II

John Bull. Let us now resume our discussion of the electoral system, Socrates.

Socrates. It is indeed an honour for me to discuss this interesting matter with so worthy a representative of this great nation, and I hope my remaining perplexities will be resolved. You will recall, Mr. Bull, that during our previous conversation we established that it is possible in principle for the most unpopular candidate to be elected. You assured me, however, that this would not occur in practice, and you undertook to find some evidence with which to demonstrate this point.

J.B. I have some bad news, Socrates. I have scrupulously checked my calculations, and I find that this absurd possibility may well have occurred in practice in a British General Election.

S. What evidence led you to this remarkable conclusion?

J.B. The evidence concerns the order of preference in which a voter places the candidates. Butler and Stokes, in their book Political Change in Britain, report the results of a survey based upon a very large, self-weighting, multi-stage, stratified sample of the adult population of England, Wales and Scotland shortly after the 1966 General Election. Of those who voted Conservative, 76 per cent. preferred Liberal to Labour; of those who voted Labour, 74 per cent. preferred Liberal to Conservative; and among Liberal voters, 56 per cent. preferred Labour to Conservative. I have assumed that these percentages hold for voters within any particular constituency.

S. Is it possible to make that assumption?

J.B. In statistical work, Socrates, one is entitled to make whatever plausible assumptions are required.

S. I see.

J.B. With this data we can estimate the number of voters who considered a particular candidate to be the worst choice in any con-

* The first part of this dialogue appeared in the April-June issue this year. The authors are at the University of Leicester
stituency in which only Conservative, Liberal and Labour candidates stood. You will recall that we initially defined the most unpopular candidate as the one whom the greatest number of voters consider to be the worst.

S. That seems the most natural definition, Mr. Bull. It is the exact converse of the criterion used to decide who is the most popular candidate and therefore who wins the seat.

J.B. Well, according to this definition, several seats in the 1966 General Election appear to have been won by the most unpopular candidates. I have performed detailed calculations for the constituency of Norfolk South for illustrative purposes. Would you care to cast your eye over my first table of results?

**JOHN BULL’S TABLE**

**Norfolk South, 1966 General Election**

<table>
<thead>
<tr>
<th>No. of votes cast for each candidate</th>
<th>Estimated No. considering candidate worst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td>16,968</td>
</tr>
<tr>
<td>Labour</td>
<td>16,849</td>
</tr>
<tr>
<td>Liberal</td>
<td>4,079</td>
</tr>
<tr>
<td></td>
<td>14,836</td>
</tr>
<tr>
<td></td>
<td>14,661</td>
</tr>
<tr>
<td></td>
<td>8,399</td>
</tr>
</tbody>
</table>

S. That is a startling result.

J.B. I have to agree. But you will have observed that the Conservative candidate who won the seat was considered the worst choice by a very narrow margin of voters, so I wouldn’t attach too much significance to this example.

S. But he won the seat by a very narrow margin of voters, Mr. Bull. I’m sure you have noticed that the margin by which he won (119) is even smaller than the margin by which he was considered worst (175). The Conservative candidate was more emphatically the most unpopular than he was the most popular.

J.B. Well, yes, I suppose so. Your facility with figures seems to be improving, Socrates.

S. Did your statistical investigations lead to any further conclusions, Mr. Bull?

J.B. You will remember that one of our alternative definitions of the most unpopular candidate was that an overall majority of the voters considers him the worst choice. Although we established that such a candidate could theoretically win the seat, my calculations have shown that it is not possible in practice, given Butler and Stokes’ survey data.
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S. That, at least, is a relief. Did you perform any calculations for our third and most crucial definition of the most unpopular candidate? In this case we would require for, say, the Conservative candidate to be the most unpopular, that a majority of the voters prefer Labour to Conservative and, in addition, a majority prefer Liberal to Conservative.

J.B. Yes, I have examined this case in the light of the survey data. It transpires that if the votes for the three candidates in a constituency had fallen within certain limits, then the most unpopular candidate in this stringent sense would, nevertheless, have won the seat. Would you like to look at my second table of results?

JOHN BULL'S TABLE 2

Percentage Voting for Each Candidate

<table>
<thead>
<tr>
<th>Party</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservative</td>
<td>35%</td>
</tr>
<tr>
<td>Liberal</td>
<td>33%</td>
</tr>
<tr>
<td>Labour</td>
<td>32%</td>
</tr>
</tbody>
</table>

Percentage preferring Liberal to Conservative = 57%
Percentage preferring Labour to Conservative = 51%

S. I see. The Conservative wins the seat, although a majority of voters prefers Liberal to Conservative and a majority prefers Labour to Conservative.

J.B. But I did not find any constituency in which the votes in the 1966 General Election fell within the required limits for this outcome to occur, although there were several very near misses indeed. And, I am bound to add, there were a number of constituencies in which one of the losing candidates, very often the Liberal, was preferred to the winner by a majority of the voters. This condition is met within a surprisingly wide range of voting results.

S. Well, what general conclusions have you drawn from all these calculations, Mr. Bull?

J.B. I have been thinking most deeply about our voting system, Socrates, and I fear that it may be less than ideal. I am reluctantly forced to concede that it may be necessary to introduce a new system in order to obviate these paradoxical outcomes, which are not in harmony with our traditionally British sense of fair play.

S. Do you have a better system in mind?

J.B. Yes. It seems that the fundamental flaw in our present system is that we consider a voter's first choice only. I think we ought to follow your suggestion, Socrates, and take into considera-
tion all the preferences among the available candidates which a voter can express. We should, in short, have the voter place all the candidates in order of preference on the ballot paper.

S. And how would you then decide which candidate is to be elected, Mr. Bull?

J.B. I would have thought that was elementary, Socrates. From the individual preference rankings of the voters we would work out the group order of preference, and the candidate who is first in the group order of preference would be elected.

S. I'm afraid I have not been able to keep pace with your thoughts, Mr. Bull. As you know, I am often slow to grasp a point. It would greatly help me if we were to construct another idealised example on which to base our further discussion.

J.B. Very well, Socrates.

S. I suggest we consider a constituency with a Labour, a Liberal and a Conservative candidate and three voters. The order of preference of the first voter is (Lab, Con, Lib); for the second voter it is (Lib, Lab, Con) and for the third (Con, Lib, Lab). Would you be so good as to explain to me exactly how you would select a winner in this simple case?

J.B. It couldn’t be easier, Socrates. We first establish whether the voters as a whole prefer Labour to Conservative or vice versa. In this case Labour is preferred to Conservative, since two out of the three voters prefer them in that order. Similarly, the group as a whole prefers Conservative to Liberal, since two out of three place them in that order of preference. Now, since the voters as a group prefer Labour to Conservative and Conservative to Liberal, it obviously follows that they prefer Labour to Liberal. In other words, the order of preference of the voters as a whole is (Lab, Con, Lib), and Labour would therefore be elected. With this system you could be quite sure that the most popular candidate would win, and the most unpopular would come last. It’s quite straightforward, Socrates.

S. I’m afraid I lost your train of thought at the point where you said it was obvious that the voters as a whole prefer Labour to Liberal. I’m sorry to be so tiresome.

J.B. Well, really, Socrates! They prefer Labour to Conservative and they prefer Conservative to Liberal, so it follows logically that they must prefer Labour to Liberal.

S. But let’s make absolutely sure by counting how many prefer Labour to Liberal in our example, Mr. Bull.

J.B. Oh, all right, if you insist. Let me see. Well, bless my soul! It’s impossible: two out of the three voters prefer Liberal to Labour.
The voters as a group prefer Labour to Conservative, Conservative to Liberal, and (blow me down) Liberal to Labour. How can they do that?

S. I can see no reason why they shouldn't, Mr. Bull. So under your proposed new method of voting the Labour Candidate would have been elected despite the fact that a majority of the voters prefers the Liberal candidate to the winner.

J.B. Well, I'd say we were in a bit of a pickle, Socrates. I suppose we shall have to go through various voting systems which have been proposed until we find one which does not give rise to any undesirable paradoxes. And if we do not find a suitable system among those which have been proposed in the past, we shall have to invent one of our own. Perhaps we could start with the various complicated alternative voting and single transferrable voting systems which have been suggested from time to time.

S. Is it necessary to do all that, Mr. Bull? I am not familiar with the methods you mention, and it is getting late.

J.B. What alternative have we, Socrates?

S. One alternative is to try to establish what can be said of voting systems in general which would apply to all methods, however complicated they may be. Tell me plainly, Mr. Bull, what paradoxes are you most determined to avoid?

J.B. We need a system which will guarantee that the candidate elected is preferred to each of the others. Any system which allows one of the losing candidates to be preferred to the winner by a majority of the voters is unacceptable in a democracy.

S. An acceptable system, then, would have to guarantee to select a winner who meets this requirement from any combination of individual preferences among the voters?

J.B. It would have to do precisely that, Socrates.

S. But have we not established that the imaginary group of voters we were discussing a moment ago preferred Labour to Conservative by a majority, Conservative to Liberal by a majority, and also Liberal to Labour by a majority?

J.B. We did indeed establish that, although I still find it hard to comprehend.

S. Then is it not true, Mr. Bull, that no voting system, not the ones you referred to nor any conceivable alternative, could produce a result from our simple example which you would consider to be acceptable in a democracy?

J.B. Why is that, Socrates?

S. Well, you said the system would have to guarantee to select a
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winner. If it selected the Labour candidate as the winner, it would be unacceptable because a majority of voters prefers Liberal to Labour; if it selected the Conservative, it would be equally unacceptable because a majority prefers Labour to Conservative; and if it selected the Liberal it would be unacceptable because a majority prefers Conservative to Liberal. We can conclude that there is no candidate which any voting system could select in this case which would satisfy you, no matter how the system were devised. Since no conceivable voting system could select a democratically acceptable winner in this case, it follows that no system could guarantee to do so in every case. There is, therefore, no possible voting system which could meet your requirements of democratic acceptability.

J.B. Well, then, Socrates, I suppose we may as well stick to the system we've got. I must say that's a consolation, anyway.

References


Butler, David and Stokes, D., Political Change in Britain (Harmondsworth: Penguin, 1971).

