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Polarization, Partisan Preferences and Strategic Voting

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Abstract

In this article, we study how polarization affects the propensity of supporters of non-viable parties to cast a strategic vote. To do so, we rely on Canadian election panel surveys from the Making Electoral Democracy Work project that were specifically designed to identify strategic voting. We find that the polarization between viable parties increases the probability of a supporter of a non-viable party casting a strategic vote, because it increases how much she likes her favourite viable party, and decreases how much she dislikes her least favourite viable party. Polarization thus increases strategic voting because it alters partisan preferences.

Keywords: strategic voting; polarization; tactical voting; partisanship; voting behaviour; Canadian politics

Voters do not always vote for their most preferred party. Sometimes, they decide to vote for their second or even third choice to increase their probability of affecting the electoral outcome. This behaviour is called strategic voting because the voters reflect on the behaviour of others when casting their vote.[1] Strategic voting is at the heart of Maurice Duverger's (1954) and Gary Cox's (1997) theories on the impact of plurality rule on the number of parties. In elections organized under plurality rule, there are incentives for voters to not vote for their most preferred party if they anticipate that this party has little chance of winning in their district. Hence, voters might cast a vote in favour of a party that has some chance of winning, or more precisely the one that they prefer between those that are viable, as their vote could potentially make the difference between which of these wins. In turn, strategic voting, and the anticipation of this behaviour by parties, reduces the number of parties (Bol et al. 2018a).

It is important to study strategic voting for normative and empirical reasons. First, from a normative perspective, a non-strategic vote, sometimes called a sincere vote, is often seen as a democratic fundamental (Gibbard 1973; Satterthwaite 1975). In an ideal democracy, all voters should vote for their preferred party so that

the electoral outcome is perfectly representative of their political preferences. Second, still from a normative perspective, if only a subset of the electorate votes strategically, this creates inequalities in representation. Strategic voters are 'better represented' in the final electoral outcome because they make their votes count (Eggers and Vivyan 2018). Third, from an empirical perspective, it is important to study strategic voting because it can substantially affect the overall score of parties by up to 10 percentage points. This has happened in the UK (Heemin and Fording 2001), France (Pons and Tricaud 2018), Canada (Gidengil et al. 2012) and the US (Burden 2005).

Party polarization has generated growing interest among political scientists. Polarization refers to the ideological positions parties take in the ideological space, and the distance between these positions. Simply put, a polarized party system is a system where parties take very different positions in the ideological space (Dalton 2008; Sigelman and Yough 1978). The growing academic interest in polarization is partly due to the growing polarization in the US. Matthew Gentzkow (2016) shows that from the 1970s to the 2000s, the proportion of books analysing polarization has tripled. Polarization is a relevant topic to study strategic voting because of its consequences for the vote. Richard Lau and David Redlawsk (1997) show that it is easier for voters to identify the party for which they should naturally vote considering their political evaluations and aspirations when the election is heavily polarized. In this article, we aim to contribute to this literature by showing that polarization also affects the probability of voters casting a strategic vote. What is more, whereas the literature on polarization tends to focus on the US, our work studies another party system, Canada. It therefore extends the literature to a different context, and in particular to a multiparty system where there are strong incentives for voters to cast a strategic vote.

We are not aware of any study that evaluates the effect of polarization on strategic voting. In this article, we develop the implications of polarization for supporters of non-viable parties for partisan preferences, and explain how it should, in theory, affect strategic voting. We then test these implications using Making Electoral Democracy Work survey data (Stephenson et al. 2017) from three Canadian federal and provincial elections. The survey was specifically designed to identify strategic voting. We measure party polarization at the election level (variations come from changes in the parties that are viable at the district level), and the implications of the theory at the individual level. Our article contributes to the literature on strategic voting by shedding light on an important determinant of this behaviour. It also contributes to the literature on party polarization by showing how it affects the voting behaviour of non-viable parties' supporters.

Polarization and strategic voting

In this article, we follow the widely used definition of strategic voting developed by André Blais and Richard Nadeau (1996).[2] In this definition, the authors note three *sine qua non* conditions that must be fulfilled for a voter to be considered as strategic under plurality rule: (1) she must prefer a party that is not among the top two contenders of her district; (2) she must not vote for this party; and (3) she must

vote for her preferred candidate among the top two contenders. According to Cox (1997), the two first parties in a district are called 'viable'. It is only when a supporter of a smaller party votes for one of these two that she casts a strategic vote. The intuition is that voting for a party that comes third or lower is a waste of a voter's vote. By definition, the voter's vote could only make the difference between which of the top two contenders wins.[3]

The notion of strategic voting relies on the assumption that voters are instrumental and aim to influence the electoral outcome of an election in their favour (Downs 1957). To do so, they usually vote for the party that proposes the platform they prefer the most. However, sometimes they cast a vote in favour of another party, because they know that their preferred party has almost no chance of winning in their district. The strategic voter will decide to desert her favoured party that is not viable, in order to vote for the party she prefers of the top two contenders. In doing so, she maximizes her chances of affecting the legislative body's composition and in turn the electoral outcome.

Previous studies of strategic voting in plurality elections find that only a small, though significant, proportion of the electorate engages in this behaviour. In Canadian elections, for example, the number of strategic voters is about 4–8% (Blais and Nadeau 1996; Blais et al. 2005; Daoust 2015; Merolla and Stephenson 2007). However, as noted by R. Michael Alvarez et al. (2006), this percentage should be interpreted in view of the number of voters that are in a situation in which they could potentially engage in such strategic behaviour. Most voters support large parties that are viable in most districts, and therefore do not have the opportunity to cast a strategic vote. If we only consider the supporters of non-viable parties, the proportion of strategic voters increases drastically (between 20% and 35% in Canada, see Blais and Nadeau 1996; Daoust 2015). In line with the literature on strategic voting outlined above, we focus only on the potential strategic voter – that is, voters who prefer a party that is not viable in their district.

Various factors are said to affect the probability of voters casting a strategic vote. The first group of determinants relates to the state of party competition. Several studies show that strategic voting is more frequent when two viable parties in a district are very close in terms of votes, since voters feel that their choice is more likely to make a difference in who is ultimately elected (Abramson et al. 1992). Also, they reveal that voters are reluctant to desert their most preferred party when this party is viable, because they believe that their preferred party might still win (Cain 1978; Niemi et al. 1992).

A second group of determinants concerns the intensity of the voter's preference for a party. Some studies find that voters who identify with a party are reluctant to desert their first party of choice, as the cost of deserting this party is sizeable (Gschwend 2007; Niemi et al. 1992). Finally, cognitive abilities and political sophistication are also found to influence the probability of casting a strategic vote. The line of reasoning is that politically sophisticated voters are better at evaluating the chances that parties have of winning in their district (Merolla and Stephenson 2007), or that voters with higher abstract-thinking capabilities are better able to understand the concept of utility maximization (Loewen et al. 2015).

In this article, we look at how polarization affects strategic voting. Party polarization is a concept that refers to the ideological spread of parties

(Dalton 2008; Sigelman and Yough 1978). To participate in elections, parties must develop an ideological platform and adapt it to voters' preferences. Polarization then is a measure of how different these platforms are. Some studies find that a high degree of party polarization is associated with a high level of partisanship (Lupu 2015) and ideologically consistent voting (Lachat 2008). However, we also have good reasons to think that the polarization between viable parties should also influence the propensity of supporters of non-viable parties to cast a strategic vote.[4]

An easy way to present our argument is to consider a one-dimension spatial model as perceived by a voter *v* (see Figure 1). The horizontal line represents the ideological space, and *a*, *B* and *C* are parties. Following the example of classic spatial model studies, we assume that voters prefer voting for the party that is the closest to them in the ideological space. In both situations, voter *v* is the closest to party *a*, which is her preferred party. However, party *a* is small and not viable, unlike parties *B* and *C* (which is why they are represented by capital letters). Thus, voter *v* has incentives to desert party *a* for party *B*.

A key difference between the two situations is the polarization between the viable parties; in the second situation, the viable parties are more polarized, or more distant on the ideological space. Our argument is that voter *v* is more likely to cast a strategic vote in this second situation. This constitutes our first hypothesis:

Hypothesis 1: *The probability of a non-viable party supporter casting a strategic vote increases with the ideological distance between the viable parties – i.e. their polarization. (H1)*

This prediction comes from two spatial implications of the polarization between viable parties. A way to understand this is to consider the ideological distances between the voters and each of the parties: that is, δ_{va}, δ_{vB} and δ_{vC} in Figure 1. At this stage, it is important to note that in our empirical analysis the ideological distances are approximated with individual-level measures of partisan preferences: the closer a voter is to a party, the more she likes it (using like/dislike party scores, see below). Since politics is often multidimensional, partisan preferences are better measures of proximity than left–right placements (Broockman 2016; Lenz 2012). However, we rely on a unidimensional definition of proximity in this theoretical section for the sake of clarity.

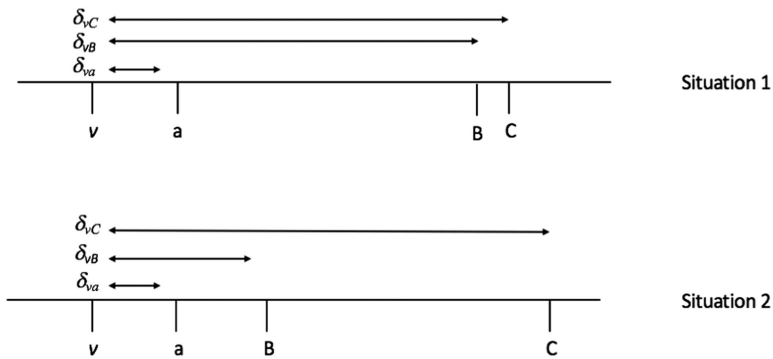

Figure 1. Strategic Voting in the Ideological Space

The first implication concerns how much voter *v* likes the viable parties *B* and *C*. In the first situation, there is little difference between δ_{vB} and δ_{vC}. Although voter *v* would prefer party *B* to win (she is closer to party *B* than to party *C*), this preference is weak as the two parties are ideologically very close to each other. In other words, it makes little difference for voter *v* whether it is party *B* or party *C* that is elected. By contrast, voter *v* has stronger incentives to cast a strategic vote in the second situation as she is much closer to party *B* than party *C*. This leads to our second hypothesis:

Hypothesis 2: *The probability of a non-viable party supporter casting a strategic vote increases with how much she likes her favourite viable party (δ_{vB}), compared to how much she likes her least favourite viable party (δ_{vC}). (H2)*

The second important implication concerns how much voter *v*'s likes her favourite non-viable party (*a*), and her favourite viable party (*B*). If the viable parties are polarized as in the second situation, the distance between voter *v* and party *B* (δ_{vB}) is small. The cost of deserting her preferred party is thus small, given that δ_{vB} and δ_{va} are almost the same. In the first situation, voter *v* would be more reluctant to desert party *a* as she is further away from the closest viable party – that is, her strategic option (party *B*). The third hypothesis is as follows:

Hypothesis 3: *The probability of a non-viable party supporter casting a strategic vote decreases with how much she likes her favourite party (δ_{va}), compared to how much she likes her favourite viable party (δ_{vB}). (H3)*

The three hypotheses are complementary, as H2 and H3 are directly derived from H1. In the example presented in Figure 1, the distance between the two viable parties increases from Situation 1 to Situation 2 (H1). This dissociation should increase both voter *v*'s preference for her favourite viable party compared to her least favourite viable party (H2), and voter *v*'s preference for her preferred viable party compared to her favourite non-viable party (H3). However, it is not always the case. If voter *v* and party *a* are located in between parties *B* and *C*, but still closer to party *B* than to party *C*, the polarization between viable parties can lead to an increase in δ_{vB}. Consequently, voter *v* might become reluctant to desert party *a*. For this reason, the measures used in H2 and H3 are more precise than the one used in H1. Our analysis below proceeds in two steps: (1) we demonstrate that the polarization between viable parties as defined in H1 affects partisan preferences as defined in H2 and H3, and (2) that these partisan preferences in turn affect the probability of casting a strategic vote. Our overall argument is that the polarization between viable parties affects the probability of casting a strategic vote via changes in partisan preferences. In other words, the effect of the polarization between viable parties should disappear when we include individual-level partisan preferences in our analysis, because the latter are more precise measures.

Three Canadian elections

Our analysis focuses on three elections: the 2011 Ontario provincial election, the 2012 Quebec provincial election and the 2015 Canadian federal election. Elections in Ontario, Quebec and Canada are similar in many respects. They are held under

the same single-member district plurality rules, which advantages large parties. Consequently, the winning party frequently receives a majority of parliamentary seats and is able to form a single-party government. When the winning party does not receive the majority of the parliamentary seats, it forms a minority government.

However, the party systems of Ontario, Quebec and Canada are somewhat different. This is partly due to the federal character of the country and its unique political history. In Ontario, there are three large parties: the Ontario New Democratic Party (ONDP), which is located at the centre left of the political spectrum, the Ontario Liberal Party (OLP), which is located at the centre, and the Progressive Conservative Party of Ontario (PCO), which is located at the centre right.[5] There is also a much smaller party, the Green Party of Ontario (GPO), which usually receives at least 1% of the vote and is located to the left of the ONDP. The GPO has never obtained a parliamentary seat. A key feature of Ontario's party system is that the competition revolves around the left–right dimension.[6]

The situation is different in Quebec, where there are six parties that receive at least 1% of the vote. Unlike other provinces, Quebec is mostly composed of French speakers, and a substantial portion of the population has secessionist aspirations driven by a strong community/national identity (among other factors). Consequently, party competition takes place on two ideological dimensions: the left–right dimension and the secessionist/non-secessionist dimension (Daoust and Dassonneville 2018). At the left of the left–right spectrum, the Parti Vert du Québec (PVQ) has no position on the secessionist issue, while Québec Solidaire (QS) and Option Nationale (ON) are largely in favour of the creation of an independent Quebec state. These are all small parties. Then, the Parti Québécois (PQ), which shares a similar position to QS and ON on the secessionist/non-secessionist dimension, is closer to the centre on the left–right dimension. On the right, the Coalition Avenir Québec (CAQ) is neutral regarding the secessionist issue, and the Parti Libéral de Québec (PLQ) is strongly opposed to the creation of an independent Quebec state. The PQ, CAQ and PLQ are large parties. However, as the left-wing parties tend to be more secessionist than right-wing parties, the positions of the parties on the two dimensions are correlated.

The party system at the federal level in Canada is similar to the party system of Ontario, although there are some differences between some of the provinces. The 2015 Canadian federal election survey we use in this article focuses on the three largest provinces of the country: Ontario, Quebec and British Columbia. Like the situation at the provincial level, there are three large parties at federal level in Ontario. There is the New Democratic Party (NDP) at the centre left, the Liberal Party of Canada (LPC) at the centre, the Conservative Party of Canada (CPC) at the centre right, (as well as) a small left-wing party, the Green Party of Canada (GPC). British Columbia's federal party system is almost the same, with the exception that the GPC is much stronger in the province. In 2015, the GPC obtained 8% of votes in British Columbia and, for the first time in history, won a seat in the province. At the federal level in Quebec there is an additional large party, the Bloc Québécois (BQ), that is centre left on the left–right spectrum and secessionist (all other federal parties in Canada are non-secessionist).

The party systems of the three elections covered in this article offer variations. In Ontario (federal and provincial elections) and British Columbia (federal election), there are three large parties and one small party. In Quebec, there are three large parties and one small party in the provincial election, and four large parties and one small party at the federal election.

Measuring strategic voting

To measure strategic voting, we rely on various unique pre- and post-election panel surveys conducted within the Making Electoral Democracy Work project (Stephenson et al. 2017). For this survey, they recruited respondents at the provincial level using pre-existing online panels. They used quotas based on age, education, gender and regional quotas to ensure the socio-demographic diversity of the sample. In total, we have the data of five surveys: two in Ontario (provincial and federal elections), two in Quebec (provincial and federal elections) and one in British Columbia (federal elections).

The first wave of panel surveys was conducted during the two weeks preceding election day, and the second wave the week after. For each provincial election, about 1,000 respondents completed the pre-election questionnaire, and of them approximately 800 filled in the post-election questionnaire. For the federal election, about 1,800 respondents completed the pre-election questionnaire in each province, and among them approximately 1,400 completed the post-election questionnaire. However, we excluded respondents who did not respond to at least one of the questions that were necessary for our analysis. To correct the attrition rate between the two waves and other potential biases, we created a sample weight based on the respondent's reported vote and actual electoral results at the provincial level. Hence, we correct for the general overestimation in surveys of third-party voters such as the Greens. Our analyses are conducted with and without this weight.

Our surveys were specifically designed to measure strategic voting. That is, it includes questions about preferences, expectations and vote choice. First, in the pre-election questionnaire, respondents were asked to rate how much they liked each party on a scale from 0 to 10 (from 'really dislike' to 'really like').[7] Based on the responses to this question, we identified the preferred party of each respondent – that is, the one with the highest rating. In the case of a tie, respondents were asked a follow-up question where they had to choose which of the two parties they liked the most.

Second, still in the pre-election questionnaire, respondents were asked to evaluate the chances that each candidate in their district had of winning, also on a scale from 0 to 10 (from 'no chance at all' to 'certain to win'). With the responses to this question, we could identify the two parties that had the most chance of winning in the eyes of the respondents. These are the two viable parties. Sometimes, there were more than two viable parties. For example, if a respondent considered that party *a* had winning chances of 7, and parties *b* and *c* had winning chances of 6, the three parties (*a*, *b* and *c*) were viable.[8] Finally, in the post-election questionnaire, respondents were asked to report which party they voted for.

With the responses to these questions, we identified respondents that were potential strategic voters (i.e. non-viable party supporters) and the actual strategic voters – that is, non-viable party supporters who voted for their most preferred party among those that were viable. Table 1 reports the weighted and unweighted proportions of these two types of voters. First, we observe that about one fifth of the respondents were non-viable party supporters; this proportion is similar in all surveys, being between 18 and 20%. The proportions are similar when we use a weighted or unweighted sample (the differences do not even reach 2 percentage points). These potential strategic voters constitute the sample of interest for this paper.

Second, we find some variations in the proportions of strategic voters. In Ontario, the proportion varies between 6% and 9% (provincial and federal respectively), in Quebec, between 6% and 8% (federal and provincial respectively) and is 6% in British Columbia. The different contexts of these elections are not a very helpful explanation for these (small) differences. Although there seems to be less strategic voting in Quebec, where the number of parties is larger, we see that the proportion of strategic voters was also quite low in the 2011 Ontario provincial election, where the number of parties is smaller. Similarly, although the proportion of strategic voters was large in the 2015 federal election in Ontario and British Columbia, it was relatively low in Quebec.

Third, at first glance the proportion of strategic voters seems quite small. However, it is important to note that a clear majority of voters are not in a position to cast a strategic vote, because their most preferred party is in fact viable. If we restrict the sample to non-viable supporters (N = 757), we see that a large portion do cast a strategic vote (between 33% and 50%, see last column of Table 2). Strategic voting is thus a far from marginal practice in this perspective (Alvarez et al. 2006).

Independent variables

In order to measure the polarization between viable parties needed to test H1, we first calculate the position of each party in the ideological space by taking their

Table 1. Strategic Voting in Canada

Survey	Non-viable party supporters (%)	Strategic voters (%)	Strategic voters (among non-viable party supporters, %)
Ontario (provincial)	17.8	6.6	37.3
	(17.8)	(6.7)	(37.8)
Ontario (federal)	18.9	9.3	49.5
	(18.2)	(8.9)	(49.1)
Quebec (provincial)	19.0	7.7	40.8
	(18.0)	(7.7)	(42.7)
Quebec (federal)	18.2	6.1	33.5
	(17.7)	(6.4)	(36.0)
British Columbia (federal)	19.8	6.1	49.7
	(19.6)	(6.4)	(48.1)
Total	18.8	8.1	43.2
	(18.4)	(8.1)	(44.2)

Note: Entries are non-weighted proportions. Weighted proportions are in parentheses. N = 618 (Ontario provincial), 1038 (Ontario federal), 517 (Quebec provincial), 900 (Quebec federal), 957 (British Columbia federal), 4030 (Total).

Table 2. Description of Independent Variables

	Ontario (prov.)	Ontario (fed.)	Quebec (prov.)	Quebec (fed.)	British Columbia (fed)	Total
Polarization between viable parties	2.6	2.3	2.3	1.7	2.3	2.2
	(0.8)	(0.9)	(1)	(1.3)	(1.2)	(1.1)
Preference for viable parties (favourite vs least favourite)	2.6	3.6	3.7	3.2	3.5	3.3
	(2.3)	(2.9)	(2.7)	(2.7)	(2.7)	(2.7)
Preference for favourite parties (non-viable vs viable)	5.4	5.8	6.4	5.7	5.8	5.8
	(2.8)	(3)	(2.7)	(3.2)	(3.1)	(3)
N	110	196	98	164	189	757

Note: Entries are means. Standard deviations are in parentheses.

average placement on the left–right scale (from extreme left 0 to extreme right 10) as reported by respondents. This aggregation technique, based on the idea of the 'wisdom of the crowd', has been used for the same purpose in other studies that deal with party positions (e.g. Golder and Stramski 2010). It is usually considered a good indicator of the actual position of the parties in the ideological space.[9] Then, we calculate the absolute ideological distance between each dyad of parties, and derive the following variable:

(H1) Polarization between viable parties = | Largest ideological distance between viable parties |

To measure the variables needed to test H2 and H3, we use the party like/dislike scores described above. Then, we can calculate the relevant variables to test H2 and H3, so that:

(H2) Preference for viable parties (favourite vs least favourite) = How much the voter likes her favourite viable party – How much she likes her least favourite viable party

(H3) Preference for favourite parties (non-viable vs viable) = How much the voter likes her favourite non-viable party – How much she likes her favourite viable party

Table 2 reports the means and standard deviations of our independent variables for the sample of interest in this article – that is, supporters of non-viable parties. The mean of the variable 'polarization between viable parties' is around 2.0. The standard deviation is small, around 1.0, as the variance comes from whichever party is viable in the voters' district. The variance of the 'perceived distances to viable parties' is greater. That is, the mean is around 3.0 and the standard deviation is around 2.5. As for the 'perceived distance to the preferred party and strategic option', the mean is 5.8 with a standard deviation of 3.0 (party like/dislike question).

In line with the literature on the determinants of strategic voting outlined above, we also include several control variables: age, education (having a university degree or not), gender, partisanship (feeling close to a party or not), and fixed effects for each survey. We also control for political sophistication that we measure using

answers to two survey questions related to political knowledge. In the first question, the respondents were asked (in the pre-electoral survey) to associate pictures of the three main party leaders with the correct party. In the second one, they were asked (in the post-electoral survey) to associate three selected emblematic pledges with the correct parties. We sum up, for each respondent, the number of correct answers to these questions to create an overall variable measuring political sophistication. In our sample of potential strategic voters, the variable has a mean of 4.0 with a standard deviation of 1.3. Finally, we also control for the difference of perceived chances of winning of the preferred party and the closest viable party (see above for a description of the question regarding perceived chances). We expect that voters are more likely to cast a strategic vote when the difference is large. In our sample, the variable has a mean of 4.1 and a standard deviation of 2.4.

Results

As mentioned, the first step of our analysis is to show that the polarization between viable parties as defined in H1 affects the preference for favourite and least favourite viable parties, and the preference for non-viable and viable favourite parties, as defined in H2 and H3 respectively. In Table 3, we report the results of OLS regressions in which we predict each of the two variables related to partisan preferences defined above by the variable 'polarization between viable parties'. We observe that, in the first case, the polarization between viable parties is a good predictor of partisan preferences. In line with our expectations (see above), the

Table 3. The Effect of Polarization on Perceived Distances

	Model 1	Model 2
Polarization between viable parties	0.43***	−0.06
	(0.07)	(0.08)
Preference for viable parties (favourite vs least favourite)		0.73***
		(0.03)
Preference for favourite parties (non-viable vs viable)	0.61***	
	(0.02)	
Age	0.00	−0.00
	(0.00)	(0.01)
Female	0.03	0.13
	(0.14)	(0.15)
University degree	0.18	−0.28
	(0.15)	(0.16)
Political sophistication (0–6)	0.02	0.16*
	(0.06)	(0.06)
Partisan	−0.14	1.01***
	(0.15)	(0.16)
Difference in perceived chances (1–10)	0.02	0.06*
	(0.03)	(0.03)
Survey fixed effects	YES	YES
Constant	−2.29***	2.84***
	(0.44)	(0.48)
N	757	757
R^2	0.516	0.518

Note: Entries are coefficients from an OLS regression predicting preference for viable parties (favourite vs least favourite) (Model 1) and preference for favourite parties (viable vs non-viable) (Model 2). Standard errors are in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

polarization between viable parties increases the preference for the favourite viable party compared to least favourite viable party (Model 1). The effect is statistically significant at a level of $p < 0.01$). To give an idea of the magnitude of these effects, an increase in one unit in the variable 'polarization between viable parties' (that is, more or less an increase in one standard deviation) increases perceived party distances by around one fifth of their standard deviation. In Model 2, the coefficient of polarization between viable parties goes into the expected direction (negative) but fails to reach statistical significance. Yet, we believe that this is the first evidence that polarization at least partially alters partisan preferences.

To test our hypotheses, we estimate logit models predicting the probability that the non-viable party supporters cast a strategic vote. Table 4 reports the results of these estimates. Model 3 only includes the polarization between viable parties as an independent variable. In Model 4, we add partisan preferences as defined in H2 and H3. In both models, we include the control variables presented above. However, in the online appendix, we also replicate the analysis without control variables. We discuss this in the robustness checks section.

Table 3 reveals that, in Model 3, the coefficient associated with polarization between viable parties goes in the expected direction (positive). It is statistically significant at a level of $p < 0.05$. However, as mentioned above, the variable is not very precise, as an increase in polarization between viable parties does not

Table 4. The Effect of Polarization on Strategic Voting among Potential Strategic Voters

	Model 3	Model 4
Polarization between viable parties	0.19*	0.12
	(0.07)	(0.09)
Preference for viable parties (favourite vs least favourite)		0.56***
		(0.06)
Preference for favourite parties (non-viable vs viable)		−0.54***
		(0.06)
Age	0.01	0.01
	(0.01)	(0.01)
Female	−0.02	−0.02
	(0.16)	(0.17)
University degree	0.36*	0.35
	(0.17)	(0.18)
Political sophistication	−0.01	0.01
	(0.06)	(0.07)
Partisan	−0.53**	−0.34
	(0.16)	(0.18)
Difference in perceived chances	0.20***	0.27***
	(0.03)	(0.04)
Survey fixed effects	YES	YES
Constant	−2.18***	−1.17*
	(0.49)	(0.55)
N	757	757
Pseudo R^2	0.071	0.198

Note: Entries are coefficients from a logit regression predicting the probability of non-viable party supporters casting a strategic vote. Standard errors are in parentheses. * $p < 0.05$, ** $p < 0.01$.

necessarily increase the incentives of all non-viable party supporters to cast a strategic vote (typically, not for the centrist ones). H1 is thus confirmed.

In Model 4, we add perceived partisan preferences as independent variables. The first observation to be made of these models is that the coefficient associated with polarization between viable parties is much smaller than in Model 3 (and not statistically significant). This suggests, as we hypothesize above, that the effect of this variable is captured by partisan preferences.

From Model 4, we also observe that the coefficient associated with preference of viable parties (favourite vs least favourite) is positive, and the one associated with the preference of favourite parties (non-viable vs viable) is negative. This is in line with our expectations. Moreover, the coefficients are statistically significant at a level of $p < 0.01$ in both instances. H2 and H3 are thus also confirmed.

To better visualize the magnitude of the effects, we draw the predicted probabilities of non-viable party supporters to cast a strategic vote as the main independent variables vary from their minimum (0) to their maximum (10), while other variables are kept at their means. We also report the variation in predicted probabilities plus or minus one standard deviation around the mean. To do so, we use the estimates of Models 3 and 4. Figure 2 reveals the effect of polarization between viable parties when the partisan preferences are not included (Model 3). The predicted probability of a non-viable party supporter casting a strategic vote goes from 0.33 (minimum of polarization) to 0.76 (maximum of polarization) – an increase of 43 percentage points. A first difference t-test reveals that this difference is statistically significant ($p < 0.01$). If we take an increase from −1 and +1 standard deviation around the mean of the variable, the effect still goes from 37% to 48% (first difference t-test $p < 0.05$).

Moreover, Figure 3 reveals that the effects of the partisan preferences (H2 and H3) are substantial. Each of the two variables almost entirely covers the variation of the dependent variable. From Figure 3 (left panel), we observe that the predicted

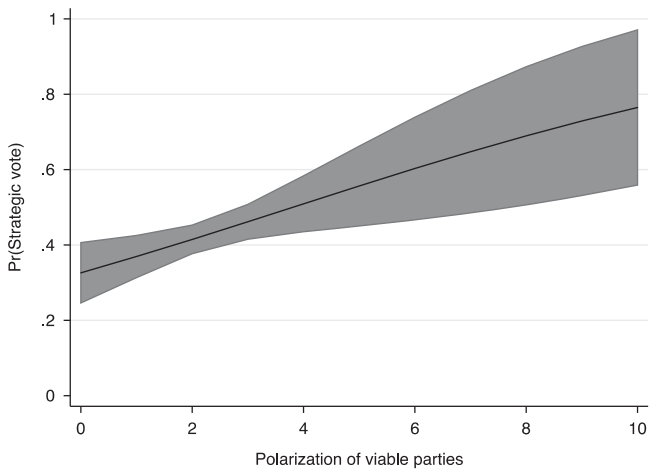

Figure 2. Predicted Probabilities of Voting Strategically as Polarization between Viable Parties Varies
Note: Based on Model 3, Table 4. The shaded area is the 95% confidence interval. All other variables are set at their mean.

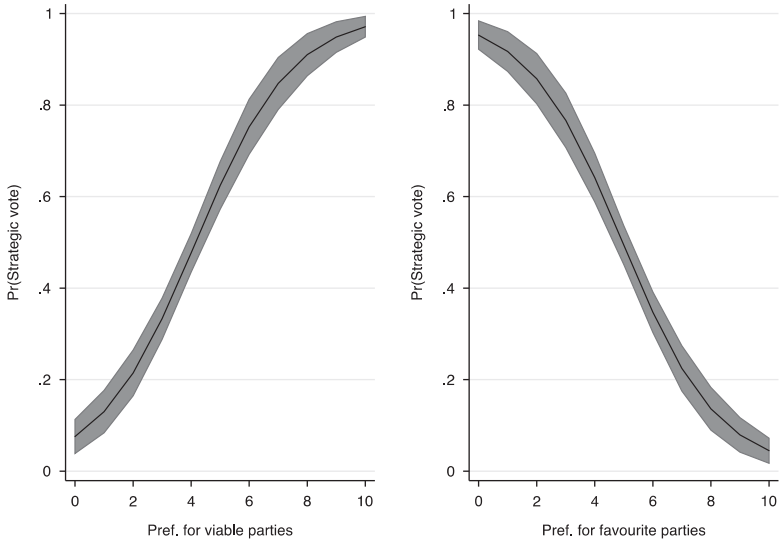

Figure 3. Predicted Probabilities of Voting Strategically as Partisan Preferences Vary
Note: Based on Model 4, Table 4. The shaded area is the 95% confidence interval. All other variables are set at their mean.

probability of a non-viable party supporter casting a strategic vote goes from 8% when the preference for viable parties is null (that is, she equally likes both viable parties) to 96% when it is maximal (that is, she likes one of them to a level of 10 and dislikes the other to a level of 0). A first difference test reveals that this difference is statistically significant ($p < 0.01$).[10] If we take an increase from −1 and +1 standard deviation around the mean of the variable, which is more realistic, the effect still goes from 12% to 74% (first difference test: $p < 0.01$).

From Figure 3 (right panel), we observe that the predicted probability of a non-viable supporter voting strategically is 93% when the preference for the favourite non-viable party compared to the favourite viable party is null (that is, she likes the two almost equally[11]) and 6% when she prefers the favourite non-viable party by 10 points. Again, a first difference test reveals that this difference is statistically significant ($p < 0.01$). If we take an increase from −1 and +1 standard deviation around the mean of the variable, which is more realistic, the effect still goes from 76% to 11% (first difference test: $p < 0.01$).

In addition, it is worth noting that for a non-viable party supporter, having a university degree, feeling close to a party, and believing that the preferred party has much less chance of winning than the closest viable party have a statistically significant effect on the likelihood of voting strategically. This corroborates previous findings in the literature (see above).

To test the robustness of these findings, we re-estimate Models 3 and 4, in a series of supplementary analyses. First, we weight the data according to the actual electoral results as we did for the descriptive analyses of our variables. Second, we remove the control variables. Third, we use an alternative definition of 'viability'. Instead of considering only the top two contenders in the respondent's district, we consider that all parties which have 50% or more chance of winning in the eyes of

the respondents as viable.[12] Fourth, we use an alternative measure of the variables related to H2 and H3. Instead of using party like/dislike scores, we use responses to left–right placement questions. For these questions, each respondent places herself and all of the main parties on a scale from 0 (extreme left) to 10 (extreme right). Hence, we calculate the variable 'preference for viable parties (favourite vs least favourite)' by using the difference in left–right proximity between the respondent's favourite and least favourite party (H2). Similarly, we calculate the variable 'preference for favourite parties (non-viable vs viable)' using the difference between the respondent's proximity to her favourite non-viable party and her favourite viable party (H3). Fifth, we exclude Quebec elections from the data (regional and federal). The results remain largely unchanged. They are displayed in Tables A2 to A6 of the online appendix.

Finally, we tested for potential interaction effects between polarization between viable parties and other control variables (Model 3). We envision the possibility that the effect of polarization on the probability of non-viable party supporters casting a strategic vote is stronger for those who have a university degree or are politically sophisticated (because they understand better the rationale behind strategic voting), and for those who are not partisan (because they are less reluctant to desert their preferred party). There was, however, no significant interaction.

Conclusion

Although strategic voting does not concern all voters, a substantial portion engage in this behaviour in both plurality and proportional representation elections. This makes the study of the factors that encourage it very important. However, it is methodologically challenging to study the determinants of strategic voting, as this behaviour only concerns a subset of the electorate: non-viable party supporters. As a consequence, the overall number of strategic voters in surveys is often low. In this article, we pooled five surveys that were specifically designed to capture strategic voting in order to have enough potential strategic voters.

We study a determinant of strategic voting that receives little attention in the literature: party polarization. We still know very little about the effect of the position that parties take in the ideological space on the proclivity of non-viable party supporters to vote strategically. We subsequently test the effect of polarization measured at the election level on partisan preferences measured at the individual level, and the effect of both on the probability of casting a strategic vote. We find that: (1) the polarization between viable parties increases the probability of a non-viable supporter casting a strategic vote, because it (2) increases how much she likes her favourite viable party (compared to her least favourite viable party), and (3) decreases how much she likes her favourite non-viable party compared to her favourite viable party.

Our article brings an important contribution to the literature on strategic voting, party polarization and voting behaviour. Previous studies have found that party polarization has a direct effect on vote choice: it tends to increase the proportion of correct voters who vote for the party that they like the most and/or is the closest to them in the ideological space (Lachat 2008; Lau and Redlawsk 1997). Thus, our findings contradict those by demonstrating that polarization increases

the proportion of strategic voters. However, we believe that the two findings are complementary. The reason is that, in this article, we only examine the voting behaviour of a specific type of voter: non-viable supporters. It is reasonable to think that party polarization can have a different effect on vote choice depending on the type of voter: for viable party supporters, it increases the probability of casting an ideologically correct vote, and for non-viable party supporters, it increases the probability of casting a strategic vote.[13] Testing this hypothesis falls beyond the scope of this article. It is, however, an interesting avenue for future research.

Supplementary information. To view supplementary material for this article, please visit https://doi.org/10.1017/gov.2018.42

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Notes

1 In the literature, we find other definitions of strategic voting. Sometimes, deserting the most preferred party is not considered to be a necessary condition for casting a strategic vote. The very act of voting for the party that maximizes one's utility in taking into consideration its chances of winning is sufficient for it to be characterized as strategic, regardless of whether this is desertion or not. However, in this article, we follow the classic definition of strategic voting used in the literature based on survey data, which states that deserting the most preferred party is a necessary condition for casting a strategic vote (see e.g. Blais and Nadeau 1996). In some studies, strategic voting is sometimes called 'tactical voting' (Niemi et al. 1992).

2 This is the most common definition of strategic voting under plurality rule. There are other types of strategic voting under proportional representation (e.g. Gschwend 2007).

3 Although this approach is standard in the literature on strategic voting (e.g. Blais et al. 2001; Lanoue and Bowler 1992), there are other definitions and measures of viability. For example, Alvarez and Nagler (2000) use a continuous measure for which each party is more or less viable and conditional logit model predicting vote choice by various independent variables including viability. We cannot use this approach in our article because our hypotheses necessitate a binary definition of the concept (see below). Hence, we stick to the classic definition of viability of Cox (1997). In the rest of the article we use the term 'non-viable party supporters' to denote voters who have incentives to cast a strategic vote because their preferred party is not among the two first parties in the district. This definition puts together supporters of parties that are (almost) never viable, and supporters of parties that are sometimes viable, sometimes not (depending on the district).

4 Note that our theory goes somewhat against previous studies that show a positive effect of party polarization on the likelihood of voters casting a correct vote for a party that is the closest to them in the ideological space (Lachat 2008; Lau and Redlawsk 1997). However, our findings do not entirely contradict the findings of these other studies. We discuss this in the conclusion.

5 We consider that a large party is a party that obtained more than 15% of the vote, and a small party is a party that obtained between 1% and 15% of the vote. In our analyses, we only include parties that obtained at least 1% of the vote.

6 The actual results of the parties included in the analysis can be found in Table A1 of the online appendix. We also include a brief explanation of the political context of each election covered in the data.

7 All the questions used in the analyses are listed in the appendix (Table A7).

8 Respondents' perception of the chances of each party are close to the results of the elections covered in this article. In Table A1 in the appendix, we report the average of this measure for each party and for each election. This finding is very much in line with what other studies using the same measure find. We sometimes call this the 'wisdom of the crowd' (Murr 2017, for a review of this vast literature). Table A1 also shows that the sample vote share is similar to the vote share in reality for each of the elections covered in the article. What is more, in the 2015 federal election in Canada, about 80% of people were good at identifying the weakest parties in their district, which is crucial in the study of strategic voting (Bol et al. 2018b).

9 Our measure of polarization is imperfect. Party competition is often multidimensional, as it includes more dimensions than the left–right one. Recent studies show that, even nowadays, the left–right dimension is still capturing a great part of the variation in party completion in the country (Cochrane 2010). However, as we mentioned above, the left–right dimension is less relevant in the province of Quebec, where the secessionist/non-secessionist dimension is also salient. In a robustness test, we reproduce the analysis without Quebec respondents.

10 By 'first difference test', we mean a t-test estimating whether two predicted values (here: probabilities) are statistically significant from each other.

11 In the survey, when a respondent reported that she likes two parties equally, there was a follow-up question asking her to say which one of these two she likes the most overall. This is why there are some non-viable supporters in the data set who like a viable and a non-viable party equally. These are the ones who said that overall they prefer the non-viable party.

12 To do so, we rely on the question about the chances of each party as perceived by the respondent from 0 to 10. Each time the respondent considers that a party is 5 or more on this scale, the party is viable. Note that with this alternative definition of viability, there are 24% of potential strategic voters in the data set, and 31% of them vote strategically.

13 Another implication of our study is that as polarization increases, non-viable supporters tend to desert their favourite party. This means that, on average, small parties become smaller as polarization increases. This is in line with the literature that shows that mainstream parties are more popular when they get ideologically closer to niche parties (Meguid 2008).

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