

# To Save Our Species But *How* Do We Make Collective Decisions?

*Peter Emerson*

Director, the de Borda Institute

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## Abstract

Throughout human history, havoc has been wrought by just a handful of very powerful leaders. The ultimate catastrophe could also be caused by just a few individuals, by unleashing a nuclear war or by ignoring international agreements on climate change. Donald Trump, for example, may renege on the Paris Agreement and commit other ecological blunders, which could spell the end for everyone. In a nutshell, the current democratic process gives him far too much power.

The rights of any one citizen or country must be tempered by the rights of all. Alas, current forms of decision-making often fail to involve everyone in the final decision, the most obvious instances relating to decisions taken by a (simple or weighted) majority vote. If instead decision-making were based on the local, national or international consensus, such exclusive decisions could not be taken so easily. It should also be pointed out that majoritarianism – majority rule based on majority voting – has been and still is problematic in numerous inter-communal conflicts.

This paper therefore outlines the flaws involved in binary voting; next, as a better methodology, it proposes a more inclusive voting mechanism; and finally, it advocates a structure to ensure that agreements are implemented, with possible penalties for those individuals, organisations or countries that flaunt the international consensus.

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**Keywords:** Consensus voting Modified Borda Count, MBC Matrix Vote

“In a plural society the approach to politics as a zero-sum game is immoral and impracticable. Words like ‘winning’ and ‘losing’ have to be banished from the political vocabulary of a plural society.”  
(Lewis 1965: 66-7.)

## Introduction

An old African proverb notes that when elephants fight, ants get killed. In like manner, the most powerful human beings often inflict fatal

blows on the poor and powerless. Furthermore, as the years go by, man-made disasters cause ever larger numbers of fatalities. In a finite world, nothing can continue on an exponential curve for ever; unless truncated by a catastrophe, many developments follow either a hysteresis-style trajectory or a sort of normal distribution curve unto their own demise. With advances in science, the world is now rapidly approaching two *denouements*: with fission and now fusion nuclear bombs, human beings could easily start a war which would lead to the end of all life on the planet; albeit rather more slowly, increases in CO<sub>2</sub> emissions caused by human activity might have the same consequence.

As our species has evolved, many primitive tools have been replaced by gadgets of fantastic sophistication. There is, however, one glaring exception: people continue to make decisions by means of a 2,500-year-old methodology, the most primitive, divisive and inaccurate measure of collective opinion ever invented: the (simple or weighted) majority vote. This binary voting has been part of the problem (a) in many dysfunctional administrations, as in the US if and when a Democrat president, say, is confronted by a Republican Congress; (b) in many international gatherings, if and when even a tiny minority vetoes potential decisions; (c) in an increasing number of binary referendums, like brexit and the Italian poll of Matteo Renzi, where the power of ‘no’ could oppose everything; and (d) in countless conflicts not only in Europe, in the Basque region, Northern Ireland, the Balkans and now Ukraine; but also in Africa, in Rwanda and Kenya for example; and throughout the Middle East where so many conflicts are based on Sunni/Shia minorities fighting Shia/Sunni majorities. Despite these horrors, majority voting and its consequence, majority rule, continue to be upheld and practiced as if beyond criticism. Granted, there are exceptions; many gatherings operate in what is described as consensus – and in using this term, those concerned usually mean a verbal consensus – not least because of the impracticalities of majority voting in any international forum. Alas, all too few persons are aware of ‘consensus voting’ (section 5).<sup>8</sup>

Alternatives to binary voting are many. Some of these procedures are more accurate and, *ergo*, more democratic. Furthermore, a few are non-majoritarian. If one of the latter were to be adopted as the democratic norm, there would be no further justification for majority rule. Instead, as advocated for nearly every conflict zone, power could be shared. Thus no one individual – Trump, Mugabe, al-Assad or whosoever – would be able to

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<sup>8</sup> The term applies to three voting methodologies, all of which are non-majoritarian and all of which are discussed later in this article.

impose his will, (it is usually a ‘he’), just because he has been elected by a (supposed) majority.

Accordingly, with a little historical background, this paper first reviews some of the mistakes, both political and mathematical, which have resulted from the almost ubiquitous belief in majoritarianism. Next, it analyses some other decision-making methodologies. Then it outlines the potential of a non-majoritarian procedure at the level of national governance and in international forums. And finally, it suggests a proviso to help ensure international agreements on nuclear disarmament and global warming could be made binding.

## I.

### The political flaws of majoritarianism

Majority voting was first used in Ancient Greece, albeit just by the rich males, and in the Imperial Court of the Former Han Dynasty in China, but only by the appointed Ministers (Wang 1968: 176). But there was “nothing resembling a ‘party system’ in sixth/fifth-century Athens” (Ste Croix 2005: 198), so the polity could best be described, not as ‘the right of *the* majority to rule’ but as the right ‘of *a* majority’. In this democratic structure, someone could vote with a colleague on one day, and against on another, without necessarily falling into blocs of permanent antipathy.

Voting was also used in Rome, where Pliny the Younger realised that in any debate on three or more options, binary voting was inadequate, so he advocated plurality voting. Other decision-making structures were devised elsewhere in the world but most of these – the *baraza*, *gacaca* or *palabré*<sup>9</sup> of sub-Saharan African, for example – relied on a verbal consensus. Only in Europe did voting become the norm.

In 1299, the Catalan Ramon Llull suggested what is now called the Condorcet rule, and maybe too the Borda count, BC (McLean and Urken, 1995: 16), though the history is a bit vague on this point. One Cardinal Nicholas Cusanus definitely suggested the BC in 1435, but that too didn’t get very far (Sigmund 1963: 212); after all, the powerful don’t like decision-making procedures which they can’t control. As a consequence, majority voting and its consequence majority rule have predominated and, as shall now be related, this majoritarianism has wreaked havoc amongst millions.

### England

The House of Commons is designed for gladiatorial debate. Initially, as in Greece of old, there were no political parties. But one side faced the other, and decisions were taken by majority vote. It did not take long,

<sup>9</sup> Quoting the Kiswahili, Kinyawanda and French words respectively.

therefore, before abuse was being hurled across the floor. “You tories,” shouted one side, “you Irish Papist bandits!” – a serious insult in those days. The response was equally rude: “You whigs!” – “money-grabbing Scots Presbyterians.” (Churchill 1956: Book II, 294.) Hence the current UK two-party political system. And hence, *inter alia*, Brexit.

## France

In 18<sup>th</sup> Century France, members of *l'Académie des Sciences* wondered how best to replace *l'ancien régime*. They looked at Westminster but concluded, *Mon Dieu, c'est incroyable*. After all, you cannot get *la volonté général* in a vote which is binary, for the outcome of such a ballot will invariably be to on one side or the other in the normal distribution curve, the left-wing or the right, whereas any consensus would be at its peak.

So maybe multi-option voting would be better. Le Marquis de Condorcet advocated a pairings system, while Jean-Charles de Borda opted for points. The problem of finding the most popular of many policies can be compared to a sports competition. Consider a tournament (debate) in which there are seven teams (policies). In a knock-out competition (binary voting), as in tennis but without any seeding, the resulting social choice might be accurate but the social ranking would be highly questionable. Better, then, either a league system (Condorcet pairings) or one based on goals scored (BC points). Every team plays every other team, (the voters cast their preferences), and then, in Condorcet, team (option) *A* plays (is compared with) *B*, then with *C*, etc., to see which team (option) wins the most matches (pairings). In contrast, in a BC (preferences are translated into points), the goals (points) scored are counted, and the team (option) with the most goals (points) is the winner. Both of the latter systems are pretty good – after all, the winner of the league often has the best goal difference – but in 1784 they chose the BC, mainly as an electoral system, and it worked pretty well.

A few years later, *l'Académie*, now renamed *l'Institut Français*, had a new president. He didn't like this preference voting so he, not best known for his democratic idealism, reverted to majority voting. “The new member was Napoleon Bonaparte” (Black 1987: 180), later elected as the emperor by a majority vote in 1804; he won by 99.7 per cent (Emerson 2012: 144). And this is just the first of umpteen majoritarian tragedies.

## The United States

Many of the founding fathers were bitterly opposed to the two-party political structure of Old Europe. To quote George Washington in his farewell address of 1796, it was “a frightful despotism”. Sadly, while they devised some pretty good electoral rules – Thomas Jefferson, for instance, invented a formula for PR (McLean and Urken, 1998: 44) – they did not

examine decision-making. Decisions were taken by majority vote, so it did not take long before the two party system and party political patronage entered into US politics; hence today's "frightful despotism," possibly the worst two-party system in the world, has now produced the frightful Trump.

### **The Soviet Union**

Like many other monarchs, the Russian tzars were not too fond of democracy, and certainly not of the left-wing politicians in the All-Russia Congress of Social Democrats. Like many other political parties, the Congress in London in 1903 used majority voting. And like many another, it split into two wings, 'soft' and 'hard' (just like today's brexiteers – section 2.11), the former led by Julius Martov, the latter by Vladimir Ilyich Lenin. The first vote went to the 'soft' wing, 28 to 23. Oh don't worry comrades, said Lenin, "I don't think our differences are so important." In the next vote, after some had walked out, Lenin won, just: 19 to 17 with 3 abstentions, so he now had not a majority, just the largest minority. (Deutscher 1966: 71.)

Ah but this was important, he decided. The Congress split. Lenin pretended he had the majority, *bolshinstvo*, and called his side the Bolsheviks. While those of the minority, *menshinstvo*, became the Mensheviks. In the post-revolution elections of 1917, the Bolsheviks won only 175 seats to the Social Revolutionaries who gained an absolute majority in the 707-seat Constituent Assembly of 370 seats. At its first sitting, the 'hard' man sent in the troops (Shub 1966: 315), so Lenin enjoyed his second *coup d'état*. And the bolshevism of majoritarianism became the bolshevism of the gulags.

When Gorbachev came to power in 1985 and announced a policy of *perestroika*, many western experts rushed over to Moscow to tell him of the advantages of a free democracy. Hold 'free and fair' elections, they advised him; establish a parliament (Duma); propose legislation; and implement any policy adopted in that parliament by a majority vote. The word, in English, is majoritarianism. But he doesn't speak English, so of course they had to translate everything into Russian. Mikhail Sergeyevich, they began, *Vam nuzhen*, you need... plus the Russian word for majoritarianism, *Vam nuzhen bolshevism*. (A new word has now been coined, *majoritarnost*.) Hence today's 'democratic bolshevik', Vladimir Putin.

### **China**

Initially, the Communist Party of China "debated and voted" issues quite frequently, but Máo Zédōng "loathed the convention of voting... and abolished the practice." (Chang and Halliday, 2006: 81 and 90.) Nevertheless, a majoritarian thought process dominated his actions and his arguments. "In 1959-60, some 3.6 million party members were labeled or

purged as rightists” (Dikötter 2011:102), and four years later, Máo addressed the Standing Committee of the Politburo of the Central Committee: “we must win over the majority, oppose and smash the minority” (Schram 1969: 325). Thus it was on the ground; at a meeting in the County of Daoxian in Hunan Province, “participants voted to decide who would be killed; one by one, potential victims’ names were read and votes were tallied. The process lasted for hours.” (Yang 2011: 65.)

### **The Balkans**

In 1991, the EU’s “insistence on referendums... provided the impetus... to create ethnically pure areas through population transfers and expulsions as a prelude to a vote.” (Woodward 1995: 271.) And “all the wars in the former Yugoslavia started with a [majority vote] referendum.” (*Oslobodjenje*, Sarajevo’s now legendary newspaper, 7.2.1999.)

### **Rwanda**

The *Interahamwe* launched their 1994 genocide with the slogan, “*Rubanda Nyamwinshi*”, we are “the majority people”. (Prunier 1995: 183.)

### **Ukraine**

Ukraine received its independence in 1991, at which time the EU argued for majority rule. In 2014, however, when violence broke out on the barricades in Kiev, the EU changed its mind and advocated power-sharing. On 20<sup>th</sup> February, the President, Viktor Yanukovich agreed that a “new government of ‘national unity’ should be formed within 10 days” (*The Guardian*, 21.2.2014), but later that day, he went into exile. The referendum in Crimea followed in March, with two more in Donetsk and Luhansk; majority votes, of course; and then, as in Bosnia, war, again of course. (Emerson 2016: 58.)

### **The Middle East**

For as long as people believe in majority rule, (a) there will not be a ‘one-state’ solution to the Israel/Palestine problem; (b), Israel’s Arab Party, Joint List, will probably not be accepted into a coalition government; (c) in numerous countries from Bahrain to Yemen, arguments will rage between the Sunni/Shia majority and its supposed opposite minority – as in Northern Ireland, so too in all of these conflicts, majority rule is part of the problem; and (d) if the policy of ‘self-determination by majority vote referendum’ is implemented in Kirkuk and Mosul, etc., Iraq may well collapse with yet more violence, just like the Balkans.

### **Kashmir and so on**

According to UN Resolution 47 of 1948, Kashmir should hold a referendum; if it did, in all probability, there would be bloodshed. One consequence of South Sudan's referendum in 2011 is that it has since imploded; a second is that other countries on the continent may also split on religious and/or tribal lines, like the Central African Republic, the Ivory Coast and the Democratic Republic of Congo, with more horrific consequences. Thirdly, there is talk of referendums in Hong Kong and Taiwan, with little recognition of the fact that the repercussions in Xīnjiāng and Tibet could be terrible.

Despite all of the above tragedies, majoritarianism continues to dominate both the domestic and the international agenda, even when it does not work.

### **Brexit**

The late Jo Cox, MP, would probably still be alive if the Brexit ballot had been multi-optional. The debate concerned whether the UK would remain in the EU, or be like Norway in the EEA, or have a looser arrangement as does Switzerland, or be in the Customs Union like Turkey, or whatever. The debate, however, was binary: “yes or no?” “remain or leave?” The will of the people? No no, everyone now knows what a 52 per cent majority does *not* want. So everything has moved on to another binary debate, is Brexit to be ‘soft’ or ‘hard’, (see section 2.4).

### **Italy**

The 2016 referendum related to a choice of (i) the old constitutional arrangements or (ii) some new ones. But the question asked was “(ii), yes or no?” So those who favoured (i) voted ‘no’. But those who did not support the EU, or Matteo Renzi, or the Democratic Party or *je ne sais quoi* also voted ‘no’. So ‘no’ won. This ‘yes-or-no’ voting might yet spread to other countries in the EU, saying ‘no’ to everything, until, according to the logic of populism, there is nothing.

### **Trump**

The US Presidential election was another (almost) binary contest, a double FPTP election in which there were just two favourites. As in any FPTP ballot, therefore, some voters, not only supporters of Cruz and Sanders, for example, but those who might have wanted to vote for, say, Johnson or Stein, had to vote tactically. Few, then, can have confidence in the outcome, 48.08 per cent to Clinton to 46.00 to Trump, let alone the even more screwed results in the Electoral College, 232 to 306.<sup>10</sup> So Trump has ‘won’; a

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<sup>10</sup> Figures as of 12.12.2016.

climate-change denier with less than 50 per cent of the vote now has 100 per cent of the power.

In a nutshell, he has inherited a political structure similar to or even worse than the UK's "elected dictatorship" (Hailsham 1978: the phrase is used frequently). The winner wins everything, the loser, even if on 49 per cent (or more!) gets nothing. That's what happens with majority rule. In countless inter-communal conflicts around the world, and now, with the rise of populism in the States and in Europe, majoritarianism is a cause of conflict; in the latter setting, it is a threat to the very survival of our species. This form of decision-making is also hopelessly inappropriate in international gatherings, as in the 2015 UN Climate Change Conference, COP 21, in Paris, or even in much smaller gatherings like the UN Security Council (section 4).

### The mathematical flaws of majoritarianism

There are, of course, other decision-making voting procedures, which are multi-optional. No complex question, especially any related to global warming, should be reduced and thereby distorted (e.g., as in sections 2.11 and 2.12) to a dichotomy, or even a series of dichotomies. Instead, debates should cater for every relevant proposal to be 'on the table' (a computer screen, and maybe too a dedicated web-page); final ballot papers should be drawn up by a team of independent facilitators; and decisions or ratifications should be taken in multi-option ballots.

Consider, then, a scenario in which 28 voters have the preferences shown in Table I. These may be analysed by a number of different voting procedures. Now an initial glance would suggest that option **A** is very divisive; it is, after all, the 1<sup>st</sup> preference of 7 voters but the 7<sup>th</sup> of 11, while 10 voters give it no preference at all! Option **G** is not much better, the 1<sup>st</sup> of 6, but the 6<sup>th</sup> of 7 and the 5<sup>th</sup> of 5. Of the others, option **B** gets a mixed reception, but something from everybody; support for options **C** is also ambivalent; so maybe **D**, **E** or **F** best represents the collective will.

Table I A Voters' Profile

Preferences	Number of voters							
	7	5	3	1	2	2	2	6
1 <sup>st</sup>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>F</b>	<b>G</b>
2 <sup>nd</sup>	<b>B</b>	<b>D</b>	<b>D</b>	<b>C</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>E</b>
3 <sup>rd</sup>	<b>F</b>	<b>E</b>	<b>F</b>	<b>B</b>	<b>B</b>	<b>E</b>	<b>D</b>	<b>F</b>
4 <sup>th</sup>	<b>D</b>	<b>C</b>	<b>E</b>	-	-	<b>C</b>	<b>C</b>	<b>D</b>
5 <sup>th</sup>	<b>E</b>	<b>G</b>	<b>B</b>	-	-	<b>B</b>	<b>B</b>	<b>C</b>
6 <sup>th</sup>	<b>G</b>	<b>F</b>	-	-	-	-	-	<b>B</b>
7 <sup>th</sup>	-	<b>A</b>	-	-	-	-	-	<b>A</b>



Consider, now, seven different analyses under plurality voting; the two-round system, TRS; the alternative vote, AV;<sup>11</sup> approval voting; a Borda count, BC; the modified Borda count, MBC; and the Condorcet rule.

### Plurality voting

In plurality voting, only the voters' 1<sup>st</sup> preferences are taken into account. So the score is *A-7, G-6, B-5, F-4, C-3, E-2, D-1*, and the winner is *A*.

### trs

If no one option gains a majority, a second round majority vote can be held between the two leading options from the first plurality vote. So that's a contest between *A-7* and *G-6*, which (if everyone's preferences stay the same) gives *A-7, G-11*, so *G* is now the most popular.

### av

AV is a series of plurality votes, the least popular option being eliminated at each stage and its votes transferred in accordance with its supporters' 2<sup>nd</sup> and subsequent preferences, until one option gains a majority (or wins by default). Stage (i), then, is *A-7, G-6, B-5, F-4, C-3, E-2, D-1*. So *D* is out, and its vote goes to *C: A-7, G-6, B-5, F-4, C-4, E-2*. That's the end of *E* so, stage (iii), *E*'s votes also go to *C: A-7, G-6, B-5, F-4, C-6*. Next, *F*'s votes go (not to *D* or *E*, both of which are out of contention), but to *C*, so it's now *A-7, G-6, B-5, C-10*. Finally, in stage (v), *B*'s 5 votes go to *C* as well for scores of *A-7, G-6, C-15*, so that's an absolute majority for *C*.

### Approval voting

In approval voting, every preference cast is regarded as an 'approval', so the scores are *B28-E27-D26-F25-C21-A/G18*, suggesting *B* is the most popular.

### bc

In a ballot of  $n$  options, a voter may cast  $m$  preferences where  $n \geq m \geq 1$ .

Points are awarded to (1<sup>st</sup>, 2<sup>nd</sup> ... penultimate, last) preferences cast as per the rule:

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

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<sup>11</sup> Also known as the single transferable vote, STV; as instant run-off voting, IRV, in the States; and as preference voting, PV, in Australasia.

This give scores of *E130-D129-B125-F118-C93-G71-A60*, so *E* is the outcome.

**mbc**

For various reasons (Emerson 2013: 353-8), the above BC is not what Jean-Charles de Borda had actually proposed (Saari 2008: 197). In effect, he advocated what is now called an MBC in which, in contrast to the BC, points are awarded as per the rule:

*(m, m-1 ... 2, 1).*

This gives scores of *D104-E101-F97-B92-C67-G64-A53*, so *D* best represents the consensus.

**The Condorcet rule**

A comparison of the pairings according to the Condorcet rule gives a ranking of *F5-D4.5-E4-B3.5-C3-G1-A0*, so the Condorcet winner is *F*.

All of these results are shown in Table II.

Table II The Social Choices and Social Rankings of Table I’s Voters’ Profile

Voting Procedure	Social choice	Social ranking	Social ranking scores
Plurality voting	<i>A</i>	<i>A&gt;G&gt;B&gt;F&gt;C&gt;E&gt;D</i>	<i>A7, G6, B5, F4, C3, E2, D1</i>
TRS	<i>G</i>	<i>G&gt;A</i>	<i>G11, A7</i>
Approval voting	<i>B</i>	<i>B&gt;E&gt;D&gt;F&gt;C&gt;A=G</i>	<i>B28, E27, D26, F25, C21, A/G18</i>
AV	<i>C</i>	<i>C&gt;A&gt;G</i>	<i>C15, A7, G6</i>
BC	<i>E</i>	<i>E&gt;D&gt;B&gt;F&gt;C&gt;G&gt;A</i>	<i>E130, D129, B125, F118, C93, G71, A64</i>
MBC	<i>D</i>	<i>D&gt;E&gt;F&gt;B&gt;C&gt;G&gt;A</i>	<i>D104, E101, F97, B92, C67, G64, A53</i>
Condorcet	<i>F</i>	<i>F&gt;D&gt;E&gt;B&gt;C&gt;G&gt;A</i>	<i>F5, D4.5, E4, B3.5, C3, G1, A0</i>

With this voters’ profile, then, the democratic decision can be either *A* or *B* or *C* or *D* or *E* or *F* or *G*. It is an extraordinary fact but, because voting procedures are so little understood, countless decisions are regarded as democratic and true representations of the collective will inappropriately, often with horrific consequences, (sections 2.4 – 2.10).

**Inclusive decision-making**

In 2002, the UN Security Council debated Iraq. The topic could hardly have been more serious. Yet everything was reduced to a dichotomy: Resolution 1441, yes or no? France and Germany, the former a veto power, did not like the phrase “serious consequences”.<sup>12</sup> Yet they voted in favour.

<sup>12</sup> The Security Council “Recalls... that the Council has repeatedly warned Iraq that it will face serious consequences as a result of its continued violations of its obligations.” Article 13.

In fact, the vote was unanimous, 15 to nil. But obviously, from a Franco-German and maybe other viewpoints, support for that Resolution was not unanimous. That majority vote was a cause of war.

If Resolution 1441 as drafted had been option **A**; if France and Germany had proposed alternative wording, even if only for that particular clause, that could have been option **B**; Syria was a temporary member of the Council, and might have wanted another variation, option **C**; and the status quo ante, of course, would have been option **D**. If such had been the scenario, the Council could have held a preference vote on the four options and, if nothing else, gained a much more accurate assessment of the Council's consensus. It might also have prevented that war and many of the horrible events which have followed the 2003 invasion.

A consensus cannot best be identified by majority voting, for the latter measures the very opposite – so many 'for' and so many 'against' – the degree of *dissent*. In inclusive decision-making, the procedure allows all concerned, not only to cast their preferences on the options listed after the debate, but also to participate during the debate in choosing those options. Accordingly, an independent authority – in a parliament, the Speaker; in a public enquiry, the commissioners – should allow all relevant options to be 'on the table' and computer screen, subject only to one proviso, namely, that the given proposal complies with an international norm like the UN Charter on Human Rights.

The outcome should be that option which gains the highest level of overall support as measured by its consensus coefficient (Emerson 2007: 161), the option's MBC score divided by the maximum possible score.

### **The inclusive nature of an mbc**

In, say, a seven-option MBC ballot, he who casts just one preference exercises just 1 point; she who casts two preferences gives her favourite 2 points (and her 2<sup>nd</sup> choice 1 point); he who casts three preferences gives his favourite 3 points (his 2<sup>nd</sup> choice 2 and his 3<sup>rd</sup> 1 point); and so on; so she who casts all seven preferences gives her favourite 7 points (her 2<sup>nd</sup> choice 6, etc.). The outcome is the option with the most points.

The difference is always 1 point. A voter's  $x^{\text{th}}$  preference, therefore, will always get 1 point more than his  $(x+1)^{\text{th}}$  preference, regardless of whether or not he has cast that  $(x+1)^{\text{th}}$  preference.

In this way, the mathematics of the count encourages the voter to cast a full ballot; in so doing, he recognises the validity of the other options and the aspirations of their proponents. The MBC is inclusive. Meanwhile, the protagonist will want her option to succeed. Therefore, she will want all her supporters to cast full (or at least nearly full) ballots. Furthermore, she will want her erstwhile (majoritarian) opponents to give her option not a 7<sup>th</sup> but a

higher preference, so it will be worth her while to campaign with all members of the electorate. The MBC is indeed inclusive.

### **Governance and Power-sharing**

The MBC is also non-majoritarian. As shown above, it is more accurate – and therefore more democratic – than any binary ballot. Therefore, whenever the debate concerns a topic which is complex and/or contentious, there can be no further justification for this primitive and divisive methodology; and no further justification for majority rule. Instead, power-sharing should be the norm.

Accordingly, in any inclusive democracy:

The people shall elect any representatives, ideally by a proportional Borda methodology, the quota Borda system, QBS.

The parliament shall then elect a government, and the appropriate methodology is a matrix vote (see below).

Parliament shall take all non-urgent decisions on the basis of consensus, either verbally or by using an MBC vote. Forming the final list of options shall be the responsibility of the Speaker.

If as a result of a Citizens' Initiative or an Act of Parliament, a referendum is to be held, an independent commission shall first determine the number and nature of all the options to be listed.

### **The Matrix Vote**

In a matrix vote, every member of parliament may vote, in order of preference, not only for which MPs they want to be in cabinet, but also for the particular portfolio in which they want each of these nominees to serve. It shall first be decided (in an MBC ballot) how many shall be in cabinet, what shall be the various functions, and who shall be eligible for election.

Consider then the simple example of a seven-member cabinet, in which case the appropriate ballot paper could be as shown in Table III.

Table IIIA Matrix Vote Ballot Paper

Preferences for Cabinet		The Cabinet						
		Secretary of	Secretary of the Treasury	Secretary of	Attorney	Secretary of Commerce	Secretary of	Secretary of Housing
1 <sup>st</sup>	Ms M				✓			
2 <sup>nd</sup>	Ms U					✓		
3 <sup>rd</sup>	Mr P							✓
4 <sup>th</sup>	Mr T		✓					
5 <sup>th</sup>	Mr R	✓						
6 <sup>th</sup>	Ms H			✓				
7 <sup>th</sup>	Ms B						✓	

Each member first chooses, in order of preference, those whom he/she wishes to be in cabinet, and these he/she then lists in the shaded column, as shown, Ms M, Ms U, and so on. Next, in the unshaded matrix, the member gives a tick to identify the portfolio in which he/she wants each of these nominees to serve. The completed ballot, then, has a full list of seven different names, plus seven separate ticks, one in each column and one in each row.

The count consists of two analyses. The first is a Quota Borda System, QBS,<sup>13</sup> count of the preferences cast in the shaded column, so to identify the seven most popular candidates. Then comes an MBC analysis of the ticks (or rather points) cast, with appointments based in descending order on the candidate/portfolio with the largest matrix MBC scores.

In electing a seven-member cabinet, a party with, say, 25 per cent of the seats in parliament can expect to get two candidates elected. Accordingly, MPs of this party would be well advised to vote for two or at most three of their own, but then to vote for other members of other parties. Such cross-party voting is a vital element, so this author would argue, of a power-sharing polity. In like manner, such co-operation should be a vital part of any international gathering.

<sup>13</sup> In a QBS count, in stage (i), any single candidate with one quota of 1<sup>st</sup> preferences is deemed elected; in stage (ii) any pair of candidates with two quotas of 1<sup>st</sup>/2<sup>nd</sup> preferences are both elected; then, in stage (iii), if another pair has a single quota, the one with the higher MBC score is elected; and if seats are still to be filled, stage (iv) is based on the candidates' MBC scores.

## **Facilitating and implementing international agreements**

Consensus voting – the MBC in decision-making, QBS in elections, and the matrix vote in delegations – could be an essential feature in all multilateral forums. The matrix vote could be used for the election of chairpersons, spokespersons, representatives or whomsoever, and the MBC could be used to resolve and/or ratify all matters of policy.

The 2009 United Nations Climate Change Conference ended in disarray. This was partly because the final agreement, the Copenhagen Accord, was supposed to be adopted ‘in consensus’ – a term which is usually taken to mean unanimously. The very methodology is part of the problem, giving as it does each and every country the power of veto.

The Accord was drafted by only five countries – admittedly, all very big ones – and in the final stages, it failed to be adopted; instead, it was only ‘noted’. Granted, considerable energy had been expended in trying to ensure that the conference would come to a successful conclusion. 183 countries had been represented in Bonn, for example, six months earlier, but there was and still is a tendency which suggests the final draft should be approved unanimously. This of course implies that any country can exercise a veto or, at the very least, fail to ratify such an agreement.

The difficulties were, of course, numerous. There again, coming to an agreement on the exact figure for the proposed reduction in CO<sub>2</sub> emissions, for example – proposals varied from -40 to +5 °C – could have been more efficiently expedited by MBC.

The Paris conference, COP21,<sup>14</sup> was rather more successful, not least because of the tactic by which, rather than asking all countries to agree to one given set of criteria for action for everyone, each was asked to devise its own plans for how it would comply, admittedly with the general agreement of keeping any global temperature rise to a maximum of 2°C.

The agreement was not as good as it might have been, however, and the most glaring exceptions related to aviation and shipping. Another feature absent from Paris concerned actions to be undertaken in the event that any one country fails to comply with its provisions. It would of course be quite difficult to persuade certain countries to agree to a treaty under the terms of which they could later be sanctioned. Nevertheless, if the world continues to give individual nation states total sovereignty over all of their activities, future generations may be confronted by the most horrible of problems.

Collective governance must cater for the situation in which those members of the human family who do not comply with everyone’s collective decisions must accept their individual responsibilities. Sadly, society is

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<sup>14</sup> The author participated in the Paris demonstration on the Champ-de-Mars on 12.12.2015.

confronted by a conundrum, for just as the veto powers in the UN Security Council have a veto on any proposals to reform that veto, so too, as it stands at the moment, individual countries may veto collective decisions with impunity.

The first step, therefore, is to dismiss the notion that a majority vote can accurately identify the “will of the people.” It cannot. Logically, as noted above, it is impossible. In its place, the UN and others should practice a more inclusive methodology, but first they should endeavor to define more precisely what they mean by the term “democratic rights”; alas, at the moment, their efforts have been all too glib.<sup>15</sup> A more comprehensive charter would include sections on decision-making and on governance.

Now no voting system is perfect. As shown (section 4), however, some decision-making systems are at best capricious, others are so-so, and a few are robust, accurate and fair. Not least because they are the only voting procedures that take all preferences cast by all voters into account, both the MBC and Condorcet are more exact. Indeed, with many voters’ profiles, the MBC social choice is the same as the Condorcet social choice, and maybe the two social rankings coincide as well. Such was the case in Table II, where the MBC and Condorcet social rankings were almost the same, and both in total contrast to that of plurality voting.

Accordingly, on really serious topics as in conferences on global warming, ballots should indeed be multi-optional and counts should be conducted by both an MBC and a Condorcet count; then, if the social choice from both is the same, and if this outcome gains a sufficiently high consensus coefficient, that outcome can be regarded as the will of all concerned – the “will of the people” – with a very high degree of confidence

## Conclusion

The decision-making methodology is key. In UN conferences, in the UN Security Council, in parliaments and councils everywhere, and definitely in referendums, questions on complex problems should not be reduced to simple dichotomies, ‘yes-or-no?’ This is partly because some people may be tempted to vote ‘no’ for reasons unrelated to the motion on the ballot paper, (section 2.12).

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<sup>15</sup> Article 21 of the 1948 United Nations Declaration of Human Rights:

- (i) Everyone has the right to take part in the government of his country, directly or through freely elected representatives.
- (ii) The will of the people shall be the basis of the authority of government; this shall be expressed in periodic and genuine elections which shall be held by secret vote or by equivalent free voting procedures.

Logically, the will of any given electorate can only be identified if each of the voters first states his or her own individual wills. In both the UK's Brexit vote and in Italy's referendum, many voters stated what they did *not* want, so both of those ballots had inaccurate outcomes.

In the US and in Europe, populism is getting stronger. Granted, there are many people who are disgruntled with the present order. If, however, majority voting remains the norm, there is the danger that there will be a proliferation of referendums in the EU and elsewhere and that, almost regardless of the question, the outcome in many will be 'no'. So the EU may collapse. So countries might do the same. So the prospects of any combined effort to solve the problems of global warming will be reduced.

Meanwhile, abroad, if majority voting remains unchallenged, there is the danger that the Kurds will never be invited to join in the governance of Turkey; that the problems of Israel and Palestine will forever fester, (section 2.9); that conflicts will continue to emerge on sectarian lines, not least in the Middle East; that in countries like China, many may wish certain parts of that jurisdiction to opt out but, in so doing, they might risk appalling violence in other parts, (section 2.10); and that some countries in Africa may also fall apart, on religious and/or tribal lines.

Meanwhile, internationally, in the inevitable event of even more serious problems caused by climate change, it will be increasingly difficult to come to worthwhile and effective agreements to effectively tackle these problems, for as long as people believe in the rights of a majority to rule and/or those of a minority to veto. Problems could be solved more readily if resort were made to multi-option, preferential voting. Decision-making is, yes, key. The problem is so complex, what with rising sea-levels, deforestation, over-population, increasing species loss and nuclear proliferation, but an understanding of decision-making will be yet another part of the holistic solution.

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