

Majority Voting – A Critique

Preferential Decision-Making – An Alternative

Peter Emerson¹

¹ The de Borda Institute, Belfast BT14 7QQ, Northern Ireland

Correspondence: Peter Emerson, Director, the de Borda Institute, 34-6 Ballysillan Road, Belfast BT14 7QQ, Northern Ireland. Tel: 44-78.3771.7979. E-mail: pemerson@deborda.org

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Abstract

The basis of western democracy is the almost universal belief that controversies shall be resolved by the will of a majority. And quite right too. Unfortunately, this leads many to take decisions by a majority vote, with proposed amendments and then the motion itself all approved or rejected in simple yes-or-no ballots. Other more accurate voting systems have long since been devised, and yet binary voting prevails, not only in democracies, but also in theocracies and autocracies; it is ubiquitous, in politics, business and law. Accordingly, this article analyses its weaknesses, discusses its origins, relates a little history, and refers to some of its worst consequences. It then goes on to describe a non-majoritarian methodology, to compare majority voting to other decision-making voting procedures, and finally to talk of a world where the words ‘majority’, ‘minority’ and ‘veto’ may fade from the political lexicon.

1. Introduction

War is binary. Majority voting is also binary. And all too often, decisions taken in ‘yes-or-no’ and/or ‘for-or-against’ votes have been at the very least unscientific in that they have reduced multi-option questions to binary dichotomies... and at worst, in many conflict zones, they have been ‘false-flag’ provocations to violence. Accordingly, this article examines majority voting, both its theoretical deficiencies and some of the horrible consequences of its application.

2. Majority Voting

Majority voting has many inherent weaknesses.

2.1 It is a blunt and binary tool. Ovens don’t have binary thermometers with temperatures marked just ‘high’ or ‘low’; they are calibrated in degrees. Speedometers don’t read velocities as ‘fast’ or ‘slow’, but in kms/hr. In politics, however, collective decisions are invariably based on individual opinions ‘yes’ or ‘no’, whereas they could be identified by an analysis of the voters’ preferences.

2.2 Politicians and others cannot best work ‘with’ each other if they are forever voting (‘for’ or) ‘against’ each other. Covid and Climate Change are telling the nations of the world that they must work together, so little wonder that the recent Conference of the Parties, Cop28, chose not to use majority voting. Maybe within nations, political parties should also seek a less adversarial polity, (and not yet has the UN found a more consensual voting procedure).

2.3 Most referendums are binary. But the questions, “Are you Serb or Croat?” “Catholic or Protestant?” “Hutu or Tutsi?” does not cater for those who are partners in, or the adult children of, mixed relationships; more to the point, such dichotomies do not cater for those who might want to vote for peace, or a compromise. Little wonder then that, “all the wars in the former Yugoslavia started with a referendum,” (*Oslobodjenje*, 7.2.1999); and the same is now true in Ukraine.

2.4 In many instances, people’s opinions lie on a normal distribution curve; and just as some people are small while others are tall yet most are near average, so too some are left-wing while others are of the right yet many are in the middle. And just as you cannot identify the average height of an electorate by asking, “Are you tall or small?” so too, asking “Are you socialist or capitalist?” cannot identify the collective will. Indeed, as often as not, the answer will be to one side or the other of the median opinion, and no matter what that outcome, it is bound to be

wrong!

2.5 In any democracy described as pluralist, controversies are invariably multi-optional. (See Sweden, in para 4). As shall become evident, (para 3.1), reducing a multi-faceted problem to a binary choice, or even a series of binary choices, cannot *identify* the will of the people, the collective will; (it might be able to *ratify* that will, but it cannot *identify* it). Furthermore, if the initial choice is more than binary, a majority vote cannot *identify* even the will of a majority. In umpteen instances, from the referendum in 1803 when Napoléon, the only candidate, was elected to be the emperor with a 99.7% majority, the vote *identifies* only the will of the individual – it is often a male – who wrote the question. Indeed, in that instance, it was himself, who chose himself. And today, in umpteen countries, in countless majority votes, in both referendums and parliamentary divisions, the question is then the answer.

2.6 In a two-party state, those who form a majority choose their policies by majority vote, of course. But a majority of a majority is often a minority: a half of a half is a quarter, and 51% of 51% is only 26%. So majority rule, as such, seldom exists. Relying as they do on majority voting, many democracies choose (in one way or another) a leader – Theresa May called her rule ‘democratic leadership,’ Xi Jinping uses the phrase ‘democratic centralism’ – and in many jurisdictions, democratic and authoritarian, this premier/president often has enormous powers.

2.7 On some of the more contentious issues, as for example in the UK when debating Brexit,¹ umpteen options are on the table, and there’s a majority against everything. In Theresa May’s first ‘indicative vote’, there were eight options; they all lost, the most unpopular by 313 votes, the least, Ken Clarke’s proposal for a form of Customs Union, by only 6.

<https://commonslibrary.parliament.uk/indicative-votes-2-0-where-did-support-lie/>

Logically, the least unpopular is the most popular, and Mr Clarke’s option should have won. In 1996, Slovenia took three majority votes on their electoral system: from a wide choice on the table, they selected a short list of just three options for the ballot paper: a mix of PR and first-past-the-post FPTP² won 14.4%; a two-round system TRS³ got 44.5%; and a PR-list system⁴ was supported by 26.2%. There was (yet again) a majority against everything... whereupon the least unpopular was declared the winner. In 2019, however, in the mother (or grumpy old grandpa) of parliaments, the House of Commons, nothing won, so everything – and everybody! – lost. The matter was eventually ‘resolved’ by Boris Johnson, (see para 3.)

2.8 North Korea uses binary voting in their elections: a candidate is chosen by the Party, and then – on the question, “Candidate X, ‘yes’ or ‘no’?” – the voters are able to vote ‘yes’ or ‘no’ (or maybe it’s ‘yes’ or ‘yes’). In real democracies, in contrast, there are of course at least two candidates,⁵ and some electoral systems like ranked choice voting RCV (otherwise known as single transferable vote PR-STV) allow the voters to cast their preferences. In nearly all elected chambers, however, elected representatives often take decisions on the basis of, “option X, ‘yes’ or ‘no’?” (or if the whip system is in operation, maybe it’s ‘yes’ or ‘yes’ for the party of government, and ‘no’ or ‘no’ for those of the opposition). Interestingly enough, simple and majority voting are enshrined in article 97 of North Korea’s constitution, (DPRK 2017: 21-2), though seldom used.

In a nutshell, majority vote is inadequate. Simple, weighted and/or consociational “majority decisions... cannot be fair in a democratic sense because the imposition of binary alternatives is itself unfair.” (Riker 1988: 64.) It is also inaccurate and, especially in divided societies, inappropriate. What’s more, it is a major cause of why politics are so adversarial, divisive and dangerous. (As shall be shown in para 8), it need not be so.

3. The Origins of Binary Voting

Majority voting was first devised some 2,500 years ago in Greece, where “sovereign power was held to reside in the [all male] Assembly, and was exercised by majority vote,” (De Ste. Croix 2004: 75). A little later on, in the year 61 BCE, binary voting was used in the Imperial Court in China in “the Court Conference of the Former Hàn Dynasty, [202 BCE – 23 CE],” when the majority was 80%. Indeed, “...decisions were based on the opinions of

¹ Most countries debate a problem *before* trying to fix it, but in 2016, the UK held a binary vote, the Brexit referendum on only one option, and only *after* the ballot did they consider – and argue over – some of the other options.

² This combined system, multi-member proportional MMP, is used in Germany and New Zealand

³ TRS is used in France and, for example, Mali and Uzbekistan.

⁴ In PR-open list systems, every party presents a list of candidates – hence the name – and in most systems, the voter is allowed to cast only a single preference. In the recent 2023 election in The Netherlands, the ballot paper listed over 1,000 candidates!

In Belgium, however, the voter may cast more than one preference for other candidates of the same party, while in Switzerland, the voters can use their preferences across the party divide.

⁵ The 1992 presidential election in Georgia was an exception: Eduard Shevardnadze was the only candidate... but this was during their civil war.

the majority... [and] as a rule, [these] were accepted by the Emperor,” (Wang 1968: 176).

Now there are two types of binary voting: a singleton poses the question, “Option *X*, yes or no?” whereas a pairing gives the voter a little more choice, “Option *X* or option *Y*?” If the former is used, then – as in Slovenia, the UK and elsewhere – there might indeed be a majority against everything. In contrast, when a pairing is deployed, even if the outcome depends on the casting vote of the chair, there will always be a definite result. Unlike David Cameron and Theresa May on Brexit, Boris Johnson used a pairing: he first chose an alternative option, ‘no deal’, which was the most unpopular of all options, and he then paired this against ‘his deal’; so, in a parliamentary division in December 2019, the latter won... but of course it b...y won: ‘any deal’ would have beaten ‘no deal’. Logically, mathematically, that vote meant nothing; but politically, the repercussions are still being felt.

But back to Greece: when our democratic forebears first devised a democratic structure, they knew of only one voting procedure, majority voting and they used pairings. *Inter alia*, they learned “the powers of the proposer, the rights of expressing an opinion, the authority of office holders, and the privileges of ordinary members; they learned when to give way and when to stand firm, how long to speak and when to keep silence, how to distinguish between conflicting proposals and how to introduce an amendment, in short, the whole of senatorial procedure,” (McLean and Urken 1996: 67). The system they devised, with everything based on majority vote pairings, is still in use today. So, even if, initially, there is a majority against everything, there will always be a definite, supposedly democratic outcome. It runs as follows:

- (i) select the more/most preferred amendment,
- (ii) adopt or reject the preferred amendment to get the substantive, and
- (iii) choose either the latter or the status quo, option *S*.

Accordingly, when a committee of let’s say 13 members is debating a motion, option *X*, and two alternative amendments which if either is adopted, would change the motion to become option *Y* or *Z*, the order of voting shall be:

$$\begin{aligned}
 & Y \text{ v } Z \\
 & (Y \text{ v } Z) \text{ v } X \\
 & \{(Y \text{ v } Z) \text{ v } X\} \text{ v } S
 \end{aligned}$$

3.1 Analysis

Consider then the members’ preferences for the three options, as shown in Table 1.

Table 1. A voters’ profile

Preferences	Number of Voters		
	6	4	3
1 st	<i>X</i>	<i>Y</i>	<i>Z</i>
2 nd	<i>Y</i>	<i>Z</i>	<i>X</i>
3 rd	<i>Z</i>	<i>X</i>	<i>Y</i>

When considering all the preferences cast by all, *X* (shown in yellow) is more popular than *Y* (in pink) by 9:4, which is written $X > Y$; in like manner, $Y > Z = 10:3$; and $Z > X = 7:6$.

Therefore, in this voters’ profile,

$$X > Y > Z > X > \dots$$

and it goes round and round for ever: Le Marquis de Condorcet’s famous paradox of binary voting.

In the given scenario – with motion *X* and the two possible amendments of *Y* and *Z* – the committee’s democratic decision is option *X*.

$$(Y \text{ v } Z) \text{ v } X = X.$$

In another setting however, if *Y* were the motion while *X* and *Z* were the alternative amendments:

$$(X \text{ v } Z) \text{ v } Y = Y,$$

or again, if *Z* were the motion:

$$(X \vee Y) \vee Z = Z.$$

In other words, in this particular (and many another) voters' profile, the outcome depends upon the order of voting (which explains why a chairperson may have so much power). Furthermore, if the chair wants something different to what a majority of the committee members favours – (and we have all witnessed those occasions when a chair interrupts proceedings to suggest everyone should also consider, let's say, option *V* or *W*) – he/she might introduce another option... and then adjust the order of voting accordingly. In a nutshell, as Napoléon, Boris Johnson and countless others have shown, majority voting is often a means by which a 'democratic' leader may manipulate an electorate.

4. A Tale of Woe

Human beings are naturally tempted to consider many things in terms of binary couplets: day and night, land and sea, flora and fauna, etc... true or false, right or wrong, heaven and hell, and so on. But not every colour is either black or white. Not everybody is either left- or right-wing. Furthermore, while some pairs are indeed opposites, others are best described as complements. The most obvious is male and female... and the latter can only be (pro)creative if *both* are involved, working (if that's the right word, which it isn't) together.

Initially, democracy was for everybody, (or rather, in Ancient Greece, for every adult male citizen, he who was not a slave). And, as mentioned above, decisions were taken in the Forum by majority vote. There were no political parties in those days, so a citizen could vote 'with' his neighbour today, and 'against' tomorrow, without falling into parties, factions locked into permanent opposition. Ideally, however, democracy is indeed for everybody, not just for a/the majority. It should be for Hutu AND Tutsi, Catholic AND Protestant, Sunni AND Shi'a, Arab AND Jew, black AND white... male AND female, rich AND poor... capitalist, socialist, *et al.*

Today, however, in politics everywhere as well as in business, law and civil society, majority voting is dominant. In courts of law, questions may indeed be binary: 'guilty or not guilty?' But in politics, disputes on how best to build a new factory or organise a transport system are not binary. Even the question – "Which side of the road shall we drive on?" – when posed in Sweden in 1955, was in a three-option ballot.⁶

As it were by definition, therefore, in any democracy which aspires to be pluralist, controversies will invariably be multi-optional. Politicians, however, like to control things; some, like Napoléon, like to control everything. Accordingly, all sorts of arguments are used in favour of binary voting; take, for example, Germany: in the Introduction para B2 of their Constitution, it is written: "The fact that Members of the *Bundestag* take decisions on behalf of the whole German people... is a requirement... for majority decision-making." (*Basic Law* 1998: 18.). This is pure gobbledegook; no matter what the controversy, "the whole" can never be the "majority".

In other settings, the consequences of a majoritarian polity have often been horribly violent. In Rwanda, for example, the colonial masters first maintained a form of minority rule: the Hutus were the workers, the Tutsi were next, and the white men were on top. Then, in 1960, as the British Prime Minister Harold McMillan's "winds of change" blew forever stronger in the European colonies in Africa, as more and more countries received their independence, instead of colonial minority rule, which was (now) wrong, Belgium introduced the opposite, majority rule.⁷ So the losers of yesteryear could be the winners of tomorrow. The first sectarian murder in Rwanda took place in 1969. Later, in 1994, when the *Interahamwe* launched their genocide, they used the slogan "*Rubanda nyamwinshi*," 'we are the majority.' (Prunier 1995: 83.)

In 1989, with tens of thousands of students in Tiān'ānmén Square, the Chinese Communist Party Standing Committee under Dèng Xiǎopíng took a majority vote, it is said, on the question of military intervention, yes or no; it passed by a majority of one vote. (Fenby 2012: 180, but see also Zhao 2010: 29.)

Ten years earlier, Iran held a referendum on the establishment of an Islamic Republic: the Shi'a voted in favour, the Sunnis abstained. In similar fashions, the Catholics in Northern Ireland boycotted the 1973 border poll; the Orthodox didn't vote in the 1991 independence referendum in Croatia, but fought a war; the Moslems stayed away in the 1994 referendum in Nagorno-Karabakh, which has seen many wars; and the Georgians abstained in South Ossetia in 2006, prior to yet more violence.

Lastly, in Donetsk in 2014, there was supposedly a majority of separatists, a majority voting in favour of independence (from Ukraine). Interestingly enough, the word Scotland, Шотландия (*Shotlandiya*) – (2014 was

⁶ The options were 'left', 'right' and 'blank', so the democratic who on this particular question was indifferent could still participate and, as it were, go with the (traffic) flow.

⁷ Other European powers did the same: Britain for example in Kenya, thus pitted the Bantu Kikuyu tribe against those of the Nilotic Luo.

also the year of Scotland's referendum) – was used by a Russian separatist, to 'justify' the unjustifiable.⁸ Now when Ireland opted out of the UK in 1920, Northern Ireland opted out of opting out, and stayed in the UK, albeit without referendums. In 2014, in Donetsk, when supposedly, a majority voted in support of Putin's question in favour of separation (from Ukraine), the Krasnoarmiisk region⁹ of Donetsk tried in another referendum to opt out of opting out and to opt back into Ukraine; and 69.1% chose to stay in Ukraine. (Emerson 2022: 79-80.)

Then, in 2022, Putin changed his mind: he now wanted the people of Donetsk, not to be independent (of Ukraine), but to be incorporated (into Russia). So he set a different question and, in another referendum, apparently, supposedly, a majority of the people of Donetsk had changed their minds too. As happens so often with binary voting, the question was again the answer... supposedly.

It might also be noted that the best answer for the Middle East – a one-state solution – would not and could not work if its polity were to be based on majority voting. Even a two-state solution would be vulnerable; suffice here to say that (not *the* but) one of the many causes of the horrible violence of October 2023 and its ghastly consequences was the majority coalition in the Knesset, in the history of Israel, the most extreme ever! But Netanyahu was only doing that which others have also done: in 2017, Britain's Tories formed a majority administration by joining up with the Unionists, thus repeating what the Labour Party had done in 1978; in 1999, Austria's Freedom Party on 52 seats joined a coalition with the 52-seat People's Party, and the 'winners', the Social Democrats on 65, were left powerless; while in The Netherlands in 2002, the Freedom Party joined a coalition, but it collapsed after just five months... today, however, having won the 2023 election, the *Partiej voor de Vrijheid* PVV wants to lead the next coalition, and negotiations are underway.

5. A Little More History

Little wonder, then, that throughout human history, many have tried multi-option voting. Pliny the Younger was one of the first to note the limitations of binary ballots. In a Roman court of law in the year 105, the jury had three options: *A* acquittal, *B* banishment and *C* capital punishment, and there was a majority against execution, a majority against innocence, a majority (yet again) against everything. (McLean and Urken 1995: 15.) Hence plurality voting.

The first people to try a little pluralism were the Chinese, or should I say the Jurchens of the Jin Dynasty (金朝). In 1197, they were worried about their northerly neighbours, the Mongolians: was their (Jurchen) future to be war or peace? But the ballot had *three* options: 'attack', 'defend', and 'alternate between the two'. The 84 members of the Jurchen government took a multi-option vote, and the result was 3:46:33. So peace did reign. (Franke and Twitchett 1994: 266.) (Alas, not for long; in 1206, the leaders in Mongolia elected¹⁰ a new leader, Chinggis Khan; the Mongols invaded in 1211, and the Jin Dynasty collapsed in 1234. Kublai Khan, a grandson, then became the emperor, the first of the Chinese Yuan Dynasty (元朝). (Emerson 2022: 68.)

As far as is known to this author, the above vote was the only multi-option ballot undertaken by the Chinese. Meanwhile in Europe, not long out of the Dark Ages, the wise were also beginning to question binary voting. In 1299, Ramón Llull spoke of preferential decision-making; in 1433, Cardinal Nicholas Cusanus devised a points system, that which is now called the Borda Count, BC, and "Believe me," he said, "no more perfect system can be found." (Sigmund 1963: 212.) He was almost right.

In 1770, in France, the scientist and mathematician Jean-Charles de Borda developed an even better variation, today's Modified Borda Count MBC. At about the same time, another member of *l'Académie des Sciences*, (the above mentioned) Le Marquis de Condorcet, devised a different multi-option decision-making voting procedure. Both the Borda and Condorcet rules are non-binary voting procedures which allow for preferential decision-making; pluralism is indeed possible.

The Condorcet rule analyses all the pairings, and the Condorcet winner is defined as the option which wins all of them, (if and when there is such an option); when there's a majority against everything, however, as with the voters debating the three options, *X*, *Y* and *Z* in Table 1 above, there might be a paradox.

The MBC, a points system, is non-majoritarian. At best, from a multi-option choice (usually of about half-a-dozen options) it can identify the option with the most points or, in other words, the highest *average* preference... and an average, of course, involves *every* voter. The methodology is inclusive, literally. The MBC is prone to what is called an irrelevant alternative: consider again, Table 1, but now with the addition of option *W*, such that, for all voters, $Z > W$. So *W* could be regarded, mathematically, as irrelevant. If it is included, however, as shown in the

⁸ In 2014, the author, a Russian speaker, was on his sixth OSCE election observation mission in Ukraine.

⁹ It included seven cities such as Mariupol and had a population about four times that of Northern Ireland.

¹⁰ The traditional Mongolian assembly, a *Kurultai*, enabled the elders to select their leader, probably by acclamation.

voters' profile of Table 2, the analysis changes as well.

Table 2. The irrelevant alternative

Preferences	Number of Voters		
	6	4	3
1 st	<i>X</i>	<i>Y</i>	<i>Z</i>
2 nd	<i>Y</i>	<i>Z</i>	<i>W</i>
3 rd	<i>Z</i>	<i>W</i>	<i>X</i>
4 th	<i>W</i>	<i>X</i>	<i>Y</i>

Table 1's BC/MBC social ranking is *X-Y-Z*, 28-27-23; but Table 2 produces a different outcome, *Y-Z-X-W* with scores 37-36-34-23. So what was the winner is now a loser!

The Borda rule is indeed vulnerable to an irrelevant alternative, but not the Condorcet rule; the latter is vulnerable to the paradox but not the former. So maybe the best decision-making voting procedure of all would be a combined Borda/Condorcet rule, (para 7).

6. Modified Borda Count

As often happens, what can go wrong does so: and that which deserves the name of Cusanus Count is called the BC, and Jean-Charles de Borda's MBC is often called the BC.

The difference between the two methodologies, though subtle, can be profound. In a BC/MBC ballot of n options, a voter may cast m preferences. And obviously

$$n \geq m \geq 1.$$

In the BC count, points shall be awarded to (1st, 2nd ... last) preferences cast, according to the formula

$$(n, n-1 \dots 1)$$

which is the same, mathematically, as

$$(n-1, n-2 \dots 0)$$

for the social choice and social-ranking outcomes of either formula will be the same. There is, however, a huge difference, especially in a conflict zone, between giving your last preference something or nothing at all!

So now, the MBC. The rule proposed in 1770 by Jean-Charles, (Saari 2008: 197), is

$$(m, m-1 \dots 1).$$

Accordingly, in a five-option ballot with the MBC:

- + he who casts just one preference (and says nothing about the other options)
 - gets his favourite just 1 point; (and the other options get nothing);
 - + she who casts two preferences
 - gets her favourite 2 points (and her 2nd choice 1 point);
- and so on; accordingly
- + those who cast all five preferences
 - get their favourite 5 points, (their 2nd choice 4, their 3rd 3 points, etc.).

In effect, the BC tempts the voter to truncate his ballot, to cast only a 1st preference, so to get his favourite n or $(n-1)$ points and thus an $(n-1)$ points advantage over *all* the other options. In an MBC, in contrast, the voter is encouraged to cast all her preferences, but not in a way which gives her favourite an advantage: the difference between the points awarded to her (x) th preference when compared to her $(x+1)$ th preference, regardless of whether or not she has cast that $(x+1)$ th preference, is always just 1 point.

Thus the MBC encourages the voters to state, not only their favourite option, but also their compromise option(s). And if every voter does state a compromise, it is then possible, in theory, to identify the collective compromise: at best – i.e., if everyone casts a full ballot – if the winning option's level of support surpasses a predetermined threshold, it is the option with the most points, the highest *average* preference.

In effect, in casting a full ballot, voters recognise the validity of their neighbours' aspirations. They may not like a certain option – in a Belfast context, the (as yet undefined) united Ireland option, or the United Kingdom status quo – but by giving it at least 1 point (and thereby increasing the number of points to be awarded to their own favourite option by albeit just 1 point as well), the voter may undergo a personal act of reconciliation.

Furthermore, in the campaign which precedes the vote, every political party will know that success will depend not only on a good quantity of 1st preferences (from its own supporters) but also a fair number of 2nd or 3rd preferences from their allies, and as few as possible last preferences (or zeros) from their opponents. As a result, while majority voting prompts confrontation, the MBC encourages cooperation.

In a parliament, the democratic MP may not only (campaign and) vote for his/her (constituents') favourite, so to identify the will of parliament; as a democrat, bearing collective responsibility to implement the will of the people (in a referendum) or the will of the elected chamber (in any parliamentary poll), he/she may also then help to implement that collective will, even if it was not his/her 1st preference.

7. Voting Procedures, a Comparison

When Nicholas of Cusa (to use his other name) was comparing his BC with other systems, he would have known about plurality voting, which dates from Pliny the Younger, and approval voting, which was quite widespread in Europe in the Middle Ages. Other systems include the Condorcet rule, which Ramón Llull hinted at in 1199, and Copeland's variation which came much later: as noted, the Condorcet rule identifies the option which wins all the pairings (if there is such a winner), the Copeland rule chooses the option which wins most of them. Today, there is also RCV (known in Europe in decision-making and elections as the alternative vote AV or, in PR elections only, as PR-STV, while in Australasia, RCV is called preference voting PV); it was devised by Thomas Hill in Britain in 1821. A brief description of all the above is as follows:

Plurality voting allows the voter to cast only a single preference; the winner might have the support of a majority, or maybe that of only the largest minority.

In TRS, if there is no majority in the plurality vote, a second ballot is held between the two top runners, so the outcome definitely has majority support...

RCV is like a series of plurality votes. The voter may cast one, some or all n preferences. In the count, if nothing has a majority, the least popular option is eliminated and its votes are transferred to its 2nd or subsequent preference options, and this step is repeated until one option does get a majority score; so this outcome will also have majority support... definitely. As will be seen in Table 4, however, a TRS social choice is not necessarily the same as an RCV social choice.

In approval voting, there are no preferences; the voter indicates one or some options of which he/she approves, and the winner is the option with the most 'approvals'. These may be identified as either all 1st and 2nd 'preferences', or all 1st, 2nd and 3rd 'preferences', or in other analyses: 1st – 4th or whatever. A change in the analysis, however, might produce a change in the outcome.

To compare all of these voting procedures, consider the voters' profile of 21 voters shown in Table 3 and the analyses in Table 4. A majority of 21 is, of course, 11.

Table 3. A voters' profile

Preferences	Number of Voters					
	6	5	4	3	2	1
1 st	<i>A</i>	<i>F</i>	<i>B</i>	<i>E</i>	<i>C</i>	<i>D</i>
2 nd	<i>B</i>	<i>E</i>	<i>D</i>	<i>D</i>	<i>D</i>	<i>E</i>
3 rd	<i>C</i>	<i>D</i>	<i>C</i>	<i>C</i>	<i>E</i>	<i>C</i>
4 th	<i>D</i>	<i>C</i>	<i>E</i>	<i>B</i>	<i>F</i>	<i>F</i>
5 th	<i>E</i>	<i>B</i>	<i>F</i>	<i>A</i>	<i>B</i>	<i>B</i>
6 th	<i>F</i>	<i>A</i>	<i>A</i>	<i>F</i>	<i>A</i>	<i>A</i>

The scenario suggests the debate is contentious. Six voters have the preferences *A-B-C-D-E-F*, and the second largest group of five have the exact opposite, *F-E-D-C-B-A*. With six 1st preferences and a dozen bottom ones,

option *A* is obviously very divisive, and option *F* is not much better. So maybe the *B-C-D-E* set includes the option which best represents the collective will: of these, *E* and *B* have no 6th preferences at all, while *C* and *D* don't have any 5th preferences either. Given what's more, that while option *D* has only one 1st preference, it has nine 2^{nds}, the latter may be regarded as a hot favourite. Let us now consider the analyses.

The **plurality vote** winner is option *A* on a score of 6, which is of course only a largest minority.

So options *A* and *F* go into the second round of a **TRS** contest, which if everyone's preferences stay the same, *F* wins on a score of 12 to *A*'s 9.

In **RCV**, option *D* is eliminated and its vote goes to option *E* for a stage (ii) score of *A6-F5-B4-E4-C2*. So now *C* is out, and its 2 votes go to *D*, but *D* has been eliminated, so they go to *E* instead: and the stage (iii) score is *A 6-F 5-B 4- E 6*. This spells the end for *B*, and its 4 votes go, not to *D* or *C*, but to *E*, for a stage (iv) score is *A6-F5-E10*. Still nothing with a majority, so *F* is dead, and the stage (v) score is *A 6-E 15*. So *E* wins.

As stated above, **Approval voting** can be analysed in a number of ways... which means there might indeed be more than one approval vote social choice. When 1st-2nd 'preferences' are regarded as 'approvals' option *C* is last; but when the 3rd 'preferences' are counted as well, *C* is the winner!

The BC and MBC are as described in para 5 above, and the Condorcet rule is in para 5.

Table 4. The analyses

Voting System	Social Choice	Social Ranking					
		First	second	third	fourth	fifth	sixth
Plurality	<i>A</i>	<i>A</i> -6	<i>F</i> -5	<i>B</i> -4	<i>E</i> -3	<i>C</i> -2	<i>D</i> -1
TRS	<i>F</i>	<i>F</i> -12	<i>A</i> -9				
AV, PV, RCV, STV	<i>E</i>	<i>E</i> -15	<i>A</i> -6				
Approval 1 st -2 nd	<i>B/D</i>	<i>B/D</i> -10		<i>E</i> -9	<i>A</i> -6	<i>F</i> -5	<i>C</i> -2
voting 1 st -3 rd	<i>C</i>	<i>C</i> -16	<i>D</i> -15	<i>E</i> -11	<i>B</i> -10	<i>A</i> -6	<i>F</i> -5
BC/MBC	<i>D</i>	<i>D</i> -89	<i>C</i> -83	<i>E</i> -80	<i>B</i> -79	<i>F</i> -56	<i>A</i> -54
Condorcet	<i>D</i>	<i>D</i> -5	<i>C</i> -4	<i>E</i> -3	<i>B</i> -2	<i>F</i> -1	<i>A</i> -0

As Table 4 shows, with this particular voters' profile, the democratic outcome could be anything at all! Choosing a voting procedure, therefore, can also be a means of manipulation. Of the methodologies here analysed, only the last two take *all* preferences cast by *all* voters into account, *always*; they are the most accurate. Both identify option *D* as the social choice, so what was the favourite is indeed the winner.

It is also interesting to note that the BC/MBC/Condorcet social rankings:

D-C-E-B-F-A

are the exact opposite of the social ranking produced from a plurality vote:

A-F-B-E-C-D

In this profile, the latter – plurality voting in decision-making and FPTP in elections – is wrong, and couldn't be more wrong!

The MBC and Condorcet can be compared to what happens in a sports tournament: the Condorcet winner is the option (team) which wins the most pairings (matches), while the MBC social choice is the option (team) with the most points (the best goal difference). In many voters' profiles (seasons), the Condorcet winner (champion) has the best MBC score (goal difference)... but not always. Both are nevertheless very good systems, and less capricious by far than majority voting, (which can be compared to a knock-out competition, where so much depends upon the luck of the draw).

Given the accuracy of both the MBC and Condorcet systems, to use a combination of both as suggested above (para 5) would be wise; those who have advocated such include Charles Dodgson, Duncan Black and Arthur Copeland, (Emerson 2007: 17).

7.1 Partial Voting

Consider now what might happen if some of the voters truncate their ballots. For example, imagine the four option *B* supporters give only their favourite option a 1st preference, as shown in Table 5.

Table 5. A partial voting voters' profile

Preferences	Number of Voters					
	6	5	4	3	2	1
1 st	<i>A</i>	<i>F</i>	<i>B</i>	<i>E</i>	<i>C</i>	<i>D</i>
2 nd	<i>B</i>	<i>E</i>	-	<i>D</i>	<i>D</i>	<i>E</i>
3 rd	<i>C</i>	<i>D</i>	-	<i>C</i>	<i>E</i>	<i>C</i>
4 th	<i>D</i>	<i>C</i>	-	<i>B</i>	<i>F</i>	<i>F</i>
5 th	<i>E</i>	<i>B</i>	-	<i>A</i>	<i>B</i>	<i>B</i>
6 th	<i>F</i>	<i>A</i>	-	<i>F</i>	<i>A</i>	<i>A</i>

The analyses of a plurality vote and a TRS count stay the same as in Table 4; the others, however, change, and please note the inclusion of separate rows for the BC and MBC analyses.

Table 6. Partial voting analyses

Voting System	Social Choice	Social Ranking					
		First	second	third	fourth	fifth	sixth
Plurality	<i>A</i>	<i>A</i> -6	<i>F</i> -5	<i>B</i> -4	<i>E</i> -3	<i>C</i> -2	<i>D</i> -1
TRS	<i>F</i>	<i>A</i> -9	<i>F</i> -8				
AV	<i>E</i>	<i>E</i> -9	<i>A</i> -6				
Approval voting	1 st -2 nd 1 st -3 rd	<i>B</i> <i>C</i>	<i>B</i> -10 <i>C</i> -12	<i>E</i> -9 <i>D/E</i> -11	<i>A/D</i> -6 <i>B</i> -10	<i>F</i> -5 <i>A</i> -6	<i>C</i> -2 <i>F</i> -5
BC	<i>B</i>	<i>B</i> -79	<i>D</i> -69	<i>E</i> -68	<i>C</i> -67	<i>A</i> -50	<i>F</i> -48
MBC	<i>D</i>	<i>D</i> -69	<i>E</i> -68	<i>C</i> -67	<i>B</i> -59	<i>A</i> -50	<i>F</i> -48
Condorcet	<i>D</i>	<i>D</i> -5	<i>E</i> -4	<i>C</i> -3	<i>B</i> -2	<i>A</i> -1	<i>F</i> -0

The various BC/MBC possibilities are shown in Table 7. If the *B* supporters do abstain, they will lose (shown in orange). The BC rewards the truncating *B* supporters by giving them victory (in blue). What Jean-Charles de Borda advocated, however, was the MBC, which would have meant that option *B*, with the support of the lower preferences of only the other voters, came fourth (in green)!

Table 7. The fortunes of option *B*'s supporters

Voting System	Option <i>B</i> supporters	Social Choice	Social Ranking					
			first	second	third	fourth	fifth	sixth
BC/MBC	abstain	<i>D</i>	<i>D</i> -69	<i>E</i> -68	<i>C</i> -67	<i>B</i> -55	<i>A</i> -50	<i>F</i> -48
BC	a partial vote	<i>B</i>	<i>B</i> -79	<i>D</i> -69	<i>E</i> -68	<i>C</i> -67	<i>A</i> -50	<i>F</i> -48
MBC	a partial vote	<i>D</i>	<i>D</i> -69	<i>E</i> -68	<i>C</i> -67	<i>B</i> -59	<i>A</i> -50	<i>F</i> -48
MBC	a full vote	<i>D</i>	<i>D</i> -89	<i>C</i> -83	<i>E</i> -80	<i>B</i> -79	<i>F</i> -56	<i>A</i> -54

Suffice to say, in an MBC, everyone fares better if they do actually participate, and the more preferences they cast, the better their final outcome. The conclusion is clear: whereas majority voting prompts only the majority to

participate, as in so many referendums already mentioned, (para 4), the MBC encourages *all* the voters to be democratic. The fact that Jean-Charles de Borda's invention – the MBC – has been misinterpreted to be a BC such that it may produce the very opposite result means, no doubt, that he rests, not in peace, but grating in his grave.

8. Conclusion

As noted, the MBC can identify the option with the highest *average* preference... and an average, of course, involves every member of the chamber, (be it elected or appointed, be it democratic or no). To modernise both the US Congress and China's Congress could mean that the two structures become more similar. Indeed, to replace majority voting by the MBC could have many huge implications.

In the UN Security Council, COP29 and other UN gatherings, it could mean that all fifteen members were equal and that none had any veto powers. Instead, no matter what the subject of debate, everything could be 'on the table' and computer screen, with additional data if need be on a dedicated website. Doubtless, on any controversial topic, initial manoeuvres could mean that, let us say, about eight options were in contention. Each could be amended or perhaps composited, or even deleted... but only if the original proposers agreed to such a change. This could mean that the number of options under consideration might vary. If it boiled down to just one option, this could be taken as the verbal consensus. If not, the chair could draw up a multi-option ballot of definitely more than two, ideally more than three, at least four, often five or six, but seldom if ever seven or more options, and if the highest points score was above a certain pre-determined threshold, this could be taken as the collective will. (Emerson 2022: 107.)

The same could apply to decision-making in the elected chamber. Consider a five-party parliament debating its annual budget. With every proposal laid out in a common format, each of the five parties could have its own budget 'on the table' and in summary on the computer screen; a more detailed version could be on a dedicated web-page. In debate, section by section, each of the five options could be discussed, sub-sections could be amended, composited or deleted, but again, only if the original proposing party were in agreement. And in all instances of disagreement, the matter could be resolved in an MBC ballot.

With policies based on consensus decision-making, formats of governance based on majority rule could be replaced by that which is used in Switzerland and often advocated for conflict zones: all-party power-sharing. At present, in many elected chambers, open and transparent democratic elections are followed by secretive discussions, as various parties manoeuvre to form majority coalitions, and these talks are often protracted: the UN needed 70 days to broker a deal in Kenya in 2008; the German Bundestag was in negotiations for 161 days in 2017; 249 were needed in Iraq in 2010; the Dutch were talking for 298 in 2021; and the world record is held by Belgium: 541 days in 2010/11. It would be wiser if the democratic country's general election were followed about one week later by a second open and transparent election – a matrix vote (Emerson 2022: 39-46) in parliament. This would allow every MP to choose, in order of preference, not only those whom he/she wanted to be in cabinet, but also the ministry in which he/she wished each nominee to serve. This matrix vote, first tested in a 1986 cross-community conference in Belfast, is proportional, colour-blind, and ideally suited to conflict zones. Because the vote is PR – and in RCV/STV elections, lest they split the vote, parties tend to nominate only as many candidates as they think they can get elected; secondly, because an MBC analysis encourages all to submit a full ballot, a matrix vote may well entice every MP to cross not only the gender gap and party divide, but also the sectarian chasm.

Doubtless, such a democratic structure would not be without its difficulties. Many politicians in Ireland, Germany and The Netherlands respectively would not wish to be in an all-party arrangement with those of Sinn Féin/the Alternative für Deutschland/PVV). There again, some politicians would not want to participate in a system of government which restricted their powers: Donald Trump for example would not want to compromise on the question of immigration, or oil exploration... or anything; nor would he want to be in an administration in which he did not have the power to appoint all his ministers of state, ambassadors, and so forth. Indeed, if democratic governance were defined in a more consensual way, those such as Trump might well decide to confine their ambitions to the world of business... and if it too were to use the MBC, maybe they would just play golf.

The USA has the most binary polity on the planet: FPTP elections, a blatantly two-party system, and majority voting in Congress. Sadly, many Americans have forgotten the words of George Washington: "The alternate domination of one faction over another... has perpetrated the most horrid enormities [and] is itself a frightful despotism."¹¹ If Canada were to adopt a more consensual polity, it could perhaps have a huge effect in Washington. Alas, in 2017, Justin Trudeau changed his mind: as a reformed electoral system, "...we had a preference to give

¹¹ Farewell address of 1796.

people a ranked ballot, [but the] New Democratic Party NDP [wanted] PR as the only way forward.”

<https://nationalpost.com/news/canada/justin-trudeau-electoral-reform-broken-promise>

Neither Trudeau’s Liberal Party nor the NDP campaigned to give the Canadian people a ranked ballot choice in decision-making, a balanced list of options from which to select their most favoured electoral system. Slovenia (para 2.7) had three options, while in 1992, New Zealand had a five-option referendum; the question was not binary; compromise options were included; and sure enough, the people chose a compromise. But Canada uses majority voting. Canada still has FPTP. And the world is left with the prospect of yet more Trump, the despot, the *denouement* of a divisive polity!

Maybe, however, with the lessons of Hitler and others to study, power-sharing should be tried. And maybe, given the universal failings of binary voting and the existential problems of Climate Change, it must be tried. Accordingly, as a matter of principal, it might be better to allow those who have a degree of popular support such that they are well represented in parliament, to also be in government. This would mean that the Arabs would always be in the cabinet in Tel Aviv, the Kurds in Ankara, as well as certain extremists in Ireland/Germany/The Netherlands and so on; it will not be easy. Nevertheless, in all such executives, decisions would be taken in consensus, either verbally or in an MBC. Thus no tail could ever wag the dog. Thus no one individual could ever have too much power. Thus politics everywhere would be a game of no trumps.

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Acknowledgments

It was perhaps inevitable that a more consensual polity would be developed in a conflict zone, and while the MBC was devised by Jean-Charles de Borda in France during their turbulent times of the 18th Century, the matrix vote is a Northern Ireland invention, arising from the 1969-94 violence of the Troubles.

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