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THE COST OF CONVICTION IN BRITISH POLITICS: WHAT HAPPENS TO LABOUR'S MAJORITY IF THE PARTY MOVES BACK TO THE LEFT?

C Hope

WP 15/2004

The Judge Institute of Management
University of Cambridge
Trumpington Street
Cambridge CB2 1AG, UK
www.jims.cam.ac.uk

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Chris Hope
Judge Institute of Management
University of Cambridge
Email: c.hope@jims.cam.ac.uk

Please address enquiries about the series to:

Research Support Manager
Judge Institute of Management
Trumpington Street
Cambridge CB2 1AG, UK
Tel: 01223 760546 Fax: 01223 339701
E-mail: research-support@jims.cam.ac.uk

The cost of conviction in British politics: What happens to Labour's majority if the party moves back to the left?

Dr Chris Hope
Judge Institute of Management
University of Cambridge
October 2004

Abstract

The proximity theory of voting states that people support the party that they perceive to be closest to their own positions in the dominant issue space, a space that is typically best represented by a unidimensional, left-right continuum. In this paper, a probabilistic modified proximity model (PM^2) of British voting is constructed and calibrated against recent British opinion polls of voter and party position and declared voting intention. It modifies the standard proximity theory to say that voters will not vote for a party more than a critical distance away on the left-right continuum, and that a proportion of potential Lib Dem voters do not believe that they are ready for government, and so either do not vote, or vote for the nearest alternative party instead.

Results from PM^2 show that Labour could increase its mean lead over the nearest opposition slightly by continuing to move to the right a little beyond Tony Blair's present position.

Moving back to the left, to a position represented by Gordon Brown and Labour MPs as a whole, would reduce Labour's overall majority by a mean of 133 seats (90% confidence interval a reduction in overall majority of 84 to 168 seats), giving a 14% chance of Labour not obtaining an overall majority, if the voters do not change their views and the other parties do not change their positions.

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Moving to a triangulation position, which is a compromise between conviction and expediency, would reduce Labour's overall majority by a mean of 62 seats (90% confidence interval a reduction in overall majority of 14 to 118 seats). Only in the very worst cases would this lead to Labour's overall majority disappearing with the proviso, as before, that the voters do not change their views and the other parties do not change their positions.

Reducing the proportion of Lib Dem voters who feel they are unready for government, or a move back towards the centre by the Tories, could cause significant electoral problems for Labour.

All of the results are based upon the proximity theory of voting, which is only one amongst several theories of electoral choice, and should be treated with the appropriate level of caution that this implies.

Introduction

The electoral landscape in Great Britain since the end of the Second World War in 1945 has been dominated by the Labour and Conservative (Tory) parties. In the sixteen general elections between 1945 and 2001, these two parties have each averaged slightly over 41 percent of the votes cast. Because of Britain's first past the post electoral system, one of these two parties has held an overall majority in the House of Commons and been able to form a Government for all except a few months of this period.

A third party, originally called the Liberals, but now the Liberal Democrats (Lib Dems) has obtained a sizable share of the vote since 1974, peaking at 25% in 1983, but remaining at over 18% in 2001. A variety of smaller parties together obtain less than 10% of the votes cast (Clarke et al, 2004).

For most of the last sixty years, the Labour party has been a party of the left. But Great Britain in 2004 is described as "a country which believes that the English-based Labour party has lurched to the right" by one of the Labour Party's own former MPs (Hattersley, 2004). About one third of Labour party members believe that the Labour party's rightward drift under Tony Blair has gone too far (ICM, 2004).

Previous Labour party chair, John Reid, implicitly accepts that a rightward shift has occurred when he says "We are not about merely occupying the centre ground of British politics. We are about shifting the centre ground." (Reid, 2003).

This is confirmed by an opinion poll which asked respondents to score Tony Blair and Labour MPs along a left-right axis running from very left wing at –2 to very right wing at +2. It found Blair to be just to the right of centre at +0.09, with Labour MPs as a whole at –0.5, and Gordon Brown at –0.4 (Kettle, 2004). As Joyce McMillan puts it "To many traditional Labour supporters, Tony Blair looks like a man who leads the Labour Party without actually belonging to it." (McMillan, 2004).

This paper develops a simple model, based upon the proximity theory of voting. Both deterministic and probabilistic forms of the model are used to explore how well a left-right distinction can explain the voting intentions of the British electorate, and calculate what the electoral implications would be if the Labour party moved back towards the left-of-centre position that the voters believe its MPs, and its alleged leader in waiting, really hold.

Methodology and data

The model is based upon the proximity theory of voting (Downs, 1957) which states that "people support the party that they perceive to be closest to their own positions in the dominant issue space, a space that is typically best represented by a unidimensional, left-right continuum" (Clarke et al, 2004).

The continuum is represented by a numerical mapping from the verbal descriptions used by opinion pollsters as shown in Table 1, which also shows the percentage of the British electorate who place themselves in each of the categories in September 2004. (Electoral politics in Northern Ireland are very different, and not covered by most opinion polls or this paper).

Table 1 The left-right continuum

Verbal description	Numerical value	Percent of electorate
Very left wing	-2 (-2.33 to –1.67)	3
Fairly left wing	-1.33 (-1.66 to –1.00)	9
Slightly left of centre	-0.66 (-0.99 to –0.34)	17
Centre	0 (0.33 to 0.33)	23
Slightly right of centre	+0.66 (0.34 to 0.99)	13
Fairly right wing	+1.33 (1.00 to 1.66)	9
Very right wing	+2 (1.67 to 2.33)	3

Source: YouGov, 2004

Note: 24% Don't Know

The best normal fit to this distribution, ignoring the don't knows, has a mean of -0.08 and a standard deviation of 0.97 (Palisade corporation, 2000). So, according to this YouGov poll, the British electorate has its mean very slightly to the left of centre, and 95% of the electorate are positioned between about –2 and +1.8 on the left-right continuum.

The same poll asked about the position of the main party leaders along the same continuum. The mean responses, again ignoring don't knows, are shown in Table 2. Charles Kennedy and the Lib Dems are perceived to be slightly to the left of the centre, Tony Blair and Labour are perceived as a shade to the right of central, and Michael Howard and the Tories are perceived as fairly right wing (YouGov, 2004).

Table 2 The positions of the party leaders

Party leader	Party	Position
Charles Kennedy	LibDems	- 0.30
Tony Blair	Labour	+ 0.09
Michael Howard	Tories	+ 1.04

Source: YouGov, 2004

There are two other parties in the British electoral landscape which have a reasonable chance of obtaining at least a few percent of the votes at a general election; the Green party and the UK Independence party (UKIP). Although the YouGov poll did not ask the electorate about these parties, it is safe to say that the Green party is perceived as being towards the left wing end of the continuum ("the Green Party now occupies the progressive political space once held by left-wing Labour" Tatchell, 2004), maybe around –2,and the UK Independence party is towards the right wing end, maybe around +2.

According to the pure version of the proximity theory, voters should vote for the party nearest to them along the left-right continuum. With the distribution of the electorate in table 1, and the position of the parties as shown in table 2, the pure proximity theory would allocate votes to parties in such a way that the Lib Dems would win the largest share of the vote, as shown in Table 3 (taken from a run of the model with 10000 voters, so party shares accurate to within about plus or minus 1%).

This pattern is far from the voting intentions uncovered by opinion polls taken in the same month as the YouGov poll, as shown in the final column of the table.

Table 3 Shares of the parties from pure proximity theory and opinion poll results

Party	Share under pure proximity theory (%)	Opinion poll result (%)
Lib Dems	34	24
Labour	25	37
Tories	21	29
Greens	14	5[1]
UKIP	5	4[2]

Source: MORI, 2004

Notes:

1. *Includes Scottish/Welsh nationalists and other small left wing parties*
2. *Includes other small right wing parties*

The pure proximity theory would also predict that there would be 100% turnout at elections, which again is far from the case. At the last British general election in 2001, the turnout was 59%, the lowest since 1918; in 1997 it was 71% and in 1992 it was 78%, the highest for 18 years (Bolton, 2001). 6% of the electorate state that they never vote (MORI, 2002).

Two modifications to the pure proximity theory allow the model to address the lower than 100% turnout and the lower intention to vote for the Lib Dems.

Critical distance

Rather than saying that a person will certainly vote for the nearest party, it may be more realistic to say they will not vote for a party more than a critical distance ('critical') away on the left-right continuum, but they will vote for the nearest party inside that distance. If no party is within the critical distance, they will not vote. This

will lead to a turnout of less than 100% provided the critical distance is not very large. Presumably some proportion of the 6% who never vote stay away from the polls for reasons other than lack of choice on the left-right continuum; the model does not attempt to take account of the politically apathetic as, by their own admission, they can never affect the result of an election.

Readiness for government

The Lib Dems have never been in power nationally, and commentators and voters worry about whether they are ready for government. A letter to the Guardian expressed this worry as "is Kennedy ready to govern? I think not. Being clubbable is enough to make him an attractive MP. But being prime minister means dealing credibly with Bush's successor" (Gilbert, 2003). One Lib Dem MP talked in 2001 about "planning for government within the next 10 years" and reflected that "if people don't think you can win and form a government, they don't vote for you. That's been our problem in the past." (Davey, 2001). Anthony King amplifies upon this "Votes in the British system go to the part which might form a Government and, for the foreseeable future, that is the Tories or Labour" (Independent, 2004).

These concerns are incorporated in the model by applying two parameters 'readiness for government' ('readiness') and 'willingness to switch parties' ('switch') to voters who are closest to the Lib Dems.

If 'readiness' takes a value r, lower than 1, then a proportion (1-r) of the voters that are closest on the left-right continuum to the Lib Dems, and inside the critical distance, do not vote for them. Instead, if switch takes a value s, a proportion s of them vote for the next nearest party (provided it is inside the critical distance), and a proportion (1-s) of them do not vote. It is assumed that r takes the value 1 for the other parties, because both Labour and the Tories have recent experience of government.

With these two modifications, the proximity model can reproduce the voting intention results very closely, as shown in table 4. The model is described as deterministic, even though it contains a probabilistic representation of voters' views, because the positions of the three main parties are assumed to be perfectly known, a condition relaxed later in the probabilistic version of the model. The party positions are taken from the YouGov poll results for the party leaders, as shown in table 2.

The positions of UKIP and the Green party, and the parameter values, are the result of a search using the genetic algorithm in RiskOptimiser to find the values that minimise the differences between the shares of the parties and the MORI poll results shown in table 3 (Palisade corporation, 2000).

As can be seen from a comparison of table 4 and table 3, all of the party shares from the model are within 1% of the opinion poll results. This is essentially a perfect fit as they are taken from a run of the deterministic modified proximity model with 10000 voters, so the party shares are accurate to within about plus or minus 1%. The model shows a Labour lead of about 9%.

The parameter values imply that a voter will not vote for a party more than 0.56 away on the left-right continuum. This is just under 1 whole verbal category away; as can

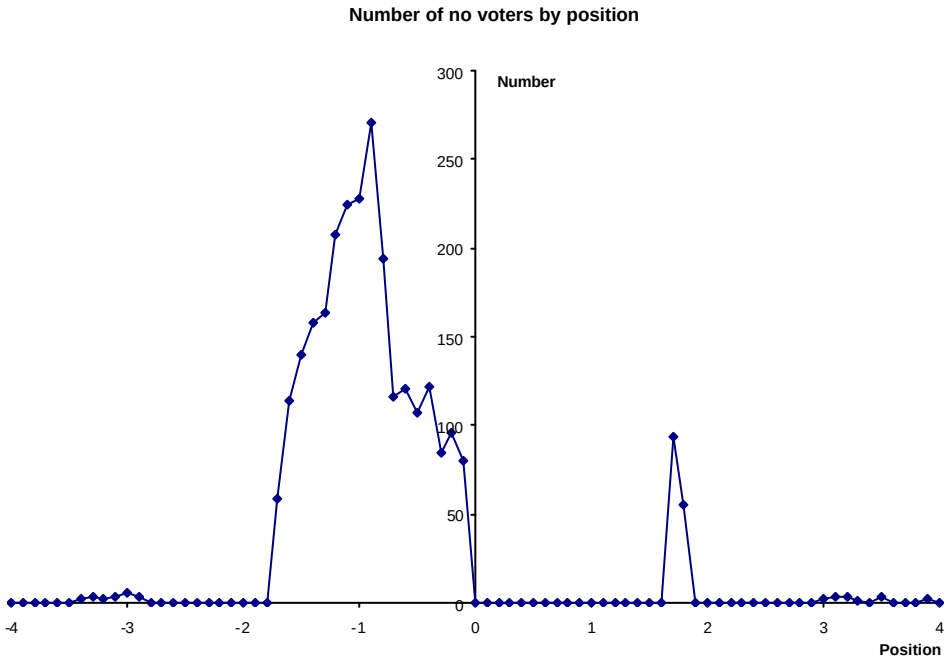
be seen from table 1, the verbal categories are 0.66 wide. 62% of potential Lib Dem voters feel that the party is ready for government, but 38% do not, and of this 38%, 40% will vote for another party, provided it is within the critical distance, but 60% will not vote.

Table 4 Best fit parameter values and shares of the parties from the deterministic modified proximity model

	Party position	Share of the vote (%)
Green	-2.33	5
Lib Dems	-0.30	24
Labour	+0.09	38
Tories	+1.04	29
UKIP	+2.33	4
	Parameter value	
Critical	0.56	
Readiness	0.62	
Switch	0.4	

Source: runs of the deterministic modified proximity model

Figure 1 Position of people who do not vote in the deterministic modified proximity model



Source: runs of the deterministic modified proximity model

The turnout predicted by the model is 73%. Figure 1 shows that the 27% of people who do not vote (2700 voters from a model run of 10000) come mainly from the positions around –1, where there are a lot of voters who are too far left to vote Lib Dem, but not left enough to vote for the Greens. Other significant locations of no

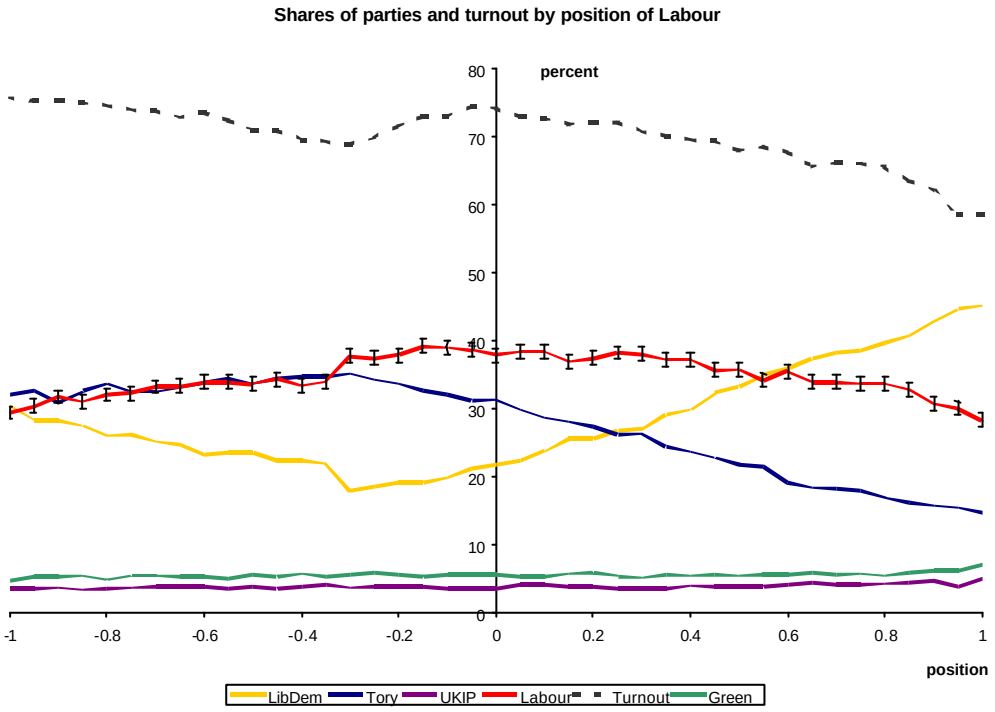
voters are those between –0.5 and just below 0, who would vote for the Lib Dems but do not consider them ready and will not switch to another party. There are a small number around +1.7, who are too far from both the Tories and UKIP to vote for either, and very small numbers at around –3 and 3 who are too extreme to vote for any of the parties.

Initial investigations of Labour's position

In a first past the post system like the British general election, what matters most is not the number of people voting for a party, nor even its share of the vote, but its lead over the nearest opponent (In a later section, we shall see how a lead in the percent of votes cast translates into an overall majority). Figures 2 and 3 show the shares of the different parties, the turnout and the Labour lead for all Labour positions of –1 to +1 on the left-right continuum, using deterministic values for the positions of the other parties shown in table 2, and the deterministic parameter values shown in table 4.

The results are taken from runs of the deterministic modified proximity model with 10000 voters, so the error bars on the Labour results are plus or minus 1% for shares, and plus or minus 1.5% for the lead.

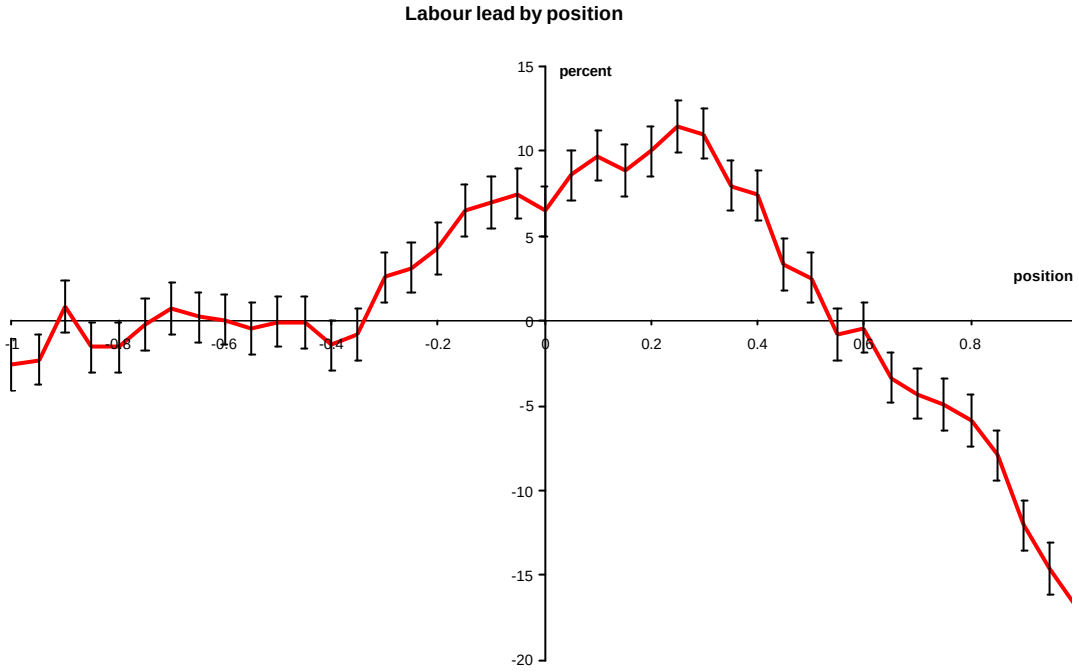
Figure 2 Shares of the parties and turnout by Labour position



Source: runs of the deterministic modified proximity model

Varying the Labour position shows that the position which gives the largest lead is around +0.25, which gives shares of the parties of Labour 38%, Tories 26%, Lib Dems 27%, UKIP 4%, Green 5% on a turnout of 72%; a Labour lead of 11%. Because of the fairly right wing nature of the Tories, it looks as though Labour could afford to move even further to the right than Blair's position of +0.09, and still gain electorally. On the other hand, any movement back to the left, particularly if it went further than the Lib Dem position of –0.3, would cause electoral damage, and may even hand a lead back to the Tories.

Figure 3 Labour lead over nearest party by Labour position



Source: runs of the deterministic modified proximity model

Introducing uncertainty: The probabilistic modified proximity model (PM^2)

These initial investigations are interesting and show the general pattern of electoral consequences that could be expected from a shift in Labour position, but they do not adequately account for the uncertainty in the views of the voters, the positioning of the other parties, or the parameter values in the modified proximity model. Using probability distributions for the parameters representing all of these variables transforms the deterministic modified proximity model into the probabilistic modified proximity model (PM^2).

Views of the voters

The YouGov poll that provided the mean position of –0.08 had a sample size of just over 1600 respondents (YouGov, 2004). Assuming the design effect of this poll is about the same as a simple random sample, the standard error of the mean is about 0.025, so there is a 95% chance that the mean is within the range –0.13 to –0.03. The standard deviation of the best fit normal distribution is 0.967; the standard deviation of the input data is 0.985. It is possible that the standard deviation could even be slightly greater than this if fewer people from the extremes of the distribution responded to the opinion pollsters, as is often the case.

Positions of Lib Dem and Tories

Michael Howard's position of +1.04, has a standard deviation of about 0.8 amongst the 1600 or so respondents, and Charles Kennedy's position of -0.30 has a standard deviation of about 0.7 amongst just under 1500 respondents, so both have standard errors of the mean of about 0.02.

Table 5 shows the mean, most likely and maximum values for the voters' views and positioning of the other two main parties used in independent triangular probability distributions in the rest of the analysis with PM^2. All the distributions have mean values equal to the values used in the earlier deterministic analysis.

Table 5 Values for voters' views and Lib Dem and Tory positions in PM^2

	minimum	most likely	maximum
Mean of voters' views	-0.13	-0.08	-0.03
SD of voters' views	0.95	0.975	1.00
Lib Dem position	-0.34	-0.30	-0.26
Tory position	+1.00	+1.04	+1.08

Positions of Green Party and UKIP and parameter values

The earlier search with RiskOptimiser for positions of the Green party and UKIP, and parameter values, that gave a good fit with opinion poll results did not produce

confidence intervals for the values, but other values which gave a fit with the opinion poll results within 1% per party were:

Critical	0.26 to 0.79
Readiness	0.59 to 0.79 (High readiness tends to go with low critical).
Switch	0.14 to 0.47
UKIP	2.02 to 2.85
Green	-2.00 to –2.54

Putting the Mean and standard deviation of voters' views and Tory and Lib Dem positions as uncertain parameters as shown in table 5 and running PM^2 100 times, with 10000 voters each time, using @RISK to sample different values from the input parameters each time (Palisade corporation, 2002), gives the best combination of other party positions and parameter values shown in Table 6

Table 6 Best fit parameter values and shares of the parties from PM^2

	Party position	Mean share of the vote (%)
Green	-2.33	5
Lib Dems	-0.34 to –0.26	25
Labour	+0.09	38
Tories	+1.00 to +1.08	28
UKIP	+2.33	4
	Parameter value	
Critical	0.60	
Readiness	0.67	
Switch	0.61	

Source: runs of the probabilistic modified proximity model

Comparing table 6 with table 4 shows that the main difference is that now a little over 60% of Lib Dem voters who think the party is not ready for government will switch to another party if it is close enough. The mean turnout predicted by the model is correspondingly higher at 77%. All of the mean party shares from the model are within 1% or so of the opinion poll results.

As before, the search with RiskOptimiser does not give confidence intervals for the parameters or the positions of the Green party and UKIP, but the top 12 results all give a fit with the opinion poll results that is within 30% of the best result. They have values in the following ranges:

Critical	0.60 and one value of 0.96
Readiness	0.60 to 0.67 and one value of 0.53 when critical is 0.96
Switch	0.21 to 0.81 with no correlation with other parameters
UKIP	2.33 to 2.46
Green	-2.85 to –2.33

Based on the parameter searches in the deterministic and probabilistic models, table 7 shows the mean, most likely and maximum values for the parameters and positioning

of the other two parties used in independent triangular probability distributions in the rest of the analysis.

Table 7 Values for parameters and other party positions in PM[2]

	minimum	most likely	maximum
Critical	0.4	0.55	0.7
Readiness	0.55	0.625	0.7
Switch	0.2	0.5	0.8
Green position	-2.6	-2.4	-2.2
UKIP position	2	2.33	2.66

The exact ranges are, of course, subjective to some extent. In particular, the very low and very high extreme values found for the critical distance have been discarded, the former on common-sense grounds (would someone really not vote for a party so close to them on the left-right continuum?), and the latter because it appeared only once in the search for the best fit to the opinion poll results. Consequently the very high value of readiness has been discarded, as it was associated with the unrealistically low value for the critical distance.

Running PM[2] 100 times, with 10000 voters each time, using @RISK to sample different values from the input parameters, gives the mean party shares shown in table 8 with Labour at Blair's position. The mean Labour lead is 9.9%, and the mean turnout 72% (100 runs of 10000 voters gives an effective sample size of 1 million, with 95% confidence intervals of about plus or minus 0.1% on the mean party shares, and 0.15% on the mean lead).

Table 8 Input ranges and shares of the parties from PM[2] with Labour at Blair's position

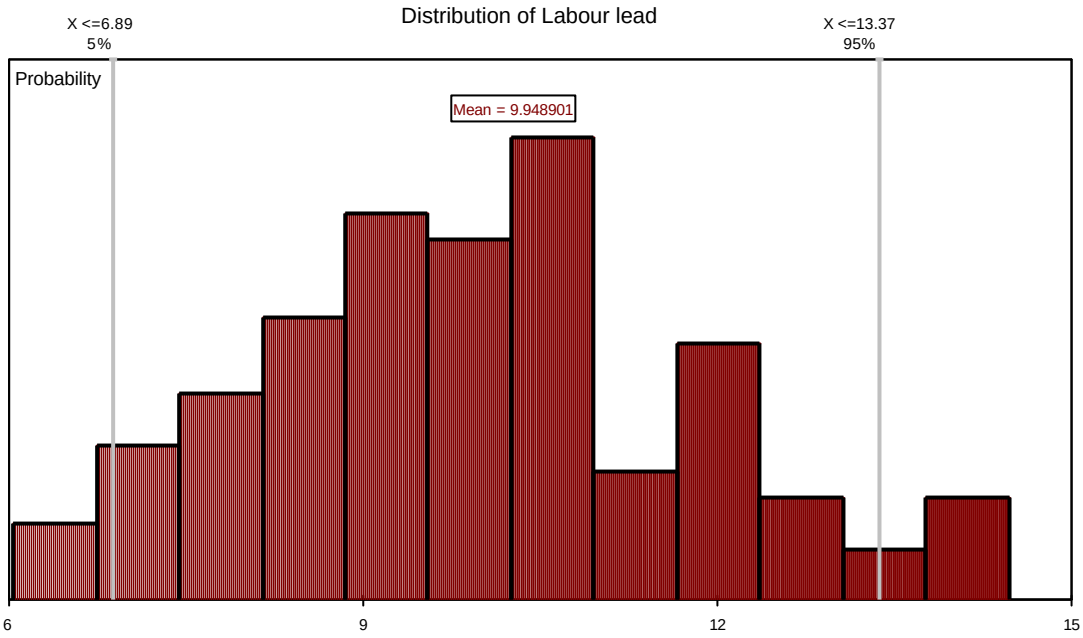
	Party position	Mean share of the vote (%)
Green	-2.6 to –2.2[2]	4.7
Lib Dems	-0.34 to –0.26[1]	23.7
Labour	+0.09	38.9
Tories	+1.00 to +1.08[1]	29.0
UKIP	+2. to +2.66[2]	3.8
	Parameter value	
Critical	0.4 to 0.7[2]	
Readiness	0.55 to 0.7[2]	
Switch	0.2 to 0.8[2]	

Source: runs of the probabilistic modified proximity model

Notes:
1. See table 5 for exact distribution used
2. See table 7 for exact distribution used

Figure 4 shows the distribution of the Labour lead across the 100 runs of the model. The 90% confidence interval for the lead is 6.9% to 13.4%.

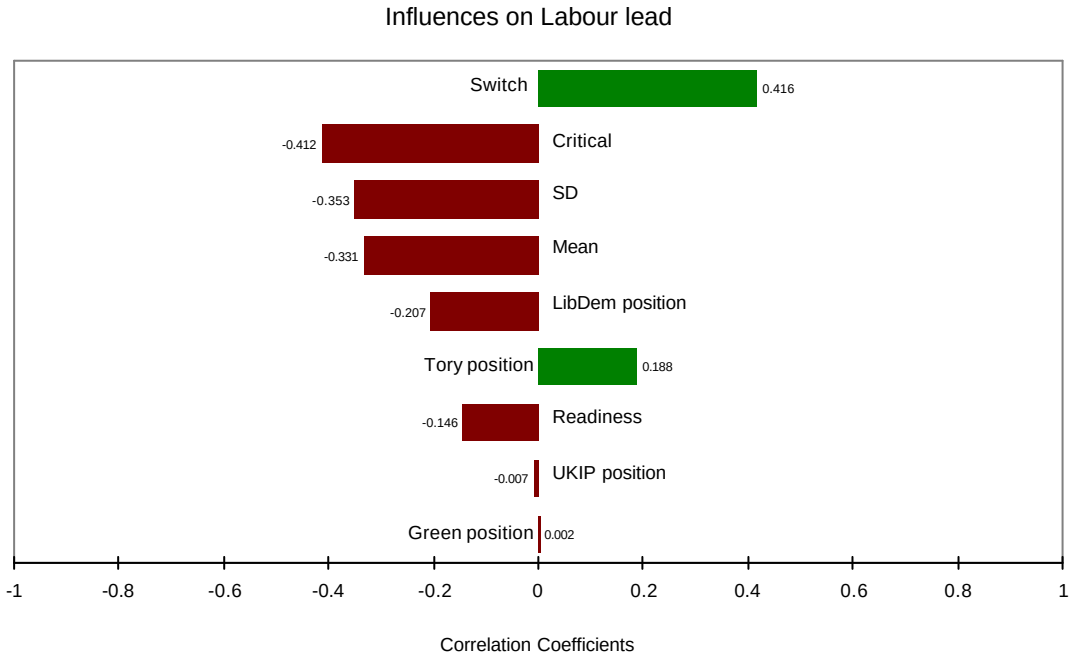
Figure 4 Distribution of the Labour lead with Labour at Blair's position



Source: runs of the probabilistic modified proximity model

Figure 5 shows the influence on the size of the lead of all the uncertain input values in the model. The influence is measured by the size of the partial rank correlation coefficient between the input and the size of the Labour lead. A positive correlation implies that a higher value for this input gives a larger Labour lead, and vice versa.

Figure 5 Influences on Labour lead with Labour at Blair's position



Source: runs of the probabilistic modified proximity model

The main influences are the willingness of Lib Dem voters to switch to other parties (the more they are willing to switch, the higher the Labour lead), the critical distance beyond which voters will not vote for a party (the smaller the critical distance the higher the lead, as it takes more votes away from the Tories and Lib Dems than from Labour). Next comes the standard deviation of voters' views; the more tightly bunched the voters' views, the larger the lead. Then comes the mean view of the voters, the further to the left the higher the Labour lead as this takes more votes away from the Tories, who are Labour's main threat at Blair's position. The further to the left the Lib Dem position, the higher the Labour lead, as more voters from the centre-left vote Labour. Similarly, the further to the right the Tory position, the higher the Labour lead, as it hands the centre-right voters to Labour. The readiness of the Lib Dems for government is the last major influence; the less they are viewed as ready, the larger the Labour lead. All of these influences seem to be of the right sign and are easily understood.

What should Labour do?

Expediency

Running the probabilistic modified proximity model (PM^2) 16 times, for values of the Labour position from 0 to 0.3, shows that the mean Labour lead is greatest for a Labour position of about +0.2, as shown in Figure 6 (100 runs of 10000 voters gives an effective sample size of 1 million, with 95% confidence intervals of about plus or minus 0.15% on the mean lead, as shown by the error bars on the figure). So if Labour were driven solely by expediency, the model says it should continue to move slightly to the right from Blair's present position, if the Tories and the Lib Dems continue to hold their present positions.

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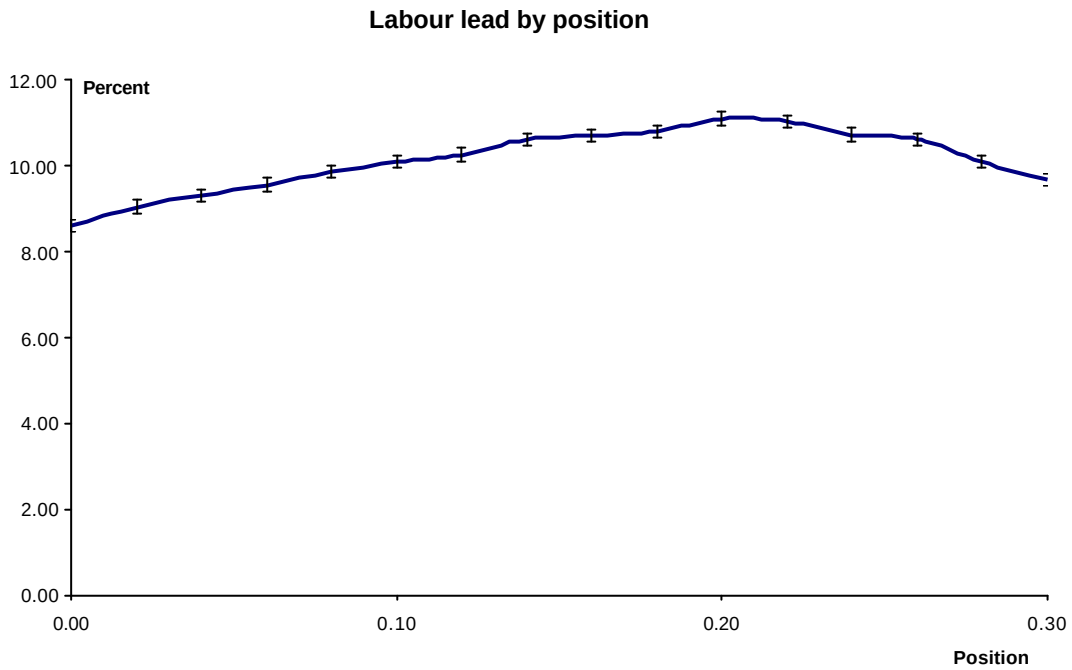
Figure 6 Mean Labour lead by position of Labour party



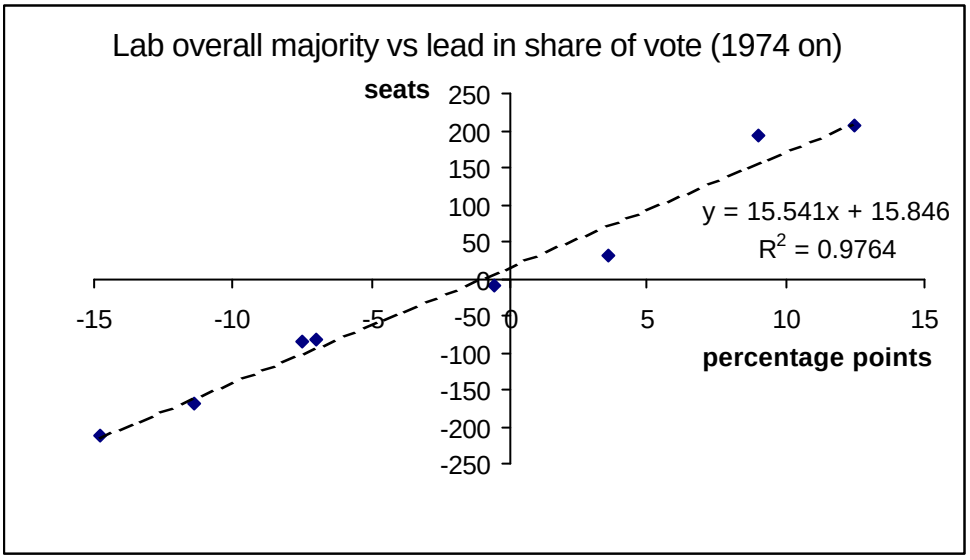
Source: runs of the probabilistic modified proximity model

This position of +0.2 gives mean shares of the vote of Labour 38.5%, Tories 27.0%, Libdems 26.0%, UKIP 3.8% and Green 4.8% on a turnout of 71%, which gives a mean Labour lead of 11.1% (The mean lead is not the same as the difference in mean share between Labour and the nearest challenger; when the Lib Dems and the Tories are both nearly equal, the lead is sometimes over one and sometimes over the other; so the average lead is lower than the difference in shares between Labour and the nearest challenger. It is the average lead that matters, since this is what will determine the size of the majority in the House of Commons, whoever the nearest challenger is. In any case, the results show that this is only an issue when the Tories and the LibDems are very close in their mean share of the vote; if they are more than 4% apart the effect is less than 0.01%; if they are equal it can be 0.6%).

Labour overall majority

How does a Labour lead in the percent of votes cast translate into an overall majority? For the elections since 1974(Feb), which was the first time the Liberals gained more than about 11% of the vote, figure 7 shows the answer.

Figure 7 Labour overall majority vs Labour lead in share of the vote



Source: Leeke, 2003

Largely because of the geographical distribution of votes, Labour gains an overall majority of about 16 seats without any lead in votes cast (the 90% confidence interval is -7 to 39 seats). Each 1 percentage point lead in votes cast leads to a rise in overall majority of 15.5 seats in the House of Commons. (Leeke, 2003). So a drop in lead of 1 point leads to a drop in overall majority of 15.5, on average. The 90% CI for the slope parameter is 13 to 18 seats per percent of lead (for all elections since 1945, the mean value is 16).

Conviction

The probabilistic modified proximity model (PM^2) can be used to find the loss in lead and loss in overall majority that results from making one decision on position, perhaps driven by expediency or the views of the leader of the party, rather than another, perhaps driven by the conviction of its MPs. The overall majority at each position is given by

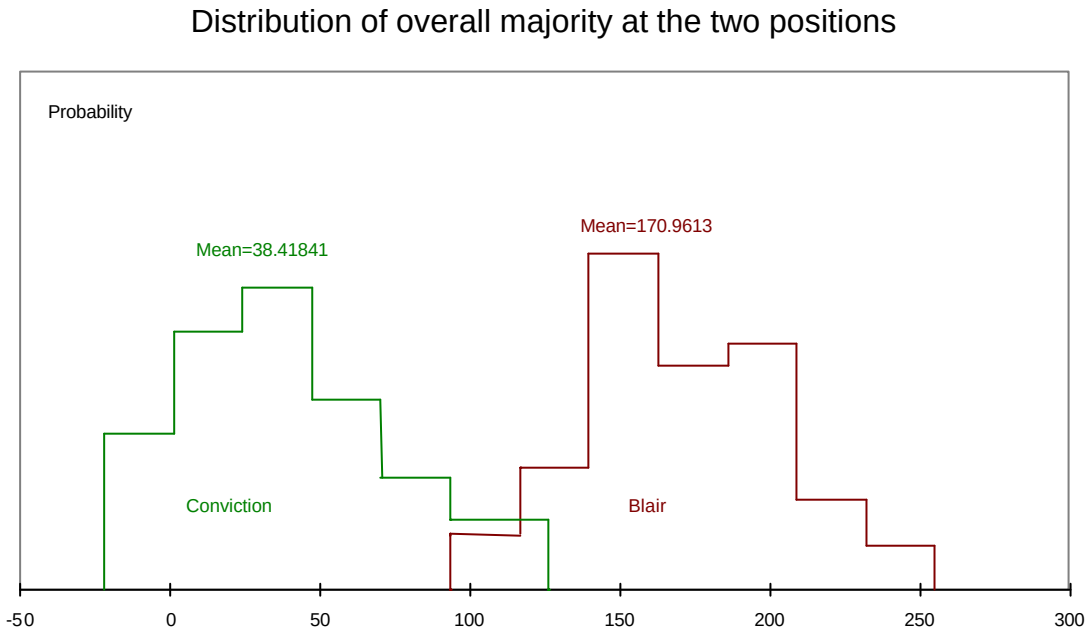
majority = intercept + slope*lead

where intercept has a normal distribution with mean16, standard deviation 13.8, and slope has a normal distribution with mean15.5, standard deviation 1.5 taken from the results above.

We can put the first position as Blair's present position of +0.09, but where should the 'conviction' position be? The YouGov poll gives the voters' perceptions of Gordon Brown's position as –0.4, and Labour MPs as –0.5 (YouGov, 2004). As table 1 shows, the boundary between slightly left of centre and fairly left wing is at –0.66. So for this analysis, the conviction position is taken to be a triangular distribution with a minimum value of –0.66, a most likely value of –0.5 and a maximum value of –0.4.

As we saw in figure 4, the mean Labour lead is 9.9% at Blair's position; this falls to 1.4% at the conviction position. The mean overall majority is 171 and 38 seats, respectively. The distributions of the overall majorities at the two positions are shown in figure 8.

Figure 8 Probability distribution of the Labour overall majority at Blair's position and the conviction position

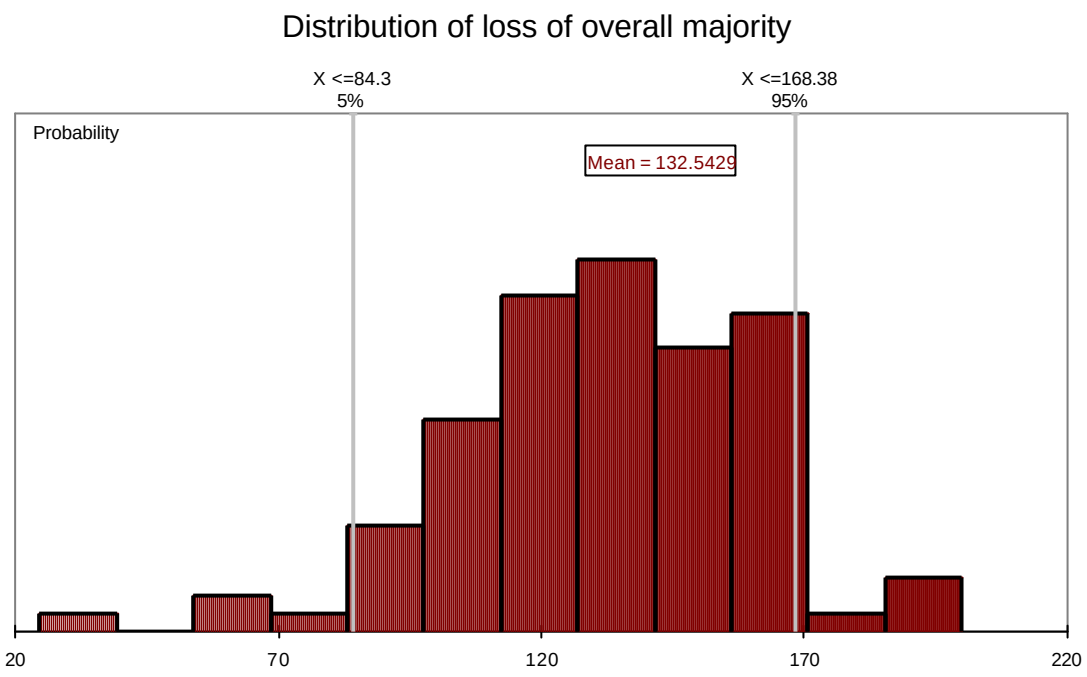


Source: runs of the probabilistic modified proximity model

At Blair's position, Labour is essentially guaranteed to have an overall majority provided the voters do not change their views and the other parties do not change their positions (the 90% confidence interval is 114 to 226 seats); taking up the conviction position increases the chance of no overall majority to 14% (the 90% confidence interval is –7 to 135 seats).

The mean loss of lead is 8.5% and the mean loss of overall majority is 133 seats as shown in figure 9 (100 runs with 10000 voters gives the mean loss of lead accurate to about plus or minus 0.2%, and the mean loss of majority accurate to about plus or minus 3 seats, assuming the 15.5 seats per % lead is a firm figure), but with a wide 90% range, from 84 to 168 seats.

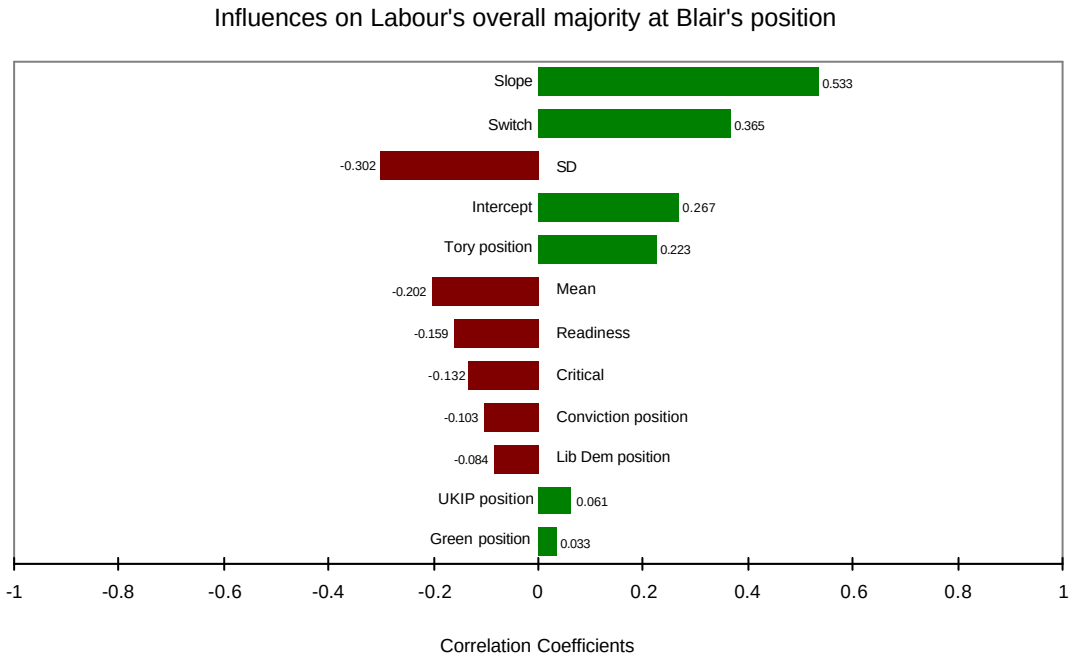
Figure 9 Probability distribution of the loss of overall majority moving from Blair's position to the conviction position



Source: runs of the probabilistic modified proximity model

The next three figures show the influences of all the uncertain parameters on Labour's overall majority at both positions, and on the loss of overall majority.

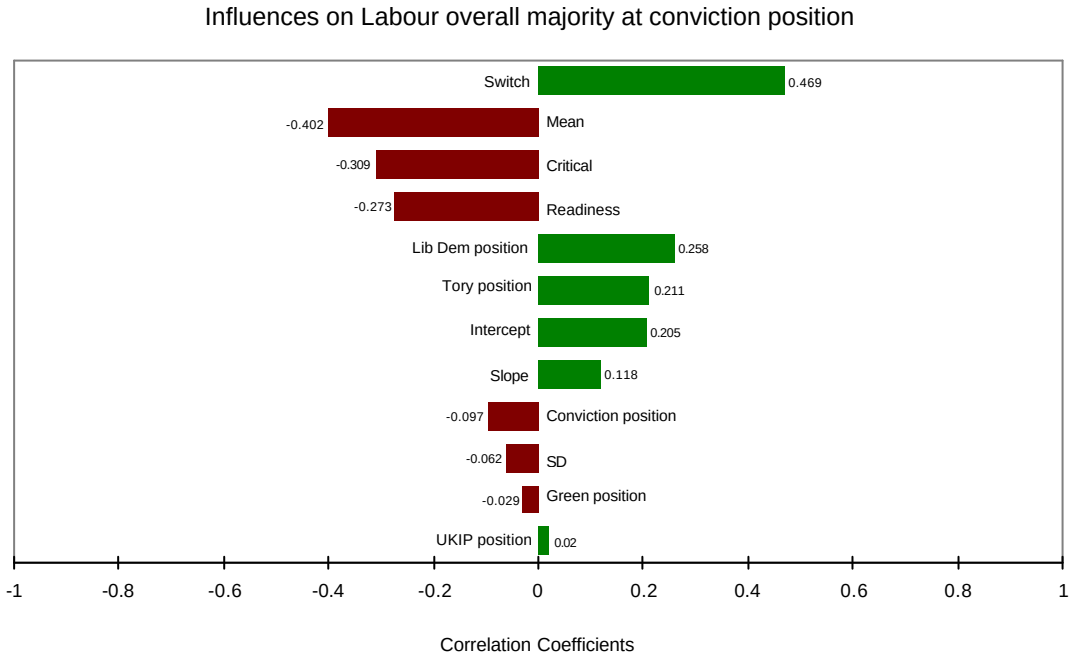
Figure 10 Influences on Labour's overall majority at Blair's position



Source: runs of the probabilistic modified proximity model

At Blair's position, the slope of the line linking the overall majority to the lead in the share of votes is the most important influence. Then comes willingness of Lib Dem voters to switch to other parties (the more they are willing to switch, the higher the majority). Next comes the standard deviation of voters' views; the more tightly bunched the voters' views, the larger the majority. Then comes the intercept of the line linking the overall majority to the lead in the share of votes, and the Tory position; the further to the right the larger Labour's overall majority. The mean position of the voters is next; the further to the left the larger the Labour overall majority. The readiness of the Lib Dems for government is next; the less they are viewed as ready, the larger the majority. Apart from the addition of the slope and intercept parameters, the major influences are similar to the influences on the Labour lead shown in figure 5.

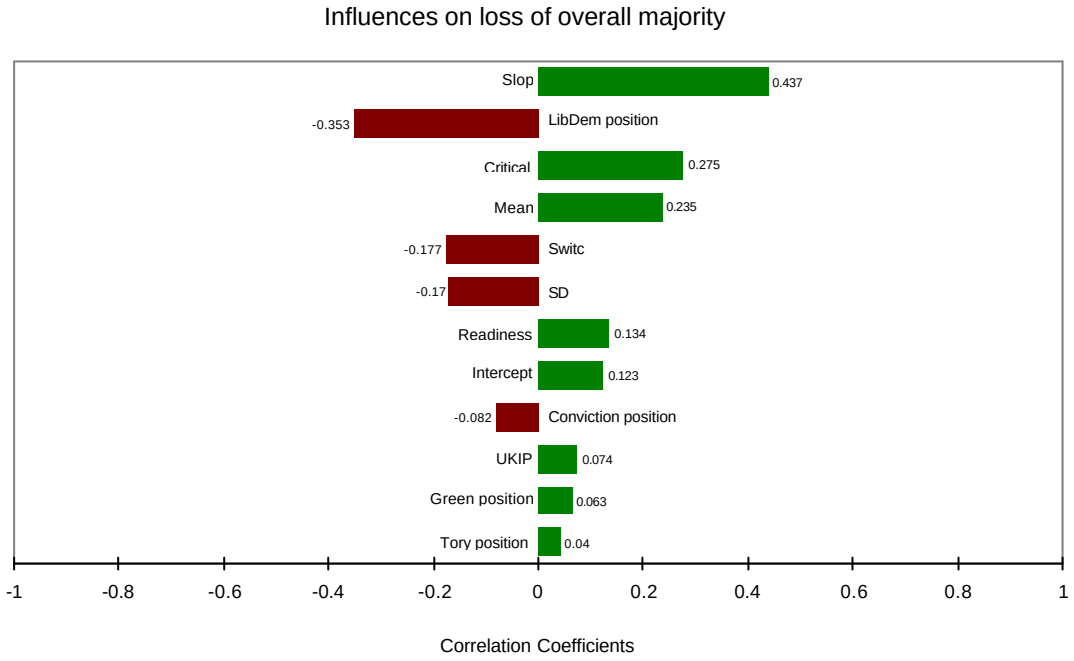
Figure 11 Influences on Labour's overall majority at the conviction position



Source: runs of the probabilistic modified proximity model

At the conviction position, the main influences as shown in figure 11 are similar, except that the slope of the line linking the overall majority to the lead in the share of votes is no longer important (as the lead in the share of votes at the conviction position is only just above zero), and the mean of the voters' positions is now very important; the further to the left, the higher the majority, as the Labour party's conviction position is to the left of the mean of the voters. The smaller the critical distance, the higher the majority, as it takes more votes away from the Tories and Lib Dems than from Labour. In fifth place now is the Lib Dem position; the further to the right, the higher the Labour majority, because the more votes they take from the Tories and the fewer they take from Labour.

Figure 12 Influences on the loss of Labour's overall majority moving from Blair's position to the conviction position



Source: runs of the probabilistic modified proximity model

The major influences on the loss of overall majority from moving to the conviction position shown in figure 12 are the slope of the line linking the overall majority to the lead in the share of votes and the position of the Lib Dems; the further to the right, the less the loss of majority. Next is the critical distance; because a small critical distance boosts the overall majority at the conviction position more than it does at Blair's position, a larger critical distance leads to a larger loss of majority from moving to the conviction position. Next is the mean position of the voters; the further to the right, the more a move to the conviction position hurts the Labour party. In fifth place is the willingness of Lib Dem voters to switch to other parties. Although this is the most important influence on the majorities at both positions, it is not so important in determining how much Labour loses by moving to the conviction position; the more Lib Dem voters are willing to switch, the less Labour loses by moving to the conviction position.

One parameter that does not appear as a major influence on any of the three figures is the exact definition of the conviction position (It is in ninth place in each of the figures). Since the whole range of the conviction position is to the left of the Lib Dems, but still not too far out to the extremes, the exact position does not matter very much in electoral terms. If some definitions of the conviction position overlapped with the Lib Dem position, it would jump from being one of the least important to one of the most important influences on the loss of overall majority.

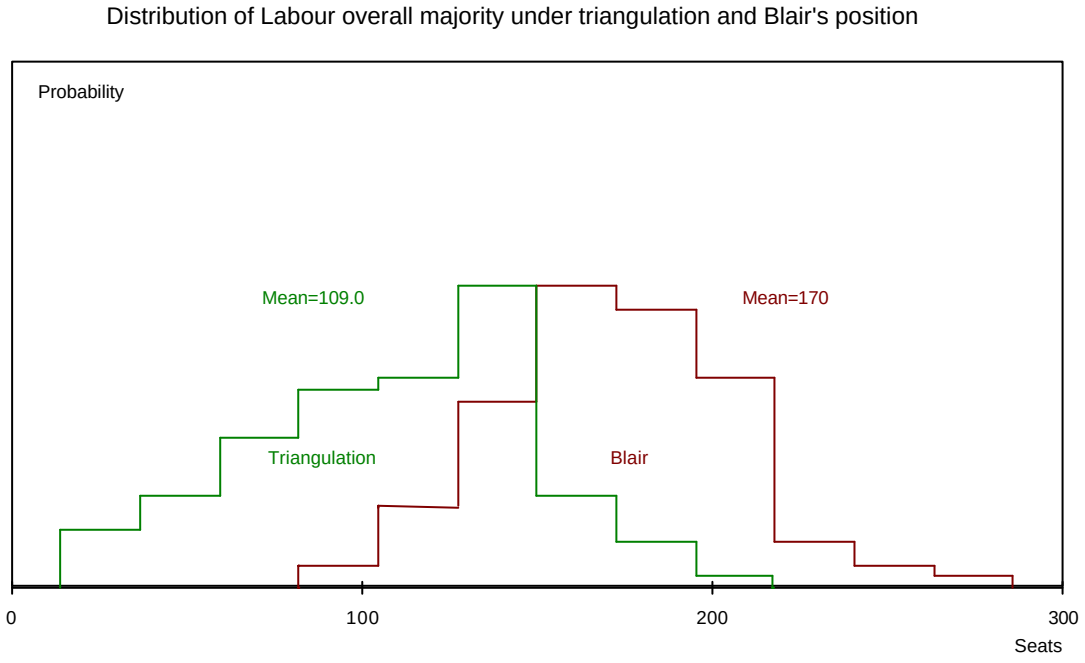
Triangulation

Roy Hattersley defines triangulation as taking 'positions staked out somewhere between conviction and expediency' (Hattersley, 2004). In the language of the model, what would a triangulation position be?

We can define it by saying it involves a movement m% of the way back to the conviction position from the true expedient position of +0.2 that obtains the largest lead in the polls (Despite its close proximity to the position that obtains the largest Labour lead, I hesitate to describe Blair's position as driven solely by expediency). In the absence of better information, let m take a triangular distribution with minimum, most likely and maximum values of 25, 50 and 75%

As we saw in figure 4, the mean Labour lead is 9.9% at Blair's position; it falls to 6.0% at the triangulation position. The mean overall majority is 109 seats, with a 90% confidence interval of 29 to 170 seats. Figure 13 shows the distributions of the overall majorities at the two positions.

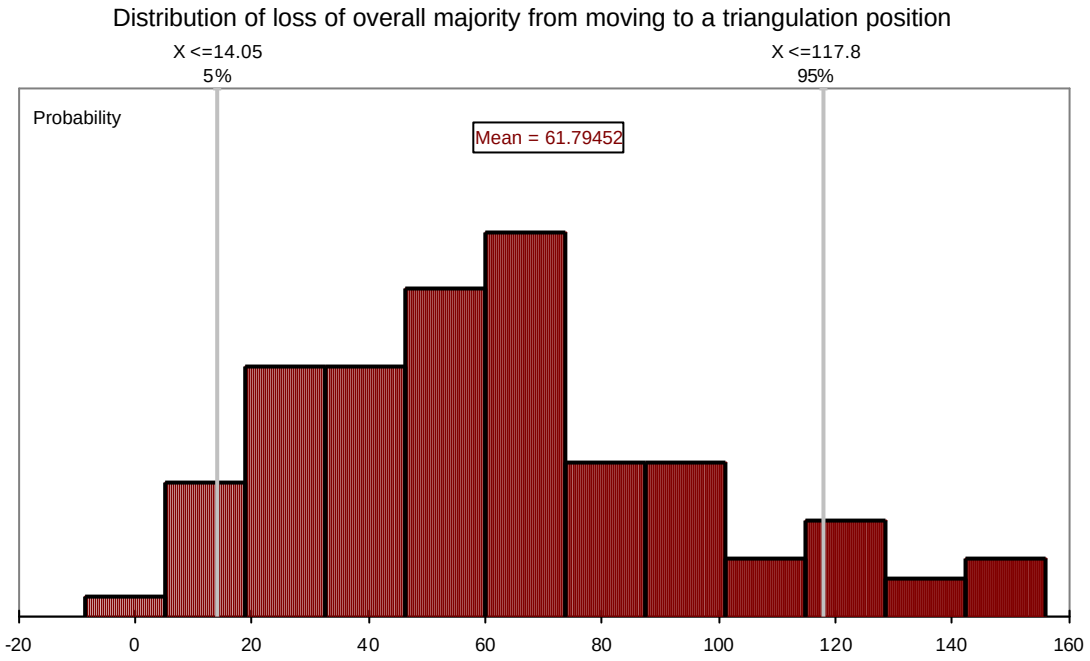
Figure 13 Probability distribution of the Labour overall majority at Blair's position and the triangulation position



Source: runs of the probabilistic modified proximity model

The mean loss of overall majority is 62 seats (accurate to plus or minus about 3 seats, assuming the 15.5 seats per % is a firm figure), but with a 90% range from 14 to 118 seats. Figure 14 shows the probability distribution of the loss of overall majority. Only in the very worst cases would it lead to Labour's overall majority disappearing with the proviso, as always, that the voters do not change their views and the other parties do not change their positions.

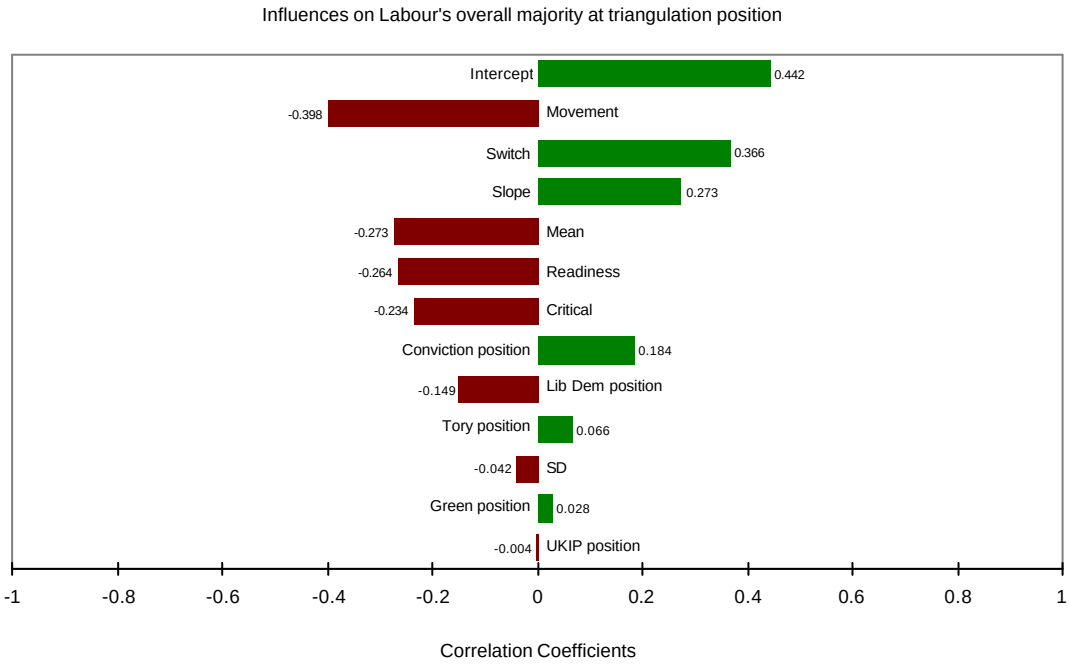
Figure 14 Probability distribution of the loss of overall majority moving from Blair's position to the triangulation position



Source: runs of the probabilistic modified proximity model

The next two figures show the influences of all the uncertain parameters on Labour's overall majority at the triangulation position, and on the loss of overall majority.

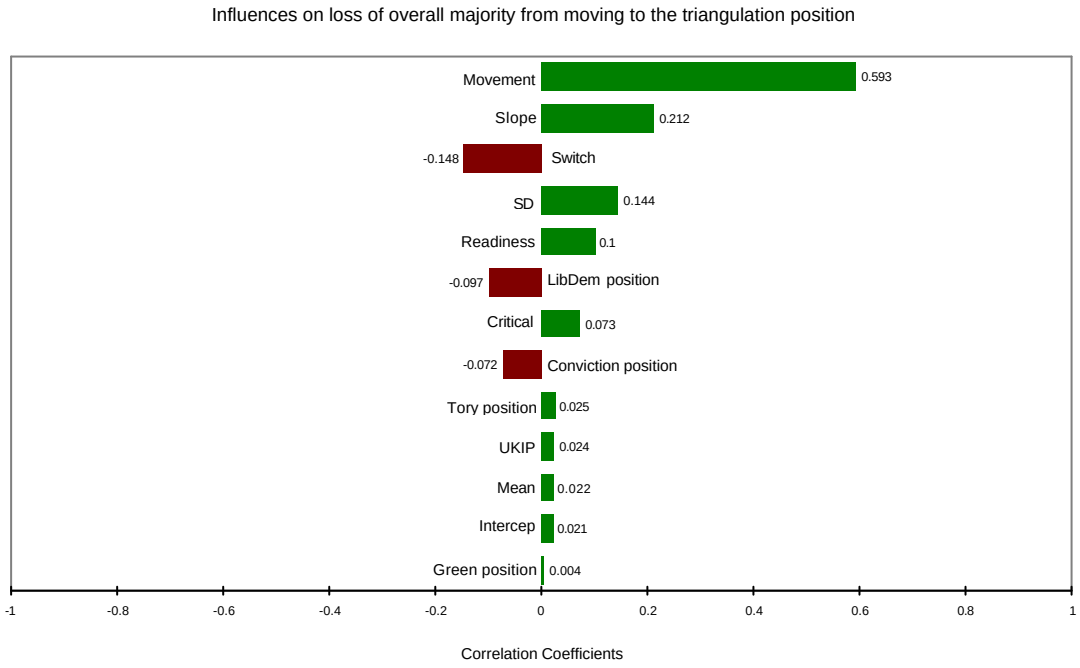
Figure 15 Influences on Labour's overall majority at the triangulation position



Source: runs of the probabilistic modified proximity model

Figure 15 shows that at the triangulation position, the main influences that increase the majority are the larger the intercept defining the overall majority for no lead in votes, and the smaller the movement required to get to the triangulation position. Other influences are similar to those at the conviction position. The definition of the conviction position itself is now a fairly important influence; the further to the right the larger the majority, as it gives a greater chance that the triangulation position will be to the right of the Lib Dems.

Figure 16 Influences on the loss of Labour's overall majority moving from Blair's position to the triangulation position



Source: runs of the probabilistic modified proximity model

In figure 16, the major influence on the loss of overall majority from moving to the triangulation position is the amount of movement required to get to the position; the higher the movement, the greater the loss in majority. The slope of the line linking the overall majority to the lead in the share of votes is next; the steeper the line, the more a move to the triangulation position hurts. Next comes the willingness of Lib Dem voters to switch; the more Lib Dem voters are willing to switch, the less Labour loses by moving to the triangulation position. The higher the standard deviation of voters' views and the higher the perceived readiness of the Lib Dems, the more a move to the triangulation position hurts.

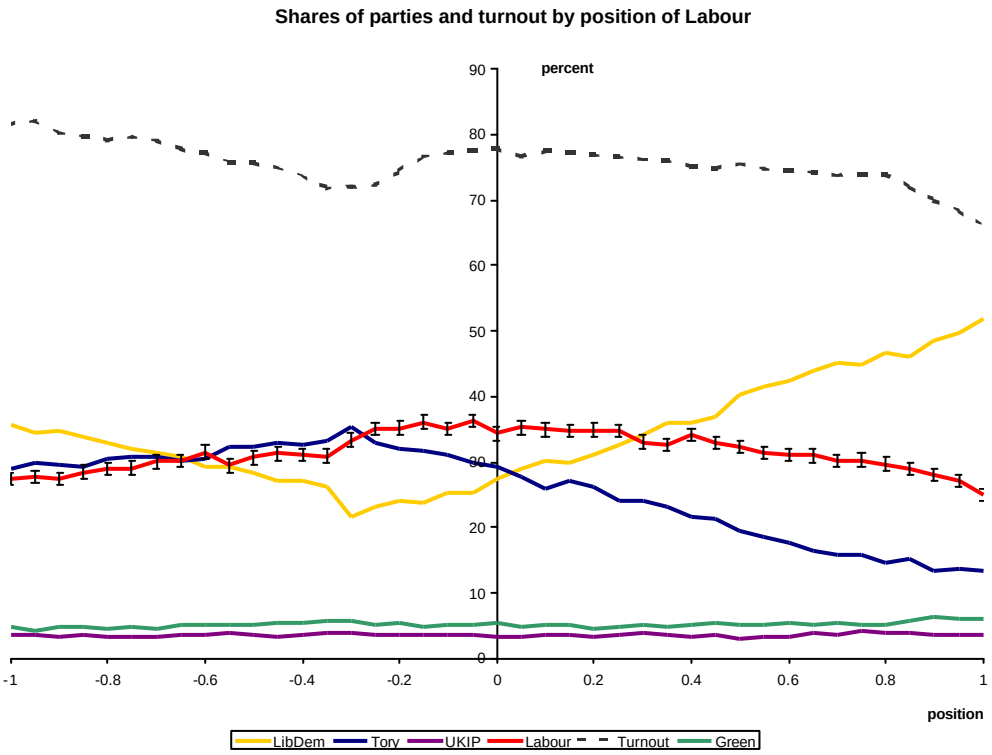
Reactions of other parties

What if the Lib Dems become more ready?

The earlier figures 2 and 3 showed the shares of the parties and the Labour lead from the deterministic model for a Lib Dem readiness of 0.62, as this gave the best fit to the opinion poll results. What if the Lib Dems became more credible as a party of government, as may not be impossible on a relatively short timescale? As Claire Raynor puts it, in a way which also lends some support to the proximity theory, "...the Labour party left me standing and galloped off to the right…Many of the policies of the Lib Dems are what I would regard as policies of 'original Labour'. I would love them to become the main opposition and I do not see any reason why they should not leapfrog the Tories. This is where they can really hone their weapons. They have been out in the cold too long." (Independent, 2004).

The deterministic model can be used to make a first investigation of this. At a readiness of 0.81, halving the numbers who feel the Lib Dems are unready, and keeping all other parameters the same, Labour at Blair's position gets 35% of the vote, Tories 27%, Lib Dems 30%, UKIP 3%, Green 5% on a turnout of 77%. Varying the Labour position gives the largest lead at a position of around +0.05, which gives shares of the parties of Labour 35%, Tories 29%, Lib Dems 28%, UKIP 3%, Green 5% on a turnout of 77%, for a Labour lead of about 6% (taken from a run of the model with 10000 voters, so party shares accurate to within about plus or minus 1%, and lead accurate to about plus or minus 1.5% as shown by the error bars).

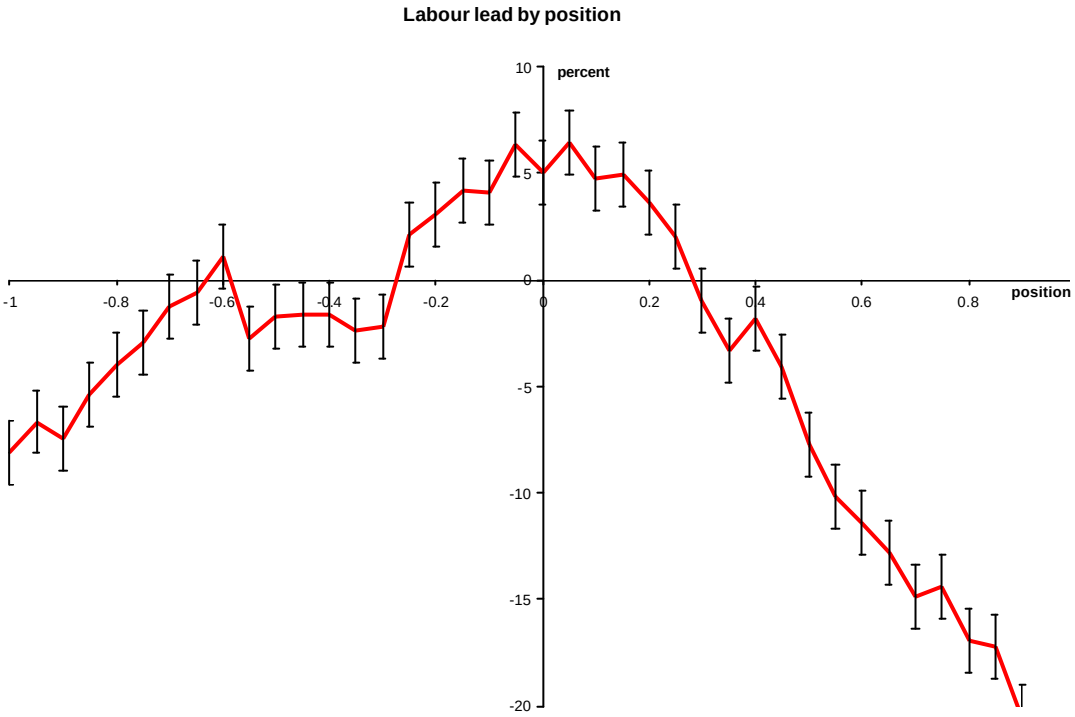
Figure 17 Shares of the parties and turnout by Labour position, with higher Lib Dem readiness



Source: runs of the deterministic modified proximity model

Figures 17 and 18 show the shares of the different parties, the turnout and the Labour lead for all Labour positions of –1 to +1 on the left-right continuum from the deterministic model. Comparing figures 17 and 18 to figures 2 and 3 shows that increasing the Lib Dem readiness makes some difference, both to Labour's lead at its current position, and to the position it should take up if it wishes to maximize its lead.

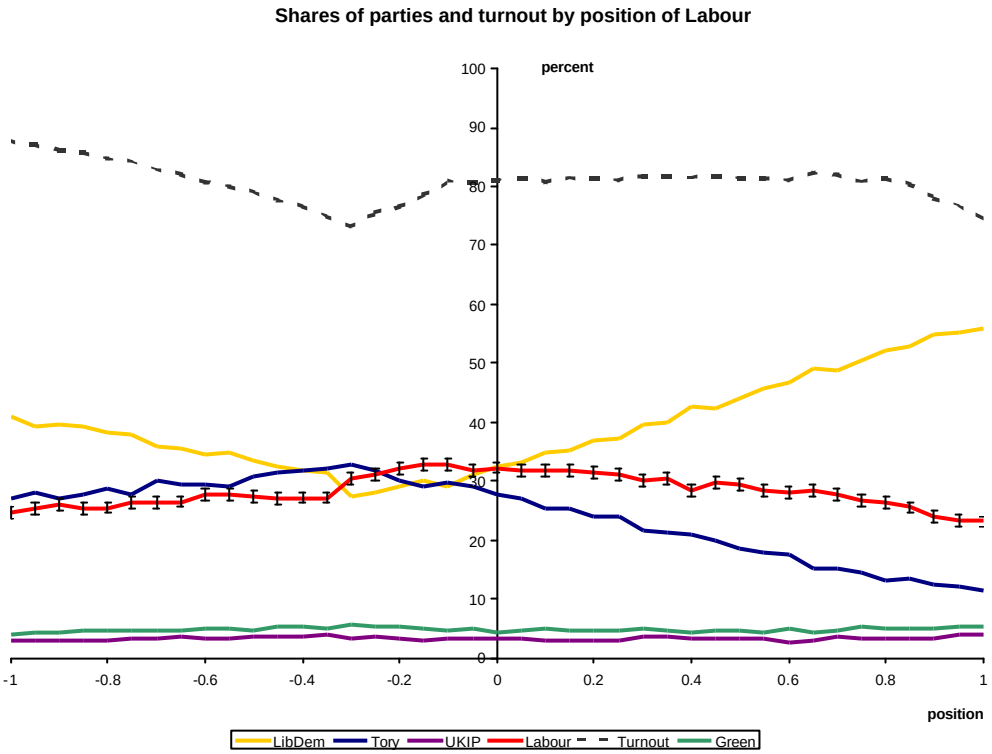
Figure 18 Labour lead over nearest party by Labour position, with higher Lib Dem readiness



Source: runs of the deterministic modified proximity model

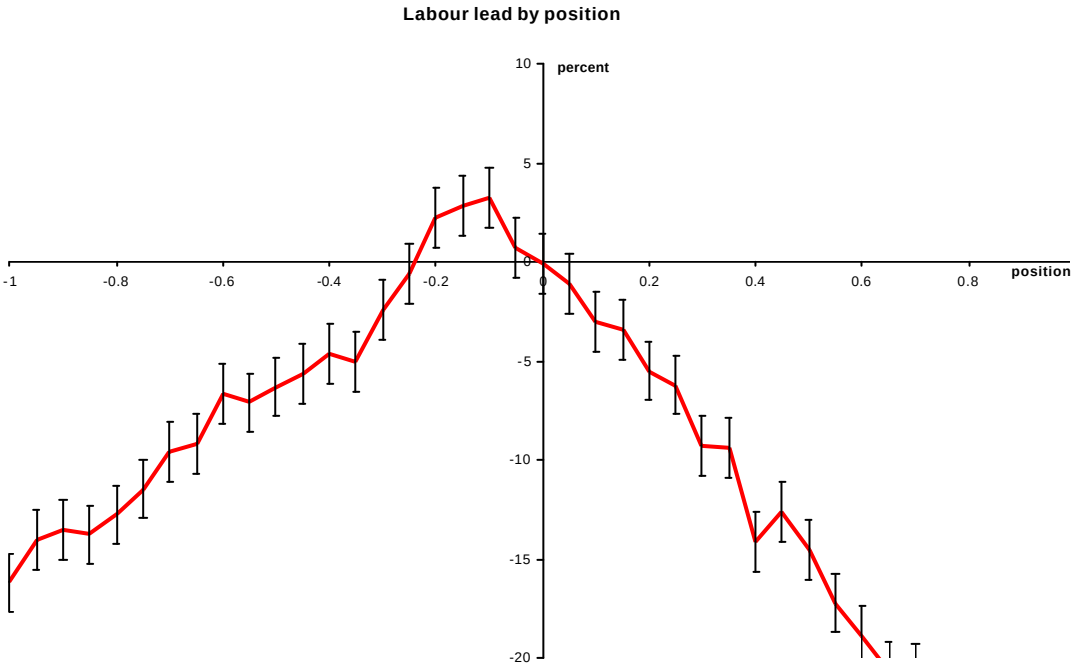
Figures 19 and 20 show what happens if we set Lib Dem readiness to 1, so that all potential Lib Dem voters feel that they are ready for government (all other parameters the same) They show that Labour would need to move back to about –0.1 to –0.2 to retain any lead at all; remaining at 0.09 would hand a lead of about 3% to the Lib Dems.

Figure 19 Shares of the parties and turnout by Labour position, with complete Lib Dem readiness



Source: runs of the deterministic modified proximity model

Figure 20 Labour lead over nearest party by Labour position, with complete Lib Dem readiness

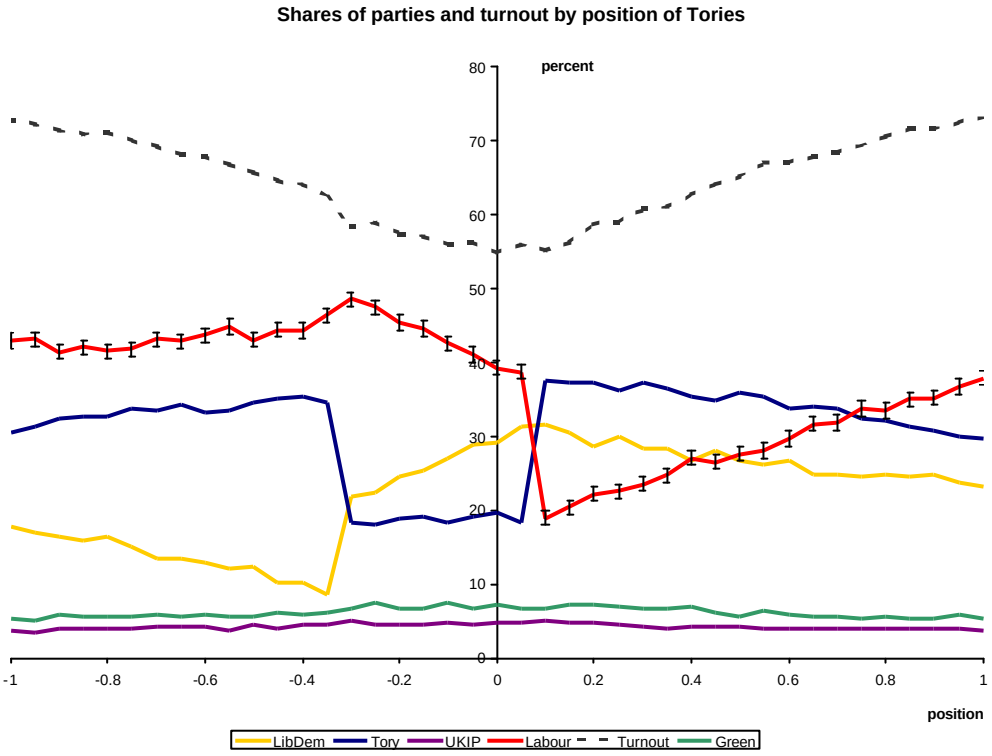


Source: runs of the deterministic modified proximity model

Tory response

Can the Tories respond to the re-positioning of Labour under Tony Blair at just a shade to the right of centre? What should they do if Labour stays at +0.09? Figures 21 and 22 show what happens in the deterministic model if the Tories' position is anywhere from –1 to +1 (with Labour remaining at 0.09).

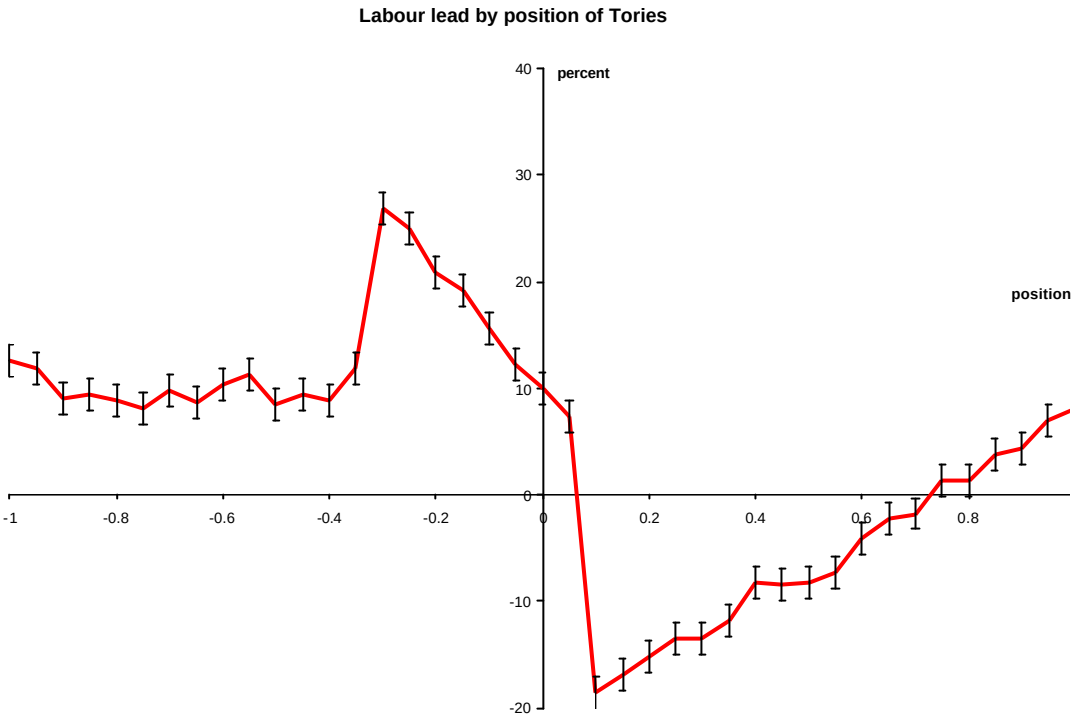
Figure 21 Shares of the parties and turnout by Tory position



Source: runs of the deterministic modified proximity model

The only Tory positions that hand Labour a lead are to the left of them at +0.05 or below, or more than slightly to the right of centre, at +0.75 and above. If the Tories were to move back towards the centre, say at +0.3, and be perceived as credible, they would win an overall majority, the Lib Dems would take second place, and Labour would be forced into third place. Note that UKIP's share of the vote does not increase appreciably wherever the Tories are positioned; there are not enough voters within the critical distance of the UKIP position for them to take more than about 5% of the vote.

Figure 22 Labour lead over nearest party by Tory position



Source: runs of the deterministic modified proximity model

Conclusions and discussion

Results from PM^2 show that Labour could increase its mean lead over the nearest opposition slightly by continuing to move to the right to +0.2, a little beyond Tony Blair's present position of +0.09.

Moving back to the left, to a position represented by Gordon Brown and Labour MPs as a whole, would reduce Labour's overall majority by a mean of 133 seats (90% confidence interval a reduction in overall majority of 84 to 168 seats), giving a 14% chance of Labour not obtaining an overall majority, if the voters do not change their views and the other parties do not change their positions.

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Moving to a triangulation position, which is a compromise between conviction and expediency, would reduce Labour's overall majority by a mean of 62 seats (90% confidence interval a reduction in overall majority of 14 to 118 seats). Only in the very worst cases would this lead to Labour's overall majority disappearing with the proviso, as before, that the voters do not change their views and the other parties do not change their positions.

Initial investigations with the deterministic form of the model, show that reducing the proportion of Lib Dem voters who feel they are unready for government, or a move back towards the centre by the Tories, could cause significant electoral problems for Labour.

Several caveats need to be stated about these results. Some of them concern technical issues; others are more profound and involve issues of trust and political theory.

Technical issues

Is the link between lead and majority valid for a larger Lib Dem share of the vote?

The relationship between Labour's share of the vote and its overall majority shown in figure 7 was taken from past elections where the Lib Dem (or Liberal) share of the vote did not exceed 25%. So it should probably be treated with caution if Labour were to take up positions much to the right of Blair's present position, or if the readiness of the Lib Dems were to improve, when the Lib Dems might obtain shares of the votes above 26%. A stronger Lib Dem showing than this might hurt the Tories more than the model shows, because they are the second party in more Tory than Labour seats. But for the majority of the analyses in the paper, the Lib Dem share is within its historical range.

The conversion from verbal to numerical categories.

The assignment of numerical values to the verbal categories shown in table 1 is not the only one that could be used. All of the results are invariant to a positive linear transformation in the numerical scale. But it is possible that they could be altered by making some of the categories narrower and others wider. A future version of PM^2 could investigate this effect.

What if voters' views are not normally distributed?

Even if the numerical definition of the categories remains the same, the use of a normal distribution to represent the views of voters is not obviously correct, even though it is the conventional assumption. In fact, the curve fitting routine of RiskOptimiser gives a triangular distribution with minimum, most likely and maximum values of –2.23, -0.08 and 2.21 as the best fit to the data of any distribution. Using this distribution instead of a normal distribution for voters' views gives the shares of the parties shown in table 9 with Labour at Blair's position. Comparing this with table 8 shows that the main effect is to reduce the shares of the Greens and UKIP and increase those of Labour and the Tories. Running the model with a triangular distribution for voters' views would require some minor recalibration of PM[2] to bring these party shares back into line with opinion poll results.

Table 9 Input ranges and shares of the parties from PM[2] with Labour at Blair's position and a triangular distribution of voters' views

	Party position	Mean share of the vote (%)
Green	-2.6 to –2.2[2]	2.3
Lib Dems	-0.34 to –0.26[1]	23.7
Labour	+0.09	39.9
Tories	+1.00 to +1.08[1]	31.4
UKIP	+2. to +2.66[2]	2.7
	Parameter value	
Critical	0.4 to 0.7[2]	
Readiness	0.55 to 0.7[2]	
Switch	0.2 to 0.8[2]	

Source: runs of the probabilistic modified proximity model

Notes:
1. See table 5 for exact distribution used
2. See table 7 for exact distribution used

Greater uncertainty about other parties' position.

The positions of the Lib Dems and the Tories have been assumed to be measured perfectly by the responses to the YouGov poll on the position of the party leaders (YouGov, 2004). The uncertainty in the positions is assumed to be caused solely by the sampling error in the YouGov poll which had about 1600 respondents. In reality, there are several reasons why the position of the Tories and Lib Dems might be less well known than this. Maybe voters associate the position of the party with the position of its MPs rather than its leader. Or maybe their estimate of its position is unstable and moves around in response to day-to-day news coverage.

Table 10 shows the effect upon the shares of each party that results from keeping the same mean Lib Dem and Tory positions, but making the uncertainty about them five times as wide as in the earlier runs, to about the same as the uncertainty in the Green and UKIP positions. Comparing table 10 with table 8 shows that the effect on the mean shares of the vote is negligible, and the mean Labour lead is likewise only

slightly affected at 10.1%, rather than 9.9%. But the 90% range of the Labour lead is now from 4.0 to 16.5% (rather than 6.9 to 13.4% as shown in figure 4), and the uncertainty about the Tory and Lib Dem positions become the most important influences on the Labour lead (rather than 6th and 5th most important as shown in figure 5).

Table 10 Input ranges and shares of the parties from the probabilistic modified proximity model (PM^2) with Labour at Blair's position and wider ranges for the Lib Dem and Tory positions

	Party position	Mean share of the vote (%)
Green	-2.6 to –2.2[2]	4.7
Lib Dems	-0.50 to –0.10	23.8
Labour	+0.09	38.9
Tories	+0.84 to +1.24	28.8
UKIP	+2. to +2.66[2]	3.8
	Parameter value	
Critical	0.4 to 0.7[2]	
Readiness	0.55 to 0.7[2]	
Switch	0.2 to 0.8[2]	

Source: runs of the probabilistic modified proximity model

Notes:
2. See table 7 for exact distribution used

Gentler implementation of critical distance

Is it realistic to say that people will certainly vote for the nearest party if it is within the critical distance, as the present model does? One alternative would be to say they will not vote for a party more than a certain distance away, but they will distribute their vote probabilistically to all parties inside that distance. If no party is within the critical distance, they will not vote.

Even this gentler form of critical distance would gives the odd result that if all other parties are more than the critical distance away, a party would win 100% of the votes until it reached the critical distance away, and then its share would drop straight to 0%. It would be possible to have a smoother version where 'no vote' is treated like another party that is always the critical distance away from the voter's view. Then the voter distributes their vote probabilistically to all parties (including no vote). Both of these changes could be implemented in future versions of PM^2.

All voters have their own view of the position of the parties

In the present version of PM^2, a position is chosen for the Lib Dems and Tories (and Greens and UKIP) from the input distributions shown in tables 5 and 7, and this is applied to all voters in a sample of 10000, then another position is chosen and applied to all voters in a sample of 10000, and so on 100 times, to calculate the mean shares of the parties, their distribution and the main influences upon them.

In reality of course, all voters have their own personal view of the position of each of the parties, and this may well be correlated with how they are inclined to vote; the 3% of voters who perceive Michael Howard as fairly or very left wing are unlikely to be Labour voters, for instance (YouGov, 2004).

To take this into account would require a more explicitly agent-based model of voting behaviour, with party positions sampled for each voter individually, possibly dependent upon their own position on the left-right continuum. It would not be an impossible task to build such a model, but it would not be a trivial undertaking either.

Deeper concerns

Trust issues for Labour and the Tories

None of this analysis allows for the fact that some natural Labour voters may be so upset by the war in Iraq that they will not vote for Labour while Blair is leader. An extreme version of this view is expressed by Alan Bleasdale, who says that "The Labour Government is not fit for government…I'd go so far as to say they're vile. They make me weep with anger." (Independent, 2004).

Likewise, some natural Tory voters may see the party as unelectable under Michael Howard. As Nick Pearce puts it, "if Michael Howard moves to the right to protect his flank from UKIP he will create space on the centre right for the Lib Dems to occupy." (Independent, 2004), although the analysis in this paper argues that this space already exists and is occupied by Tony Blair's Labour.

In the very long term

Suspicion that parties might be positioning themselves expediently rather than honestly representing the views of their MPs could lead to disillusion and disengagement from the political process. In PM^2 (and in reality in the short term), this does not matter; to a close approximation, obtaining a 10% lead with a 50% turnout would provide just as large an overall majority at the next general election as a 10% lead with an 80% turnout. But in the long term, the lack of voter participation could lead to a perceived lack of legitimacy, possibly with an increase in other forms of political engagement, such as membership of NGOs, protests and civil disobedience. The drop in turnout in 2001 to the lowest level since the end of the Second World War suggests that this process may have already started.

Other theories of voting.

The proximity theory of voting is only one amongst several theories that have sought to explain voting behaviour. Other major theoretical strands include tribal theories, where voters cast their votes largely along class lines, party identification theories, where voters make judgements early in their lives about which party to support, and tend to continue that support until some major political trauma causes them to reassess their judgement, and valence theories, where voters make judgements about the overall competence of rival political parties (Clarke et al, 2004).

It is unlikely that the debate between these theories will be settled any time soon. As Clarke et al put it "…empirical analyses typically and predictably, demonstrate the power of the preferred model". However, it is clear that after an extensive analysis of the 2001 British general election, they lean towards valence rather than proximity theories. (Clarke et al, 2004). On the other hand, Fisher and Swyngedouw find " a one-dimensional model to be adequate…the dominant theme of party competition is the left-right one" albeit for Belgian rather than British elections (Fisher and Swyngedouw, 2003).

Each of the rival theories could lead to probabilistic models of a type similar to PM^2 described in this paper, and the inclusion of readiness in PM^2 means that it does contain some valence ideas. The conclusions of this paper must be treated with an appropriate degree of caution: they show the implications for Labour's overall majority if the proximity theory of voting is broadly correct, and neither voters' views nor the positions of the parties undergo significant change.

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