



Stalemate by Design? How Binary Voting Caused the Brexit Impasse of 2019

G. M. Peter Swann

Nottingham University Business School, Nottingham NG8 1BB, United Kingdom,
gmpswann@yahoo.co.uk

Abstract: Between January and April, 2019, the UK parliament voted on the Prime Minister's proposed Brexit deal, and also held a series of indicative votes on eight other Brexit options. There was no majority support in any of the votes for the Prime Minister's deal, nor indeed for any of the other options. This outcome led to a prolonged period of political stalemate, which many people considered to be the fault of the Prime Minister, and her resignation became inevitable. Controversially, perhaps, I shall argue that the fault did not lie with the Prime Minister, but with Parliament's stubborn insistence on using its default binary approach to voting. The outcome could have been quite different if Parliament had been willing to embrace the most modest of innovations: a voting system such as the single transferable vote, or multi-round exhaustive votes, which would be guaranteed to produce a 'winner'.

Keywords: Brexit, Parliament, Binary Votes, Indicative Votes, Single Transferable Vote, Exhaustive Votes

1. Introduction

This paper considers the impasse in the Brexit process that developed from the start of 2019. I argue that an important factor in the emergence of this impasse was the use of binary voting – the default method of voting in the Westminster Parliament. I shall argue that alternative voting processes would have had a much greater chance of success.

The title of this paper needs a little explanation. The phrase, “stalemate by design”, implies that if a process leads to stalemate rather than a satisfactory conclusion, the reasons for that can be found in the design of the process. There is however an ambiguity in the phrase. Does this stalemate imply intent on the part of some participants, or is it just the unintended outcome of an imperfect design? Some might say that the expression “by design” usually implies intent, though I would say, not necessarily. In what follows, I can demonstrate that binary voting was highly likely to lead to the Brexit impasse, though I certainly don’t suggest that was the intention of the then Prime Minister, Theresa May. However, I do suggest that some MPs endorsed binary voting precisely because they believed it would lead to an impasse, and therefore to the fall of Prime Minister May, and her replacement by another leader (probably Boris Johnson) who was open to a hard Brexit, and indeed a no-deal Brexit.

The rest of the paper is organised as follows (section numbers in brackets). We start (2) with a brief summary of some of the most important facts about Brexit, and the voting process used in parliament. In addition (3), I include a brief diversion on the Conservative Party Leadership Election in June-July 2019, which illustrates that when they really want to, politicians do know how to identify their first choice from a wide range of options. Next (4 and 5), I turn to a critical examination of binary voting which is the default process in the Westminster Parliament. I argue that in the context of a vote on the Prime Minister’s Brexit deal, this process was highly likely to lead to an impasse. Then (6), I make a critical assessment of process of indicative votes, explored as a last-gasp attempt to avoid crashing into a no-deal Brexit. The process was flawed because it used parallel binary votes, but it could be made to work with a simple modification. Moreover, the vote did at least give us some useful information on opinions within Parliament. The implication of this (7) is that an exhaustive ballot run over all Brexit alternative would probably need to run for many rounds before a winner is identified. Section (8) concludes.

There are two appendices. The first (A1) considers a simple mathematical model of a leadership contest or an exhaustive ballot to identify the best deal from a wide range of alternatives. This shows that in most cases, it takes many rounds of voting to identify the winner. The second (A2) uses data on the correlation in votes for different alternatives to place these alternatives on a spectrum from Remain-oriented to Brexit-oriented.

2. A Brief History of Brexit to May 2019

In June 2016, the UK held a referendum on the question: “Should the United Kingdom remain a member of the European Union or leave the European Union?” The outcome of the vote was: Leave 51.9%; Remain 48.1% (Wikipedia, 2016). Prime Minister David Cameron resigned, on the grounds that as he had led the campaign to remain, he would not be viewed as a credible leader to implement Brexit. In July 2016, he was replaced as leader of the Conservative Party (and Prime Minister) by Theresa May, who promised to implement Brexit.

From the start, the outcome of the referendum was divisive. In England and Wales, the majority voted to leave, but in Scotland and Northern Ireland, the result went the other way. In Scotland, 62.0% voted remain and 38.0% voted Leave; in Northern Ireland, the percentages were Remain 55.8%, Leave 44.2% (Wikipedia, 2016). And in England, there were deep divisions between big cities and other prosperous areas of the South-East, which were pro-Remain, and the smaller and less prosperous towns in the North and Midlands, and the countryside, which were pro-Brexit. The referendum was also divisive by age group: most young people were pro-Remain while old people were pro-Brexit. There were countless tales of families and friends who were bitterly divided because of different views about Brexit.

Sadly, moreover, there were occasional episodes of violence. The most tragic occurred when Jo Cox, a much-respected Labour MP, was murdered by a man who objected to her pro-Remain stance (Wikipedia, 2016).

May’s government started the official withdrawal process on 29 March 2017, and that gave a period of two years (i.e. until 29 March 2019) to complete the Brexit negotiations. This period was later extended until end-October 2019, and then again until end-January 2020. By 25 November 2018, the UK and the EU had reached agreement on Brexit, and this was described in two documents:

- i) a Withdrawal Agreement, describing the withdrawal of the UK from the EU;
- ii) a Political Declaration, describing a framework for the future relationship between the EU and the UK.

The first vote in the Westminster parliament on the Prime Minister's deal took place on 15 January, 2019. The government's motion asked MPs to approve the withdrawal agreement *and* the political declaration. The motion was heavily defeated: 'Yes', 202; 'No', 432 (Hansard,¹ 2019a, Columns 1122-1125). In due course, the government asked parliament to vote again on two further occasions, but while the margin of defeat was smaller, the motion was still defeated.² Table 1 gives details (based on raw data from Hansard (2019a, 2019b and 2019f).

Ballot	1	2	3
Yes	32%	38%	45%
No	68%	62%	54%

Table 1: Ballots on Theresa May's Brexit Deal January-March 2019

Following the first vote, the Prime Minister's immediate response to Parliament was as follows (Hansard, 2019a, Columns 1122-1125):

"The House has spoken and the Government will listen. It is clear that the House does not support this deal, but tonight's vote tells us nothing about what it does support; nothing about how, or even if, it intends to honour the decision the British people took in a referendum that Parliament decided to hold."

The next day (16 January 2019), the House of Commons Exiting the European Union Committee (2019) published its response to the vote on the Withdrawal Agreement and Political Declaration. The penultimate paragraph of the report concluded as follows:

"It is vital that the House of Commons is now given the opportunity to identify an option that might secure a majority. We recommend that this is done by holding a series of indicative votes on the options we

¹ *Hansard* (the Official Report) is the edited verbatim report of proceedings of both the House of Commons and the House of Lords.

² The second vote was on 12 March 2019 (Hansard, 2019b, Columns 291-295), and the third vote on 29 March 2019 (Hansard, 2019f, Columns 771-775). In the third vote, the motion was changed slightly, and Parliament was only asked to vote on the Withdrawal Agreement, and not the Political Declaration.

have set out above as soon as possible. In deciding how to proceed on 21 January, the House and the Government will need to identify not only where a majority might be found but also what decision-making process might allow for the reflection of the view of the House as a whole, including the possibility of free votes, and how to enact any decision made.”

But despite this recommendation, the government were slow to act on this, and despite much criticism from MPs for the delay, it was not until 27 March that a series of indicative votes was held. Eight possible Brexit Policies were considered, as in Table 2 – but note that Prime Minister May’s deal was not included as one of those options (Hansard, 2019d).

	Brexit Policy	Proposed by
A	Revoke Article 50	Joanna Cherry
B	Confirmatory Referendum on Withdrawal Agreement	Margaret Beckett
C	Labour Party’s Alternative Plan	Jeremy Corbyn
D	Customs Union	Kenneth Clarke
E	Common Market 2.0	Nick Boles
F	EEA/EFTA -- No Customs Union	George Eustice
G	Contingent Preferential Agreements (or “Managed No Deal”)	Marcus Fysh
H	No Deal Brexit	John Baron

Table 2: Proposals Included in Indicative Votes, 27 March 2019

Significantly, the vote did not adopt the usual Westminster convention where MPs walk through the lobbies to vote. Instead, all eight votes took place simultaneously, and on paper. The order of these 8 policies in Table 2 is not the same as on the ballot Paper, but is intended to show the location of policies on a spectrum from Remain-oriented to Brexit-oriented policies.

A is at one end of the spectrum (Remain) while H is at the other end of the spectrum (Brexit). The derivation of this ordering is described in Appendix 2.

The Exiting the European Union Committee of the House of Commons, several MPs and many outside parliament argued that MPs should place these policies in order of preference (using the single transferable vote process), but the latter proposal was considered too radical. Instead, there were eight binary (yes/no) votes, one on each policy. The outcome of the eight votes were as follows. (These calculations are based on raw data from Hansard, 2019e).

	Yes	Abstain	No
A	29%	25%	46%
B	42%	11%	47%
C	37%	14%	48%
D	42%	15%	43%
E	30%	26%	45%
F	10%	30%	59%
G	22%	12%	67%
H	25%	12%	63%

Table 3: Indicative Votes on 8 Brexit Policies, 27 March 2019

As in Table 1, no policy achieved a majority voting ‘yes’, though option D (Customs Union) comes very close, and option B (Confirmatory Referendum) comes quite close. Note however that a large and clear majority voted ‘no’ to the policies F, G and H. A few days later, Parliament ran another round of indicative votes, but this time considering only four options. The results were not very different, and once again, no policy achieved a majority voting ‘yes’ (Hansard, 2019g).

The Brexit process had now reached an impasse. Indeed, it is fair to say that the whole Brexit debate had exhausted the patience of the British people, the patience of people across other EU countries and beyond, and the patience of all involved in negotiations on both sides. The following two comments by MPs in the north of England summarise this sense of exhaustion:

“People are looking at what is happening and feeling absolute frustration and despair, because the people whom they elected to make decisions and make this work have not found a way through the difficulties.” (Jim McMahon, Hansard, 2019c, Column 66)

“Our international reputation has taken the worst hammering in living memory. The Confederation of British Industry said that it has lost confidence in the political process. The TUC has specifically asked us to look for a new parliamentary mechanism. MPs are always telling other people to change and adapt. Now, perhaps it is time for us to do the same. Confidence in our parliamentary process will be restored only when we show that we can act constructively and creatively.” (Helen Goodman, Hansard, 2019c, Column 104)

The Prime Minister made one last attempt to break the Brexit impasse by holding talks with the Labour Party, in the hope of finding a compromise. But these talks were unsuccessful, and these ended without agreement on 17 May. Then, a few days later, the Conservative Party suffered a disastrously bad performance in the European Parliament Elections, coming fifth – behind the Brexit Party, Liberal Democrats, Labour Party and Green Party. After that, Theresa May’s resignation as Prime Minister and leader of the Conservative Party was inevitable.

3. Conservative Party Leadership Election, June-July 2019

For the purposes of this paper, I could end this historical sketch here. However, it is very instructive to add a brief diversion on the Conservative Party Leadership Election in June-July 2019. This shows that, when they really want to, politicians know perfectly well how to identify the (collective) first choice from a wide range of options.

The method of choosing the leader of the Conservative Party can be described as an ‘elimination contest’ or ‘exhaustive ballot’. Those who wish to stand as candidates have to declare their participation by a given date. Then a series of votes are held, where at each stage, one or more candidates are eliminated. In the early rounds, it is Conservative MPs who vote on the available candidates. In the last round, when only two candidates are left, the decision is made by the full membership of the Conservative Party. To progress beyond the first round, a candidate must win at least five per cent of the vote, and to progress beyond the second round, a candidate must win

at least ten per cent of the vote. If all candidates meet that threshold, then the candidate with the lowest number of votes is eliminated. And from the third round onwards, the candidate with the fewest votes is eliminated.

Table 4 summarises the progress of the 2019 leadership election (calculations based on data from Wikipedia, 2019). Ten candidates entered the contest. In the first ballot, three candidates were eliminated, as they failed to gather 5 per cent of the vote. One other candidate (Hancock) did meet that threshold, but decided to withdraw anyway. In the second ballot, one candidate was eliminated, as he failed to achieve 10 per cent of the vote. Thereafter, one candidate was eliminated in each ballot.

Ballot	1	2	3	4	5	6
Contestants	10	6	5	4	3	2
Boris Johnson	36%	40%	46%	50%	51%	66%
Jeremy Hunt	14%	14%	17%	19%	25%	34%
Michael Gove	12%	13%	16%	20%	24%	–
Sajid Javid	7.3%	11%	12%	11%	–	–
Rory Stewart	6.1%	12%	8.6%	–	–	–
Dominic Raab	8.6%	9.6%	–	–	–	–
Matt Hancock	6.4%	–	–	–	–	–
Andrea Leadsom	3.5%	–	–	–	–	–
Mark Harper	3.2%	–	–	–	–	–
Esther McVey	2.9%	–	–	–	–	–

Table 4: Conservative Party Leadership Election, June-July 2019

Mr Johnson was widely expected to win this election – so long as he reached the final round. It was well-known that Johnson was very popular amongst party members, while amongst Conservative MPs, only about one half would vote for Johnson, while the other half would definitely not vote for Johnson.

There is nothing exceptional about this particular leadership contest. But the reason for dwelling on Table 4 in this paper is to make a different point: why could we not have had a similar process to choose the preferred type of Brexit policy? We shall return to this question later.

4. Binary Voting, Part I

The normal – and, I might say – almost invariable method of voting in the House of Commons is a particular type of binary vote. The government tables a motion proposing (say) a new policy. MPs are asked to vote, ‘yes’, if they are in favour, or ‘no’, if they are not.

Indeed, we can say that the principle of binary voting is deeply embedded in the architecture of the House of Commons. Rather than vote on paper, the normal procedure is for those in favour of the motion to walk into a room called the ‘Ayes’ Lobby (‘aye’ meaning ‘yes’),³ while those against the motion walk into the ‘Noes’ Lobby. The clerks in each Lobby record which MPs have entered their Lobby during the vote, and the results of Parliamentary votes are calculated in that way.

If the majority vote ‘yes’, then the government implements its new policy. If the majority vote ‘no’, then government policy is unchanged. Therefore, this particular type of binary vote is in effect a decision between adopting a new policy, and maintaining the status quo.

This is an absolutely critical point. Given that some government motions will not pass, it is arguable that Parliament should only offer a binary vote of this sort when maintaining the status quo is an acceptable outcome -- albeit not the government’s preferred outcome. But in the case of a vote on the Prime Minister’s Brexit deal, the status quo was obviously not an acceptable outcome. The government was committed to implementing the result of the 2016 referendum, and ensuring that the UK leaves the EU; to maintain the status quo would be a breach of that commitment. Arguably, therefore, Parliament should not have allowed a binary vote of this sort.

There is another type of binary vote, which does not suffer from such problems, where the decision is between two specific alternative policies, (say) X and Y. In the context of Brexit, X could be the Prime Minister’s deal, and Y an alternative policy proposed by the opposition (for example).

³ In English, as spoken in most of the UK, the use of the word ‘aye’ is archaic. There are some exceptions, especially in the north-east of England and in Scotland, where ‘aye’ is in general use today.

In this case, MPs don't vote 'yes' or 'no', but vote for X or Y. That is a slight challenge to the architecture of the House of Commons, but is hardly a radical innovation. And moreover, whichever way the vote goes, there is a specific outcome (X or Y), and no stalemate. But this type of binary vote was not used in the Brexit voting process.

What did it mean when an MP voted in favour of May's Brexit motion? The most extreme interpretation is that May's deal was their first choice amongst all possible Brexit arrangements. Or, as a slightly less extreme interpretation, it means that even if May's deal is not that MPs first choice, it is close enough to the first choice that no great compromise is involved in voting for the May deal.

And what did MPs think they were doing when they voted 'no' to the Prime Minister's deal? Were they voting for a stalemate? I suspect almost all MPs would deny that. Instead, they would probably say that this was not the right Brexit deal, and there were better alternatives. The compromise involved in voting for May's deal was too great. In order to make Parliament consider these alternatives, it was necessary to vote against the Prime Minister's deal, even if that led to a temporary stalemate.

And this illustrates the problem with a binary (yes/no) vote in this Brexit context. It did not make sense for parliament to choose between the Prime Minister's Brexit deal and the status quo. The real meaning of this vote was to compare the Prime Minister's Brexit deal (X) and a hopelessly ill-defined range of alternatives, which we might call $\{Y_1 \dots Y_N\}$. This perceived range might vary from person to person, and the possible range may be quite wide.

From the evidence we have, we cannot know how many possible alternatives MPs had in mind when deciding whether to vote for May's deal or against. However, we can get an idea of this from the range of alternatives discussed when the indicative vote experiment was under way. For the first set of indicative votes, sixteen alternative policies were proposed, of which the Speaker (chair) chose eight for MPs to consider.

When so many different alternatives are being considered by MPs, and when MPs have such wide differences in opinion as they do on the issue of Brexit, it is highly improbable that one specific deal could expect to achieve more than fifty per cent of the vote in one binary vote. Why is this? The easiest way to understand this, I think, is to consider a simple model of choice between multiple alternatives. We do this in Appendix A1, where we can use the single transferable vote method, or the exhaustive ballot method to choose a winner. There, we show that in most cases, it takes many rounds of voting to identify a winner from a wide variety of alternatives.

5. Binary Voting, Part II

In view of the above, binary voting was not, and probably never could be, an appropriate approach to resolving the question of which sort of Brexit we want. Let us return to Theresa May's remarks made immediately after the first rejection of her Brexit motion on 15 January 2019. She said two things:

- i) "it is clear that the House does not support this deal"
- ii) "tonight's vote tells us nothing about what it does support ..."

Start with the second point. Here, we have to agree with May: the vote does indeed tell us nothing about what alternative policy the House would support. But the reason for that is not because MPs were mischievous or uncooperative; the problem lies with the procedure itself. MPs were offered a binary vote to support or oppose a particular deal, and the motion did not refer to any alternative options. Binary (yes/no) voting on such a motion *cannot* tell us what alternative would be supported. The only way we can find out about potential support for alternatives is to allow MPs *multiple* choices – and not just a binary choice.

Then take the first point. For a politician brought up in the binary voting culture, such a defeat would seem overwhelming. But I myself would be more optimistic. It is clear that the House will not support this deal in a binary (yes/no) vote but, on the other hand, if this deal were one of several options offered in a leadership election, using the same (or a similar) procedure to that described in Section 3, then it is still possible that May's deal could win that 'election'. I shall explain this further below.

In short, I would say that May's deal is not necessarily 'dead', but binary voting is (or should be) 'dead' as a way of selecting the appropriate form of Brexit. Instead, as argued by several MPs (notably the 'Father of the House',⁴ Kenneth Clarke), MPs should place these policies in order of preference using the single transferable vote process, or the exhaustive vote process used in the Conservative Party Leadership Election in June-July 2019 (see Section 3).

⁴ The 'Father of the House' is an informal role occupied by the longest-serving male MP. There is also a 'Mother of the House'. As these MPs have exceptionally long experience of Parliament (in Clarke's case, 49 years), their opinion carries a lot of weight.

Given that there were ten candidates in round one of the Leadership Election, and all of them had their supporters, it was extremely unlikely that any candidate could expect to achieve more than fifty per cent of the vote in the first round. Indeed, Boris Johnson did not manage to exceed fifty per cent until round five.

It is interesting to compare May's experience in the three votes on her Brexit deal with Boris Johnson's experience in the first three rounds of the Conservative leadership election. Table 5 gives a succinct summary (based on Tables 1 and 4):

Ballot	1	2	3
Theresa May's Share of Vote	32%	38%	45%
Johnson's Share of Vote	36%	40%	46%

Table 5: Comparison of May's Brexit Vote with Conservative Leadership Election

In each round, May's share of the vote is not far behind Johnson's. But May's results in these three rounds were considered a failure, while nobody considered Johnson's performance a failure. The reason for that is that May was expected to win fifty per cent support for her deal in one or two votes, while Johnson was not expected to achieve that until the field was reduced to three or four candidates. In short, a binary (yes/no) vote on one specific deal was an impossibly demanding test of whether that deal was preferable to any alternative. Indeed, suppose the leadership election had taken the form of a binary vote: "Do you support Boris Johnson for Leader? (yes or no.)" I doubt that Johnson would have won the necessary majority in that single vote, and if confined to binary votes, the Conservative Party would have failed to agree on a new leader.

In summary, I would argue that the impasse described above was a highly probable outcome of a badly-designed voting process. Binary voting is an unsuitable method for choosing the best option from a wide range of alternatives. This seems so obvious that it hardly needs any further explanation, and yet Parliament, in all its wisdom, did not recognise this problem.

6. Indicative votes, Part I

The Institute of Government (2019) provide a useful guide to the idea of indicative votes. The indicative votes experiment in March 2019 would probably not have happened without the efforts of Sir Oliver Letwin – a former government minister, but by 2019, a ‘back-bench’ Conservative MP. In order to outflank leading Eurosceptics in the Conservative Party, who did not want indicative votes, Letwin had to work with some opposition MPs in order to table a cross-party motion for indicative votes. Letwin’s efforts were widely praised by many MPs from all parties, and many ordinary members of the public.

In the debate on indicative votes (25 March 2019), Kenneth Clarke asked Letwin this question (Hansard, 2019c, Column 83):

“As his amendment does not set out precisely the form that the indicative votes will take, there is a real danger that if everybody votes for their first preference, we will not produce a majority for anything. His amendment does not set out the basis on which the indicative vote motions are to be tabled. How are we to resolve the method by which we table them? The opinion of the hon. Member for Bishop Auckland (Helen Goodman) and myself is that the single transferable vote is the best way to steer people to one conclusion. It will force compromise, except from those who will vote only for their first preference. Unless my right hon. Friend has a better alternative, how does he guard against the danger of nothing getting a majority?”

Letwin replied (Hansard, 2019c, Column 83):

“My own view is that, at least to begin with, it may be wiser simply to disclose where the votes lie on a plain vanilla basis—this point was made very forcefully a few moments ago—with all the voting going on at once, with pink slips in the Lobby at the end of the debate and not sequentially so that we do not have the gaming of sequence. On that basis we could discover which propositions that have been put forward commanded significant support and which did not. We should do so in the hope that, as politicians—we should remind ourselves that we are not just an ordinary electorate, but politicians who have spent our lives in this business—we can, in the succeeding

few days, having observed the lie of the land, zero in on a compromise that could get a majority. My second answer is that I do not at all discount the possibility that, at a later stage—I am sure that there will have to be a later stage, and indeed I hope that the business of the House motion will book a slot for a later stage—we should resort to some other method to crystallise the majority if we find that it is otherwise difficult to do.”

Perhaps Letwin made two mistakes. First, the suggestion that Parliament might “resort to some other method” never materialised. Second, we have to accept that what we got from the indicative votes experiment was not “plain vanilla”. On the contrary, it was a rather confusing “fudge” and there is some ambiguity around what exactly the results tell us. The MPs had eight votes each (one for each possible Brexit policy) to express which policies they would vote for. Presumably Letwin hoped that MPs would declare votes for all of the policies that they could envisage supporting. But this is not what he got. Instead, the majority of votes cast were votes against policies, while less than a third of votes were in favour of a policy. This was the outcome that Kenneth Clarke had anticipated in his comment cited above: too many people chose only to vote for their first-choice policy. (Table 6 is calculated from the data in Hansard, 2019e.)

Yes	Abstain	No
30%	18%	52%

Table 6: All Indicative Votes by Outcome

Moreover, there were some telling differences by party (Table 7, again calculated from data in Hansard, 2019e.) Labour MPs appeared, by and large, to enter into the spirit of the indicative vote experiment, with an average of 3.8 yes-votes per MP. Conservative MPs, on the other hand, only made an average of 1.4 yes-votes per MP. There appear to have been two factors at work here. Firstly, many of those close to Prime Minister Theresa May hardly took part in the process at all, with many abstaining on each vote – perhaps as a signal of loyalty to the Prime Minister. Secondly, many Brexiteers voted for one policy only (or two at most) and large numbers voted against everything else.

Yes-Votes	Con	Lab	SNP PC	Ind	Lib Green	DUP	Total
0	86	1	1	3	0	0	91
1	65	5	2	0	0	10	82
2	126	20	32	15	11	0	204
3	29	45	4	2	1	0	81
4	7	121	0	0	0	0	128
5	0	50	0	1	0	0	51
6	0	1	0	0	0	0	1
7-8	0	0	0	0	0	0	0
Total Yes-Votes	432	920	78	41	25	10	1506
MPs	313	243	39	21	12	10	638
Yes-Votes per MP	1.4	3.8	2.0	2.0	2.1	1.0	2.4

Table 7: Participation in Indicative Votes by Party⁵

Next, we need to ask what ‘yes’, ‘abstain’ and ‘no’ votes actually meant in this context. ‘Yes’ votes are straightforward: they either indicate a first-choice policy, or a close alternative that the MP is content to support. But what of ‘abstain’ votes? Do they perhaps suggest a second tier of policies that the voter is unwilling to support openly at this stage, but might support in some circumstance? And what of ‘no’ votes? Are these policies that the MP would never support in any circumstance? And what are we to make of MPs who voted ‘no’ to all 8 policies? Is there nothing at all they support – even amongst the diverse options on offer?

If we assume that ‘no’ votes do indeed indicate policies that the MP would never vote for, in any circumstances, then on the face of it, the right-hand column of Table 6 is quite incredible. It says that the ‘average MP’

⁵ Con: Conservative; Lab: Labour; SNP: Scottish National Party; PC: Plaid Cymru (Party of Wales); Ind: Independents; Lib: Liberal Democrats; Green: Green Party; DUP: Democratic Unionist Party (of Northern Ireland).

voted against four out of the eight options – apparently implying that they would never vote for those four policies in any circumstance. But suppose we reach a point on the exhaustive ballot where there are four options left, and suppose a particular MP has voted ‘no’ to all four of those remaining options. The implication of Table 6 would appear to be that that MP would never cast a vote for any of those four remaining options, and therefore would no longer participate in the voting process. Is that really credible? I don’t think so.

So why were there so many ‘abstain’ and ‘no’ votes? Consider a voter who is broad-minded, and would in principle be willing to vote for many different options (say 6 out of 8), if that was the right thing in the circumstances. But that fact does not necessarily mean that this voter is indifferent between those 6 options; on the contrary, this person may have a very clear order of preference. If you don’t allow the voters to state their order of preference, then they may, quite reasonably, be unwilling to give a ‘yes’ vote to all the 6 acceptable options. In that case, it is quite plausible to expect that voters will vote ‘yes’ for their first choice (and close substitutes), vote ‘abstain’ for the next tier of options, and vote ‘no’ for the least preferred options. In short, by not allowing people to express their order of preference, it is likely that potential ‘yes’ votes turn into ‘abstain’ votes – or even ‘no’ votes.

Finally, it is a pity – from the point of view of statistical analysis – that Prime Minister May’s Brexit Deal was not included in the indicative vote. The reader may be thinking that since there was a third binary vote on the Withdrawal Agreement on 29 March 2019, then it was unnecessary to include May’s deal in the indicative votes. But that is to miss the point: the rules of the game for a single binary vote on one deal are quite different from the rules of the game for a series of N binary indicative votes. The latter is a free vote for most MPs; the former is not. The latter is not binding, while the former certainly is. In the latter, MPs may vote for as many policies as they like; in the former they can only vote for (or against) one.

I suspect that Theresa May was reluctant to let her Brexit Deal be included in the indicative votes in case an alternative policy gained a higher share of the vote. Ironically, if voting on the indicative votes had used the single transferable vote, or an exhaustive multi-round ballot of alternatives, then the inclusion of May’s deal in the list of choices could quite possibly have rescued her deal.

7. Indicative votes, Part II

Despite the ambiguities described above, the indicative vote data do give us an idea of which of the eight options would be most likely to survive to the latter states of an exhaustive vote -- as in the Conservative Party Leadership Election.

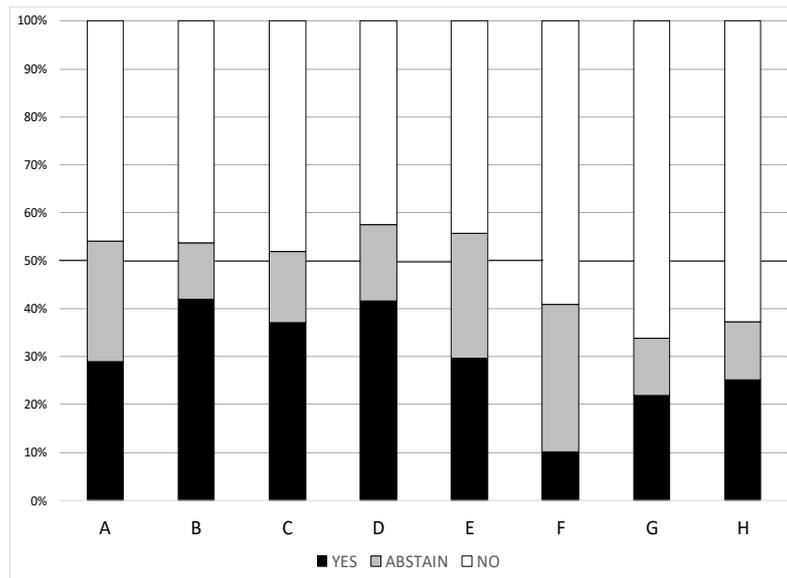


Figure 1: ‘Yes’, ‘Abstain’ and ‘No’ Votes on 8 Brexit Policies, 27 March 2019

Figure 1 shows, for each of the eight options, the ‘yes’, ‘abstain’ and ‘no’ votes as percentages. The left-hand end of the spectrum represents pro-Remain policies, while the right-hand end of the spectrum represents pro-Brexit policies – and the rationale for placing these eight policies in that particular order is discussed in Appendix 2.

Suppose that my earlier comments are right, and ‘abstain’ votes might really indicate a potential ‘yes’ vote, but for a less preferred alternative. Then the challenge in an exhaustive ballot is to turn ‘abstain’ votes into ‘yes’ votes, and thereby to cross the 50 per cent line. Figure 1 shows that all the first five options (A to E) can cross the line so long as enough ‘abstain’ votes are turned into ‘yes’ votes. Perhaps option D has the best chance. On

the other hand, options F, G and H cannot expect to achieve 50 per cent of votes, even if all their ‘abstain’ votes are turned into ‘yes’ votes. While it is difficult to compare the binary votes on Theresa May’s deal with the indicative votes, it is certainly possible that May’s deal would progress to the last few rounds of the exhaustive ballot.

The geometric distribution considered in Appendix 1 is not a good approximation to the distribution of votes shown in Figure 1. Nevertheless, if we compare Figure 1 with the two bar charts in Appendix 1, we can see that the numbers of votes for different policies in Figure 1 do not vary very much (apart from option F). As discussed in Appendix 1, that means that an exhaustive ballot will usually take a large number of rounds to identify a winner; indeed, it would probably have to go the final round, when voters must choose one policy or another.

Figure 1 describes voting patterns across all MPs -- from all the different parties. The pattern amongst the Conservative and DUP parties was to vote for rather few options, except those at the right-hand end of the spectrum. The pattern amongst Labour MPs was to cast most votes for the policies in the middle. And the pattern amongst the remaining parties -- Liberal Democrats, Scottish National Party, Plaid Cymru (Party of Wales), and Greens -- was to vote for the two most remain-oriented policies, at the left-hand end of the spectrum.

8. Conclusion

On 16th January, 2019 - the day after the first Commons vote on Theresa May’s Brexit deal - the newspaper headlines made for grim reading (Guardian, 2019):

“Brextinct: May’s Brexit deal dead as a dodo” (*The Sun*)

“Brexit shambles” (*Daily Mirror*)

“Brexit Vote Bombshell: Fighting for her life” (*Daily Mail*)

“May suffers historic defeat as Tories turn against her” (*Guardian*)

“A complete humiliation” (*Daily Telegraph*)

“May’s Brexit deal crushed by Commons” (*Financial Times*)

Even by the standards of the British press, these headlines are pretty harsh. And yet, extraordinary as it may seem, I think that all the newspapers (except perhaps the *Financial Times*) missed the point. Yes, it was a humiliating outcome for Prime Minister Theresa May. But, as I have

suggested above, the problem was not so much Mrs May's deal as Parliament's stubborn determination to press on with using its normal binary voting system, when that was wholly unsuited to a complex and multi-faceted decision of this sort.

In a sense, the *Financial Times* headline was closest to the truth. May's Brexit deal was indeed crushed by the House of Commons. It was crushed by the insistence on observing the convention that all votes must be binary (yes/no). The binary vote used to decide if Parliament would accept May's deal had little chance of success, but that did not, of itself, imply that the deal was a bad one. The flaw was in the voting procedure used – not necessarily the policy. In the same way, I have argued that the use of eight binary votes in the indicative vote experiment was also flawed, because it tends to generate too many abstentions and 'no' votes.

The large literature on voting and social choice theory (with pioneering works by Condorcet, 1785; Black, 1948, 1958; Arrow, 1951; Sen, 1970) tells us that we should not seek a 'perfect' voting system. There is no such thing: all voting procedures have imperfections. But nevertheless, we should be alert to recognise flaws in commonly-used procedures, and to learn how to avoid them.

How would I answer the title question? Was there "Stalemate by Design?"; and, if so, was it intentional or unintentional?

My answer to the first part of the question is, 'yes'. The 2019 Brexit stalemate in the Westminster Parliament was the result of a flawed design in the voting procedure. It was the unintended and unexpected outcome of a flawed voting process. Binary voting processes are not suited to the complex features of Brexit – as I have discussed above. Like Kenneth Clarke (quoted above), I am confident that an alternative approach (whether a single transferable vote, or an exhaustive ballot) could have forced Parliament to select the most popular (or least unpopular) Brexit deal. But I stress the word, "forced". Either of these alternative approaches could have delivered a solution instead of an impasse, but voting would have been a lengthy and very heated process. When opinions were so different and entrenched, how could it be otherwise?

What of the second part to the question? Obviously, I don't suggest that this stalemate was Prime Minister Theresa May's intention. But we should ask this: were there other actors in the drama who were content (or even happy) to see stalemate, because it served their purposes? The short answer is: yes, I think there were. From the evidence I have seen, in reading countless pages of Hansard, I suspect that some actors in the drama tried to

exploit archaic procedures to stall May's Deal, and therefore to force her resignation.

Did the stalemate matter? And if so, why? It obviously mattered for Theresa May, as it forced her to resign as Prime Minister, and it was more or less inevitable she would be replaced by Boris Johnson. However, the question of whether it was good for the UK that Johnson should replace May lies well outside the scope of this paper!

The stalemate mattered in other ways. I refer the reader again to the two quotations towards the end of Section 2. The stalemate exhausted the patience of the British people, the patience of business in the UK, the patience of people in many (if not all) of our EU neighbours, and beyond, and the patience of all involved in negotiations on both sides. It also fostered suspicion amongst many Brexiters that the 'establishment' were trying to block Brexit in underhand ways. That suspicion was exploited in the 2019 General Election, so that regions of the UK which had never voted for the Conservative Party did so, because they were persuaded that a vote for Johnson would ensure Brexit went ahead, and soon, while any other vote was a vote for further stalemate.

And, most of all, stalemate mattered because it paved the way for a government that would be only too happy to decide on a no-deal Brexit – and, at the time of writing, that seems the most likely outcome. That matters because of the evidence in Figure 1, which shows that in the indicative votes, it is inconceivable that a proposal for a 'no deal' Brexit could have won a majority in parliament – even if all the 'abstain' voters could be persuaded to vote in favour. While there is undoubtedly a mandate for Brexit, as a result of the 2016 Referendum, I am aware of no vote, survey or opinion poll that offers a mandate for 'no deal'.

In conclusion, I turn to this final question. Of the two voting procedures that could be used to avoid this sort of stalemate, which is better?

The single transferable vote was the solution proposed by Kenneth Clarke and Helen Goodman. The advantage of this is that only a small incremental innovation is required beyond the indicative votes in March 2019. MPs are given a piece of paper with eight options, but instead of a binary (yes/no) vote on each option, MPs are asked to rank these options in order of preference (1 N). The disadvantage is this: Westminster politicians seem to have a deep suspicion whenever they are called on to reveal their 'hand'. The single transferable vote forces them to do that, by writing down their 'secrets' on paper. If they do not wish to do that, then they must conceal part of their 'hand' by ranking only a small number of

alternatives. That may be acceptable, if it happens only in few cases. But when preferences are ‘hidden’ in a widespread manner, that is not good for the integrity of the voting process.

In comparison, one advantage of the ‘exhaustive ballot’ is that it works pretty well in leadership election (as illustrated above). So, why should politicians object to its use in Parliament? I suspect that the main objection of most MPs in Parliament would be that it is a radical change compared to standard Parliamentary procedures. But in the end, it is Parliament’s obligation to solve problems, and during the Brexit process, Parliament spectacularly failed to do that.

The alternative I have proposed will involve a lengthy voting process, and a heated one. How could it be otherwise when different MPs have such different preferences, and when the number of indicative votes for many of the options are quite close to each other. But I think we must accept that is a better outcome than stalemate, where the wishes of a majority of the British people cannot be honoured because of Parliament’s reliance on traditional procedures, and reluctance to consider innovations.

Appendix 1: A Simple Model of an Exhaustive Ballot

Here, we present a simple model of a leadership election, or an exhaustive ballot to pick a Brexit deal. This shows that when different voters have very different preferences (as described in Section 7), and there is a fairly even distribution of votes across different alternatives, then it will take many rounds of voting before a winner emerges. This very simple model is applicable in two different contexts:

- a) An exhaustive ballot for the most preferred deal out of N possible policies ($P = 1 \dots N$).
- b) A leadership contest, where MPs have to select a winner, who becomes leader, from N different candidates ($P = 1 \dots N$);

Suppose that after the first round ($R=1$) of the contest, we sort the different candidates (people or policies) according to their share of the vote: the candidate with the highest share of the vote is given the number 1, while the candidate with the lowest share of the vote is given the number N . And

suppose, for simplicity, that the distribution of votes across the N candidates in that first round follows a geometric distribution:

$$V_{P,R} = aP^b$$

Where $V_{P,R}$ represents the number of votes for person or policy P in round R ; a is a constant representing the scale of voting; b (which is negative) is a constant describing the difference in votes for different people or policies. (The more negative is b , the more different the number of votes for different people/policies; the less negative is b , the more similar the number of votes for different people/policies).

At the end of each round (R), one person or policy ($P=X$) is eliminated from the contest: the one with the least votes in that round. This means that $V_{X,R}$ are 'dislocated', and in the next round, these 'dislocated' votes are redistributed between the remaining people or policies. For simplicity, we assume that the redistribution of votes follows this formula:

$$V_{P,R+1} = V_{P,R} \left[1 + \frac{V_{X,R}}{\sum_{P=1}^{N-R} V_{P,R}} \right]$$

or

$$V_{P,R+1}/V_{P,R} = \left[1 + \frac{V_{X,R}}{\sum_{P=1}^{N-R} V_{P,R}} \right]$$

The second formula makes it clear that, subject to our simplifying assumptions, the votes for each person/policy increase from one round to the next by the same percentage. And that means, in each round of the competition, the distribution of votes continues to follow a geometric distribution. That is a convenient assumption, but not necessarily an accurate one. It means that those who start ahead forge further ahead.

Figures 2 and 3 show two examples of the geometric distribution for these values of b : -1.5 , -0.1 . In each case, the vertical axis shows the percentage of votes, while the horizontal axis shows the different people or policies.

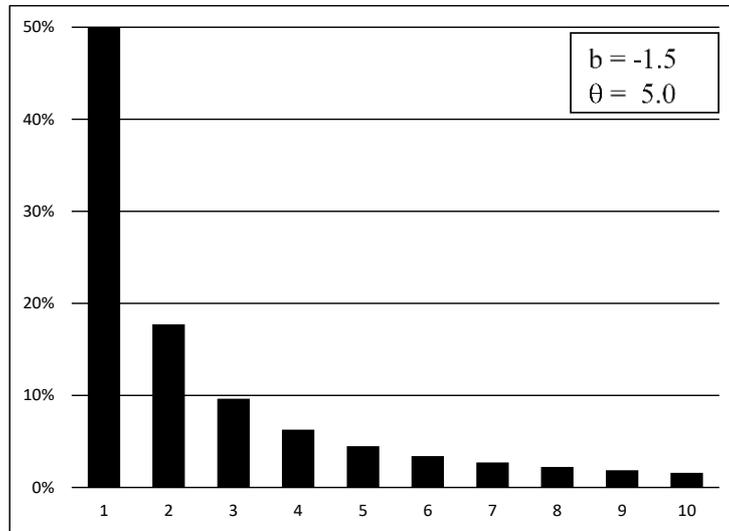


Figure 2: Example of Uneven Geometric Distribution ($b = -1.5$)

In Figure 2, person or policy $P = 1$ is far ahead of the rest from the start, while in Figure 3, there is almost no difference between the candidates.

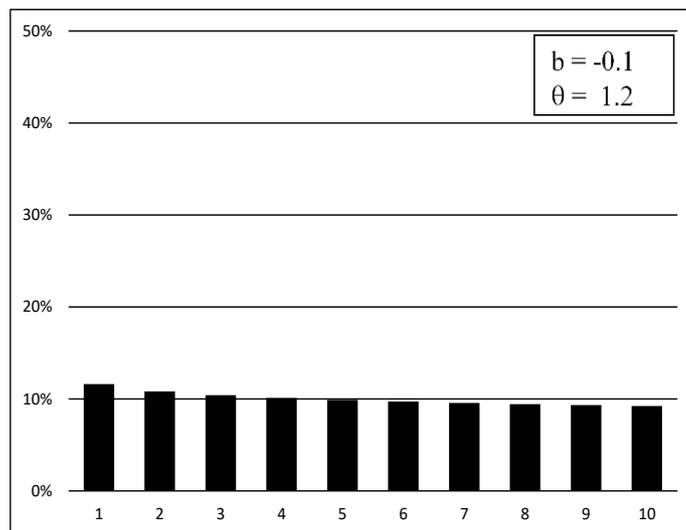


Figure 3: Example of Even Geometric Distribution ($b = -0.1$)

Using this simple model, we can work out how long the contest will take before the leading candidate has more than 50 per cent of the vote. Figure 4 measures the length of the contest by the number of candidates that have to be eliminated, before a winner emerges.

For the most negative values of b (-1.5), the leading candidate achieves just over 50 per cent of the vote in round 1, and therefore no eliminations are required. Indeed, this is clear from Figure 2. But for less negative values of b , the required number of eliminations grows quite fast. For $b = -1$, seven eliminations are required before the leading candidate can achieve 50 per cent of the vote. And for $b = -0.7$, eight eliminations are required, meaning that only two candidates are left.

The more negative is b , the greater the differences in votes captured by the leading candidate and the ‘also ran’ candidates. This means the contest can be resolved quite quickly. The less negative is b , the smaller are these differences, and the longer it takes for the winner to achieve 50 per cent.

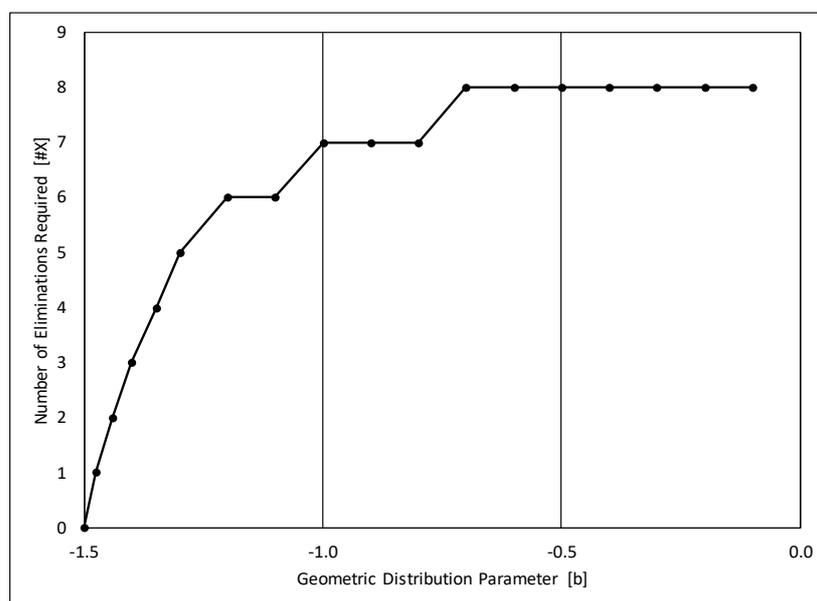


Figure 4: Number of Eliminations Required as a Function of Parameter b

The geometric distribution is a reasonably good fit to the first round of the Conservative leadership election, described in Section 3. But the geometric distribution is not such a good fit to the data from the indicative votes

(Section 7). In that case, a useful nonparametric measure to describe the equality between votes for different alternatives is this:

$$\theta = V_{1,1}/\bar{V}_{.,1}$$

where $V_{1,1}$ is the number of votes for person or policy 1 in round 1; and $\bar{V}_{.,1}$ is the average number of votes across all people/policies in round 1

The measure θ compares the votes for the leader in round 1 to the average for all contestants in round 1. The values of θ corresponding to values of b are shown in Figures 2 and 3. In the first round of the Conservative leadership election, $\theta = 3.6$. In the indicative votes exercise, $\theta = 1.4$.

Appendix 2: Principal Components Applied to Indicative Vote Data

One of the useful things we can do with the indicative votes data is to use the correlations between votes for different Brexit policies as an indication of the similarity and difference between different policies. This can be done using principal components (as the simplest method), factor analysis or multidimensional scaling (as the most general method). For the very simple purposes of this paper, the application of principal components is sufficient.

Table 8 shows the correlation in voting patterns across all MPs for each pair of policies, where the policy definitions are taken from Table 2.

	A	B	C	D	E	F	G	H
A		0.87	0.65	0.62	0.45	-0.08	-0.53	-0.63
B	0.87		0.74	0.69	0.56	-0.02	-0.57	-0.65
C	0.65	0.74		0.84	0.63	0.03	-0.53	-0.61
D	0.62	0.69	0.84		0.74	0.21	-0.58	-0.69
E	0.45	0.56	0.63	0.74		0.43	-0.45	-0.57
F	-0.08	-0.02	0.03	0.21	0.43		-0.07	-0.15
G	-0.53	-0.57	-0.53	-0.58	-0.45	-0.07		0.74
H	-0.63	-0.65	-0.61	-0.69	-0.57	-0.15	0.74	

Table 8: Correlation in Voting for Different Policies

This suggests the policies can be placed in three natural groups:

$$\{A, B, C, D, E\} \quad \{F\} \quad \{G, H\}$$

Correlations within group {A, B, C, D, E} are positive and strong. Correlation within group {G, H} is positive and strong. But correlation across groups {A, B, C, D, E} and {G, H} are negative and strong. Group {F} is an outlier and correlations between F and most members of the other groups are weak (except in the case of E).

We apply the principal components method to that correlation matrix, and compute the two eigenvectors corresponding to the two largest eigenvalues. Then we use these eigenvectors to create a two-dimensional plot of the eight policies. This is shown in Figure 5. I have not drawn a numerical scale for the two axes, because that has little meaning in such a plot; the most important thing is the relative location of the eight different points A to H.

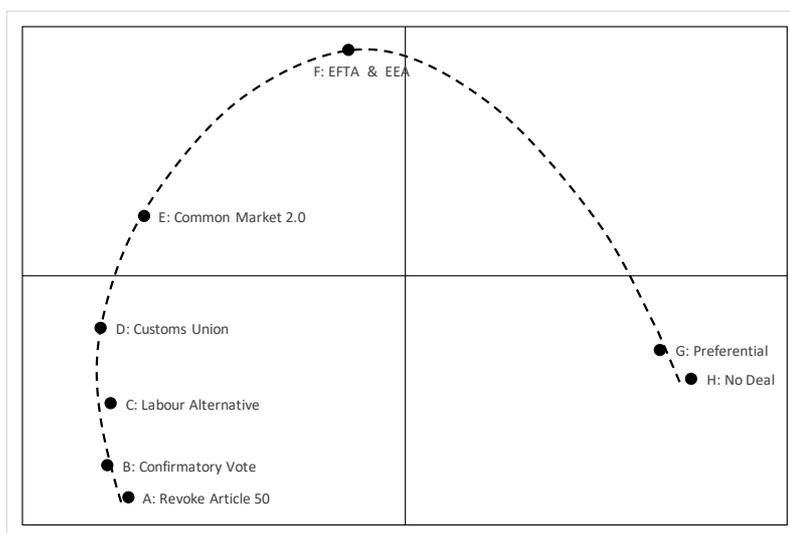


Figure 5: Principal Component Plot of Vote Correlation Matrix

As so often happens with principal component plots generated from a correlation matrix, the different policies lie approximately on an ellipse, as shown. Given that, we can simplify things further and use a simple one-

dimensional, *ordinal* and alphabetical scale to compare the policies. At one end of the scale is A (the most remain-oriented policy) while at the other end is H (the most Brexit-oriented policy). But as the scale is only ordinal (not cardinal), we are not suggesting that the ‘distance’ between (say) H and G is the same as the ‘distance’ between G and F; indeed, that is clearly not the case in Figure 5. We have used that scale at various points in the main part of the paper.

When using a one-dimensional scale of that sort, we can often assess how reliable it is by testing if voter preferences along that scale are single-peaked. If one end of the spectrum is very pro-remain, while the other end of the spectrum is very pro-Brexit, then it seems reasonable to assume that each MP can identify one ideal point (or contiguous group of points) on that spectrum, which corresponds to their peak preference. If we list an MP’s indicative votes in the order A, B, C ..., H, then one clear example of single-peaked preferences would be:

<No> <Yes> <Yes> <Yes> <No> <No> <No> <No>

When we take account of ‘abstain’ votes, that is a little more complex. Should we treat <Abstain> as indicating a neutral option that is less preferred to <Yes>, but more preferred to <No>? In some cases that may be a reasonable assumption. If so, then the following example would violate the principle of single-peaked preferences (the violation is highlighted in **bold**):

<No> <Yes> <**Abstain**> <Yes> <No> <No> <No> <No>

But this may not be a fair assumption in all cases. Abstention may often reflect a strong political constraint – not neutrality. In that case, the last example does not violate single-peakedness. But either way, this next example certainly does violate single-peakedness:

<No> <Yes> <No> <**Yes**> <No> <No> <No> <No>

Out of 638 voting MPs,⁶ only 15 (2.4 per cent) have non-single-peaked preferences, when we only consider <Yes> and <No> votes. But if we treat

⁶ By tradition, the Speaker and three Deputy Speakers do not vote. In addition, the

<Abstain> votes as an intermediate preference score between <Yes> and <No>, then 67 (10.5 per cent) have non-single-peaked preferences. In short, the vast majority of MPs appear to have single-peaked preferences over this one-dimensional, ordinal scale.

References

- Arrow, K. J. (1951), *Social Choice and Individual Values*, New York: Wiley.
- Black, D. (1948), “On the Rationale of Group Decision-making”, *Journal of Political Economy*, 56: 23–34.
- Black, D. (1958), “The Theory of Committees and Elections”, Cambridge: Cambridge University Press.
- Condorcet, Marquis de (1785), *Essai sur l'Application de l'Analyse à la Probabilité des Décisions Rendus à la Pluralité des Voix*, Paris: Imprimerie Royale: archive.org/details/essaisurlaplica00cond
- Guardian (2019), “Front Pages on Wednesday after May's Brexit Vote Defeat”, 16 January 2019: www.theguardian.com/politics/2019/jan/16/brexit-front-pages-on-wednesday-after-may-vote-defeat
- Hansard (2019a), *European Union (Withdrawal) Act*, 15 January 2019, Volume 652, Columns 1020-1130: hansard.parliament.uk/Commons/2019-01-15
- Hansard (2019b), *European Union (Withdrawal) Act*, 12 March 2019, Volume 656, Columns 208-300: hansard.parliament.uk/Commons/2019-03-12
- Hansard (2019c), *European Union (Withdrawal) Act*, 25 March 2019, Volume 657 Columns 60-145: hansard.parliament.uk/Commons/2019-03-25
- Hansard (2019d), *EU: Withdrawal and Future Relationship (Motions)*, 27 March 2019, Volume 657, Columns 369-428: hansard.parliament.uk/Commons/2019-03-27
- Hansard (2019e), *EU: Withdrawal and Future Relationship Votes*, 27 March 2019, Volume 657, Columns 481-513: hansard.parliament.uk/Commons/2019-03-27

Sinn Fein MPs, representing voters in Northern Ireland that favour closer ties with the Irish Republic, do not take up their seats in the Westminster Parliament, and therefore do not vote.

- Hansard (2019f), *United Kingdom's Withdrawal from the European Union*, 29 March 2019, Volume 657, Columns 696-778:
hansard.parliament.uk/Commons/2019-03-29
- Hansard (2019g), *EU Withdrawal and Future Relationship (Votes)*, 1 April 2019, Volume 657, Columns 893-910:
hansard.parliament.uk/Commons/2019-04-01
- House of Commons Exiting the European Union Committee (2019), *Response to the Vote on the Withdrawal Agreement and Political Declaration: Options for Parliament*, 16 January 2019:
publications.parliament.uk/pa/cm201719/cmselect/cmexeu/1902/1902.pdf
- Institute of Government (2019), *Indicative votes on Brexit*:
www.instituteforgovernment.org.uk/explainers/indicative-votes
- Sen, A.K. (1970), *Collective Choice and Social Welfare*, San Francisco: Holden Day.
- Wikipedia (2019), *2019 Conservative Party Leadership Election*:
en.wikipedia.org/wiki/2019_Conservative_Party_leadership_election
- Wikipedia (2016), *2016 United Kingdom European Union Membership Referendum*:
en.wikipedia.org/wiki/2016_United_Kingdom_European_Union_membership_referendum