TACTICAL VOTING AND TACTICAL NON-VOTING

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Abstract. Turnout and tactical voting are driven by remarkably similar processes. Using British Election Study data from 1997, both are shown to depend on the strategic situation in the constituency and on the relative strength of preference between parties. Also both are influenced by party campaigning and the level of political interest, knowledge and trust. Tactical non-voting creates the potential for selection bias in models of vote choice. A model of tactical voting with sample selection suggests that the main conclusions are robust.

1. Introduction

There is a considerable overlap between what rational choice theory has to say about both turnout and tactical voting (or strategic voting as it also known). Both are thought to depend on the relative strength of preference for the different parties. Both should be sensitive to the strategic situation in the constituency as defined by the levels of support for the different parties. Beyond the narrow rational actor models, both turnout and tactical voting could be influenced by party campaigns which target party supporters and potential (tactical) voters. Both may depend on the level of political interest and knowledge since both require some degree of thought, effort and understanding. Also, both may be influenced by general attitudes to the political system. These factors are not always expected to have the same relationship with both turnout and tactical voting. For instance, political knowledge should increase both turnout and tactical voting, but political trust should decrease turnout while increasing tactical voting. Nonetheless the potential similarity between the dynamics of turnout and tactical voting is striking.

It is a common criticism of tactical voting models that they take no account of the possibility of tactical non-voting. If people can make strategic decisions as to whether or not to vote this has implications for our understanding of tactical voting. Statistically, there is a strong

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possibility of sample selection bias. Substantively, we should stop thinking of tactical voting as a unique form of instrumentally rational behaviour. Also tactical voting is not necessarily a unique source of strategic desertion of third placed parties. Tactical decisions to abstain may help generate two party systems as well as tactical switching to front running candidates.

This paper considers the rational actor and other theories of turnout in Section 2 and of tactical voting in Section 3. The 1997 British Election Study data and various methodological aspects of the study are introduced in Section 4, whilst the main predictor variables and their bivariate relationships with turnout and tactical voting are presented in Section 5. Multivariate models of turnout and tactical voting are presented in Sections 6 and 7 respectively. The question of selection bias is dealt with in Section 8 where a joint (Heckman) model of tactical voting with sample selection for turnout is discussed. Section 9 concludes.

2. Theories of Non-Voting

For obvious reasons, rational choice theory is the dominant framework for the analysis of tactical voting. It is hard to see how else it could be understood. Almost the opposite seems to be true of turnout. The probability of influencing the result of an election is so small that it seems inconceivable that the expected utility gain of voting would be sufficient to outweigh the costs. This familiar story is known as the 'paradox of voting'. One approach to the problem is to posit that people get utility from the act of voting in itself which has nothing to do with the candidates or the outcome. So in their classic exposition Riker and Ordeshook (1968) encapsulate the calculus of voting with the equation R=BP–C+D. Where R is the expected utility gain from voting as opposed to non–voting, B is the difference between the benefits received on the election of the favourite candidate rather than another, P is the probability that the vote will be pivotal, C is the cost of voting and D is utility gained from voting that is unrelated to the outcome of the election. Individuals should vote if and only if R is positive.

The introduction of D into the calculus of voting has been labelled a departure from rational choice theory by some critics. Two lines of argument are relevant here. First, if all the action goes in the D and C because P is so small then there is nothing particularly 'rational choice' about the calculus (Barry 1970). This is a reasonable point, but Riker and Ordeshook (1968) argue that the BP part of the theory is important, both theoretically and in practice. However, their empirical test relies on the perceived closeness of the election rather than the absolute probability of casting a decisive vote. For Green and Shapiro (1994) this is an unacceptable circumnavigation of the problem. It begs the question why people misperceive the probability of affecting the outcome. Moreover, as Blais, Young, and Lapp (2000) point out, it is the perceived probability of being decisive that is relevant to the model and not the perceived probability that the election will be close. In their study of Canadian elections the perceived probability of being decisive did not influence turnout, even when the perceived closeness of the election was

a significant predictor. This suggests that Riker and Ordeshook (1968) were wrong to rely on the latter.

The standard economist line on rational actor models is that people may behave as if the model works, even if they do not consciously follow the logic of the model. Often it is inconceivable that anyone could follow the necessary calculations. Together with an assumption of misperception of the probability of being decisive, this view of rational choice modelling suggests that people may be sensitive to variation in the probability of a tie even if they do not consciously assess the probabilities. Thus, it could be that people are not very good at stating how close they think the election will be or how likely it is that their vote will make the difference, but still be more likely to vote when there is a greater probability of there being a tie for the lead.

For practical purposes there is still a difficulty for testing the theory because it has not been fully expounded. McKelvey and Ordeshook (1972) outline the calculus of voting for multiparty competitions and show that the expected utility of voting over non-voting is a complex function of the utilities associated with the different parties winning and the probabilities of different pairs of parties being involved in a tie for the lead. The paper does not specify how these probabilities relate to the distributions of the vote we observe in practice. Least of all is it straightforward to conclude in the three party situation that the incentives to vote should increase with the marginality of the constituency. In fact, McKelvey and Ordeshook (1972) argue that there are special cases where turnout should increase as the margin of victory widens. Without computing the incentive structure for the three party competition it is impossible to provide a strict test of the formal rational actor model of turnout.

Nevertheless, there is a common intuition that people will be more likely to vote when the result is close. Similarly, people should be more likely to vote when they much prefer their favourite candidate over their least favourite. These are not hypotheses derived from a formal rational choice model, but it is likely that they correspond to the P and B components of the formal calculus. Assuming that this is the case, it remains an empirical matter as to whether they have explanatory power beyond the C and D components.

The second critique of the calculus of voting as a 'rational choice' theory is that the C and D components comprise so many ingredients that really belong to another theory. Riker and Ordeshook (1968) claim that D includes, 'satisfaction from compliance with the ethic of voting, affirming allegiance to the political system, affirming a partisan preference, affirming one's efficacy in the political system and from deciding and going to the polls'. Aldrich (1993) also calls for a broad conception of the C and D terms which include the effects of mobilization and campaigning effects by political parties. One may be sympathetic to the view that these factors do play a role in the decision making of electors and it would be odd for rational choice theorists to ignore them. However, it is also reasonable to argue that empirical evidence for, say, an effect of duty on turnout does not add support to rational choice theory (Blais, Young, and Lapp 2000). Compliance with a sense of duty to vote may well yield utility from voting

that is not related to the outcome of the election, but this does not make it a rational choice hypothesis. Incorporation of a rational choice theory of duty is necessary for this to be the case. Otherwise the calculus becomes tautologous. If the 'expressive' component of utility is simply the set of all factors that change the general willingness to vote then the theory adds no value.

Four further points are relevant here. First, a cost is the same as a negative benefit, so any hypothesis in the C category could be negated and assigned to the D category instead. Second, together the C and D components comprise so many diverse hypothetical factors influencing turnout that to view them as a group is to mask the important and interesting differences between them. Third, there are still some predictors of turnout that may affect more than one component of the calculus. Finally, some hypotheses challenge the logic of the calculus, such as distrust of the system and party identification theory. For all these reasons it is best to consider factors outside the B and P components as separate and maybe alternative hypotheses to the rational choice model. Even if there are arguments that could classify a particular effect within a broad conception of rational choice explanation, for present purposes trying to sort out such debates is unhelpful.

If survey responses are to be believed, the majority of non-voters in Britain are those who simply had problems getting out to vote (Johnston and Pattie 1997, Swaddle and Heath 1989). Some find it difficult to find the time because of work, child care or other commitments. For this reason we expect voting to be related to economic activity. Some find it difficult to get to the polls because of health or a combination of distance and a lack of transport. In the absence of good indicators of the practical costs of voting we are likely to find that turnout is related to a combination of different socio-demographic characteristics include age, sex, marital status, housing tenure, car ownership and class. However, these may also be proxy measures for other factors too.

Political knowledge and interest are thought to be important in influencing the enthusiasm for voting, partly by reducing the costs of information gathering and decision making and maybe also by making voting a positive experience (Teixeira 1992). Those who have been living in the same place for a long time and pay attention to local news may have a keener sense of what the election means to them and the people in their area. Party campaigning can also raise turnout in this way. Campaigns should decrease the costs of voting by increasing information, awareness and even providing a reminder on the day. They also seek to convert people or increase their enthusiasm, commitment and duty to vote for the party.

There are a variety of other psychological and sociological influences that can affect turnout including political efficacy, trust in the government and politicians, and civic obligation (Sabucedo and Cramer 1991). Those with little trust in the system are likely to feel as though their vote will make little difference and that it doesn't really matter who wins the election because the system is incapable of responding or because the politicians within it are corrupt and fail to represent the wishes of the people. Part of this could impact on turnout through a low regard

for the parties and a failure to see any significant differences between them (i.e. the B term of the calculus). Part of it could also be a sense of alienation, exclusion or frustration that reduces any desire to express a preference by voting when one may exist.

The calculus of voting is clearly not a sufficient framework for a full study of turnout. The formal rational choice model is not sufficiently well developed to go beyond intuitive hypotheses regarding the effects of the strategic situation and the strength of preferences for parties. Many of the factors that could reasonably influence turnout are not best understood in terms of costs and benefits even if they can be viewed in this framework. Some potential effects on turnout seem to touch on all parts of the calculus while others, particularly distrust, seem to challenge it. This discussion of theories of non-voting suggests that the rational actor model should be considered alongside other hypotheses which have been introduced here. These will be further elaborated and tested in Sections 5 and 6.

3. Theories of Tactical Voting

Whilst the theory of tactical voting is dominated by rational choice there is no single theory. There are three main competing models: the standard intuition; the Cox model; and the Myatt model. The standard intuition consists of four hypotheses. Firstly, tactical voting should decrease with the relative strength of preference for the favourite party over the second preference party. Second, tactical voting should increase with the relative strength of preference for the second favourite party over the least preferred party. Third, people will be more likely to vote tactically the further behind their preferred party is from the second placed party. Fourth, as the competition between the top two candidates becomes closer tactical voting should be more likely.

Despite the intuitive appeal of these hypotheses, formal theories have produced different propositions. Cox (1997) claims that constituencies will tend towards two discrete equilibrium types, but does not provide any comparative statics describing where tactical voting is more or less likely. Myatt (2000a) has developed a formal model which is driven by voter uncertainty as to the distribution of party preferences in the electorate. The comparative statics from this model are similar to those of the standard intuition with the exception of the marginality hypothesis. In the Myatt model, after controlling for the effect of the distance the preferred party is behind the leading pair of candidates, the effect of marginality is in the opposite direction from what one would intuitively expect. The intuition behind Myatt's tactical incentive is derived from the observation that the only circumstance in which a voter can influence the result of an election is when there is a tie for the lead, i.e. when the voter is pivotal. People need to know who they will be pivotal between if they are to be pivotal. Therefore it is the conditional probability that different pairs of parties are tied for the lead, given that there is a tie, that becomes important. Now when the margin of victory in a constituency widens the absolute probability of a tie for the lead may decrease, but the conditional probability that, if there is a tie, it is between the

top two placed parties can actually increase. So, supporters of the third placed party have more incentive to vote tactically, because the probability that any tie for the lead involves their party has gone down.

This prediction bears out empirically. Fisher (2000) shows that tactical voting did not increase with marginality in the 1987, 1992 and 1997 elections in England. Only the Myatt model fits the pattern of tactical voting for these elections. Moreover, the model also works well after controlling for a variety of other factors outside the 'rational actor' model that could influence tactical voting, including local campaign effort, political interest, education, strength of party identification, time, anti-Conservative feelings and anti-incumbent feelings (Fisher 2001). Indeed, the variables associated with the Myatt model proved to be much better predictors than these additional variables which were very weakly associated with tactical voting if at all.

There are some hypotheses that were not tested, and several that were not tested thoroughly, in Fisher (2001) because of issues of comparability of data across the three elections. For example, the effect of political knowledge and interest was tested using educational qualifications as a proxy because the more direct survey items are not all the same for the three elections. Although campaign spending effects were studied in Fisher (2001) and found to be negligible, a canvassing effect was not tested. Voters who were canvassed by their preferred party may be less willing to vote tactically, whilst those who were canvassed by their second favourite should be more willing to switch tactically to that party. Although persuasion is not the declared aim of canvassing, the contact could encourage people to vote for the party if they are already sympathetic towards it. Also, simply by getting either tactical voters out to vote, canvassing can have the same effect. Political trust has not so far been considered as a predictor of tactical voting even though it is striking how strongly people can feel about the issue. Many people believe that tactical voting is dishonest or subversive because it involves 'lying' about which party you prefer. Such attitudes are likely to be related to political trust. Those with a healthy scepticism about how the system works may be more willing to see tactical voting as simply a sensible way to cast a vote. Finally, it is well known that there are various social and demographic characteristics that are associated with vote choice and turnout. It seems reasonable that they may also be associated with tactical voting. However, *a priori* there is no apparent reason to suspect any demographic influence except through the factors similar to those mentioned. Nonetheless, these are also examined in later analyses.

4. Data

The data for this paper are drawn from the 1997 British Election Study (BES) (Evans and Norris 1999). This is a very high quality survey taken shortly after the election. Although the level of turnout estimated by the survey responses of 82 per cent is much higher than the official turnout of 71 per cent, the difference is largely accounted for by redundancy in the electoral register and case non response bias (Swaddle and Heath 1989, Heath and Taylor 1999).

Turnout was validated by comparison with official records and there was very little misreporting of turnout. Also the effect of the turnout validation is to produce stronger relationships not different ones (Swaddle and Heath 1989). So whilst survey response bias is cause for concern, it is reasonable to suppose that the measured relationships between turnout and other variables are likely to differ in strength, rather than nature, from the truth.

This analysis is restricted to registered electors in English constituencies because tactical voting in three party competition is theoretically and practically simpler to study than in systems with more parties. Scotland and Wales both have very strong nationalist parties and therefore genuine four party competition. Although there are minor parties in England, there is essentially a three party competition since the same three parties stood at all three elections and took first, second and third places in all but a couple of constituencies (which have been excluded).

Since the question of whether or not to vote tactically is not relevant to most voters, the most dramatic restriction of the population comes with the identification of a risk population for tactical voting. Blais and Nadeau (1996) show that when there is no direct indicator of tactical voting in a survey it is helpful to isolate a, 'pool of potential tactical voters' before attempting to identify tactical voters. However, even when there is a reliable direct measure of tactical voting it is still necessary to consider what the risk population is for tactical voting. When testing theories of tactical voting one examines how the chances of voting tactically are associated with certain variables. These tests are calculated on a sample from a population about which one wishes to make inference. If that population systematically includes individuals with no chance of voting tactically this would artificially weaken or misconstrue any relationships between tactical voting and the predictor variables of interest. Similarly, if the population studied is too narrowly defined this too may change the nature of the observed relationships. To study tactical voting except with reference to the population at risk of tactical voting may result in false impressions of the processes driving tactical voting.

Since there is no indicator in the BES cross-section surveys of how voters perceive the chances of their preferred party, it is necessary to use election results to define the risk population. So, a working definition of the risk population for Duvergerian tactical voting is all those voters whose preferred party came third or lower in their constituency in the current election, the previous election or the poll adjusted election results. This definition is pragmatic rather than ideal, but it enables the analyst to compare the decision to vote tactically among people that could reasonably have voted tactically and only those people. The risk population here includes most of the voters who could reasonably have voted tactically and relatively few for whom it would be unreasonable to vote tactically.[1]

[1]Arguments for the use of a risk population and the properties of the population are discussed further in Fisher (2000).

The definition of the risk population assumes that we know the preferred party of each respondent, but there is no item in the BES which asks this directly. Instead, we define the favourite party to be the party voted for except when the vote is tactical or when the voter has a clear (unique) favourite on the strength-of-feeling scores for a party other than that voted for. The strength-of-feeling score for a party is the response coding (1 to 5) from the following question about the party.

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A. Please choose a phrase from this card to say how you feel about the
(Conservative Party/Labour Party/Liberal Democrats) ...?

   (1) Strongly in favour
   (2) In favour
   (3) Neither in favour nor against
   (4) Against
   (5) Strongly against
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For non-voters there is a serious problem with identifying the favourite party because ties on the strength-of-feeling scores are not only very common, but there is little or no additional information to identify a preference order. The favourite party can be coded arbitrarily to test hypotheses, but the consequent results are highly sensitive to the method of coding. Unfortunately, therefore, nothing can reliably be said about predictors of turnout which depend on the correct identification of the favourite party. This includes distance from contention and campaign spending by the favourite or second preference.

Tactical voting in British general elections can be measured according to the Heath-Evans technique (Heath, Curtice, Jowell, Evans, Field, and Witherspoon 1991, Evans 1994) using responses to the following question.

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B. Which one of the reasons on this card comes closest to the main reason you
voted for the party you chose?

   (1) I always vote that way
   (2) I thought it was the best party
   (3) I really preferred another party but it had no chance of winning
       in this constituency
   (4) Other (write in)
   (5) None of these/Don't know
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Tactical voters are primarily identified by response option 3 in question B, but some respondents who gave tactical reasons for their vote in option 4 were also coded as tactical. Those who gave option 3 were asked a follow up question to gauge the preferred party.

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C. Which was the party you really preferred?
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For those tactical voters who didn't answer or weren't asked question C, the preferred party was imputed from the strength-of-feeling scores. Also some adjustments to the Heath-Evans technique were made to ensure consistency between tactical voting status, vote choice and party preference order according to the strength-of-feeling sores. By definition tactical voters do not vote for their preferred party. If there was any indication that they did so, the respondent was not coded as tactical. As a result of this measurement scheme, tactical voting as a proportion of all English voters was 8.5 per cent in 1997. However, in the risk population tactical voting was at 23.6 per cent. So tactical voting is a substantial phenomenon for the population for whom it is a relevant option.

5. Predictors of Turnout and Tactical Voting

In order to compare the effects of turnout and tactical voting this section looks at the predictors of each simultaneously, rather than providing a discussion of turnout followed by tactical voting. The bivariate relationships are shown in a set of tables that present breakdowns of the probability of voting among the population of all electors and the probability of tactical voting within the risk population. The baseline frequency is shown in each case.

Table 1. Turnout and Tactical Voting by Preference Structure

	% Voting	N	% Tactical	Risk N
Relative Strength of Preference (1st over 3rd)				
0	46.1	180		
1	78.0	527		
2	84.7	680		
3	86.7	462		
4	94.9	327		
Relative Strength of Preference (1st over 2nd)				
0			42.5	150
1			17.5	275
2			12.8	79
3			3.9	12
Relative Strength of Preference (2nd over 3rd)				
0			10.3	138
1			17.5	161
2			32.3	128
3			40.6	83
4			69.8	6

Table 1 shows the relationships between various aspects of the voter's preference structure and both turnout and tactical voting. The preference structure is characterized by three relative strength of preference indicators. The relative strength of preference between two parties is

given by the difference between their strength-of-feeling scores. The scores are taken as indicators of the utilities associated with each party winning in the constituency, as employed in rational choice models. Turnout is expected to increase with the difference between the best and worst scores given for any party, i.e. the relative strength of preference for the favourite over the least preferred party. The first part of Table 1 shows that turnout is very low for those who gave the same strength-of-feeling score for all three parties, and very high for those who strongly preferred their favourite over their least favourite party.

The relationship between tactical voting and preference structure is more complicated. Tactical voting should be most common when the voter is indifferent between their preferred party and their second choice party, and also when they strongly prefer their second choice over their third choice. Thus tactical voting should be responsive to two relative strength of preference scores, that between the first and second preference and that between the second and third preference. Table 1 shows that tactical voting as a proportion of the voters in the risk population is increasing in the relative strength of preference for the favourite over the second favourite, and decreasing in the relative strength of preference for the second over the third choice party. This is intuitive and as predicted by Myatt (2000b) and Cain (1978).

TABLE 2. Turnout and Tactical Voting by Strategic Situation

	% Voting	N	% Tactical	Risk N
Margin of Victory				
0 to 10	82.2	529	27.6	127
10 to 20	83.4	633	27.1	173
20 to 30	84.6	350	19.5	105
30 plus	78.6	663	17.4	111
Dist from Contention				
-15 to 0			0.0	2
0			8.4	74
0 to 15			22.7	215
15 to 30			28.4	200
30 plus			31.9	25

The second part of most rational actor theories of both turnout and tactical voting is the response to the strategic situation. As the margin of victory in the constituency (the absolute difference in the share of the vote for the winner and second placed party) increases, turnout is expected to decline. People are more likely to vote when they see that the contest is close and there is a better chance of influencing the outcome. Table 2 suggests that this relationship is in practice very weak and inconsistent. However, as Section 6 shows, the relationship is stronger after controlling for the relative strength of preference effect in Table 1. People in marginal constituencies are more likely to be indifferent between all three major parties. So the relative strength of preference effect confounds the marginality effect.

Distance from contention is the share of the vote for the second placed party in the constituency minus the share of the vote for the preferred party. So when the distance from contention is negative the preferred party is in first place, when it is zero the preferred party is the second placed party and when it is positive the preferred party is running third or lower in the constituency. Table 2 shows that distance from contention is a very strong predictor of tactical voting in the risk population.[2] People are more likely to feel that a vote for their favourite party is wasted the further it falls behind the second placed party. Intuition also suggests that tactical voting should increase with marginality as people believe they have a greater chance of influencing the outcome. Table 2 seems to confirm this trend too, but the figures are actually driven by the strong relationship between tactical voting and distance from contention, coupled with the high correlation between marginality and distance from contention. Those in the risk population in marginal seats are more likely to have a high distance from contention. Thus, since tactical voting increases with distance from contention it also increases with marginality. Section 8 shows that after controlling for distance from contention the marginality effect negative if anything.

TABLE 3. Turnout and Tactical Voting by Party Campaign Effort

	% Voting	N	% Tactical	Risk N
Spending by Fav				
Upto 0.4			26.8	295
0.4 to 0.6			17.9	140
0.6 to 0.8			8.2	49
0.8 to 1.0			43.5	31
Spending by 2nd Pref				
Upto 0.4			8.9	73
0.4 to 0.6			23.8	98
0.6 to 0.8			17.8	108
0.8 to 1.0			30.8	236
Canvassed by Fav				
Yes	90.0	268	31.2	34
No	80.7	1908	23.1	482
Canvassed by 2nd Pref				
Yes	87.0	191	32.8	79
No	81.4	1985	21.9	437

Both turnout and tactical voting may be influenced by local party campaigns. Unfortunately Table 3 does not show the relationship between campaign spending and turnout because the coding of the favourite party is unreliable for non-voters. However, it does show that the effect of canvassing on turnout is independent of the party canvassing. This is surprising given that the aim of canvassing is to identify party supporters so as to remind and encourage them to vote on the day. Although there is a large overlap between those who were canvassed by their

[2]Note that turnout is not given as a function of distance from contention because of the unreliability of the coding of the favourite party for non-voters.

favourite and by their second preference party, this does not explain the result. Those canvassed by both the favourite and second favourite were no more likely to vote than those canvassed by their second favourite only. Rather it seems that canvassing can provide an impetus to vote for supporters of other parties.

Campaign effort at the local level may influence tactical voting as well as turnout. Parties will seek to persuade their supporters not to vote tactically for anyone else, and to persuade supporters of other parties to vote tactically for them. If this strategy works then campaign effort by the voter's favourite party will reduce tactical voting. Conversely, high levels of local campaign spending and being canvassed by the second preference party should increase tactical voting. Table 3 shows there is some evidence for a campaign spending effect of this nature, but, as with turnout, canvassing seems to increase tactical voting whichever party is doing the canvassing.[3]

Table 4 shows us that there is a strong relationship between turnout and political knowledge, interest and caring who won the election. Some of the knowledge and interest effect could be through party preferences. Certainly those with little political interest or knowledge are much less likely to feel strongly in favour or strongly against any of the main parties. This alone may account for the 'interest in politics' effect. The 'cared which party won' item is highly likely to impact on turnout via preference in this way. This kind of process probably also explains the fact that those who think there is a big difference between the Conservatives and Labour and those who think it makes as difference who is in power are more likely to vote (Heath and Taylor 1999). Whether these are anything but proxy measures for the relative strength of preference between parties is not clear.

TABLE 4. Turnout and Tactical Voting by Political Knowledge and Interest

	% Voting	N	% Tactical	Risk N
Political Knowledge Quiz				
0 or 1 right	65.8	233	11.7	32
2,3 or 4 right	78.4	921	20.6	189
5 or 6 right	88.7	1021	26.8	295
Cared which party won				
Cared a good deal	89.4	1646	26.5	403
Didn't care	58.6	520	13.8	110
Interest in Politics				
Great Deal	93.4	201	40.3	55
Quite a lot	90.1	514	25.4	163
Some	84.1	818	23.5	185
Not very much	75.4	518	12.3	96
None at all	41.1	125	2.8	16

[3]Note that campaign spending in Table 3 is expressed as a percentage of the legal maximum as is standard.

The willingness to vote tactically also depends heavily on political knowledge and interest (Table 4). Since the relationship between party preference structure and tactical voting is more complex than that with turnout, political interest and knowledge effects are less likely to operate through party preferences. Rather those who are interested and knowledgable about politics will be more likely to vote tactically because they will be more aware of the idea of tactical voting and understand the reasoning behind it.

Turnout in Britain is related to various demographic and social characteristics (Swaddle and Heath 1989, Pattie and Johnston 1998, Heath and Taylor 1999) and it would take too much space to tabulate them all (again) here. Table 5 shows the bivariate relationship between sex, age and length of residence with both turnout and tactical voting. There is a small gender gap whereby women are more likely to vote, but there is no significant difference between the sexes in the chances of tactical voting. Turnout increases with age until about age sixty when it levels out and drops slightly. There is no consistent relationship between tactical voting and age, but young voters are remarkably less likely to vote tactically. This, and the low turnout for young people, is likely to be explained by the fact that they have little interest in politics and are less likely to have distinct preferences between parties.

TABLE 5. Turnout and Tactical Voting by Demographics

	% Voting	N	% Tactical	Risk N
Sex				
Male	80.3	1083	24.2	251
Female	83.4	1093	23.0	265
Age				
18-24	68.7	198	9.1	41
25-34	74.6	427	22.5	88
35-44	80.8	447	31.2	98
45-54	85.3	398	19.4	118
55-59	91.8	131	26.9	34
60-64	88.6	159	26.0	40
65+	87.8	412	26.1	96
Years of Residence in Neighbourhood				
Up to 5	73.8	545	14.2	122
5 to 15	84.5	616	29.0	156
15 to 30	82.1	563	21.5	127
30 plus	87.6	453	28.8	110

Engagement in the community and interest in local issues is positively associated with both turnout and tactical voting. Length of residence in the neighbourhood is one indicator of this. Table 5 shows that those who have lived in the neighbourhood for 5 years or less are particularly unlikely to vote or vote tactically. Similar effects of local engagement can be seen from questions regarding attention to local newspapers and local television news.

There a few other social or demographic characteristics associated with the turnout. Heath and Taylor (1999) show that there are differences in turnout depending on economic activity.

Those in full-time education have low turnout since they are only marginally more likely to vote than other young people. Those who are unemployed of all ages are frequent non-voters, possibly because they are less interested and care less about the outcome. There is some class effect since the salariat are more likely to vote and the working class are less likely to vote than others. However, those in trade unions are marginally more likely to turnout than the average elector. Whilst this variation is interesting, many of the relationships seem to change after controlling for other variables as discussed in Section 6.

Finally in this Section, Table 6 shows that those who trust government to put the interests of the nation above party, who are satisfied with the way democracy works in Britain and who believe they have some say in government actions are more likely to vote than those who don't. Note that the relationship between trust in MPs to tell the truth and trust in Government is similar. Heath and Taylor (1999) however found that political trust does not seem to have a significant effect on turnout after controlling for strength of party identification and whether one cared about the outcome. This may be because political trust is strongly linked to dissatisfaction with and indifference to the parties. But if political trust is the cause of indifference it is clearly important.

TABLE 6. Turnout and Tactical Voting by Trust, Satisfaction in Democracy and Efficacy

	% Voting	N	% Tactical	Risk N
Trust Gov to put nation above party?				
Just about always	89.9	60	19.9	8
Most of the time	88.4	688	12.8	138
Only some of the time	80.0	1132	25.9	284
Almost never	71.6	254	33.7	83
Satisfied with way GB democracy works				
Satisfied	91.4	326	23.1	67
Fairly satisfied	82.9	1109	22.1	271
Not very satisfied	79.1	374	27.2	110
Not at all satisfied	66.5	59	49.3	18
People like me have no say in gov actions				
Agree strongly	77.4	287	26.4	69
Agree	83.1	796	30.0	197
Neither	81.0	384	15.1	87
Disagree	88.1	364	20.2	109
Disagree strongly	95.0	20	29.6	4

Satisfaction with the political system and feelings of efficacy have no systematic association with tactical voting. The latter is perhaps more surprising than the former, but then believing that you have a say in government actions is not necessarily related to believing that how you vote will make a difference to the election outcome. The latter would be more likely to have an effect on tactical voting. Political trust has a strong association with tactical voting, but as with turnout, this may be partly explained through indifference. Alternatively, distrust could

be associated with higher levels of tactical voting because it is only those who are sceptical about the behaviour of politicians who are happy to use their vote to manipulate the outcome.

This discussion of the bivariate relationships has illustrated two main points. Firstly, that the main predictor variables are often strongly associated with each other. The multivariate analyses in the following sections should help to disentangle some of the effects. Second, the determinants of turnout are very similar to the determinants of tactical voting. This is not just an interesting observation, but has important implications for the analysis of tactical voting. Since the risk population for tactical voting is a non-random sample of voters that is partly self-selected there is a risk of sample selection bias. This is discussed in Section 8.

6. Modelling Turnout

Since many of the variables discussed in the previous section are strongly associated with each other, a multivariate analysis of turnout is helpful to separate out some of the effects from each other. Table 7 gives the coefficients of a probit model for turnout. For reasons of space, parsimony and problems of multicollinearity associated with large regression models, variables with statistically insignificant association with turnout have been removed from the model. Testing was at the 10 per cent level. All the variables discussed in Section 5 and more have been tested.

Table 7. Probit Model of Turnout

	Coef.	Std. Err.	P-value
Relative Strength of Preference (1st/3rd)			
1	0.520	0.147	0.00
2	0.672	0.157	0.00
3 or 4	0.861	0.170	0.00
Margin of Victory	-0.007	0.002	0.00
Canvassed	0.169	0.095	0.08
Didn't care who won	-0.580	0.102	0.00
Disinterest in politics (5pt score)	-0.132	0.047	0.01
Political knowledge (7pt score)	0.075	0.028	0.01
Dissatisfaction with democracy (4pt score)	-0.110	0.058	0.06
Trust Gov to put nation first...			
Only some of the time	-0.293	0.085	0.00
Almost never	-0.339	0.139	0.02
Years in neighbourhood	0.008	0.003	0.00
Home owner	0.245	0.087	0.01
Female	0.244	0.086	0.00
Married	0.294	0.084	0.00
Aged 25 to 54	-0.227	0.099	0.02
Constant	0.693	0.298	0.02

N=1889, LL=-689.4

The model shows turnout is strongly associated with the relative strength of preference for the favourite over the third choice party. In particular those who gave the same strength of feeling score for all three main parties were much less likely to vote than those who showed even the smallest degree of preference. This conclusion is compounded by the finding that those who 'didn't care who won' were significantly less likely to vote even after controlling for the relative strength of preference. Also as predicted by intuitive interpretations of rational choice, those in more marginal constituencies are more likely to vote. Although the bivariate relationship between marginality and turnout was very weak in Table 2 this was because of the confounding relative strength of preference effect.

Political knowledge and interest do not simply help people distinguish more strongly between parties, but are associated with greater turnout after controlling for preference structure. Party campaign influence is witnessed in the model by a canvassing effect. Curiously. the canvassing effect is independent of the party canvassing, which implies that parties can face incentives not to canvass. Such conclusions should however be tempered by the fact that the canvassing effect is weak and the statistical significance is highly sensitive to the model specification.

Political trust and satisfaction with democracy are associated with higher turnout. The fact both are significant despite the collinearity problem shows that the effects are very strong.[4] Feelings of efficacy are much more strongly linked to political interest and knowledge than political trust. If the interest and knowledge items were excluded from the model, feelings of efficacy (having a say in government actions) would be a significant predictor of turnout. So the effect of political knowledge and interest should be interpreted with this in mind. Length of residence in the neighbourhood is positively correlated with turnout in the model in Table 7. As one would expect from Table 5, further investigation shows that the effect of time spent in the neighbourhood is particularly strong in the early years (up to five years).

Although, turnout does generally increase with age, the age effect in the model is not what one would expect it to be. Table 7 suggests that turnout is lower for those aged 25 to 54. Although young people have the lowest turnout of any age group, they are much more likely to be indifferent. After party preference structure is controlled for, the middle-aged people who look peculiar in their low turnout. Although the effect is small and it is the net effect after controlling for marital status and home ownership, it is still fairly robust. It is statistically significant even if the other socio-demographic variables are excluded from the model. Finally, as previous work has shown, married people, women and home owners are more likely to vote than their counterparts. The possible reasons for this are numerous. These variables probably reflect the failure to control some relevant factor, such as for feelings of duty attached to turnout and the practical costs of voting. Without further information it is difficult to explain the effects of the social characteristics.

[4]Note that trust in MPs to tell the truth would also be significant, but it is so highly correlated with trust in government that the model could not accommodate them both.

7. Modelling Tactical Voting

This section describes a similar analysis of tactical voting to that that of turnout in the previous section. Table 8 gives the coefficients of a probit model of tactical voting within the risk population. As with the turnout model in Table 7, variables which are not statistically significant at the 10 per cent level are excluded from the model.

Table 8. Probit Model of Tactical Voting in the Risk Population

	Coeff.	Std. Error	p-value
Relative Strength of Preference (1st/2nd)			
1	-0.660	0.147	0.00
2	-1.031	0.229	0.00
3 or 4	-1.797	0.589	0.00
Relative Strength of Preference (2nd/3rd)			
1	0.134	0.211	0.53
2	0.529	0.233	0.02
3 or 4	0.675	0.243	0.01
Distance from Contention	0.024	0.010	0.02
Margin of Victory	0.003	0.008	0.74
Spending by 2nd Preference	0.651	0.352	0.06
Canvassed by 2nd Preference	0.407	0.198	0.04
Disinterest in politics (5pt score)	-0.261	0.081	0.00
Trust Gov to put nation first...			
Only some of the time	0.603	0.186	0.00
Almost never	0.929	0.244	0.00
Watch local TV news (days per week)	-0.066	0.031	0.03
Aged 18-24	-0.799	0.346	0.02
Constant	-0.927	0.521	0.08

N=516, LL=-216.4

The most important part of the model is the set of variables associated with the standard intuition about tactical voting. Tactical voting increases with indifference between the first and second choice parties, and with the relative strength of preference for the second choice over the third choice. Tactical voting also increases with distance from contention (the share of the vote for the second placed party in the constituency minus that of the voter's favourite). Thus far the findings are in accordance with the standard intuition. But the model also shows that tactical voting does not vary with marginality after controlling for distance from contention. If anything tactical voting increases rather than decreases with the margin of victory. This is as predicted by Myatt (2000b). In fact, the distance from contention and margin of victory variables could be replaced by a theoretically derived incentive variable from Myatt (2000a) as shown in Fisher (2000). Distance from contention and the margin of victory have been used instead for ease of interpretation and analogy with the turnout model.

Tactical voting is also encouraged by local party campaigns. Those who were canvassed by their second choice parties and those who lived in constituencies where their second preference

party campaigned strongly were more likely to vote tactically. Campaigning and canvassing by the voter's favourite party did not seem to dissuade voters from strategic desertion. Interest in politics increases tactical voting as well as turnout. Political knowledge was not found to be statistically significant, but interest levels are positively correlated with political knowledge. Without interest levels in the model, political knowledge would be a significant predictor. Similarly, political trust is associated with lower levels of tactical voting, but satisfaction with democracy is not included because of collinearity.

Somewhat strangely those who paid attention to the local news on the television were less likely vote tactically. Furthermore, those who watch the local television news often are also more likely to read the local newspapers too. Local newspaper readership is also a significant predictor of tactical voting in the absence of local TV news viewing. One might have suspected that such people would be better informed about the strategic situation in the constituency, and therefore been more likely to vote tactically. One possibility is that attention to local news generates a certain commitment to the local candidate that one prefers and thus tactical voting becomes less likely.

The final term in the model shows that young people are particularly unlikely to vote tactically. Why this should be is not clear. It may be spurious correlation. Even if this is the case, it is notable that this is the only significant socio-demographic predictor of tactical voting. Whereas turnout is linked to several such variables. Whilst one can imagine why turnout is linked with certain social characteristics, it is always more satisfactory to provide more direct explanations. To this extent the models of both turnout and tactical voting have provided evidence not only for a substantial variety of different causal factors, but for a remarkably similar set of predictor variables for each. Although the relationships are not always in the same direction the fact that a number of the variables predict both turnout and tactical voting certainly shows that the two phenomenon have much in common. It also has important implications for how we view and study tactical voting, given that the decision of whether or not to vote appears to have been made tactically.

8. Modelling Tactical Voting with Sample Selection

Differential turnout is potentially a problem for all models of voting behaviour not just tactical voting studies. Since people do not choose whether or not to vote at random this can lead to sample selection bias in models of vote choice (Heckman 1979). Selection bias tends to diminish the coefficients in a regression model. The classic example of this phenomenon is the relationship between wages and age. There is a selection mechanism in the form of a reservation wage; people will not work below a certain wage. Wages tend to increase with age and those who cannot command the reservation wage tend to be young. Since the lower skilled young

people are disproportionately unemployed and so not observed, the OLS estimate of the wage-age regression line is not as steep as it should be. The fewer people selected into the observed sample the greater the problem is likely to be (Groseclose and Milyo 2001).

A solution to the selection bias problem for linear regression was proposed by Heckman (1979) and has since been extended for binary logit and probit models (Dubin and Rivers 1989, Van De Ven and Van Praag 1981). Whilst the method is a standard procedure in the econometrics literature, it is also well known to be highly sensitive to the assumption that the residuals are normally distributed (Greene 2000). Even though it cannot be relied on to provide definitive answers, it does still provide an important check, especially given the lack of established alternatives. The essence of the approach is that the selection mechanism and the outcome of interest are modelled simultaneously. This approach has been used before to study voting behaviour. Timpone (1998) considers factors affecting turnout in a two stage model with voter registration as the selection mechanism and then turnout is modelled for registered voters. This method helped to separate out two very different processes contributing to overall turnout. Dubin and Rivers (1989) modelled voting choice in a Presidential election with a selection model for turnout. Although they did find statistical evidence for selection bias, it made no difference to the substantive conclusions. However, given that both turnout and tactical voting are clearly products of similar strategic considerations, one would expect selection bias to be considerable in this case.

Unfortunately, there is a practical problem with estimating the effect of selection into the risk population. Any serious model of recruitment into the risk population must include distance from contention. But if this is done then distance from contention ceases to be significant in the model for tactical voting. The Heckman approach makes sample selection bias equivalent to an omitted variable bias. The omitted variable is derived from the selection model and reflects the probability of selection. Since the selection model for the risk population is dominated by distance from contention the 'omitted variable' in tactical voting model is highly correlated with distance from contention. In fact the correlation coefficient is 0.9. Thus distance from contention in the Heckman model fails to be a statistically significant predictor of tactical voting, not because of sample selection bias, but because of multicollinearity. Although conclusions regarding the other variables in Table 8 are largely unchanged, it is clearly unsatisfactory to produce an analysis in which distance from contention is not a significant predictor. In order to test for selection bias properly it is necessary to produce a model of selection which is sufficiently independent of the explanatory variables in the main part of the model. This is not possible when distance from contention is critical to understanding both the membership of the risk population and tactical voting within it.

Even though the main form of censoring associated with the risk population comes with choosing only third or lower placed party supporters, turnout among the third party supporters may still be an important source of self-selection and thus selection bias. This question can be dealt

with more successfully using Heckman style methodology. Table 9 gives the coefficients of a probit model of tactical voting with sample selection, computed using the `heckprob` routine in Stata. This routine estimates a Heckman model for a binary dependent variable with sample selection using the estimating equations described by Van De Ven and Van Praag (1981). The sample selection model of turnout is precisely that in Table 7. The parameter estimates of the turnout part of the model are different from those shown in Table 7 because the population base is different. However, since they are not of particular interest they are not reported. The correlation between the residuals of the turnout and tactical voting parts of the overall model is statistically significant at the 10 per cent level. This suggests that there may well be sample selection bias as a result of differential turnout within the population of third placed party supporters. The fact that the correlation is negative means that the level of tactical voting we observe among voters is lower that it would be if everyone had voted. So it seems that potential tactical voters are more likely to select not to vote than potential sincere voters.

TABLE 9. Probit Model of Tactical Voting with Sample Selection for Turnout among Third or Lower Placed Party Supporters

	Coef.	Std. Err.	p-value
Relative Strength of Preference (1st/2nd)			
1	-0.717	0.145	0.00
2	-1.008	0.216	0.00
3 or 4	-1.832	0.577	0.00
Relative Strength of Preference (2nd/3rd)			
1	0.080	0.213	0.71
2	0.230	0.268	0.39
3 or 4	0.626	0.275	0.02
Distance from Contention	0.024	0.010	0.02
Margin of Victory	0.006	0.008	0.46
Spending by 2nd preference	0.703	0.343	0.04
Canvassed by 2nd preference	0.462	0.209	0.03
Disinterest in politics (5pt score)	-0.135	0.094	0.15
Trust Gov to put nation first...			
Only some of the time	0.724	0.183	0.00
Almost never	1.017	0.251	0.00
Watch local TV news (days per week)	-0.066	0.031	0.03
Aged 18-24	-0.698	0.370	0.06
Constant	-1.092	0.454	0.02
Correlation between residuals of outcome and selection models	-0.578	0.241	0.07

N=645, LL=-463.1

The tactical voting model is precisely that in Table 8 in order to compare the coefficients between the two tables. In fact the coefficients, standard errors and p-values are very similar and the substantive conclusions are almost exactly the same. The one major difference is the interest in politics variable which has clearly ceased to be significant when previously it was

highly significant. By and large the conclusion must be that sample selection bias as a result of tactical turnout among third placed party supporters seems to have little effect on the analysis of tactical voting.

9. Conclusion

The similarities between the models of turnout and tactical voting are impressive. Both depend on the relative strength of preferences voters have between parties. Turnout increases with the strength of preference for the favourite over the least preferred party. Tactical voting increases with indifference between the first and second preference and with the strength of preference for the second over the third choice. Both are sensitive to the strategic situation. Turnout increases with marginality. Tactical voting increases with distance from contention. Both are influenced by local campaign effort. Turnout is higher for those who were canvassed. Tactical voting in higher for those who were canvassed by their second preference party and when that party campaigns strongly. Both turnout and tactical voting depend on political knowledge and interest, although these are more important predictors of turnout than tactical voting. Both depend on political trust. Distrust in government and dissatisfaction with the democratic system increases tactical voting and non-voting.

There are some explanatory factors that turnout and tactical voting do not have in common. Turnout is higher among women, married people, home owners and those who have been living the neighbourhood for a long time. Surprisingly, after controlling for the factors already mentioned, those who are middle aged (25-54) are less likely to vote than those who are younger or older. This is partly because the low turnout of young people can be explained through their indifference, disinterest and distrust of politics. Why young people should be less likely to vote tactically after controlling for these things is not clear. Also, it is slightly surprising to find that attention to local news decreases the chances of tactical voting, but then this may be due to candidate orientation.

Given these findings, there are two senses in which we could say that there was tactical non-voting in England at the 1997 general election. The first is that the core of the Riker and Ordeshook (1968) calculus seems to work. People are sensitive to the constituency marginality and to how much they care about the parties in deciding whether or not to vote. But, secondly, going beyond simple rational actor models, the determinants of turnout overlap so much with those for tactical voting that it is tempting to argue that they share something else in common. Just as tactical voting is prompted by party campaigning and dependent on political knowledge, interest and scepticism, so it is with turnout. These are factors that impact on behaviour at a level above preferences. The fact that turnout and tactical voting decisions can both be analysed as if the party preferences are fixed makes them special. It at least separates them from the mainstay of voting behaviour literature which attempts to define why people prefer one party to another.

The extent to which turnout and tactical voting are indeed one step removed from the processes influencing party preferences is an empirical matter. The importance of socio-demographic factors in explaining turnout suggests that there are further social processes that have yet to be explained. To this end, additional survey questions on the sense of a duty to vote and the costs of voting, such as those in Blais, Young, and Lapp (2000), would be helpful. It has also been unfortunate not to be able to adequately identify the preferred party for non-voters. This meant it was impossible to test the hypothesis that turnout decreased with distance from contention. If this is what happens there are interesting implications for the understanding of Duverger's psychological effect (Duverger 1954). It may be that third parties are deserted not only by voters switching to other parties but also by strategic non-voting.

Further investigation suggests this may well be the case. If turnout is higher in marginal constituencies because the chances of influencing the result is higher, then turnout among third party supporters should be lower on the basis of the same 'wasted vote' intuition too. Among third party supporters the Heckman model estimated that those predicted to vote tactically were more likely not to vote than those predicted to vote sincerely. Again this reinforces the idea of non-voting as a direct alternative to tactical voting.

Setting this study in a cross-national and longitudinal context should help answer more general questions about the rise of critical citizenship (Norris 1999). The findings here depend crucially on the logic of the simple plurality electoral system, both for turnout and tactical voting. So it is difficult to make many international comparisons. Within the UK we note that turnout dropped from 77.9 per cent in 1992, to 71.6 per cent in 1997 and again to 59.4 per cent in 2001, it's lowest level since 1918. Models of turnout across time suggest that low turnout occurs when the election is a foregone conclusion and when the voters see little difference between the main parties (Heath and Taylor 1999). These conditions certainly held in 2001. The results here suggest that interest in politics and political trust are also important, but whether they can explain the massive drop in turnout remains to be seen.

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