + 1 + 0$ points, and give 5, 4, 3, 1, 1, 1 Borda points to A, B, C, D, E, F. In MBC Emerson gives 3, 2, 1, 0, 0, 0 points to A, B, C, D, E, F. The first method does open for strategic use of an incomplete ballot in some situations, here by making a 2 point gap between A, B, C and all the rest. MBC may give an extra incentive to submit a complete ranking, and thus distinguish between proposals from the "other side". These are arguments in favor of MBC, but both MBC and Borda with symmetric completion share all the weaknesses of the Borda Count described above.

Emerson's own discussion of MBC in chapter 4 ("The Art or Science of Manipulation") is, in my opinion, not thorough enough. Agenda manipulation is discussed on p. 90. In a voting with proposals A, B, C, D, E, a new alternative F is entered, and every voter ranks it immediately after E. F is then a *"clone"* of E [6] and ranked immediately after E by every voter. That of course helps E, and even more so if another *"clone"* G of F is entered etc. If everybody ranks X before Y, Emerson calls Y an *"irrelevant alternative"*, an unfortunate choice since that term for 50 years has been associated with Arrows IIA-axiom, in a very different meaning.

Emerson claims that, provided some *"consensors are doing a good job"*, then *"-there will not be any irrelevant alternatives on the ballot paper"* (p.91). My objection is that this argument is irrelevant. *"Irrelevant alternatives"* in Emerson's sense will hardly ever occur. Inserting a *"clone"* F just after E in every ballot is an extreme case of similarity, giving a theoretical bound to the effect of entering an alternative similar to E. Figure 2a) shows how entering B in a large area South of C can help C even though the effect never is the maximal effect obtainable with a *"clone"*. There will always be some voters with B on top, and in most cases there will even be a few BAC-voters. Emerson's argument is based on the description of an unrealistic case, and the correct claim that it is unrealistic. Thus the effect of similarity is conjured away by an invalid argument. Dummett [3] was, with good reason, concerned about the similarity effect, but in Emerson's book the general and undemocratic advantage which Borda gives to a cluster of similar proposals has not been discussed.

Then comes possible use of strategy 2, which in my mind is an even more serious objection to both ordinary Borda and MBC. Emerson (p.89) points out that *".. if the persons voting are MPs, their preferences should all be in the public domain, not least via the pages of Hansard, and if there are signs that someone has been voting tactically - for whatever reason - then the press and others may ask why"*. I am sure that awareness of the public eye may have a dampening effect on the most obvious use of strategy 2, but we can only expect that really gross cases will raise public concern. If a genuine XYZ-preferring MP votes strategically XZY and it is not obvious to everybody that Y is much closer to X than to Z, who can criticize it? Most likely, somebody would have XZY as their straightforward ranking. Who can prove that an MP should consider his/her own position as being closer to that of Y than to that of Z? But in a deeply split society with lots of distrust, an MP may easily be suspected by the other side for using strategy 2.

In most cases one of the proposals will be a Condorcet winner, and most parliaments use one of two voting methods that then almost always end up with the Condorcet winner. The system of pairwise comparisons and eliminations (by Emerson called serial voting) may be the most reliable, especially if it is possible always to match the two among remaining alternatives that are most dissimilar. It is also important that the matched alternatives are mutually exclusive. The other system takes the proposals one by one and the MPs votes "Aye" or "No" until "Aye" wins; it is then important in the "Aye-No"-method that the Condorcet winner does not come too early and thereby run the risk of being prematurely eliminated.

In my opinion, Emerson has not given valid reason to expect that MBC is more likely to produce better consensus than any of these two established methods. Because of the serious defects of Borda, favoring similarity and urging the use of strategy 2, I am afraid the opposite is true.

3.2 The Quota Borda System (QBS)

For elections to legislative assemblies, Emerson suggests to use QBS, first proposed by Dummett [2]. Emerson remarks on p.39 that *"... the two main systems which do this without direct resort to party* *or any other labels are PR-STV* [multi-seat Single Transferable Vote] *and QBS"*. The goal for QBS is to achieve a proportional representation without using eliminations like STV.

The complete rules of QBS are rather complicated, but should have been explained more briefly and clearly. QBS adopts the Droop quota q used in STV [q = the nearest integer above $v/(e+1)$ when v voters are to elect e candidates]. QBS does not work with eliminations, but the tally pays particular attention to 1st ranks, first and second ranks etc. On p. 41 is stated *"When there are* $5+$ *candidates, any candidate gaining 1 quota of first preferences wins that 1 seat; any pair of candidates gaining two quotas wins those 2 seats; and any triplet of candidates gaining 3 quotas wins those 3 seats; any triplet of candidates gaining 2 quotas wins those 2 seats, the actual seats going to those 2 candidates of the triplet with the highest MBC scores"*.

A pair may gain the two quotas on first and second ranks etc.: On p. 113 is stated: *"In constituencies sending 3/4 representatives, any pair of candidates which has been ranked first or second by at least 2q voters is elected"*. [In this case $2q$ voters have the pair in the first two ranks, so at least one candidate gets q top-ranks.] A pair gaining 1 quota on first and second ranks may get 1 seat, which is awarded according to MBC-score. Etc.

QBS deviates radically from the Borda Count; in the latter a vote starting with "1:X, 2:Y, ..." has the same influence inside $\{$X, Y$\}$ as a vote ending with "... n-1:X, n:Y" (n candidates). That the B in QBS stands for "Borda", is therefore misleading; QBS must be very far from the Borda/Condorcet family.

In QBS there is an emphasis on first, second, third, ... ranks (in that order), which reminds much more about STV. However, in STV the elimination institute gives a certain flexibility: elimination of a candidate with few top-ranks channels a voter's support to the next-in-line who thereby may gain the quota. Some aspects of QBS are discussed by Schulze [4].

I miss a discussion of the properties of QBS in the book and a demonstration of how and why the QBS should function better than the STV. At least there should be a reference to an impartial discussion (Dummett is in the book's reference list, but not Schulze.)

The many STV variations that have been or may be devised are based on principles that have been developed by many contributors over many years. Many countries and organizations have collected experience with STV over a long time. I have seen no evidence that QBS would serve any declared purpose, e.g. proportionality without party-lists, in any better way than the existing STV variations.

In order to convince the countries Emerson *et al* particularly have in mind, that a certain election method may be a valuable tool in the efforts to improve unity, I think that it would be very helpful to point out that the method has been tested thoroughly in practice and studied in theory.

However, as mentioned in section 2.2 above, a Condorcet method in single-seat constituencies may be a more radical device in split societies with its strong urge for the minority to vote across the divide and really modify the majority's choice; there must be a related urge for the majority candidates to pay attention to the minority voters.

3.3 The Matrix Vote

Here Emerson considers situations where a national assembly appoints a cabinet consisting of e of the assembly's members, office by office. In order to elect e cabinet members, each MP fills in candidate names in e positions in an $e \times e$-matrix, one in each row (for office), one in each column (for rank). The e MPs in the cabinet are first elected by means of QBS, after that various MBC-scores (for each candidate to each post, for each candidate, and for each ministerial post) decide the distribution. For the QBS-step, the relevant comparison must be with STV, cf the remarks above.

Emerson does not inform how common it is that legislative assemblies compose a cabinet with full office specification. Anyway if the cabinet depends on the assembly's support, the problem of how to compose the cabinet seems less important than how the MPs are elected to the assembly in the first place.

3.4 The "Critique"

Chapter 5 is "The Theory of Voting and the Borda System" by Maurice Salles and chapter 6 is "Assessing Borda's Rule and its Modification" by Hannu Nurmi.

Chapter 5 (10 pages) is a well written general survey of relevant voting theory, explaining *"... why Arrow's independence condition [IIA], the Condorcet winner property and majority rule (and more generally pairwise voting) were so important and successful"*. Over the last half page the author concludes *"by mentioning when and how things began to change"*. Some papers and books by Young, Dummett, and Saari are then mentioned, but I would have liked to see the author follow up with a technical discussion of the voting methods proposed by Emerson.

Chapter 6 (11 pages) is more concentrated on QBS and the Borda/Condorcet family, but is still quite general on these topics. Based on a constructed profile, a comparison between QBS and Borda (p. 117) points out a difference due to the fact that QBS is designed as a proportional system (while Borda, even with straightforward voting, of course may allow a 51% majority to take all seats). The comparison is unfavorable to QBS: *"It seems, then, that QBS is considerably more majoritarian in spirit than BC* [Borda]". However, in the example QBS picks the same candidates as STV, and I am convinced that a comparison based on realistic profiles will show that both QBS and STV after all are much less *"majoritarian"* than Borda. Here I should have liked to see a comparison between QBS and STV.

Some properties of Emerson's *"Matrix Vote"* are also described, but without comparison with any realistic alternative. But I do not see any strong democratic need for a single voting procedure doing all the things that Emerson wants his *"Matrix Vote"* to do.

There are two more chapters in "Critique": chapter 7 ("Human Rights and Voting Procedures in Plural Societies" by Christine Bell of the Transitional Justice Institute, University of Ulster) and chapter 8 ("Inclusive Decision-making in Mediation and Politics" by Phil Kearney and Aileen Tierney, both of the Clanwilliam Institute). Their contributions do not directly concern election technicalities, but are based on an assumption that the voting procedures suggested in the book really will function as claimed; I am in doubt that this assumption holds.

4 Conclusion

The book concludes in chapter 9, "The *Realpolitik* of Consensus Voting" by Emerson with assistance from Elisabeth Mechan of Queen's University Belfast. It summarizes arguments for "non-majoritarian" election rules, and mentions many obstacles on the way to have new rules adopted.

Certainly there is a natural wish from politicians not to run the risk of an unpredictable outcome of a formal vote or election. In most formal voting in a legislative assembly the result is quite predictable after preparatory work; if need be one may enforce some party discipline. Elections or decision-making with new rules will themselves appear unpredictable to many people.

(Party discipline may also cause cycling. I consider that party discipline extended to subsidiary voting in the "Aye-No"-voting sequence over the location of Oslo airport 1992 was the main cause of a well documented Condorcet paradox. This is perhaps most likely to happen in cases of localization: it was not practical to create a compromise proposal and build the airport in the middle of the triangle formed by the proposed sites!)

It is important that people get used to preferential methods and their properties, and that the methods introduced are suited for their purpose (e.g. proportional representation, or a compromise decision). One should perhaps start in other places than high level politics, like internal elections of representatives at the universities, churches, companies or private organizations. As it is stated in the book's conclusion p. 142: *"Maybe the academic and the journalist will study decision-making in greater depth, when society at large has taken further steps in this direction"*.

The book must be seen as part of a project to promote "non-majoritarian" methods, especially in deeply split societies. (However, I do not always accept all of the authors' remarks about "majoritarian" methods in established democracies, although I think that proportional methods like STV will be an improvement compared to Plurality elections.) The participation of election theorists and law specialists in the book, and the book's acceptance by a major publisher show a serious commitment from Emerson *et al.* My main objection is with the particular methods suggested, especially the MBC for decision making in assemblies. I also think that one of the well tested STV-methods will serve better, and will be more easily accepted, than the less known QBS.

5 References

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[5] Stensholt, E. (1996), Circle Pictograms for Vote Vectors, *SIAM Review* vol 38, 96-119.

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