Labour Party leadership election, 2020

Voter distribution in political space

Introduction

Now in the aftermath of its election disaster, the Labour Party has set about electing a new leader to replace Jeremy Corbyn. A survey of Labour party members by YouGov reports on the members' preferences for the leadership candidates. Previous leadership elections are also referred to. Links are provided to my analyses of previous occasions: the leadership elections for Jeremy Corbyn in 2015 and for Boris Johnson in 2019.

A brief note on the questions in the YouGov survey. The questions which I have seen from the YouGov survey for the new Labour leader cover less ground than the YouGov survey for the Conservative leader in 2019. There I was able to analyse the amount of value for each candidate in addition to preferences; and also to look at Condorcet voting. The former requires an extra question and the latter requires a specific way of analysing the preference data. A question about the perceived amount of value of candidates would provide evidence about the much commented on bitterness in politics over the past year.

1 Electing a new leader for the Labour Party in 2020

1.1 The candidates evaluated on different criteria

"Keir Starmer comfortably leads Labour leader race"[1]

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[1] Chris Curtis, January 2, 2020
https://yougov.co.uk/topics/politics/articles-reports/2020/01/02/keir-starmer-comfortably-leads-labour-leader-race;
full results:

The following remarks apply only to the YouGov survey. What will happen in the actual contest may be different.

Keir Starmer wins:

> he has more first preference votes than anyone else;
> he wins all six elimination stages;
> he has the highest Borda Count;
> he tops all six cumulative preference sums.

Also:

> his preferences have a low index of being polarised.

See Table 1 and Figure 1 below.

However:

> we do not know if he is the Condorcet winner (although I would be surprised if he is not – he wins 61% to 39% in the final round of the elimination);
> we do not know if he is the most valued candidate (although I would be surprised if he is not – his Borda Count is highest);
>
> he is not a middle voter winner in 2 dimensions (see Section 1.5) …
> middle voter, winners:
> median, class dimension: Nandy
> median, Brexit dimension: Lewis
> median, overall: Cooper
> mean, class dimension: Nandy
> mean, Brexit dimension: Thornberry, Phillips
> mean, overall: Long-Bailey
>
> but he is a middle voter in 12 dimensions (see Section 1.7)

Table 1 The candidates evaluated on different criteria

| . .	first prefer.	rounds survived	Borda count	polarised* index
Keir Starmer	36	6	474	62
Rebecca Long-Bailey	23	5	364	360
Jess Phillips	12	4	310	297
Yvette Cooper	8	3	333	70
Clive Lewis	8	2	312	98
Emily Thornberry	7	1	342	60
Lisa Nandy	6	0	317	40

* This is a rather crude measure indicating that the candidate has a lot of first preferences and a lot of last preferences – it is simply the product of the two raw percentages.

1.2 Cumulative preference percentages

The survey asked people to rank all seven candidates, giving their most preferred candidate, their second most preferred candidate … their seventh most preferred candidate, i.e. their least preferred candidate. It is these rankings which provide the basis for the elimination process and also the basis for the Borda count: the Borda Count is the sum of the rankings with '7' as first preference, etc., taking the percentages of the rankings.

The rankings also enable us to calculate the cumulative preference percentages: the percentage of first preferences; the percentage of *first or second* preferences; the percentage of *first or second or third* preferences, etc. Figure 1 below presents the cumulative preference profile for each of the candidates. The curve for Keir Starmer is well above the other curves.

Figure 1 Cumulative preference profiles for the Labour leadership candidates, 2020

cumulative percentage of votes

.   cumulative first to nth preferences
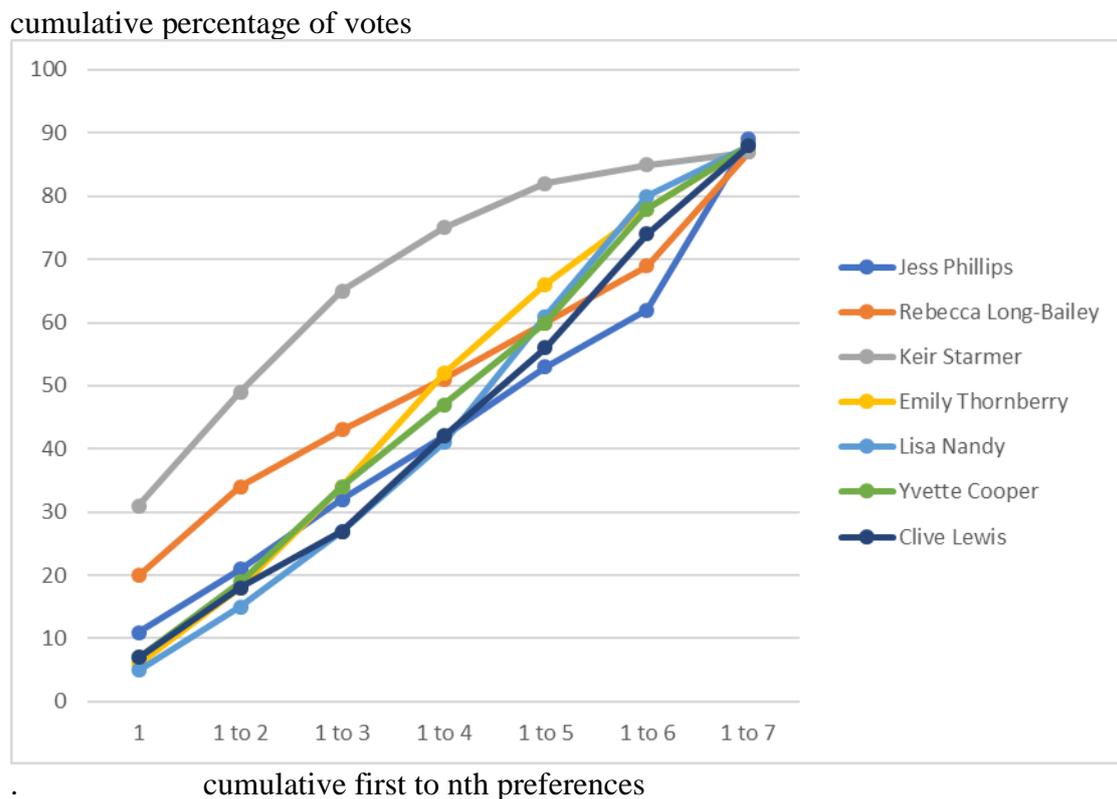
Let us look more closely at Figure 1. The Keir Starmer curve is always above the rest. Also it has a half-rainbow shape. What about the curve below it? Who comes second? Actually there are three different curves: on the left the Rebecca Long-Bailey curve is second; in the middle the Emily Thornberry curve is second; and just at the very end and very marginally the Lisa Nandy curve is second.

Compare the Rebecca Long-Bailey curve and the Emily Thornberry curve. The Emily Thornberry curve is flattish then steep then flattish - and this is because she gains quite strong support in terms of middling preferences. In contrast the Rebecca Long-Bailey curve is steep then flattish then steep - and this is because she gains quite

strong support for the top preferences, rather weak for the middle preferences and then a fair amount of least preferences. This contrast is reflected in the polarised index, where Rebecca Long-Bailey has strongly polarised support on 360 and Emily Thornberry has low on 60 (see Table 1 above).

The Jess Phillips curve is more like the Rebecca Long-Bailey curve and has a high polarised index of 297. The Lisa Nandy curve is more like the Emily Thornberry curve and has the lowest polarised index, 40.

A candidate like Emily Thornberry who gains mostly middling preferences performs poorly on first preferences and on the elimination process but performs well on the Borda Count. In contrast a candidate like Jess Phillips who gains a fair number of first preferences performs well on first preferences and on the elimination process but performs less well on the Borda Count – See Table 1 above.

Figure 2 shows the distribution of preference rankings, contrasting the U-shaped distribution for Rebecca Long-Bailey and the *inverted*-U shaped distribution for Emily Thornberry.
Note: in statistical terminology, Figure 2 is the frequency distribution and Figure 1 is the cumulative frequency distribution.

Figure 2 Distribution of preference rankings, Rebecca Long-Bailey and Emily Thornberry

percentage

.   preference rankings
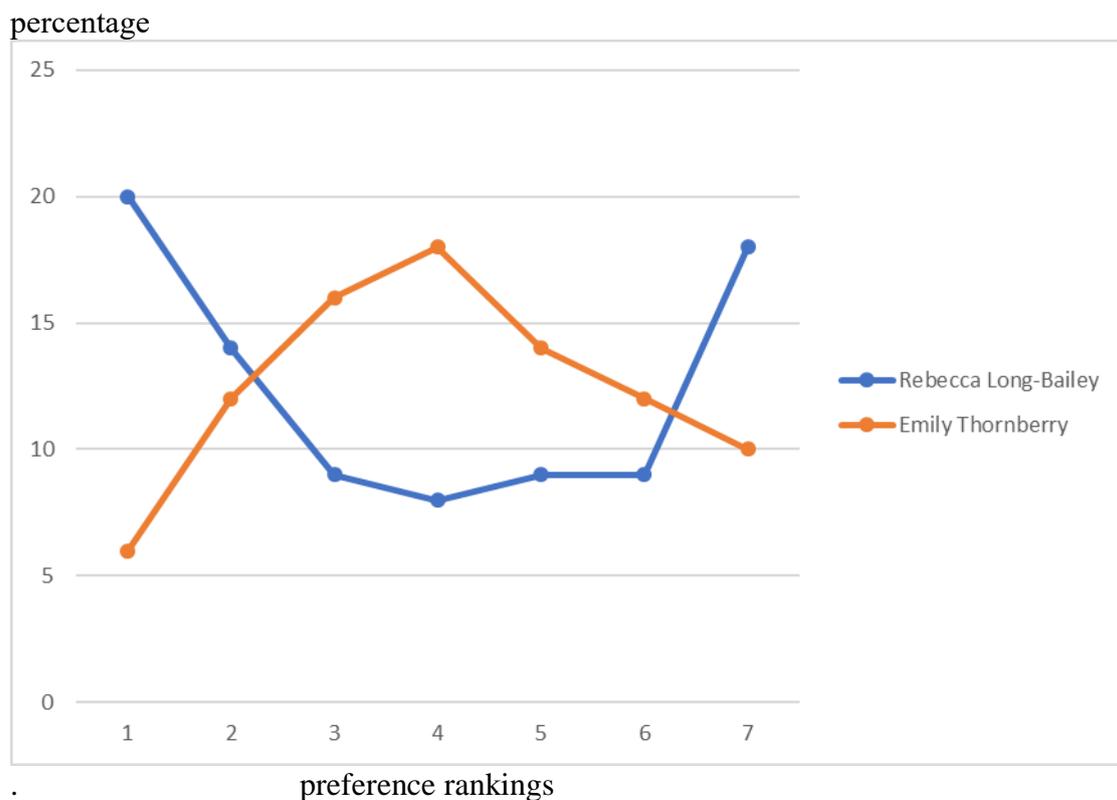
1.3 How social groups voted

As well as showing the overall response the tables produced by YouGov also show the response by a number of different social groups. Brexit was a major factor, with the Leave group responding differently from the Remain group. For example Rebecca Long-Bailey is polarised due to a lot of first preferences from the Leave group and a lot of last preferences from the Remain group. See Figure 3.

Figure 3 Polarised distribution of preferences for Rebecca Long-Bailey, Leave and Remain social groups

percentage of votes

.   nth preferences
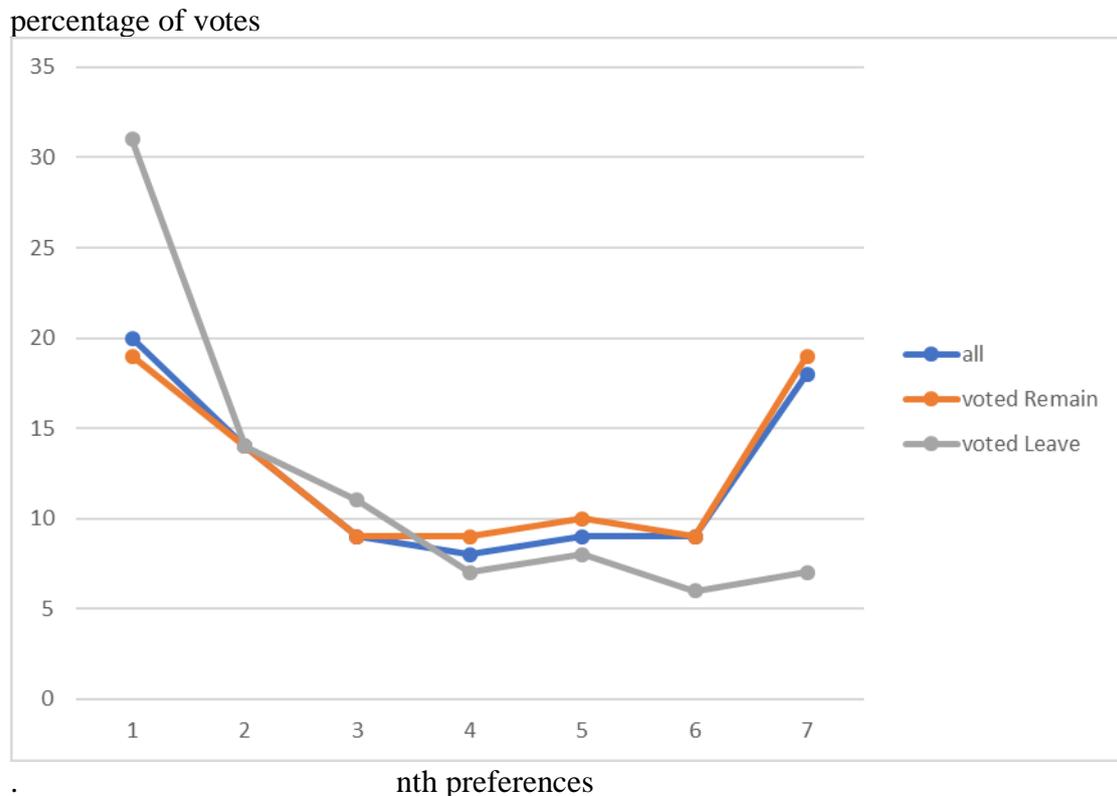
Brexit was also a factor in the comparison between, Rebecca Long-Bailey and Keir Starmer. Leave voters preferred her to him whereas Remain voters preferred him to her. The gap between the two candidates on Brexit groups was the largest. Figure 4 shows the gaps for all the other social groups.

Overall Starmer had 31% first preferences and Long-Bailey had 20% and so Starmer was ahead, with a gap of 11%.

Relative to his own overall performance Starmer did very well in Scotland and with those aged 60+; well with Remain and ABC1 groups; and well in England regions other than the North. He did relatively badly with Leave and C2DE groups and in the Midlands.

The opposite was the case for Long-Bailey. Relative to her own overall performance she did badly in Scotland and with those aged 60+; and in England regions East and

West. <u>Relatively</u>, she did very well with Leave and well with those aged 18-59, the North and male.

Figure 4 needs explaining. The horizontal axis orders the social groups in terms of the gap between Starmer and Long-Bailey. The curve for Starmer was obtained from Starmer's first preferences from the different social groups, from these percentages Starmer's overall first preference percentage was subtracted. This gives Starmer's support from a group relative to his overall support. Similarly for the Long-Bailey curve.

Figure 4 Social groups: ordered by the gap between Starmer and Long-Bailey; group support relative to own overall support

percentage support relative to own mean percentage support
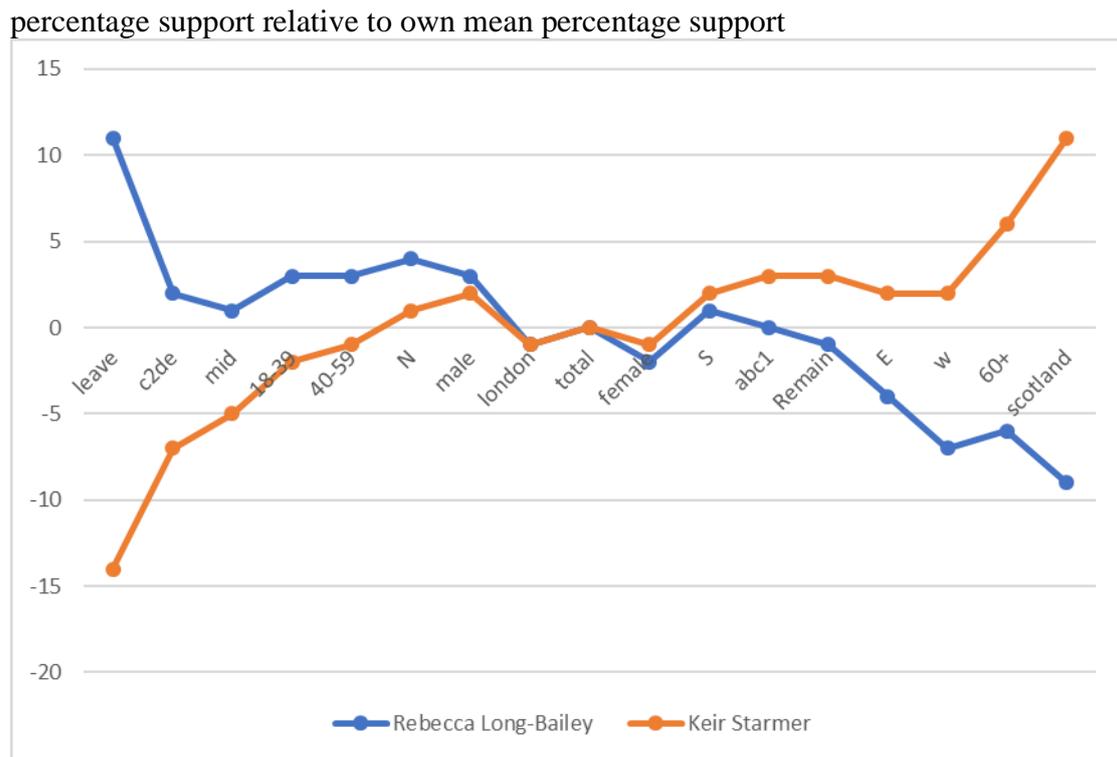
.   social groups: ordered by the gap between Starmer and Long-Bailey

1.4 Locating the candidates in two-dimensional political space

In this section we seek to locate the results in political space. We suppose that voters and candidates are located in political space. However the YouGov survey does not provide information about the candidates directly. So what we do here is to look at the respondents who support each candidate and consider the position of these supporters in political space.

Figure 4 above shows that Starmer and Long-Bailey have distributions of support which are differently located in what might be called political space. This space has a number of dimensions but, on the basis of Figure 4, there are two dimensions which seem to most strongly differentiate Starmer from Long-Bailey. These two dimensions are class and Brexit. Looking at each candidate we can calculate their Middle-Class

score and their Remain score. These two scores enable us to represent each candidate in a two-dimensional space. See Figure 5 and Table 2.

The scores are defined as the relative percentage C of support a candidate has from the middle class as opposed to the working class, and the relative percentage R of support they have from Remain voters as opposed to Leave voters.
.(i) The score needs to be calculated from the numbers in the YouGov tables. The score $x=aP/(aP+bQ)$, where P and Q are the relevant whole-sample proportions, and a and b are the subsample proportions for the candidate.
.(ii) Warning: there may be sizeable error, particularly for lower ranked candidates. This is partly because I do not have access to the raw numbers.

Looking at the two leading candidates, Starmer has a higher Middle-Class score and also a higher Remain score than does Long-Bailey. The mean position for the whole sample is between these two candidates, somewhat nearer Long-Bailey. Indeed Long-Bailey is the closest of all the candidates to the mean position.

Phillips is near Starmer but more Middle Class and less Remain – and farther from the mean position.

Cooper has the highest Remain score and is second nearest to the mean position. Thornberry is second least Middle Class and Lewis is least Middle Class. Nandy has by far the lowest Remain score.

Figure 5. Support. The location of the candidates in Middle-Class & Remain political space

Remain score

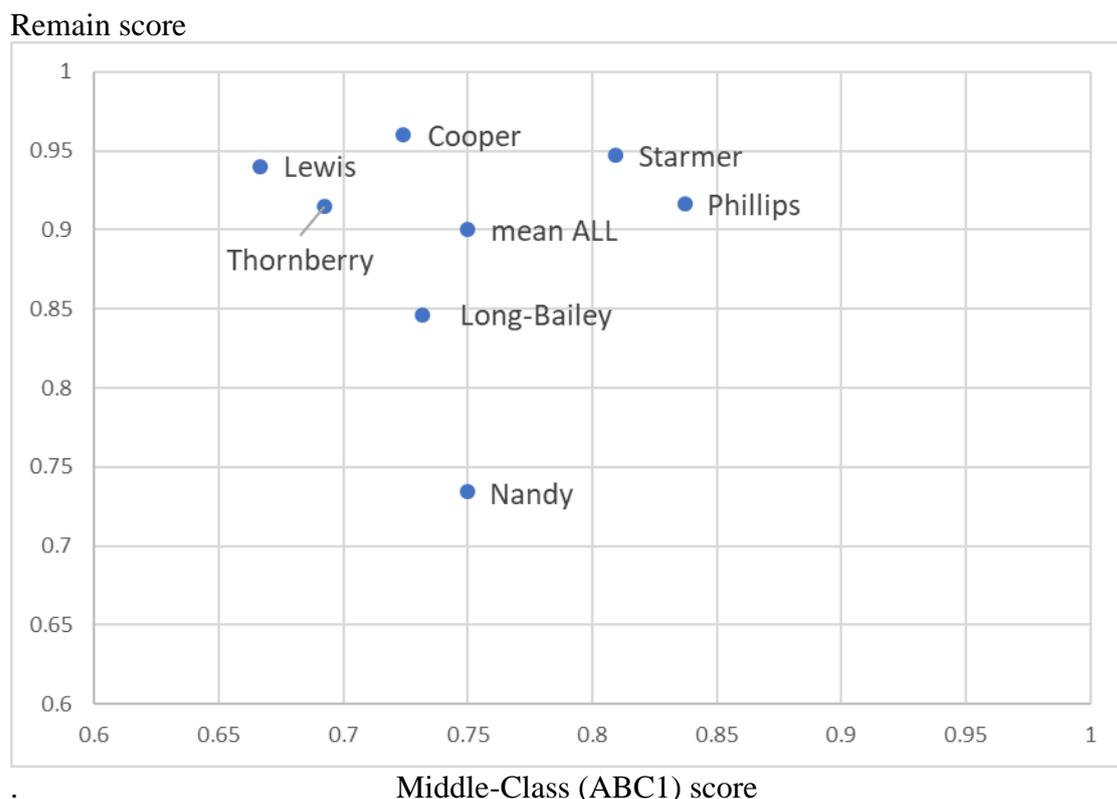.   Middle-Class (ABC1) score

Table 2 Support. Middle-Class and Remain scores; distance from mean
Warning: there may be sizeable error, particularly for lower ranked candidates

.	Middle Class	Remain	distance from mean	
Keir Starmer	81	95	7.6	
Rebecca Long-Bailey	73	85	5.7	
Jess Phillips	84	92	8.9	*
Yvette Cooper	72	96	6.5	
Clive Lewis	67	94	9.3	*
Emily Thornberry	69	92	6.0	
Lisa Nandy	75	74	16.5	*
Mean, all sample	75	90	0	

Notes: (i)The mean given in the above table is the mean position of all the survey respondents. Only very slightly different is the mean of the candidates' positions, 74 and 89.

(ii) *the three lowest Borda counts … suggesting the notion that the Borda Count reflects distance from the mean position – although that can't quite be the case. It more generally reflects the distribution in space

1.5 The distribution of voters in political space

The numbers given in Table 1 above are the headline first preference frequencies. Rather than using these headline figures I have used the raw figures in what follows. Both sets of figures give the same results.

The distribution of first preferences in relation to Middle-Class scores is shown in Figure 3; and the distribution of first preferences in relation to Remain scores is shown in Figure 4. Both have an approximately M-shaped distribution: there are two peaks associated with Starmer and Long-Bailey; a dip between the two peaks; and tailing off moving away from the two peaks.

These two one-dimensional distributions are projections of a two-dimensional distribution. We can think here of frequency columns sitting on the points in Figure 5 above. We can think of a two-dimensional M-shaped distribution: two peaks associated with Starmer and Long-Bailey; a dip between the two peaks; and tailing off moving away from the two peaks in every direction.

The gap between the two peaks is from 73 to 81 on the Class dimension and from 85 to 95 on the Brexit dimension.
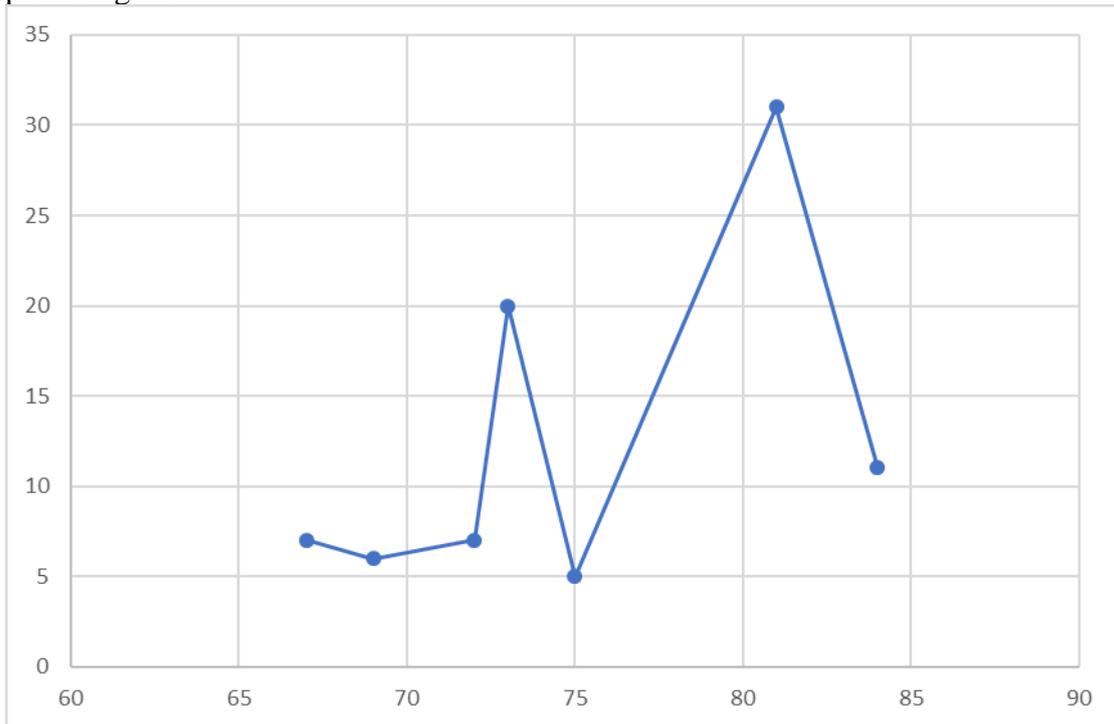
Other cases of M-shaped distributions are discussed in:
Voter distribution in political space: Tunisia, Austria, Israel, Portugal, Poland, UK
https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3Jkb25idXJ0b3A0aHNvY3NiaXxneDo1ZWRmM2M5MGFjN2Q0NWZi

Figure 6 The distribution of first preferences in relation to Remain scores
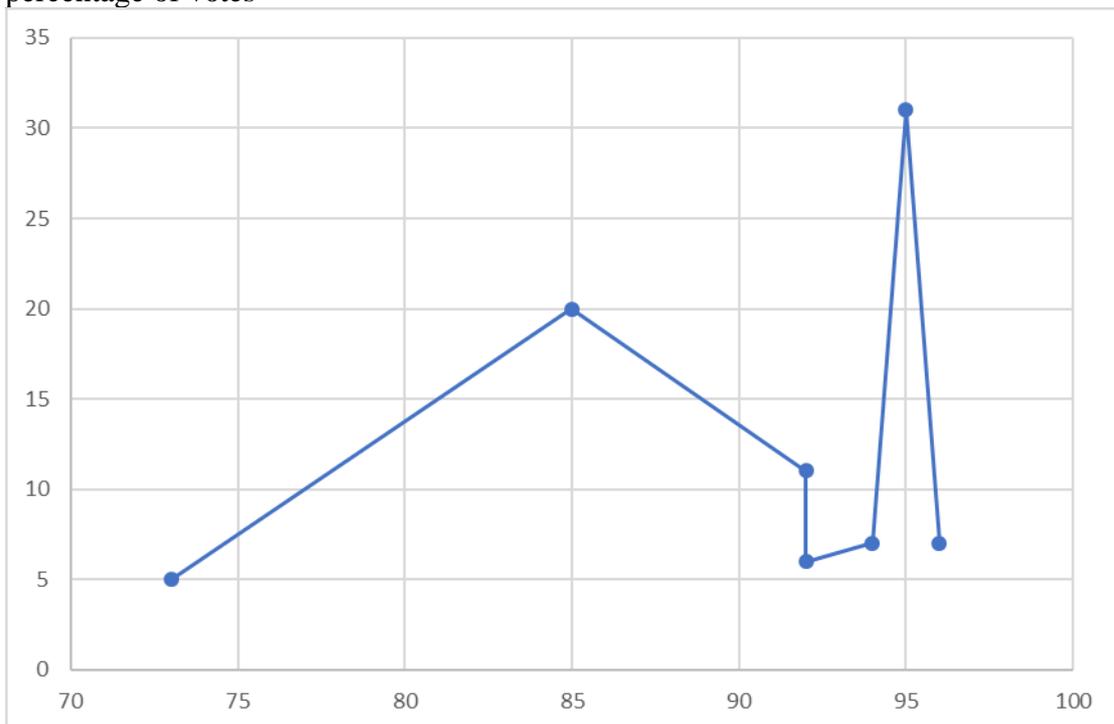
percentage of votes

. candidate ordered by their Remain score (based on first preferences)

Figure 7 The distribution of first preferences in relation to Remain scores

percentage of votes

. candidates ordered by their Remain score (based on first preferences)

1.6 Middle Voter Democracy

In Middle Voter Democracy one identifies the middle voter and selects the option favoured by the middle voter.

Consider the median voter. Looking at the two distributions separately, Figures 6 and 7, we find that Nandy, 75, is the median candidate on the Class dimension; and that Lewis, 94, is the median candidate on the Remain dimension. Now consider the overall median voter in two-dimensional space. We might define this as the voter at the overall median voter point (75,94). Looking back at Figure 5 we can see that there is no candidate at that point. However the closest candidate is Cooper. So Cooper is the overall median voter winner according to the criterion of the candidate closest to the median voter point.

Consider the mean voter. We might define this as the voter at the overall mean voter point (75,90). Looking back at Figure 5 we can see that there is no candidate at that point. However the closest candidate is Long-Bailey. So Long-Bailey is the overall mean voter winner according to the criterion of the candidate closest to the mean voter point.

The situation may be summarised as follows:

> middle voter, winners:
> median, class dimension: Nandy
> median, Brexit dimension: Lewis
> median, overall: Cooper
> mean, class dimension: Nandy
> mean, Brexit dimension: Thornberry, Phillips
> mean, overall: Long-Bailey

Extremes and factions ... Middle Voter Democracy (25 pages)
https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3Jkb25idXJ0bWF0aHNvY3NjaXxneDo0OWM1NmRkZTk5ZGZmMDZm

The Majority Problem and Central Optimality
https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3Jkb25idXJ0bWF0aHNvY3NjaXxneDo0ZWFmZmViNTBlYmJiNGI4

1.7 Political space in 12 dimensions

A problem with the two-dimensional model is that it ignores a number of other dimensions. Indeed some of the dimensions that the model ignores are ones that have figured strongly in the post-mortem debate about Labour's defeat – dimensions such as region, age and gender. The YouGov tables provide information about these other dimensions, and we can use this to produce a model of political space which has twelve dimensions.

Using the same approach as in the previous section we can calculate the mean position in this 12-dimensional political space and the distance of the candidates from this mean position. The last column of Table 3 gives these 12-dimensional distances. These distances place the candidates in the same order as in Table 1. The more first

preferences a candidate has the closer they are to the 12-dimensional mean. Starmer is the closest and Long-Bailey next, and so on.

The first column in Table 3 gives the 2-dimensional distances (as given in Table 2 above). The ordering of candidates is different here. The difference between the two sets of distances may be due to the number of dimensions used, which dimensions are used and the weighting of the dimension. This requires further investigation.

A final point to note about the mean position is that if a candidate's support comes from a representative sample of the voters then the position of the candidate is the mean voter position.

Table 3 Support. Distances from the 2-dimensional mean and from the 12-dimensional mean

.	distance from mean ……………	
.	2 dimensions	12 dimensions
Keir Starmer	7.6	10.2
Rebecca Long-Bailey	5.7	14.1
Jess Phillips	8.9	14.6
Yvette Cooper	6.5	15.8
Clive Lewis	9.3	20.8
Emily Thornberry	6.0	22.2
Lisa Nandy	16.5	22.1

1.8 The candidates – a few odd notes

Helm, Toby. "''We must restore trust' – Labour's would-be leaders brace for battle." *The Observer*. December 5, 2019: 14-15.

Lisa Nandy
"Ms Nandy urges the party in her letter not to give in to factionalism, outlining that Labour needs the support of left-wing and centre voters in both struggling working-class towns and affluent, liberal cities, despite their differences of opinion on a number of issues."
https://www.wigantoday.net/news/politics/exclusive-wigan-mp-lisa-nandy-enters-the-race-to-become-new-leader-of-the-labour-party-1-10181778

Jess Phillips
https://www.thetimes.co.uk/article/jess-phillips-im-quick-funny-and-speak-to-people-the-best-choice-to-take-on-johnson-rvvn7lxt3

2 The leadership election for Jeremy Corbyn in 2015

Dissatisfaction within parties: the leadership
Labour leadership: Jeremy Corbyn
Labour leadership: discourse of dissatisfaction
Labour leadership: different views
Labour leadership: individual preferences

The above are the relevant section headings, pages 226-243, in:

Democracy: satisfaction? … dissatisfaction? … value space

This is Chapter 11, pages 219-243, in the 2015 Yearbook:

Burt, Gordon. *Values, World Society and Modelling Yearbook 2015*. Newcastle: Cambridge Scholars.
https://www.cambridgescholars.com/values-world-society-and-modelling-yearbook-2015

The chapter is directly available online from my web page on UK politics & Ireland politics:

https://sites.google.com/site/gordonburtmathsocsci/World-Society-Programme/uk-politics-ireland-politics

A direct link to the chapter is:

https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3Jkb25idXJ0bWF0aHNvY3NjaXxneDoxNzM4OGJlNzNiNzU1YTg

3 The leadership election for Boris Johnson in 2019

7 Party leaders
7.1 Changing leaders
7.2 The Tory leadership contest
7.2.1 Introduction
7.2.2 Conceptual issues
7.2.3 The contest
7.2.4 The candidates' proposals for solving Brexit
7.2.5 Conservative party members
7.2.6 The general public

The above are the relevant section headings, pages 33-62, in:

Brexit: the impact on UK politics
(62 pages, fifth draft)
https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxnb3Jkb25idXJ0bWF0aHNvY3NjaXxneDo1OTkxMmI4MzI0Zjc0Nzk

Other related papers can be found on my Brexit web page:
https://sites.google.com/site/gordonburtmathsocsci/World-Society-Programme/uk-politics-ireland-politics