Splitting the tactical vote? Coordination problems with polling model-driven tactical voting websites

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The December 2019 General Election was widely billed as ‘the Brexit election’. According to Boris Johnson, it offered an opportunity to ‘get Brexit done’ by electing a parliament that would pass the revised withdrawal agreement negotiated with the European Union (EU) in October. For opponents of Brexit, it was the last chance to stymie the process, most likely via a second referendum.

For voters wanting to cast their ballot to ensure that the UK leaves the EU, the decision was relatively simple – vote Conservative. The main alternative, Nigel Farage’s Brexit Party, stood down its candidates in all Conservative-held seats, effectively signalling to Leave voters that Boris Johnson’s party should get their support. This message was made explicit a week before polling day by four Brexit Party MEPs, who abandoned the organisation they had joined only months earlier and urged voters to back the Conservatives. The Brexit Party’s poor showing in national opinion polls during the general election campaign, averaging around 5%, also reinforced the perception that they stood little chance of securing any seats. In the end, Farage concentrated his campaigning efforts in a few dozen seats where the Conservatives had little realistic chance of effectively challenging Labour.

For voters who wished to use their ballot as effectively as possible to achieve the opposite outcome, the picture was rather more complex. Labour promised to renegotiate the withdrawal agreement with the EU and then put it to a referendum, without committing themselves to

campaign either for Leave or Remain in that subsequent poll. The Greens, Liberal Democrats, Plaid Cymru and the SNP committed themselves strongly to the Remain cause, all four advocating a further referendum (or 'People's Vote') on EU membership in which they would campaign to Remain. The Liberal Democrats also said that in the (unlikely) event of them forming a majority government, they would stop Brexit immediately by revoking Article 50.

In 60 seats across England and Wales, the Green Party, Liberal Democrats, and Plaid Cymru formed an electoral pact to put forward one candidate between them, in an initiative billed 'Unite to Remain'. However, with Labour not participating in this scheme, even in those seats pro-Remain voters faced a choice between at least two parties who favoured a second referendum. Elsewhere, voters wishing to express their discontent with Brexit found three or more plausible options on the ballot paper.

For those wanting to vote tactically against Brexit (which at this election effectively meant against the Conservative Party) the question therefore became one of who to tactically vote for. This is essentially a coordination problem: in addition to choosing the right someone to vote tactically for (choosing the 'best' candidate by acceptability and electability), voters had to choose the same someone as other like-minded voters in their constituency to maximise impact. To assist voters in making these decisions, recent years have witnessed a new drive for tactical voting advice websites. In the 2019 election, two of these were based on MRP (Multi-level Regression with Poststratification) models projecting constituency-level results using national polling data. These intended to increase the impact of tactical voting, and thereby stop Brexit.

In this article we look at tactical voting as a coordination game, and argue that these new polling model-based sites could be counter-productive. Although helping to identify the strongest candidate based on constituency demographics, these websites also rely on voters to engage

with, and trust, the models to the exclusion of other tactical voting signals such as previous election performance. That trust is made more difficult as MRP models are complex, difficult to understand for non-psephologists, and sensitive to the modelling choices made by their creators, which may not be either disclosed or in line with the intentions of those voters using the sites. We argue that by sending mixed signals, the emergence of tactical voting websites risks muddying the waters further for electors seeking to vote tactically, potentially splitting the tactical vote rather than unifying it.

We first briefly set out the history of tactical voting in British general elections, then offer an introduction to coordination games and the strengths and weaknesses of MRP modelling, before discussing the coordination problems and practical challenges of using polling models to drive tactical voting. We illustrate these issues as they played out in three constituencies in the 2019 general election: York Outer, Finchley and Golders Green, and Kensington.

Tactical voting in British general elections

Tactical or strategic voting is a long-standing feature of general elections in the UK, where the single member plurality system tends to favour two-party competition. If a voter believes that their preferred candidate (or party) has little chance of victory in their constituency, they may instead choose to vote tactically for an alternative. Most commonly, this has occurred as an anti-Conservative phenomenon involving switching between supporters of other parties, particularly (but not exclusively) Labour and the Liberal Democrats. Psephologists have found consistent evidence over several decades of ‘a marked willingness amongst both Labour and Liberal Democrat voters to vote tactically’ against Conservative candidates.[1] This pattern persisted even in 2015, after the Liberal Democrats had spent five years in coalition with the Conservatives, and was ‘crucial’ in two seats (Kingston & Surbiton, and Eastbourne) recaptured

by the smaller party from their former governing partners in 2017.[2] The extent to which tactical voting occurs is disputed, but there is little doubt that for some proportion of voters, particularly in marginal seats, it is an important consideration. Direct measures of tactical voting in the British Election Survey suggest that around one in ten voters engage in the practice.[3] Declining partisan attachment, and greater voter volatility, make calculations regarding tactical voting all the more important. According to the British Election Study, 'in terms of individual vote switching, the 2015 and 2017 general elections were the most volatile we have seen in modern times' with only half of voters sticking with the same party in 2010, 2015 and 2017.[4] In advance of the 2019 general election, one poll suggested that almost a quarter of voters were planning to vote tactically.[5]

Having decided to vote tactically, the question then becomes which candidate to vote for. In other words, a voter must identify how to cast their ballot to best achieve their desired objective. If a voter has decided to cast their ballot strategically, we can reasonably assume that they will try to make an assessment of the nature of party competition in their particular constituency. However, in doing so, there are a number of possible sources of information voters might draw upon.

Firstly, they might look at national opinion polls, and/or the coverage of such polls in the media, to get a sense of which party (if any) appears to have momentum in the form of rising support going into the election. Secondly, they might be persuaded by local campaigning that, for example, candidate X is best placed to defeat the incumbent. At British elections the Liberal Democrats are notorious for their creative use of graphs in campaign material, which are used to depict themselves as the main challenger to the sitting Conservative or Labour MP, even in cases where the previous general election had the party in a distant third place.[6] Thirdly, voters might look to constituency-based opinion polls to provide them with an accurate snapshot of the

sentiment of their local electorate, but due to the cost and issues of sample size there is relatively little of this in the UK, although particular battleground seats which capture the interest of media outlets are intermittently polled. Fourthly, voters might look simply at the constituency result of the previous general election, and support whichever of the top two candidates they most prefer (or least dislike). Fifthly, voters might take their cue from voting guides. In the UK, there is a well-established tradition of newspapers publishing seat-by-seat guides at election time. In 1997, for example, the left-leaning Independent published a list of seats where the Liberal Democrats were best placed to challenge the Conservatives, which purported to take account of boundary changes since the last election, and a second list of seats where Labour were a close third – leaving their readers to decide for themselves 'whether Labour's national advance will sweep them from third place'.[7] The recent trend for MRP-based tactical voting websites can thus be seen as a much more sophisticated addition to this practice of issuing tactical-voting advice, now coupled with the imprimatur of truth offered by complex statistics.

Which of these factors is most influential is a matter of academic dispute. In their analysis of the 2010 election, for example, Muller and Page found that rather than relying on past election results or media voting guides, tactical voters 'seem to form their expectations based on a national swing in vote shares'[8] – that is a uniform swing assumption. Other studies of tactical voting have been premised on investigating shifts in support to the party that finished second locally at the previous general election. Blais and Bodet, for example, suggest that the basis of voters' assessments of local chances is the outcome of the previous election in the local constituency, whereas their expectations of the overall national result are shaped by opinion polls.[9] Alvarez et al. find that voters are significantly more likely to vote strategically if their first choice of party (in a three-party race) 'was expected to run last based on the results of the previous election'.[10] Analysing the 2010 UK general election, Johnston and Pattie reached a similar conclusion.[11] It's clear then that tactical voting advice websites are competing in a

somewhat crowded field to become an important cue for how tactical voters choose to cast their ballot. The rationale for such websites is that they help voters cut through this information to find the most effective use of their vote. Whether this is actually the case is analysed in the next section.

Coordination games and tactical voting

Coordination games, in economics, model attempts by two or more people to choose a mutually acceptable outcome, often without the ability to communicate. In Thomas Schelling's classic example, two strangers need to meet up in New York City on a particular day. Each gets one chance to choose the 'right' place and time: how can they maximise their chances of meeting? Schelling discovered that there was enough tacit knowledge in his survey group to converge on a prominent 'focal point', knowing that the stranger is trying to do the same. Forced to choose a spot, participants disproportionately chose under the clock in Grand Central Terminal (the common 'default' meeting place in the most prominent of the railway stations, which were, at the time, the key means to get to New York City). Likewise, the most popular time choice was noon. In this case, there is no particular benefit to meeting in one place or another, but the participants need to choose the same spot (without communicating) or they will not meet and thus 'lose' the game.[12]

We see tactical voting as an example of a coordination problem. Assume that, like Schelling's participants, tactical voters wish to coordinate with each other to achieve a common outcome, but individual voters have no reliable way of actively communicating with each other; they must rely on their tacit understandings and on messages from third parties to decide. If half the tactical voters vote Labour in a given constituency and half Liberal Democrat, the tactical vote is split and wasted. If all can agree on one candidate or the other, then their electoral power is

maximised.

Tactical voting is not a pure coordination game, though: it does still matter which candidate is chosen as the tactical voters are not the only people choosing. If tactical voters coalesce around a candidate with zero support in the rest of the population, they will lose even if they are well-coordinated. So not only should they try to choose a single candidate, but they should try to choose the one with the best chance given wider voting patterns. We see the introduction of polling-model driven tactical voting websites as potentially helping to identify the candidate with the best outside chance, but also as being disruptive to the existing focal points for tactical voting. We suggest that the overall result of the intervention is likely to be negative.

Polling models and MRP

The traditional way of predicting constituency-level polling results in Britain uses the so-called Uniform National Swing (UNS) model. Essentially, this takes the previous election as a baseline, and assumes that changes in (national-level) polling results will affect the whole country evenly. Although a crude model (we know very well that parts of the country are different and a 5% swing to the Conservatives will not add 5% everywhere) it has been reasonably successful. Crucially, its assumptions are also fairly transparent. If Labour was second and the Lib Dems third last time, and there is negligible swing between the two main non-Conservative parties, then Labour are also expected to be second this time. In that sense, UNS predictions are built on the last election, and the voting signals they give are likely to be concordant with the default decision to vote for whoever came second last time.

In the 2017 election in particular, more sophisticated MRP models seemed to make a better job of predicting the complex changes in results that were seen. These take results from a

reasonably large national survey, often using an online panel, then estimate voting patterns by fitting a multilevel regression model. A sophisticated model can be built by coupling knowledge of the survey respondents' demographics and location, with the estimation of a fairly large set of both individual and constituency-level variables (for example age, sex, education level and reported 2017 vote might be individual-level variables, and the constituency's 2017 Conservative vote and local unemployment rate could be constituency-level ones). The final part of the process uses a poststratification frame, which estimates the number of voters in each constituency falling into each individual-level demographic category (for example, 18-25 year old women with GCSE-level qualifications). This allows constituency-level voting predictions to be made including the individual-level variables, despite the small number of individual survey respondents in any given constituency.[13] For example, if a poll suggested that 18-25 year old women with GCSE-level qualifications were increasingly likely to vote Labour, seats with many such young people will generally see Labour vote share estimates increase.

MRP is a technique and not a model: different models can be (and are) put together using different combinations of demographic variables for poststratification, as well as different constituency-level regression specifications and different underlying polling data; for accurate results, the demographic variables chosen to model constituencies have to be correctly specified. Where UNS is simple (essentially last time + national swing) MRP has hundreds of choices for the analyst which make the models more varied and more contestable. This is not a trivial concern: of the three MRP models publicly presented during the 2017 campaign, YouGov's central estimate was of 304 Conservative seats, Lord Ashcroft's of 355, and Chris Hanretty's of 367 (the actual result was 317). The distance between just the central estimates of the different models was the difference between a hung parliament and a comfortable Conservative majority (and the confidence intervals either side of these estimates broader still).

Two prominent tactical voting advice websites for the 2019 election adopted MRP models as the basis of their voting recommendations: Best for Britain's website getvoting.org, which was especially prominent in the early part of the campaign as a result of its unexpected recommendations of Liberal Democrats in seats where Labour would traditionally be favoured, and Remain United's site remainunited.org. Some other sites relied on traditional signals, or (like Jon Worth[14]) provided a meta-analysis of other sites' advice. An initial post-election analysis by Chris Hanretty suggests that these websites, especially getvoting.org, did in fact have an effect of encouraging voting for their selected candidates which was both statistically and practically significant.[15]

This paper is not an empirical analysis of the accuracy of the advice given. We assume that well-constructed MRP models give a better estimate of which non-Conservative party is strongest in a given constituency than either traditional UNS models or the heuristic of relying on the last election. This does not, however, solve the coordination problem that bedevils tactical voting. There are also intrinsic practical issues with relying on tactical voting websites which potentially limit their value, even leaving aside the coordination issues. We identify two main issues, and discuss them in the context of three illustrative constituencies, below.

Coordination problems and practical challenges

Until recently, choosing the 'best' candidate to vote tactically for has normally been quite easy: look at the last election to see who finished second (or first) and choose them, especially if they were second by a clear margin. This is the explicit approach chosen by voters relying on the results last time. It is also the implicit base of a UNS strategy, especially if the relative national strengths of the voter's preferred parties are similar to the last election: swings to or from the party the voter is trying to exclude will not affect which preferred candidate is best placed. It is

also the implicit base of newspaper tactical voting guides, generally constructed using previous election results or UNS.

Although parties sometimes advocate for other approaches (the Liberal Democrats' election leaflet graphs mentioned earlier will creatively use the most recent European or local election results if they are more helpful to the party), treating likely party strength as a function of the previous election result is significantly the most prominent strategy suggested. Now we have MRP methods to impute individual constituency predictions which are relatively uncoupled from the last election result, we have two competing possibilities: whoever did best last time, or whoever the model says is 'best placed'. For tactical voters, this poses both an increased coordination problem and new practical challenges.

Firstly, the existence of multiple signals and heuristics makes the coordination problem much harder. To go back to Schelling's problem of strangers meeting in New York, coordination is maximised by the shared tacit understanding around the default focal point (the clock in Grand Central Terminal). If in addition to that knowledge several websites existed to 'help coordinate stranger meetups in New York', but one of them advocated the Empire State Building foyer, a second suggested their own restaurant (conveniently located near the bull statue on Wall Street), and a third offered a bespoke service predicting where your stranger is most likely to be using an opaque machine learning model and the stranger's demographic details, the result would be confusion, not clarity, and a likely reduction in the number of successful matches. Assuming that all of a given tactical voting website's recommendations are actually correct (they are indeed the most electable suitable candidates if everyone follows the recommendations), then a substantial proportion of voters are still going to be following other signals such as who came second last time. Indeed in 2019, data from the British Election Study found that almost half of voters in marginal seats could correctly identify the two strongest parties in their seat at

the previous election, while only 6 percent of voters had made use of tactical voting websites.[16]

In fact, the situation with MRP model-driven advice websites is likely to be worse than this. The entire value of MRP models in this context is to offer counter-intuitive recommendations: if the preferred tactical voting candidate from an MRP model is the same as would have been predicted by the previous election result or a UNS model, then it adds complexity without adding value. But the more that model's outcomes vary from the existing focal point, the less likely they are to be the choice of those using different signals to select, and the less likely the MRP model's recommendation is to 'clear the field' in favour of the selected candidate. And the failure to get behind one candidate kills the theoretical value of tactical voting.

Secondly, there are a series of practical challenges. One is that the heuristic of relying on tactical voting websites is vulnerable to strategic action by partisans. A competent operator not held to academic standards of model transparency can make a plausible model to favour whichever party she likes, so the end state is likely multiple models, many of which are straightforwardly strategically partisan (which could affect the 'right' candidate element of the problem) but have the dubious imprimatur of statistics. As MRP is a technique rather than a single model, it is intrinsic that there will be variation between recommendations from different models, and this can be exploited to add confusion or push votes in a particular direction. This is more than a theoretical worry: Best for Britain were accused of this in 2019 because of the high number of Lib Dem recommendations in their initial model, even in places where the Lib Dems were a distant third in 2017. Perhaps more worryingly, there are also allegations that local Liberal Democrats did just this in some parts of the country, using bespoke projections from the non-British Polling Council member Flavible to make misleading claims about the state of the race in constituencies such as Oxford East.[17]

Thirdly, MRP models represent the state of the race at the time they are made, and should change with updated polling as the campaign continues. This was the case in 2019, where the projections in many constituencies were updated as the Liberal Democrat and Brexit Party votes were squeezed during the campaign. Unfortunately, this makes the early models somewhat problematic. They potentially offer a steer in allowing parties to choose where to invest their time, and potentially offer guidance for early postal votes. But it's also likely to be impossible, in practical terms, to entirely undo the influence of the initial recommendation if it turns out not to represent the best advice by polling day. This may have been a factor in the Conservative victory in Kensington, discussed below.

Finally, another potential problem for would-be tactical voters interested in seeking guidance is the existence of multiple MRPs with, at times, competing recommendations. As an illustration of the difficulties of coordinating the tactical vote using polling models we can look at three constituencies offering different challenges for the tactical voting website: York Outer, Finchley & Golders Green, and Kensington. Each was confidently predicted in favour of different candidates by different tactical voter sites and illustrate the limits of modelling in different ways.

Some constituency examples

York Outer is one of two constituencies covering the City of York and environs. Unusually, the constituencies here are drawn as a doughnut: York Central covers the central areas of the city (and is a fairly safe Labour seat) while York Outer completely surrounds it, covering York's outer suburbs and surrounding villages (and is Conservative). The demographics in York Outer were very friendly for the Lib Dems at the 2019 election, and so MRP models can be constructed which are extremely bullish on Lib Dem chances despite their poor performance in 2017. Reflecting this, the October 2019 Best for Britain recommendation was to vote Liberal

Democrat, but this was then changed to Labour the following month. By December, the five main tactical voting websites were in agreement that Labour was the best option for anti-Brexit voters in York Outer. Anti-Brexit voters in the constituency who looked to the 2017 result for guidance would also have concluded that Labour (who received 37% last time) were a better bet than the Liberal Democrats (who received 10%). Jon Worth's tactical voting guide, which had initially not found it possible to make a recommendation, then backed the Liberal Democrats, and finally switched to Labour, to avoid 'extra confusion'. Of course, it is unlikely that more than a small fraction of York Outer voters will have been following the competing MRP models through their various iterations. However, they ultimately added little but potential confusion to the mix. Although treated as a potential target and worked hard by the Lib Dems, the seat was a comfortable Conservative hold with Labour remaining second (Con 49%, Lab 31%, Lib Dem 18%).

In Finchley & Golders Green, by contrast, the demographics and 2017 results were more favourable to Labour, but there were specific local circumstances (the ongoing Labour antisemitism row, a high proportion of Jewish voters, and the presence of Jewish ex-Labour Lib Dem candidate Luciana Berger) which suggested that the Lib Dems could do much better than predicted. These idiosyncratic local effects are recognised as being particularly difficult to model using MRP techniques.[18] As one of the seats in the Unite to Remain initiative, the Green Party also stood aside in Finchley and Golders Green. For anti-Brexit voters in this constituency, three of the five main tactical voting websites recommended backing the Liberal Democrats, while two were unable to reach a conclusion. However, tactical voters looking to the 2017 result, which saw Labour (44%) run a close second behind the Conservatives (47%) would have been unlikely to conclude that the Liberal Democrats (7%) were the most plausible anti-Brexit option. Further complexity was added to the mix by a series of constituency-level opinion polls. One in October had the Liberal Democrats in first place, others had the Conservatives with a

comfortable lead, and data analysis from Remain United in November had Labour in second place just 7 percent behind the Conservatives. On the basis of this and other MRP analysis published close to the election, the Labour candidate presented the battle as a two horse race between himself and the Conservatives,[19] a scenario not played out on polling day when the Liberal Democrat advanced to second place but fell significantly short of victory (Con 43%, Lib Dem 32%, Lab 24%). In short, voters in Finchley and Golders Green searching for tactical voting advice were as likely to be confused as enlightened by what they discovered.

Kensington was an especially unusual case in that it was represented in the 2017 Parliament by a Labour MP (Emma Dent Coad) but the initial getvoting.org advice was to vote for the ex-Conservative Liberal Democrat Sam Gyimah, even though the Lib Dems came in a distant third in 2017 (Lab 42%, Con 42%, Lib Dem 12%). This recommendation was immediately controversial and was held up as part of the evidence that Best for Britain were biased towards the Lib Dems; the seat was one of those which was later switched back to Labour as a result of tightening polling. The final result in the constituency was a Conservative gain, with a margin over Labour of 150 votes; although the Lib Dems made a significant improvement, they were still a clear third (Con 38%, Lab 38%, Lib Dem 21%). We do not know to what extent the initial Lib Dem recommendation made a difference, either by directly influencing votes or by altering the distribution of parties' campaigning resources, but whatever influence it did have was positively harmful to its professed anti-Brexit ambitions: it failed to clear the field for the Liberal Democrat and it may have diverted votes to him at the expense of the Labour incumbent.

These are edge cases. But tactical voting is all about handling the edge cases. And Jon Worth's analysis suggests that there were 125 of 632 seats in England and Wales which differ between the four tactical voting sites he analysed, of which there are '39 of the 632 seats where a judgment as to how to vote tactically is unusual, complicated or even close to impossible'.

These include Finchley & Golders Green, where he ended up recommending Berger, and York Outer where he 'simply cannot draw a conclusion, and need[ed] more data'.[20]

Conclusion

The particular circumstances of the 2019 'Brexit' general election led to burgeoning interest in both strategic voting and the use of MRP-based models for assisting tactical voters in making their decisions. In this article, we have not attempted to assess the merits of the competing models. The triumph of the YouGov MRP poll in successfully calling the result of the 2017 general election as a hung parliament, when virtually every other poll suggested the Conservatives were on course for a majority, greatly enhanced the reputation of the technique and was widely cited in 2019, not least by the tactical voting websites that utilised it. While this neglects the fact that other MRP models were rather less successful in predicting the 2017 result, it does not alter the fact that at least in attempting to model for the characteristics of individual constituencies the technique does offer a methodologically robust way of trying to understand how a general election might play out at a local level, and therefore of how to best vote tactically. Our central argument, however, is that even if you believe a model (or models) to be statistically rigorous and accurate, you should be very cautious in using or advocating their use for tactical voting coordination. In fact, rather than effectively marshalling the strategic vote, tactical voting websites are more likely to divide it.

The likelihood that tactical voting websites will split the tactical vote derives from the fact that tactical voting is a coordination problem. To be effective, tactical voting relies on voters backing the same candidate to defeat their common adversary. However, lacking an effective means to communicate with potentially thousands of other tactical voters, they must rely on their tacit understandings and signals from third parties. Tactical voting websites insert themselves into

this space on the promise of offering the most effective means of coordination, particularly in the age of social media. However, in practice there are multiple competing models and websites, and other key sources of information to voters. Most importantly, while only a small minority of voters utilise tactical voting websites, many tactical voters look to the previous election result as a guide. So tactical voting websites are on the horns of a dilemma. If the results of a sophisticated statistical model are surprising, it potentially hurts coordination (and therefore reduces the value of tactical voting). But if they aren't, their use adds nothing to the existing heuristics but still enables and incentivises unscrupulous partisans to strategically create biased tactical voting websites in the future. In short, the emergence of these websites risks muddying the waters further for electors seeking to vote tactically, potentially splitting the tactical vote rather than unifying it.

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