31 October 1931.

Major L. Darwin, Sc.D.,
    Cripps's Corner,
        Forest Row,
            Sussex.

Dear Major Darwin,

I have been tempted by the copious supply of election results to try and see if a study of the figures could throw light on some of the questions one would be inclined to ask, such as, how regular has been the change of opinion since 1929 in different constituencies, how can one tell if a particular man has done well or badly, considering the change of opinion, how has the Liberal vote of 1929 distributed itself when it is offered in 1931 only Unionist and Labour candidates?; and though I have not done much to answer these questions, or even to show whether they can be answered or not from election results, I thought you might be interested in the outcome of what I have done.

I took 27 London Boroughs in which there were Unionist Liberal and Labour candidates in 1929 and only Unionist and Labour in 1931, and in which there had been no intervening election, and set up a prediction formula for the Unionist

vote based on the previous voting, and another formula for the Labour vote of the same kind.   You will see what I mean by an example.   The Unionist formula I obtained was approximately 1.362 times the old Unionist vote + .371 times the old Liberal vote + .208 times the old Labour vote - 236.   The last constant term seems not to mean much and I probably ought not to have admitted it but put in its place some small fraction of the total electorate.   However, whatever improvements might be suggested in the formula, they could only serve to emphasise further one point, and that is that the formulae I have, fit the facts extremely closely. Based on twenty three degrees of freedom, which remain after adjusting four constants, my standard error is only about 1,000 votes, 1,058 for the Unionists and 951 for the Labour. This fact surprised me very much, as in different constituencies the Unionist vote this year varied from ten to forty one thousand, and the Labour vote from under three to over twenty two thousand.   One would have expected that the different amounts of effort and skill put in by the different candidates and their organisations, might have counted for a lot more. And of course changes in the number of voters, and local interests and opinions, must also contribute to the discrepancies from any one formula.

One cannot take the coefficients as directly representing

the proportion of the voters at the last election of each
kind who voted Unionist or Labour this year for 1000
Unionists could not manage to poll 1362votes.   What
the figures mean directly is that if A and B are two
Unionist candidates whose Labour and Liberal opponents
polled the same last time,while A secured a thousand more
votes than B, then A should secure 1362 more this year.
One might say, perhaps that the extra 1000 Unionists have
influenced the opinion of 362 others, or perhaps more
probably that in socialist districts,with few Unionists
in 1929,the Liberal and Labour voters were more determinedly
anti-Unionist on the average than the Liberal and Labour
voters in Unionist districts.   On either view it seems
clear, by like reasoning, that more than 20 per cent. of the
Socialist voters in these constituencies must have voted
Unionist this time,for the figures show that of two constitu-
encies with the same Unionist and Liberal votes in 1929,
but differing by 1000 in their Labour vote, the candidate to
whom these were opposed would have the higher poll in this
election by 208,by reason of there being more to convert,
although on the average less easily convertible.

As regards the Labour man one must subtract 43 per
1000 of the former Conservative vote, add 271 per 1000
for the Liberals,and 878 for the Socialists and subtract
2518.   The size of this last constant makes me rather

wish that I had replaced it by something proportional to the electorate, but it cannot in fact do much harm as the standard error is only 951.   On balance 1000 former Unionists increase the Unionist majority by 1405, 1000 former Liberals increase it by 100, and 1000 former Socialists decrease it by 670, and these differences look reasonable enough; but, I suppose owing to the different quality of the Unionist and Labour voters in different constituencies if one adds the coefficients one gets the apparent absurdity that 1000 former Unionists increase the total poll by 1319, 1000 former Liberals by only 642, and 1000 former Socialists by 1086.

In order to see if personal differences in the candidates, or the effectiveness of their organisations, had contributed appreciably to the small differences which exist between the actual and the computed votes, it occurred to me that as the candidate is concerned both to get voters for himself, and to stop them voting for his opponent, it should show up by the constituencies having an excess Unionist vote having a defect in their Labour vote and vice-versa.   Changes in the total electorate, however, in the last two years, would work in the opposite direction and I have not examined how great these are in the London Boroughs.   Graphing the two deviations on the same chart one can see that there is in fact no significant negative correlation between the Unionist and the Labour deviations,

though there would be if Lewisham E. where both votes show
an excess of nearly 2000 and Balham and Tooting which is
2000 down in Unionists and about 1000 in Labour were left
out.   On the chart one can see at a glance where the
Unionist has done particularly well, the only three with
a majority 1500 over expectation being at St. Pancras S.W.
Southwark S.E., *which Labour ought to have held)* and Islington N; while Marylebone comes
very near it.   On the other hand the Labour man has done
specially well at Woolwich W., Stepney, (Mile End) and
Chelsea, while Deptford is just over the 1500.   I enclose
a chart with the names written in in case you are personally
interested in any of the candidates.   Do you know if
anything of the kind is done at the Central Offices?;
because otherwise I should expect them to be pretty wildly
astray when there have been three-cornered fights.

Yours sincerely,

R.A.F.

Without the constant

	Unionist 1931	Labour 1931
Unionist 1929	1359	- 68
Liberal 1929	355	101
Labour 1929	201	805
	± 1039	± 1184