

THE MANY FACES OF STRATEGIC VOTING

Tactical Behavior
in Electoral Systems
Around the World

Edited by
Laura B. Stephenson,
John H. Aldrich, and André Blais



The Many Faces of Strategic Voting

Strategic voting is classically defined as voting for one's second preferred option to prevent one's least preferred option from winning when one's first preference has no chance. Voters want their votes to be effective, and casting a ballot that will have no influence on an election is undesirable. Thus, some voters cast strategic ballots when they decide that doing so is useful.

This edited volume includes case studies of strategic voting behavior in Israel, Germany, Japan, Belgium, Spain, Switzerland, Canada, and the United Kingdom, providing a conceptual framework for understanding strategic voting behavior in all types of electoral systems. The classic definition explicitly considers strategic voting in a single race with at least three candidates and a single winner. This situation is more common in electoral systems that have single-member districts that employ plurality or majoritarian electoral rules and have multiparty systems. Indeed, much of the literature on strategic voting to date has considered elections in Canada and the United Kingdom. This book contributes to a more general understanding of strategic voting behavior by taking into account a wide variety of institutional contexts, such as single transferable vote rules, proportional representation, two-round elections, and mixed electoral systems.

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University of Michigan Press
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This volume is dedicated to the special people in our lives who support us in all we do and to the voters around the world who keep us guessing about their motivations.

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Strategic Voting and Political Institutions

John H. Aldrich, André Blais, and Laura B. Stephenson

In 1999, Israel held an early election. For only the second (and last) time, citizens cast two votes.¹ One was the usual vote for party representation in the Knesset, which allocated seats to the parties in near proportion to the percentage of votes they received. The other was a separate vote for candidates, with the candidate receiving the most votes directly elected as prime minister. Several early candidates for prime minister dropped out, leaving three who ran throughout the campaign. The leaders of the two dominant parties, Ehud Barak and incumbent Benjamin Netanyahu, received the most votes, with Barak winning.² A third candidate, Yitzhak Mordechai, ran as the head of the newly formed Center Party, which had broken away from Likud and PM Netanyahu. Mordechai was running reasonably strongly in third place, but with Barak rising in the polls and his fortunes declining, Mordechai withdrew his candidacy the day before the election.³ Subsequent studies showed that one important factor in citizens' decisions was their perception that Mordechai was increasingly likely to lose and that their votes were better spent in support of Barak, whom they preferred to Netanyahu and who, unlike Mordechai, could win (Abramson et al. 2004).

Such decisions by voters are referred to as “strategic” voting, because the choices they make reflect the strategic setting of the campaign. Typically, the idea is to avoid “wasting” a vote on a candidate or party whom the voter likes but who cannot win by giving it instead to a candidate or party whom the voter finds less attractive but who may well win, thereby defeat-

ing an option the voter likes even less. Thus, some voters who disliked Netanyahu considered voting for Mordechai, their most preferred choice, or Barak, their second choice. In this instance, Mordechai lost support right at the end of the campaign as the strategic setting evolved such that those who especially disliked Netanyahu settled on Barak. As it became clear that Mordechai could not win but that Barak might, even more voters changed from Mordechai to Barak to avoid wasting votes. Those who reasoned in this fashion are said to have voted strategically. Had Mordechai stayed in the running, many others would undoubtedly have continued to vote for him in spite of the strategic setting.⁴ Such voters are referred to as sincere voters, voting for whom they prefer regardless of the strategic context. Sincere and strategic voting have similarities (they are both based on preferences, or utilities) but they also differ (since only strategic voters form expectations about likely outcomes and act upon those expectations). Those expectations combine with their preferences regarding the various outcomes to form expected utilities—to determine for which party these voters cast their ballots. Sincere voters, by contrast, act on their preferences but do not consider expectations in determining their actions.

The chapters in this book study the question of the existence, extent, and conditions under which voters reason strategically and thus engage in strategic voting in a wide variety of institutional settings and in elections in different strategic contexts. This variation provides the opportunity to test several theoretical propositions about voters and their inclination to engage in strategic reasoning. By examining voters in these different institutional and electoral contexts, we not only learn about how voters reason and thus about their role in democratic politics but also explain more fully voting decisions and outcomes in many different elections.

Each of the chapters involves original data, often survey-based but including laboratory and survey-embedded experiments. While sources vary, more than half the chapters draw their data from the Making Electoral Democracy Work (MEDW) project led by André Blais (2010). This project includes detailed analyses of party strategies, voting behavior, and laboratory experiments. According to the project's website (www.chairelectoral.com/medw.html),

The goal of the MEDW project is to examine how the rules of the game (especially the electoral system) and the electoral context (especially the competitiveness and salience of the election) influence the dynamic and reciprocal relationship between voters and parties.

The nations studied (Canada, France, Germany, Spain, and Switzerland) were chosen to obtain a rich variety of electoral institutions. The data, now publicly available (<https://dataverse.harvard.edu/dataverse/MEDW>), contain key questions that enable researchers to identify the preferences, expectations, voting choices, and evaluations of voters across a range of elections in different electoral contexts.

This chapter provides a conceptual framework for thinking about voting and its strategic and sincere forms. It provides a theoretical basis for understanding how voters reason through to their choices that applies across the various institutional structures that shape elections. This theoretical basis, in turn, enables a better understanding of the role the public plays in a democracy.⁵ Voters are often conceived as the target of campaigns but only sometimes imagined as active participants in democratic choices, alongside parties and candidates. This chapter examines those conditions under which voters are central, active strategists in shaping outcomes.

The chapter begins by developing the logic of strategic voting in a single-member district system, thus won by whichever party or candidate gets the most votes (first past the post, or FPTP). This represents the simplest and easiest case for the logic of strategic voting, and similarities (and sometimes theoretical isomorphism) exist between strategic voting—sometimes called instrumental voting (or voting as an investment)—and expected-utility maximization. This problem was developed originally in the context of studying turnout by Downs (1957) and Riker and Ordeshook (1968), leading to what the latter referred to as the calculus of voting. We prefer to call it the calculus of voting as investment to distinguish it clearly from the different but parallel calculus for sincere voting. We then develop the logic for sincere voting through the theory of expressive voting, which is (in its pure form) simply utility maximization—what might be referred to as the calculus of voting as consumption. The final part of this section unites the two pure cases of strategic voting and sincere voting into a general formulation (originally the work of Fiorina [1976]) that includes each pure type as a special case. In doing so, we further generalize by examining the concatenation of preferences and expectations, illustrating how these types of voting decisions are related and pointing out two further categories of voting decisions.

Part II examines institutional variation as a means of expanding the study of strategic voting from its common focus on FPTP systems. While part I develops the logic for a single district (or for a presidential election, where the nation as a single district selects a single winner via some [usually modified] form of FPTP), in part II we note not only that voters

choose their own representatives in the legislature but also that selection contributes to the collective outcome of what party or parties are chosen to lead the legislature (organize the government in a parliamentary setting or select chamber leadership in a legislature like the US House of Representatives). We thus consider the problem of nationwide as well as districtwide strategic voting.

We then turn to proportional representation systems in which there are several outcomes about which voters might have preferences, thus potentially leading them to think further about strategic actions for achieving those outcomes. One is voting in an attempt to ensure that a party crosses the threshold of representation and ends up with at least minimal representation in parliament. In proportional representation systems, increasing the percentage of votes received by a party also increases the percentage of seats won, often in a closer-to-matching proportion than under FPTP. Thus, a voter might consider how to maximize a party's representation in a parliament. Finally, those who won seats in parliament then must decide which party or parties are in government and, if more than one, how cabinet portfolios are allocated across the parties in the governing coalition. Voters might reason strategically about government formation and perhaps about other aspects of the governing coalition, such as who will serve as prime minister. The final section considers the now-common mixed systems and how voters might cast their votes strategically in such systems.

Part I: The Microfoundations of Strategic and Sincere Voting in FPTP

Theoretical Foundations

There are several places to look when seeking the theoretical foundations of vote decisions in FPTP systems. Rational choice theorists, such as Downs (1957), Riker and Ordeshook (1968), and McKelvey and Ordeshook (1972) thought about the act of voting in a way similar to how they thought about the actions taken by candidates and parties. That is to say, they thought of voters as rational actors. There is thus a firm foundation in decision theory for studying the conditions under which expected-utility-maximizing voters will vote for their most preferred candidate or will instead turn to their second-most-preferred candidate instead of the first-ranked candidate as the “rational” choice because of the higher probability terms involved.⁶

There is also a long history of studying considerations about voting

choices in game theory as well as in decision theory. Farquaharson (1969; written in the 1950s) developed the logic of strategic voting in game theoretic terms. Gibbard (1973) and Satterthwaite (1975) independently proved a very important result that showed that *all* voting systems are vulnerable to strategic action.⁷ Their theorem provides the foundation for studying strategic voting in all kinds of voting institutions because it is an ever-present option for voters, no matter how elections are structured. In many respects, however, this history goes back even further.

Blais and Degan (forthcoming) assert that “the study of strategic voting in political science started with Duverger (1951) and was given its full credential with the publication of Cox’s (1997) seminal *Making Votes Count*.” Duverger argued that plurality voting systems, which exist in many Anglo-American democracies, should logically lead to a two-party system for two reasons. The first is the mechanical effect, or the fact that the party that wins a plurality of votes overall almost always wins a higher proportion of seats than of votes.⁸ The second is the psychological effect, which is that voters, knowing the rules, do not want to waste their votes on parties or candidates that have no chance of winning. Voters consequently focus on the two leading candidates, reasoning that one of them will win and no one else will.⁹

Riker (1982) made the fullest argument that it was important to understand Duverger’s results in rational choice theoretic terms (even though Duverger resisted the use of rational choice theory). Cox (1997), however, should justly be credited with being the first to fully derive Duverger’s Law from game theoretic foundations with purely strategic voters; indeed, the voters, not parties or candidates, are the driving force in this result.¹⁰ Even more generally his “ $m + 1$ ” rule holds that in equilibrium, rational voters support a number of parties equal to the number of seats being chosen (m , or district magnitude) plus one, so that in single-member districts, the voting equilibrium $m + 1$ is 2. He further showed that the law applies only to a single district at a time, thus requiring a second provision—an aggregation rule to go from a single district to a full legislature (see also Palfrey 1984, 1989 [using a one-dimensional spatial structure]; Aldrich and Lee 2016 [expanding that perspective]).

The Vote Decision in FPTP Systems

Downs (1957) and then Riker and Ordeshook (1968) developed the calculus of voting, which is a statement of voting as an act of expected-utility maximization applied to the two-party FPTP case. McKelvey and Orde-

shook (1972) expanded the model to the more general, or n -candidate, case. It posits a single goal for voters: trying to make a candidate into a winner. This is sometimes referred to as thinking of one's vote as an "investment" decision, investing the currency of a single vote in the election to try to produce a favorable result. It is, however, also a simple case of decision making under risk, and voters are assumed to be expected-utility maximizers. That is, voters must consider the likelihood that their vote will affect the outcome. If they prefer a party with no chance of winning, voting for that party does little to maximize expected utility.

Applying this to the two-candidate FPTP case, citizens vote for the more preferred candidate, since there are only two candidates in the race and one must win; the only interesting question is whether the citizen votes or abstains. In a contest with three or more candidates, however, a citizen may vote for the most preferred candidate or, under certain conditions, for the second-most-preferred candidate. A voter will never vote for the least preferred candidate. (For the full decision-making problem for this case, including abstention, see the appendix.)

In sum, the key here is that it is assumed that all voters value outcomes solely in terms of who wins their district. If there are three parties— X , Y , and Z —voters think of outcomes solely as whether X , Y , or Z wins. Hence, it follows that the only thing that matters in terms of voting is whether one's vote affects which candidate wins in the district. This exclusive focus is why voters turn from preferred candidates to less valued ones if they are more likely to win and why this exclusive focus leads to two viable parties (that is, Duverger's Law), but only in a given district. This is the pure theory of instrumental voting, based on the assumption that who wins and who loses is the single attribute of elections that matters to voters.

The Calculus of Voting as Investment

Under what conditions would someone vote for a second-most-preferred candidate? For example, there are three candidates, and a voter prefers them in alphabetical order—that is, receives the greatest utility if candidate X is in office, next most if Y wins, and least if Z wins. We can assign a utility of 1 to the victory of X , 0 to Z , and s to Y such that $0 < s < 1$ (putting the candidate values in the correct order and simplifying the arithmetic). But, of course, one's vote does not determine the outcome unless that vote makes or breaks a tie. So, for outcome-oriented voters, we need to calculate a set of expectations about the closeness of the contest among the three

candidates.¹¹ In Downs (1957) and in Riker and Ordeshook (1968), attention is also given to the costs of voting, C . Furthermore, both consider the benefits that may come from the act of voting per se—what Riker and Ordeshook call the “citizen duty” term. Such benefits include the satisfaction of having done one’s duty as a citizen (or avoiding the costs of guilt from failing to do one’s duty by abstaining), D .

Important though C and D might be for understanding abstention, they do not affect the choice of voting among the candidates, because these terms are the same whether one votes for candidate X , Y , or Z and thus cancel out. As the appendix shows, the expected-utility-maximizing choice comes down to the question of how much one likes the second choice compared to the first (Is s close to 1, close to 0, or in between?) and the relative chances of making or breaking ties involving candidates X and Y . In particular, a voter chooses candidate Y —that is, casts (what appears to be) a strategic vote—if and only if s is larger than the ratio of tie-making and -breaking chances for candidate X to the tie-making and -breaking chances for candidate Y . Thus, if X has a better chance of beating Z than does Y , one never votes for Y . To put it algebraically, if P_{ij} indicates the probability of making or breaking a tie between candidates i and j , then one votes for one’s second choice candidate if and only if $s > (P_{X,Z} + P_{X,Y,Z})/P_{Y,Z}$ —that is, when s is greater than the ratio of the chances of making or breaking a tie between X and Z or among all three candidates compared to the chances of making or breaking a tie between Y and Z . This follows from the classic form of the calculus (where R is the reward or expected utility of voting): $R = PB + D - C$.

What we call strategic voting is simply selecting the best choice in expected utility when there are more than two candidates. Rational expected-utility-maximizing voters sometimes find it in their best interests to vote for their most preferred candidate; sometimes their best interests dictate that they vote for their second-most-preferred candidate, depending on how much they like the candidates and how close the contest is. The key is that voters are deciding how best to utilize their vote to be instrumental in affecting the outcome.

The concern often expressed about the calculus of voting applied to abstention—that the probability of making or breaking a tie in a large electorate is extremely small—does not apply to strategic voting. Because whether one votes for the first- or second-choice candidate depends upon a ratio of probabilities, it does not matter whether the numerator and denominator are both large or both small numbers; what matters is how

much larger one is than the other. The absolute size of probability terms matters a great deal in asking whether one votes or abstains, but once one is in the voting booth, only the relative size of probabilities matters.

The Calculus of Voting as Consumption

This theory posits that a rational, expected-utility-maximizing voter simultaneously chooses whether or not to vote and for whom to vote. Thus, the concern that voters do not (and maybe cannot) determine their choice on what are likely to be *very* small probability terms is worth considering. Indeed, citizens might find close elections exciting, but it is hard to imagine anyone saying they are voting because they think it plausible that doing so will make or break a tie. Why, then, do voters vote? From the view of voting as consumption, voters have a different goal. They are not voting to determine who wins or loses—or at least, that is simply one (likely small) component of their choice. Rather, their goal is to express their support for their preferred candidate. Consumers in economic theory do this all the time; they pay for tickets to go support their preferred athletic team, for example, or give money to the local classical station during fund-raising periods simply to express their support for such a valued commodity. Even more commonly, consumers buy groceries to consume them directly and not as an investment in the future of farming. That is, rather than valuing actions by their strategic effect on who wins or loses, the “expressive” voter values outcomes differently. This voter cares primarily (and in the “pure” theory, exclusively) about asserting support for the most preferred candidate or party—sincere voting.

In the purest case of expressive voting, the voter gets a benefit (a utility value), B , for voting for a preferred option (in the investment voting example, above, we set $B = 1$) and only for voting for that candidate. This differs from the expected-utility case, where a value is realized if and only if a candidate wins the election; with expressive voting, if you abstain, even if your candidate wins (or if you vote for another candidate), you get zero expressive benefit.¹² Put alternatively, the outcomes of value in the pure strategic voting case are who wins and who loses the election. The outcomes of value in the pure sincere voting case are who one actually supports and who one does not support.

The pure case of expressive voting is simple. Vote for the preferred candidate, X , and get B (and possibly the benefit for doing your duty, D , and pay cost, C); vote for candidate Y or Z and get 0 (plus, possibly, $D - C$); and abstain and get 0 (and receive no D and pay no cost, C).¹³ Thus, it is

always better to vote for one's most preferred candidate, no matter the circumstances. The only interesting question under this conceptualization of expressive voting is whether the person votes rather than abstains, which happens when $B + D > C$.

This expressive voting account may sound simple, perhaps simplistic. Vote only for your favorite candidate. And vote if you like your candidate a lot and if you feel you should do your duty. Abstain only if the cost of voting is (relatively) high. As simple as that may sound, Brennan and Hamlin (1998) and Brennan and Lomasky (1997) develop complex theories of choice and elections from expressive voting accounts, paralleling the spatial and related models that depend on expected-utility-maximizing voters, including Cox (1997).¹⁴

Distinguishing Voting Types

The difference between strategic and sincere voters comes down to the considerations that factor into the vote decision—more precisely, whether the choice is based solely on preferences regarding candidates or parties or on preferences and expectations regarding outcomes. It can be visualized as follows in table 1.1.

TABLE 1.1. Distinguishing Voting Types

		Expectations Regarding Outcomes	
		Yes	No
Preferences Regarding Candidates/Parties	Yes	1. Strategic, also Instrumental	2. Sincere, also Expressive
	No	3. Bandwagon, also Underdog	4. ?

Square 1 applies to the case when individuals take into consideration both their preferences regarding the candidates and their expectations about the outcome of the election. This case corresponds to voters who care only about the result of the election in their constituency and evaluate outcomes accordingly. It is thus the case where strategic voting comes into play via expected-utility maximization. Voters are using their ballot to affect the outcome of the election and therefore are voting on the basis of their preferences regarding outcomes rather than just their preferences regarding candidates or parties, or expectations. In square 2, voters ignore expectations and act purely to express their preferences with regard to candidates or parties. While they may care who wins their district's seat, they

evaluate turnout and vote considerations only in terms of their preferences regarding the options on the ballot and thus are expressive or sincere voters. Even someone who prefers a small, niche party's candidate who has no chance of winning will support that candidate, knowing that the candidate will lose, because the voter likes this candidate best.

If a voter considers only the likely outcome of the election, without caring about personal preferences regarding the candidates/parties (or if she is indifferent between some or among all options), then her vote choice would correspond to square 3. One can imagine someone who likes to be on the winning side, regardless of who the candidate is, or someone who only supports an underdog candidate so he/she does not "feel bad" about having such low support (Simon 1954; Lanoue and Bowler 1998). At least some voters in US presidential nomination contests consider whether to back one candidate or another based on how strongly they are performing and how well they might do in the general election—the famous "momentum" factor. In such cases, some voters end up voting for what might be their least preferred alternative in the primary (say, Romney in 2012), because he appears the most likely to win that November. Square 4, on the other hand, is harder to define. For our purposes, the crucial feature of these individuals is that they consider neither of the two elements—preferences regarding candidates/parties and expectations regarding outcomes—that we have identified as pertinent to vote choice. One can imagine voters who simply copy others in their household or sell their vote, which would lead to a specific choice that cannot be discerned from knowing personal preferences and/or expectations regarding outcomes. It is also possible that someone might decide to vote (possibly out of a sense of duty) but does not know whom to vote for and thus makes a random choice. Most studies consider only the options that include preferences regarding defined quantities, and given the range of motivations that might explain a voter with this profile, we set aside such consideration here.

Sincere and Strategic Voting

So far we have considered different types of voting as if they are mutually exclusive. However, there are two important exceptions. First, how can we distinguish the motivations of voters who support a first preference if it is also one of the top two most viable options (in an FPTP election)? In some configurations of preferences and expectations, we can distinguish strategic from sincere voters (for example, we would take all those who voted for the second-most-preferred party as at least potentially strategic but certainly not as sincere voters). But we cannot tell whether those who

support a top-two party as their preferred option are strategic or sincere voters. Both kinds of voters would choose the same action; the different calculi predict observationally equivalent outcomes. Indeed no fewer than two-thirds of all voters in a three-candidate contest have identical choices derived from strategic as well as sincere preferences. All those who prefer the strongest-running candidate and those who prefer the second strongest candidate should vote for their most preferred option whether reasoning from sincere or from strategic premises. So, when estimating rates of strategic voting, the best we can say is that we are estimating “pure strategic voting,” and possibly compare that to the rate of “pure sincere voting.”

Second, there is nothing to say that voters cannot receive pleasure from voting for their favorite candidate and value the fact that their vote helps make that candidate into a winner (and, at the least, certainly does not make it any less likely that the candidate wins). There is no reason to believe that citizens are either purely strategic (that is, purely investment) or purely sincere (that is, purely consumption) voters. On the contrary it makes sense to suppose that voters value shaping outcomes and also supporting their favorite party/candidate. While Brennan and colleagues argue for this mixture, they do the hard work of theorizing about the pure case of expression to show its richness. Even earlier, however, Fiorina (1976) developed this hybrid account as a generalization of the calculus of voting.¹⁵

So, if the reward for voting for a Downsian, purely strategic, or expected-utility maximizer is

$$R = PB + D - C,$$

and for a Brennan-esque, purely expressive, or utility-maximizing voter is

$$R = B + D - C,$$

then for a voter who is both an instrumental consumer and an investment voter, the reward should be

$$R = PB + B + D - C.$$

Part II: Extensions across Outcomes and Institutions

In the abstract, the emphasis on preferences and expected utility regarding outcomes is equally applicable across all electoral rules, and as the Gibbard-Satterthwaite theorem (Gibbard 1973; Satterthwaite 1975) shows, there

are *always* reasons in every electoral system for deviating from the purely sincere choice. Voters have preferences regarding candidates/parties and have expectations about the chances of each winning. But institutional rules shape a variety of different kinds of outcomes and thus ways in which “winning” is defined. In this section, we generally consider all voters to be instrumental, using the calculus of voting with regard to outcome. What differs, however, are the definitions of *winning* and thus the outcomes about which voters have preferences and expectations. The relevant institutional rules are primarily those defining the electoral system and the party system. We focus here mostly on different electoral systems. We also recognize that ingrained in all systems are several different types of outcomes that may concern voters—direct winners in a constituency, legislative control, and government formation. The existing work on strategic voting in FPTP systems tends to concentrate on the constituency level, which makes sense because that level is where the vote is directly invested. But just as decisions about investing in any specific stock may be shaped in part by expectations about the performance of the national economy, so might decisions about investing the vote in any specific district race be shaped in part by expectations about the performance of the national government. It thus becomes pertinent to consider different institutional configurations and how those shape the importance of outcomes at other levels.

National Outcomes under FPTP

The citizen is a potential voter not only in a district but also in a country. Both Canada and the United Kingdom essentially have unicameral national governments. As a result, if one party wins a majority of the seats, it forms the government, selects the cabinet and prime minister, and so on. But even in a separated-power system such as the United States, the majority party in the House of Representatives selects the Speaker of the House, who may wield considerable partisan authority over the agenda and help determine outcomes that flow from the House. And, in both cases, if no one party holds a majority of the seats, a coalition of parties may form and determine the government, or a minority may try to govern (in a minority government). As a result, voters may care not only about who wins their constituency but also about who controls the chamber. (For the United Kingdom, see Abramson et al., this vol.)

In such a system, the citizen votes directly for a candidate in the district. The citizen is more likely to vote if that election is predicted to be close. The citizen votes only indirectly for the government. That is,

the party that carries that particular district has one more seat in the legislature and thus one more step toward forming a majority in the chamber. Abramson et al. (this vol.) basically investigate three UK parties. Since World War I, the “third party” (in this case, the Liberal Democratic Party) has not come close to winning a majority in the Commons and rarely has kept the Conservatives or the Labour Party from winning an outright majority of seats. But in the 2010 election, the Lib Dems appeared to have a real chance to move as high as second place in the Commons and their leader seemed to have a plausible chance at becoming prime minister—at least for a short while.

Taking this example for simplicity, then, the citizen was choosing among at least nine possible outcomes; party X wins in the district, X forms the government; X wins in the district, Y forms the government; X wins in the district, Z forms the government, and so on with Y or Z winning the constituency’s seat. Citizens are assumed to have candidate/party preferences and expectations regarding these nine outcomes and choose so as to maximize expected utility. (Of course, there are more possible outcomes, and the actual result in the 2010 UK election was a coalition government formed of the Conservatives and the Lib Dems.) We might well imagine a voter caring about who forms the government and runs the political system. However, that voter will be inclined to vote on the basis of the local constituency only if the contest is competitive; if it is, the voter might select the second-choice contender if the most preferred party has no chance of winning.

The voter’s actions also contribute to the national outcome, but again, only if the contest is close. Thus, the voter could decide to cast a constituency-level “tactical” vote (that is vote for the second-place party, following Abramson et al.’s terminology [this vol.]) if the constituency contest is close. But the voter could cast a national-level tactical vote if the parties are expected to be close in terms of numbers of seats won nationally *and* if the voter’s constituency is also competitive. In other words, casting a strategic vote in the constituency involves the straight P term—the closeness of the race in the district. Casting a strategic vote with respect to the nation involves both the expected closeness in the district and the expected closeness in the legislature. We thus expect that district closeness will matter more in determining the casting of a strategic vote than will national closeness, which involves a combination of two (likely small) probabilities, in interaction. Psychologically, we might also expect that the indirect nature of the national outcomes reduces their saliency to the determination of the vote, relative to the more immediate case of an expected close

contest in the constituency (though the media are likely to pay more attention to the national than to the local outcome).

Two-Round Systems

Two-round elections are particularly popular for the election of a president, and we thus start with this simplest situation. We also focus on the most frequent rule, which is that an absolute majority of votes is required for election in the first round and that if a second round is necessary, only the top two candidates can participate. In that case, the only outcome that matters is who will be elected president. Because the second round has only two choices, strategic and sincere voters alike vote for the more preferred option. Strategic voting in the binary case *is* sincere voting.

The most obvious type of strategic voting in the first round in such a context is strategic desertion of the weak candidates. Supporters of these candidates must decide whether to vote sincerely for their preferred option or to cast a strategic vote for the preferred candidate *among those who have some chance of winning*. The logic is exactly the same as in an FPTP election.

The existence of two rounds, however, opens up the possibility of at least two additional types of strategic moves. The first type is when there is certainty about who the top candidate in the first round will be (and certainty that this candidate will not obtain an absolute majority of the votes) but uncertainty about which other candidate will be allowed to participate in the second round. In such a context, some supporters of the strongest candidate may want to focus on the race for the second position and cast a strategic vote for a candidate who has some chance of making it to the second round and who is very unlikely to be able to defeat the strongest candidate in the second round. In this situation, the voter strategically deserts a strong candidate to support a weaker one. Those who oppose the strongest candidate, conversely, may support a candidate expected to have the best chance of defeating the certain candidate. In both cases, such voters are taking into account the possible outcomes of both the first and second rounds when making up their mind about how to vote.

A second possibility emerges when there is certainty about the two candidates who will make it to the second round. In this context, some of the supporters of these two candidates may wish to signal their preferences among the weaker candidates. This can be the case, for example, when a voter likes a policy stance of one of these weak candidates and wishes that the preferred strong candidate would pay more attention to that policy position. This seems to have been the case for some Jospin supporters in

the 2002 French presidential election: they voted for a more leftist candidate because they mistakenly believed that Jospin would reach the second round and hoped to prevent Jospin from moving too much toward the center (Blais 2004). This appears similar to sincere voting, and indeed it might be—but not always. That is, a voter wishes to vote strategically but calculates that expectations are so nearly certain that it is better to vote purely for a desired policy than to invest the vote strategically by supporting the more preferred of the top two contenders so that the candidate makes it to the second round. It can differ from the single-round FPTP case of strategic voting, however, if the voter prefers, for example, the moderately liberal strong contender who is certainly expected to make it to the second round *but* the voter wants to send a signal to that candidate. By voting for a more liberal candidate not expected to advance, the voter can signal to the preferred and strong candidate that if policies must be modified to gain support, the candidate should work with the Left and not the middle or Right.

The same possibilities apply to single-member district two-round legislative elections, since the presidential election is a single-member district election. In legislative elections, however, as in the case of FPTP elections, voters may care not only about who wins in their district but also about which party will gain a majority of the seats or even whether the government will be a majority or minority one. This creates additional incentives for strategic voting if and when voters take into account the possible outcomes of the national race.

Divided Government

In the specific case of France, with its semipresidential system, there is also the issue of divided government (called *cohabitation* in France). There is divided government when the party that has a majority of seats in the National Assembly differs from the party of the president.¹⁶ But since the presidential and legislative elections are not simultaneous, voters already know who will be the president for the next five years when they vote in legislative elections, and expectations about the other election thus do not come into play. Therefore, the voters have only two choices if they care about the president-legislature combination: divided government or single-party government. The key is that the outcome of interest for the voter—in this case, whether there is *cohabitation*—has only two options. With only two choices, there is no room for strategic voting as we have defined it.¹⁷ The United States extends this consideration of divided government by having three electoral units, each of which has a role in passing

any legislation, thus expanding the array of strategic choices for voters. We do not consider this case further, but see Alesina and Rosenthal (1995, 1996); Fiorina (1991, 1992).

In the case of a parliamentary system, the issue of divided government takes a slightly different form. Divided government then means that the largest party holds only a minority of the seats, as happened in the 2010 elections in the United Kingdom considered by Abramson et al. (this vol.). As a result, passing any legislation requires the formation of a multiparty coalition after the election, either on a case-by-case basis between a minority government and one or more parties not in government or via a lasting coalition of parties to forge a majority government, with the party of the prime minister needing the support of some other party to remain in power or to pass legislation. Some voters prefer minority or majority governments. Daoust (this vol.) considers how such preferences affect voting behavior in Canadian elections. Voters who prefer minority governments, like those who prefer divided government, may decide not to support a party that is perceived to have a good chance of gaining a majority of the seats. Voters who prefer majority governments may wish to support the only party seen as having a good chance to win a majority, even if that party is not their most preferred party. There is thus the possibility of strategic voting, since voters' decisions hinge on both their preferences and their expectations about election outcomes. Unlike in the case of *cobabitation* or midterm divided government in a presidential system, there is no certainty about how one's vote would contribute to the outcome. But outside of Canada and the United Kingdom, most parliaments are decided by either proportional representation or a mixture of FPTP and proportional representation voting. We now turn to strategic voting under proportional representation and under mixed systems.

Proportional Representation (PR)

The wide array of PR systems all share two features. First, they contain multimember districts. In some cases, districts are a whole country (for example, Israel, the Netherlands); in others, the country is divided into regions (for example, Spain, Norway). Second, seats are distributed based on the proportion of support shown for a party. As was the case under FPTP and two rounds, strategic voting may occur in PR because of expectations about the outcome in the district, in the legislature, and in the government.

While some observers claim that strategic voting is associated with

FPTP but not with PR voting procedures, the Gibbard-Satterthwaite theorem tells us that logically there are opportunities for strategic voting in every system, including PR. What makes FPTP special in this sense is that the logic of wasted voting is very easy to see and implement. Indeed, parties and candidates often pursue campaign strategies that remind voters about this logic and instruct them on what to do. The situation is more complex with PR voting. Empirically, the evidence seeming to support “wasted” voting may well be as clear and compelling under PR as under FPTP (see Abramson et al. 2010; Riera 2016, table 1.1). Table 1.2 offers a simple example, the 1999 Israeli election. In that election, Israelis cast two votes, one for prime minister under pure FPTP rules and one for representation in the Knesset under what are among the purest cases of PR rules in use. Nearly everyone who preferred Barak or Netanyahu most intended to vote for him. Many Mordechai supporters also intended to vote for him, but one in four reported an intention to cast a strategic vote for their second-choice candidate. That is the kind of evidence we would expect given the circumstances of the campaign at the time of the survey and assuming that voters are purely investment-oriented. But Israelis also cast a vote for the Knesset under highly proportional rules. Table 1.2B shows that, if anything, the results are even stronger in support of the “wasted voting” account in the Knesset election.

At least three kinds of outcomes under PR might motivate strategic

TABLE 1.2. Preference and the Vote in Israel for Prime Minister and for Knesset Representation

A) Voting for PM via FPTP, 1999

Highest Preference	Vote intention for		
	Barak	Netanyahu	Mordechai
Barak	95.6%	3.2%	1.3%
Netanyahu	5.3%	94.3%	0.4%
Mordechai	8.5%	15.9%	75.6%

Source: Abramson et al. 2010, table 2E.

B) Voting for the Knesset via PR, 1999

Highest Preference	Vote intention for		
	One Israel	Likud	Center
One Israel	96.3%	1.6%	0.0%
Likud	1.8%	93.6%	0.9%
Center	25.3%	6.0%	61.5%

Source: Compiled by authors from Israel Election Study 1999; Jewish respondents only.

voting. First, voters might support a party to ensure that it achieves representation in the parliament. Generally, that means that a party must pass a voting threshold—that is, receive at least a legally specified minimum proportion of the vote—to obtain any representation. Israel previously had a relatively low 2% threshold; 5%, as in Germany, is more typical; Sweden's threshold is 4%, while Turkey's is 10%. An extreme example of threshold politics is presented by the United States and its presidential primary system. In 2016, for example, thresholds were often as high as 15%; in other years, they have reached 20%. The higher the threshold, the harder it is for small and new parties to achieve representation (or in the US primary case, for presidential candidates to win delegates). Indeed, a threshold of 50% means that the PR system has become identical to a majority voting system. Theoretically, the set of outcomes over which a PR voter has preferences is rather like that of FPTP. There are two outcomes—the party does or does not achieve the threshold—and the citizen evaluates by preferences and expectations accordingly. While breaking the threshold is often a stated goal of a party and often claimed to motivate voters, if the party is anywhere close to the threshold in popular support, it is very difficult to measure reliably such a rare circumstance with very low percentages of support for a party just at the threshold in a survey. This consideration may be very important, but it also can only be investigated via a special research design (see Freden 2016).

A second outcome is the number of seats a party wins. For a supporter of a given party, the most obvious formulation is that supporters desire their party to win more rather than fewer seats. That is, at least over the empirically relevant range of likely outcomes, preferences regarding those outcomes are monotonically increasing in the number of seats the preferred party wins. In Israel, with one nationwide district and thus with all 120 seats allocated in close proportion to the percentage of votes received, the set of outcomes is finite but dense (that is, there are many different outcomes, each one differently valued, such as my party wins 2 seats, it wins 3, . . . m, it wins 119, it wins 120) and preference is increasing with each new seat won. In that respect, utility is approximately continuous and for this reason is considered to have very little room for the logic of “wasting” a vote. Every vote contributes to increased representation, and thus we expect that voters will vote for their preferred party in the hope of helping it win just one more seat. In such cases, strategic and sincere voters vote exactly the same. Of course, all PR systems deviate from a pure one-to-one relationship between seats and voters, and this discrepancy provides room for strategic considerations.

More important, unlike Israel, most other PR systems have voters select more than one but less than every member of Parliament (often in the range of 5 to 10). It is in this case that the Cox $m + 1$ result really takes effect, so that if m is 5, there is strategic room for up to 6 parties to survive and win up to 5 seats. And here there is room for strategic voting in quite the same way as under FPTP. With so many parties able to win seats, however, fewer and fewer voters will back a party that is unlikely to win one seat and thus be a prime candidate for the “wasted vote” logic. Alternatively, a voter in a multimember district may have near-certain expectations for how many seats the preferred party will win and so may vote strategically to influence the outcome of a close race. For example, if there are four parties and four seats and party A is certain to win two seats and party B one, then the voter may choose between parties B and C if the race for the fourth seat is close.

But there is an FPTP-like situation in every parliament, and this FPTP-like argument is particularly compelling in unitary governments (that is, in cases where one chamber of the parliament is dominant in governing). After the election determines the allocation of seats, the parties in the parliament must select a government with a cabinet and prime minister, and this selection is clearly FPTP—that is, only one government forms at a time. It is quite reasonable to imagine that voters do care what government forms, who chooses policies for the nation, and who leads the nation as prime minister (and who occupies other important posts, such as finance or defense minister). Thus, the third outcome to consider is government composition. In PR systems, where coalition government is the norm, considerations of composition take the form of voting to affect the ruling coalition. There are two ways that this can be strategic. The first is that a voter may desert a sincere preference for a larger party to support a small party in the hope that the small party will become a member of a preferred coalition (known as rental voting; Meffert and Gschwend 2010). If expectations for a preferred major coalition party winning are high, this might be a consideration. This could result, *inter alia*, in moving the center of the governing coalition in a direction favored by the strategic voter (see, for example, Duch, May, and Armstrong 2010). The other form of strategic voting would be deserting a first-preference small party to support a major party that is likely to head a coalition in the case of a close race between two potential coalition heads (that is, between the two leading candidates for prime minister). Lagos (this vol.) examines this possibility using data from the 2016 election in Spain.

Overall, PR systems introduce many different outcomes regarding

which voters might have preferences. All of these preferences have the potential for strategic behavior, or using a vote in an instrumental way that takes into account both party preferences and expectations. To appreciate the range of ways that voters may use their vote instrumentally, we need to recognize the great range of outcomes that matter to voters.¹⁸

Mixed-Member Systems

Having discussed outcomes and potential strategic behaviour in FPTP, two-round, and PR systems, it is now necessary to consider the other major electoral system type, mixed-member systems. There are two main types of mixed systems: parallel, where the two systems work independently of each other (sometimes called Mixed-Member Majoritarian), and compensatory, where the number of seats allocated to each party is basically determined by the list vote (sometimes called Mixed-Member Proportional). In the majority of mixed systems, one vote determines the outcome of a single-member district election (usually the FPTP rule), and the other vote is cast to support a party, which in turn will affect the proportional allocation of second-tier seats. Thus, the outcomes that may affect vote choice in mixed systems combine the outcomes for FPTP and PR systems separately.

In parallel mixed systems, each vote may be sincere or strategic on its own terms. In compensatory systems, however, a voter knows that the constituency vote will count toward the allocation of seats determined by the party vote. This opens up the possibility of using one vote instrumentally based on expectations regarding the outcome of the other vote. The practice of allowing candidates to stand for election for both types of seats at the same time can also contribute to this phenomenon, bringing elements of personal voting into play (see Gschwend 2007).

The presence of ticket-splitting (for example, voting for a given party in the list PR vote and for a candidate of another party in the FPTP district vote) is sometimes interpreted as an indicator of strategic voting. Plescia (2016) compellingly demonstrates that this is a mistake. In many cases, people vote for the candidate of another party simply because they have distinct preferences about the parties and the local candidates. Plescia (this vol.) shows that this is particularly the case in Japan, where many voters have distinct preferences regarding the local candidates. In their analysis of Germans' two votes, Harfst, Blais, and Bol (this vol.) make the same point. In addition, they show that it is possible to cast a straight ticket for the same party and for both votes to be strategic. In short, ticket-splitting

and strategic voting are two different phenomena that need to be clearly distinguished.

Strategic voting is likely to be more frequent in mixed systems. This is so almost by definition since the presence of two votes increases (by 100%) the opportunity to cast a strategic vote. But it is also quite possible that having two votes makes people think a bit more about how to make both votes count. Gschwend (2007) and Plescia (2016, 55) have argued that strategic voting in FPTP local district ballots (a common feature of mixed systems) is more frequent precisely because it is less consequential and thus less psychologically costly for voters with strong partisan preferences.

Part III: Chapter Overview

This chapter provides a general framework for assessing the strategic quality of vote decisions. Identifying a voter's goals within the context of a given electoral system and thinking through how preferences and expectations may affect actions taken to achieve those goals leads to a better understanding of what behavior is sincere and what is strategic. It also leads to different conceptualizations of what constitutes strategic voting.

In the chapters that follow, each study presents an analysis of strategic behavior in a specific institutional context. FPTP, PR, mixed, and approval voting systems are examined in the United Kingdom, Belgium, Canada, Japan, Switzerland, Spain, and Germany. Each chapter takes a unique approach to a specific case.

Three chapters consider the balance between local and national considerations. Abramson et al. examine the 2010 UK election, building on the classic calculus-of-voting model by relaxing two assumptions and thus allowing for uncertainty about outcomes and introducing national considerations into voters' decision making. Using both micro and macro models, they find evidence that both local and national considerations are relevant for voters, although to different degrees. Local considerations are the main factor, but national considerations also produce strategic incentives, and such incentives are amplified when local and national considerations push behavior in the same direction.

Lago's chapter also addresses national considerations. The 2015 Spanish election failed to produce a viable government—no party commanded the support of enough legislators to govern effectively. As a result, Spain held another election in May 2016. Going into that contest, it might have

seemed logical that voters would have had the national situation in mind and would want to elect legislators who would lead to a clear win for a party. To this end, Lago analyzes the effects of local and national considerations on voters' strategic behavior. Surprisingly, however, he finds very little effect, although the outcome of a minority or majority government seemed to be a pressing concern.

Daoust's chapter considers the influence on strategic voting of preferences regarding minority or majority government at the national level in a single-member district system, where strategic behavior *should* be a local calculation. He looks at the 2015 Canadian election, in which expectations of a minority government were common. The country had experienced minority governments in 2004, 2006, and 2008, and these experiences informed voter preferences. He finds that minority government preferences do matter, although the local calculus dominates voter considerations. His findings are commensurate with those of Abramson et al., although Daoust uses different analytical techniques and different measures of national considerations.

Blais et al. also consider the 2015 Canadian election but do so from a different part of the voting calculus. Instead of considering voters' preferences, the authors focus on whether providing more information that could shape expectations affects strategic behavior. They present the results of an experiment that randomly showed voters the latest local or national poll results. Given the prominence of expectations in the theory of strategic voting, receiving information that a preferred party is unlikely to win *should* inspire strategic behavior. Somewhat surprisingly, they find no effect of the experimental treatment. This result raises questions about the origins of perceptions and the importance of wishful thinking.

Plescia's chapter also looks at the role of information in the calculus of voting. She examines strategic behavior in the single-member district ballot of lower house elections in Japan. Her analysis demonstrates voters' ability to use contextual information—in this case, the number of quality challengers—to understand the strategic incentives to coordinate. This kind of indirect information gathering should inspire researchers to look for the cues that voters are likely to use to figure out the nature of electoral competition in their district.

The remaining four chapters look at the incidence of strategic behavior in complex contexts. Focusing on Belgium, Verthé and Beyens analyze whether coalition viability affects voting behavior when coalitions are the norm but the party system is complicated. They seek to understand

whether voters would try to use their vote strategically even when there are two separate party systems, different language groups, and a constitutional requirement for language representation in government. They find that voters are still affected by viability and preferences. Indeed, for those who have an incentive to vote strategically, the distance between their first and second party preferences is a key factor. Voters therefore consider not only which parties might have a chance of being in government but also whether they like the alternatives well enough to support them and avoid wasting votes.

Harfst, Blais, and Bol take a close look at strategic voting in a mixed electoral system. They distinguish three separate types of strategic behavior—strategic local desertion (in the FPTP ballot), strategic list desertion (in the PR ballot), and strategic coalition insurance voting (in the PR ballot)—a common expectation in Germany, where coalition government is the norm. Assessing the FPTP and PR votes for the 2013 German election individually, the authors find that people can and do vote strategically, sometimes only on one ballot and sometimes on both.

Van der Straeten, Lachat, and Laslier look for evidence of strategic behavior in approval voting in Switzerland. They find that even when voters appear to have no strategic incentives, there is evidence of strategic behavior along the lines put forth by Laslier and Van der Straeten (2016). This lends support to the chapter's overall conclusion that any time a voter considers the outcome of the election when making a choice, strategic thinking is involved.

Finally, Lebon et al. consider the choices of voters confronted with three voting rules that allow them to use their vote in different ways. The results demonstrate that voters do not always behave as one might predict. They consider alternative explanations for the observed behavior that recognize that some parties that are popular (evaluated positively) are also small and so do not receive the expected support. They also find that neither strategic voting nor sincere voting paradigms can entirely explain voters' choices.

Understanding the incidence of strategic voting in elections, then, requires that we expand our thinking to consider voters' many preferences regarding various electoral outcomes and the ways that voters imagine they can use their votes instrumentally. Strategic voting indeed has many faces, because the instrumentally oriented voter may have a diversified set of goals and the choice of the optimal decision is bound to depend on the prevailing political institutions.

APPENDIX

TABLE A1.1

	1 ahead	2 ahead	3 ahead	1–2 tie	1–3 tie	2–3 tie	1–2–3 tie
Vote for:							
1	1–C+D+B	S–C+D	0–C+D	1–C+D+B	1–C+D+B	S/2–C+D+B	1–C+D+B
2	1–C+D+B	S–C+D	0–C+D	1–C+D	0.5–C+D	S–C+D	S–C+D
3	1–C+D+B	S–C+D	0–C+D	1–C+D	0–C+D	0–C+D	0–C+D
Abstain	1	S–C+D	0	1	0.5	S/2–C+B	(1+S)/3

NOTES

1. The first such election was 1996. Yitzhak Rabin was assassinated as the time for the election campaign neared. While there were likely to have been several candidates, the assassination changed the dynamics, with the result that only two candidates, Shimon Perez (standing in for Rabin as head of Labor) and Benjamin Netanyahu (Likud) ran, and Netanyahu won.

2. Barak was the head of the Labor Party, running in a coalition with smaller parties and called on the ballot “One Israel.” Netanyahu was head of the Likud Party.

3. In the last two weeks of the campaign, his support fell from nearly 20% to about 5%.

4. Still others might have found that the strategic setting inclined them to remain supportive of Mordechai, such as those who really did not like Barak much better than Netanyahu. And, of course, all those who preferred Barak from the outset would stay with him because the strategic setting reinforced their preferences. Such voters are sometimes said to have “straightforward” strategies in that their strategic and their sincere choices are the same.

5. For a recent review of empirical findings that often parallels our theoretical review, see Riera 2016.

6. See McKelvey and Ordeshook 1972. For an early empirical application of this calculus to voting behavior in Britain, see Cain 1978; for Canada, see Black 1978.

7. They actually proved that all voting procedures are consistent with the conditions of Arrow’s theorem (2012), but that includes all systems under consideration here.

8. Imagine a nation with two single-member districts. Party A wins both districts with 51% of the vote in each. Party A thus wins 100% of the seats with 51% of the vote, while Party B wins 0% of the seats with 49% of the vote. Rarely is the result so extreme, but it is common for the plurality-winning party in a nation to win far more seats than votes. In the United Kingdom, for example, no party has won a majority of the votes nationwide since World War II, but only twice has the plurality-winning party failed to win a majority of the seats. In the United States, there is considerable public opposition to politicians’ construction of gerrymandered electoral districts that seek to capitalize on the mechanical effect to the benefit of the majority party.

9. That is so unless the third-strongest contender is nearly tied with the second-place party, as was more or less true for Mordechai early in the 1999 Israeli prime ministerial election. This psychological effect underlies all of the results in Cox's (1997) classic book.

10. Palfrey (1984, 1989) was the first to derive a two-party system from rational choice theoretic principles, but he did so with both "strategic" and "sincere" voters, so that the driving force was not the electorate's decision making.

11. Harsanyi (1977) developed game theory with Bayesian expectations among citizens (more generally, all players), with the resulting advances in game theory yielding him a Nobel Prize.

12. This expressive term differs from the Downs–Riker/Ordeshook "citizen duty" or D term, which comes from voting, no matter for whom. This expressive or B term comes only from supporting the appropriate candidate.

13. Alternatively, the theory might be modified so that a voter who chooses Y might get s . With $s < B$, the purely expressive voter would not choose to vote for Y, since that action is dominated by voting for X.

14. Their accounts also differ substantially from the standard Downsian spatial model in terms of candidate strategies.

15. He developed a theory of party identification, which is where the expressive values were located. We simply take his model and apply the expressive term as something that any voter (not just partisans) might value.

16. This is much less likely to occur since legislative elections now take place immediately after the presidential election. In the wake of that institutional change, the party of the president has always won the next legislative election, partly because the presidential party benefits from a honeymoon and partly because most voters prefer unified government.

17. Strategic voting in the presidential election may still occur on the basis of expectations about the outcome of the following legislative election. For example, some voters who prefer unified government may decide not to support their preferred candidate in the presidential election because they believe that the party of that candidate is too weak to win a majority of the seats in the following legislative election. We are not aware of any study that has explored that possibility. However, it is similar to the theory applied to divided government in the United States developed and tested by Alesina and Rosenthal (1995, 1996) and Fiorina (1991).

18. The major difference with respect to strategic voting is that under PR, there are many ways—and many reasons—for casting a strategic vote, and these differences may lead to conflicting outcomes, so that some voters cast a strategic vote in one direction while some do so in the other direction. Formally, there are equilibrium solutions for strategic voting under FPTP but not (or not yet proven) under PR. This difference is especially acute because there are so many reasonable motivations for considering the strategic setting and for evaluating the diversity of possible outcomes.

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The Effect of National and Constituency Expectations on Tactical Voting in the British General Election of 2010

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The 2010 elections in the United Kingdom provided voters with numerous and diverse opportunities to reason strategically. The Liberal Democrats (Lib Dems)—traditionally finishing a distant third in terms of seats in Parliament—vied with Labour to be the principal competition to the Conservatives, who failed to win a majority of seats, creating a rare case of what the British call a hung parliament.¹ These conditions varied across constituencies at the district level, and we exploit this variation to study the incidence of “tactical” voting. But the national outcome also presented strategic considerations for voters, and these conditions varied to some extent over the course of the campaign, giving voters interviewed at different times different sets of national considerations for tactical voting. This presents us with the opportunity to investigate how both local and national considerations may shape strategic reasoning among voters and relate to each other and to the final choices of voters on Election Day.

The Problem

Statement

The logic of strategic voting, developed in detail in chapter 1, is simple. Strategic voters seek to use their votes to shape the outcome, if at all possible, rather than to “simply” express their preferences.² If voters value their votes in terms of affecting collective outcomes, they will avoid “wasting” their votes on candidates with no chance of winning. More precisely, strategic voters will cast their votes for the candidate who maximizes the expected utility, which is a product of the utility they derive from the candidate’s winning and their expectations that their votes will be pivotal for the candidate’s victory. Though all voters may be strategic and make such calculations, only a subset of the electorate faces a strategic context that compels them to be “tactical” voters—that is, voters who deviate from voting for their most preferred candidate or party. Decades of study have confirmed the empirical manifestation of strategic voting, especially in observing the regularity of tactical voting under the theoretically predicted circumstances. Particularly in “first past the post” (FPTP) electoral systems (but also in other electoral systems, including proportional representation), candidates expected to lose the race tend to lose supporters who cast tactical votes for less preferred but more viable candidates (see, e.g., Abramson et al. 2010; Riera 2016).

The apparent simplicity of the calculus of voting obscures understudied complications to the practice of strategic voting, even in the fairly clear strategic considerations presented in modern Westminster systems. Voters in such systems cast ballots only for local candidates, but in the aggregate their votes determine which party or parties form(s) the national government. Thus, such strategic voters may be expected to choose among the candidates with these dual considerations in mind. It would be surprising, for example, if voters’ opinions about prime ministerial candidates failed to enter their thinking, and there is evidence that expectations about the national outcome also shape their understanding of the strategic context of the campaign. This may be no surprise, because media coverage of elections focuses heavily on the national race, meaning that voters have good information to develop national-level expectations,³ while the amount and quality of information available to develop constituency-level expectations is varied and often of low quality. In sum, a voter’s strategic context is determined by both national- and constituency-level expectations and preferences, and it is a testable question as to how they shape voting behavior.

Data

We evaluate this approach using data collected from individual English respondents during the 2010 British election campaign. This election provides a particularly valuable empirical test of the national- and constituency-level components of strategic voting. First, if it is correct to rely solely on constituency-level information in calculating tactical voting, the 2010 UK contest constitutes a strong test of the assumption, as it is a case where voters who might rely on national-level information concerning various parties' realistic chances of forming a government should have been more reluctant than usual to vote tactically, at least for a good part of the campaign. The 2010 election was typical in that there was very little chance that any one party would win an outright majority of the votes. But the 2010 election was atypical in that for the first time in many years, the heretofore perennial third-place-finishing Lib Dems were, for at least a short while during the campaign, statistically tied with and possibly even ahead of Labour in the public opinion polls and thus in second place. At that point, according to the theory of strategic voting, no vote for any of the three parties would be wasted. The viability of the Lib Dems became particularly apparent following the first debate on April 15, three weeks prior to the election. An unexpectedly strong performance by Lib Dem party leader Nick Clegg resulted in the party's brief surge toward the top of the polls. Clegg's and the Lib Dems' chances subsequently declined, but they ended up in a governing coalition with the plurality-winning Conservatives. Even so, voters reported taking tactical votes away from the Lib Dems, as would be the tactical choice in most British elections since World War II.

Second, the 2010 British Election Study (BES) provides an ideal dataset to explore the phenomena of tactical voting at the national and local levels. More than 7,000 respondents in England were asked to provide evaluations of the three main parties as well as an estimate along two 11-point (0–10) scales of the likelihood of the parties' winning the national election and the local seat. These data allow us to estimate and analyze voters' individual expected-utility calculations using their own expectations rather than relying on external (and in the case of local races, infrequent) poll results. We can also then aggregate these individual choices to examine the overall occurrence of tactical voting. The dynamics of the campaign itself—especially the Lib Dems' surge and decline in the polls—provides variation in respondents' expectations, which allows us to better test our theoretical predictions.

Third, the United Kingdom has been one of the primary locations for the empirical study of strategic and tactical voting. Evidence of tactical voting has been found in a variety of voting systems, including runoff systems and proportional representation (Abramson et al. 2010; Riera 2016). But many scholars expect that tactical voting should be most common in FPTP systems like that of the United Kingdom (for early tests, see Black 1978; Blais and Carty 1991; Cain 1978). And with a virtually unitary government, the single vote cast for a candidate for the House of Commons is the basis for determining that nearly unitary government.

These effects are magnified in the United Kingdom because what Duverger (1959) referred to as the “mechanical effect” of single-member districts that has translated a plurality winner in terms of votes into a majority winner in terms of seats in the great majority of elections since World War II, thus both justifying and magnifying his “psychological effect.” Figure 2.1 illustrates the relationship between vote and seat proportions in British general elections since 1945. The top two lines show how the plurality-winning party (either the Conservatives or Labour) won a higher percentage of seats than votes and how that result frequently translated a sub-50% vote share into a single-party majority in Parliament, thus indicating the relevance of the mechanical effect. The two lower lines show how that legislative seat bonus came at the expense of the third-place party (always the Lib Dems or their predecessors), which has consistently received a smaller percentage (and often a much smaller percentage) of seats than of votes.⁴ If anything, the seats/vote splits for the Lib Dems appear to be growing farther apart over time, suggesting that the mechanical effect, as Duverger proposed, has been supplemented and strengthened by the psychological effect, revealed as tactical voting. That is, it appears that a significant number of voters abandon the Lib Dems in districts where they have little chance of winning. And, if anything, it appears that over time voters are learning when to avoid “wasting” their vote.⁵

Scholars have shown that in recent British elections, a significant subset of the electorate who preferred electorally unviable parties voted consistent with the logic of tactical voting based on their understanding that the FPTP system would deny their preferred party representation. Evidence of tactical voting has been found in the British elections of 1970 (Cain 1978), 1977 (Fieldhouse, Shryane, and Pickles 2007), 1983 (Fisher 2004; Franklin, Niemi, and Whitten 1994; Heath et al. 1991; Lanoue and Bowler 1992; Niemi, Whitten, and Franklin 1992), 1987 (Heath et al. 1991; Heath and Evans 1994; Lanoue and Bowler 1992), 1992 (Fisher 2004), 1997 (Fisher 2004; Myatt and Fisher 2002), 2001 (Clarke et al. 2004; Fieldhouse, Shry-

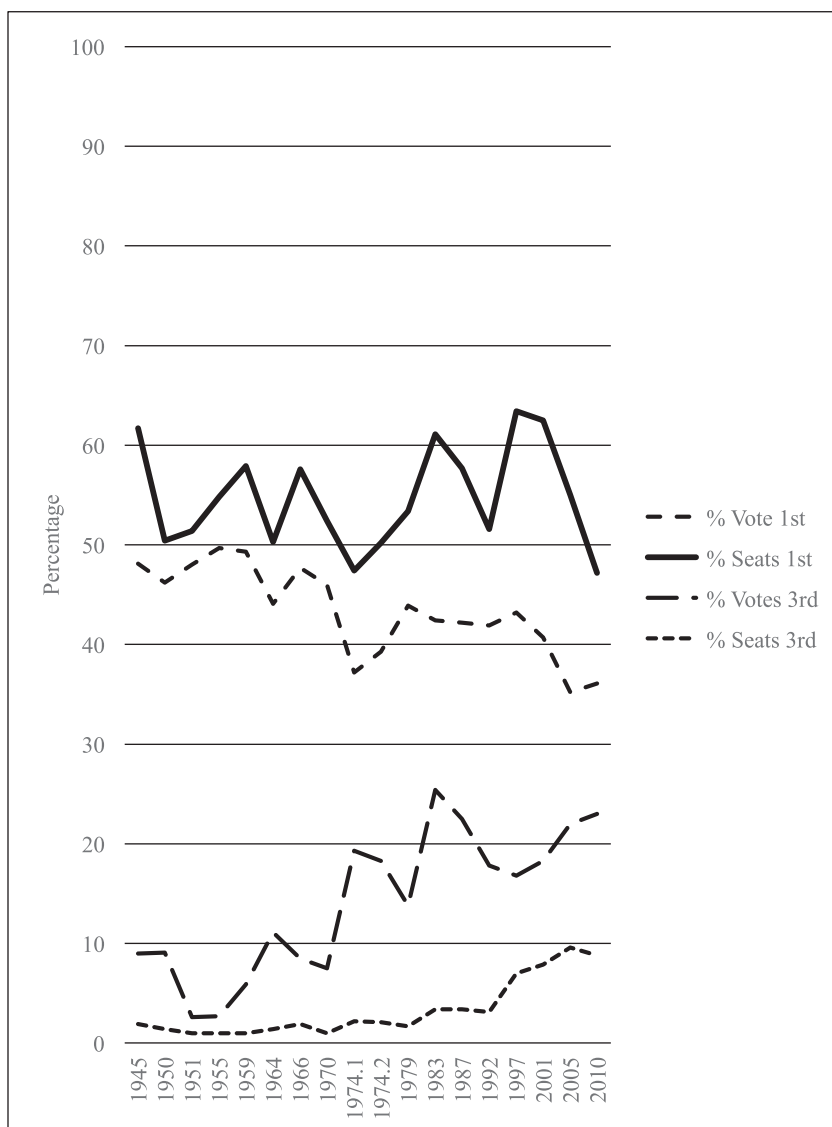


Fig. 2.1. Seat and Vote Percentages, First- and Third-Place Parties, UK Elections, 1945–2010

ane, and Pickles 2007; Fisher and Curtice 2006), and 2005 (Fisher and Curtice 2006; Kiewiet 2013).

The Theory of Strategic and Tactical Voting, with Two Modifications

The Standard or Classical Model of Strategic Voting

The theory of strategic voting has been formalized by scholars examining the “calculus of voting” (McKelvey and Ordeshook 1972). Under this theory, voters maximize the expected utility of their votes calculated by multiplying the voter’s utility from that candidate’s winning by the expectation that the vote will be pivotal or decisive. Thus citizens’ vote choices are a function of both their preferences among the candidates and their expectations about the election outcome. We will thus consider two utility orderings of candidates: a simple or pure utility ordering that considers only preferences (that is, “sincere” preferences) and an expected-utility ordering that combines preferences with expectations. When the two orderings differ and when an expected-utility-maximizing voter votes for the candidate at the top of the expected-utility ordering instead of the candidate at the top of the ordering based purely on preferences, we say that the voter is voting tactically.

Because *tactical* voting applies only to supporters of trailing candidates, many *strategic* voters will still vote for their most preferred party. In a three-party local race, the two parties with the greatest chance of winning will, by definition, be the first choice of at least two-thirds of the electorate (and typically will be favored by more than two-thirds), assuming that all voters have reasonably accurate expectations about the campaign. Consequently, no fewer than two-thirds of the voters in each constituency should vote for the party or candidate they most prefer whether for sincere or strategic reasons. The exception to this “straightforward” strategy occurs only in the narrow circumstances described by Kselman and Niou (2010), when the second-most-preferred party is seen as more likely than the most-preferred party to defeat the least favorite party (see chapter 1).

Testable Hypotheses Drawn from the Classical Model

There are many empirical tests of the strategic voting model, particularly using data from the United Kingdom. The best of these tests are based

on testable hypotheses that flow from the classical model of the multicandidate calculus of voting. We draw here from Kselman and Niou (2010; see also Niou 2001), who emphasize the drawing of empirically testable hypotheses from the strategic calculus. Their work helps to sharpen our theoretical understanding of this well-documented phenomenon. Their formal model of voting in a three-party FPTP system, for example, demonstrates that tactical voting can occur only when the voter's second-most-preferred candidate is more likely to win than the favorite candidate.⁶ We extend their hypotheses to cover both national and local strategic considerations, thereby providing a novel mechanism for sorting constituency- and national-level incentives for tactical voting. We find strong support for our conclusions that both levels of incentives help to explain variation in the patterns of tactical voting across England and that voters' individual strategic considerations vary according to informational and viability contexts. Before we develop this empirical model, we first introduce our two modifications.

Two Modifications of the Classical Model

We believe that voters are influenced by strategic considerations. We also believe that the rigidity and determinism of the "classic" statement of the calculus of voting in multicandidate contests needs to be relaxed somewhat, much as the behavioral revolution in economics has relaxed particular assumptions of the rigid, classical rationality model. We propose a weakening of two assumptions to the strict, standard model.

First, in any expected-utility model, the estimated probability of an outcome is assumed to be known with certainty. We imagine instead that voters are uncertain about this number—that is, they act as if their reported likelihood were the mean of a subjective probability distribution. We assume, therefore, that there is a stochastic term associated with the probability terms, reflecting that uncertainty. In practice, we use this assumption solely to assert that voters do not have deterministic expected-utility values for the casting of votes for party *x* rather than *y* but rather have an expected value with variance reflecting uncertainty.

The second weakening of the standard calculus is that voters' estimates of closeness draw from the full campaign—that is, their expectations about outcomes are derived from information that might be available about races at both the local and the national levels. Further, voters care not only who their local MP will be but also which party or parties form the government and who becomes prime minister. Indeed, both are found empirically

to be important independent determinates of voters' choices (see Blais et al. 2006 on coalitions; Bean and Mughan 1989 on prime ministerial candidates). National effects enter the strategic vote in two ways. One way is fully within the model: the classical model includes national closeness but does so only interactively. A voter might vote strategically if the circumstances are correct in the constituency, just as usual. Empirically, this would show up as voting strategically based on preferences regarding the local candidates and/or their parties and the closeness of the vote in the constituency. There would be no effect of national closeness on the vote. If the national conditions are also ripe for casting a strategic vote, then this would show up—and in the classic model would *only* show up—when it is simultaneously appropriate to vote strategically in the constituency *and* in the nation.⁷ Our relaxation of the classic model says that preferences might have a modest direct effect on preferences about the national outcome and closeness at the national level. This is not surprising if there is some variation in citizens' calculations about closeness in the local electoral district. A Bayesian subjective probability distribution of outcomes would have some probability of a close outcome happening locally even when the occasional polls and conventional accounting of the local race point to that probably being very small. But even a very small probability can sustain a (small) effect on the national race, even when a voter thinks a close race locally is unlikely. Voters may hedge their bets by voting based on national considerations “just in case” (and contrary to what they believe is most likely) the local race turns out to be competitive and thus relevant for national seat totals. While this model would formally result from an interaction between local and national effects, our data (indeed all existing data of which we are aware) do not give us sufficient information about the (assumed) subjective probability distribution of local outcomes to observe this interaction. Instead, it would show up empirically as a (modest) apparently direct effect of a national basis for a strategic voter's casting of a tactical vote.

These two modifications are based on the notion that voters may make what they believe to be strategic decisions in an environment of incomplete information. Existing research (e.g., Blais and Bodet 2006; Blais and Turgeon 2004; Lanoue and Bowler 1998; Murr 2013) finds that at the national level, polls are a key driver in how voters perceive the competitiveness of the overall election, while at the local level, voters rely on cues such as (and perhaps especially) incumbency to make their decisions concerning candidate viabilities in the constituencies.⁸ Thus, voters may have more confidence in their national-level expectations and take that greater certainty into account when deciding how to vote.

These ideas lead to two empirical implications. First, it is appropriate from the strategic voters' perspective to have a stochastic term in the estimation with respect to subjective estimates of probabilities of outcomes. That is, while empirical estimations always have such a stochastic term, it is justified as a consequence of sampling error. We assume that this is inherent in the choice process itself.⁹ Second, people care about the national outcome as well as the local one—that is, they care about what government will form, who will lead it, and perhaps other features of the national election. This means that a strategic voter considers both the national and local races. Empirically, if this is true, we should expect at least a modest interaction effect, as one can be decisive nationally only if one is also decisive locally, and the effect is likely modest, because the probability of being decisive nationally is much smaller than locally, *ceteris paribus*. Under our first modifying assumption, we would observe a direct effect of national closeness—likely a very much weaker effect, as it may appear to be a direct effect primarily because the voter who said the election was not likely to be close locally nonetheless is assumed to have a small but still positive probability of it being close.

Empirical Tests of the Theory of Strategic Voting

We test a theory of strategic voting that predicts that voters will cast their votes for the candidate who maximizes their expected utility, where utility is derived from both the local and the national outcomes (that is, who wins the district and who forms the government). Our theory implies a series of testable hypotheses.

We derive our first set of hypotheses about strategic voting in the aggregate. These predictions rely on a relatively weak set of assumptions about the data-generating process, requiring only ordinal data about voters' preferences and expectations. Our second set of hypotheses is the consequence of assuming fuller information about the strategic context at the microlevel of the individual. This model makes stronger assumptions about the measurement of individual voters' cardinal preferences regarding candidates and expectations about the election outcomes but yields a larger and stronger set of implications.

We use survey data from the BES to explore the incidence of tactical voting in the 2010 British General Election.¹⁰ We limited our analysis to respondents from English constituencies and to those who reported a vote intention for one of the three major parties.¹¹ Each respondent's preferences

over the three major parties is determined by comparing the feeling thermometer scores given each party.¹² Respondents' preference rankings of the parties are compared with their reported vote intention. The reported intention of tactical voters will deviate from their "sincere" preferences: that is, they will report an intention to vote for their second choice instead of their most preferred candidate.¹³ We used the comparison between preferences and intended votes to create two new variables, *topvote* and *secondvote* for each respondent. The variable *topvote* is a dichotomous indicator of whether a respondent reports an intention to vote for the most preferred party. The variable *secondvote* is similarly a dichotomous indicator of whether a respondent intends to vote for the second-most-preferred party, and it serves as the key dependent variable in the hypotheses and analyses.¹⁴

The BES included a question asking respondents about the rationale behind their vote intention. Two of the available responses implicated tactical considerations: "I really prefer another party, but it stands no chance of winning," and "I vote tactically." Of the respondents who indicated an intention to vote for their second-most-preferred party, 61.4% chose one of those two responses.¹⁵ Among all other voters, only 9.8% (708 of 7,257 respondents) chose one of those two responses.¹⁶ This suggests that our *secondvote* variable provides a good indication tactical voting.

Macrolevel Hypotheses

Our first test of the model of strategic voting describes how we expect tactical voting to vary by strategic context in the aggregate using the less demanding information from our survey respondents. Like Kselman and Niou (2010), we consider respondents' personal assessments (preferences and expectations) of the various parties and then identify these assessments by the individual's preference ordering of the parties (rather than by, say, party name). Thus for one voter, the Conservatives might be the most preferred party (Party 1), and for another voter, the Conservatives might be Party 3 (that voter's third choice—i.e., least favorite party). We can then identify each voter's strategic context by listing whom the voter expects to come in first, second, and third. Thus, a voter with a strategic context of (1,2,3) faces a situation in which the favorite party has the best chance of winning, the second choice has the second-best chance of winning, and the least-favorite party has the worst chance of winning, while (2,1,3) denotes the case where the second-choice party is expected to win, the first choice is expected to come in second, and the third-ranked party is expected to come in third place in the vote.¹⁷

Kselman and Niou (2010) consider a three-party contest in one single-member district. They prove that of the six possible combinations of expected order of finish among the ranked parties,¹⁸ only three provide a voter with any incentive to vote tactically for their second-choice party—those in which the voter's second-choice party is expected to have a greater likelihood of winning than the voter's first-choice party. That is, tactical voting is a theoretical possibility only for orderings (2,1,3), (3,2,1), and (2,3,1), and if a voter with an ordering of (1,2,3), (1,3,2), or (3,1,2) votes for the second-choice party, it must be for reasons other than strategic considerations. Kselman and Niou note that among the three scenarios in which tactical voting is possible, the conditions under which it is a possibility are narrower for ordering (2,1,3) than for either (2,3,1) or (3,2,1). Based only on the theoretical work of Kselman and Niou, one could place the various possible orderings of three parties into three categories based on incentives to tactically vote for a second-choice party. The (1,2,3), (1,3,2), and (3,1,2) orderings would be classified as providing zero incentive; the (2,1,3) ordering would be classified as having weaker incentives; and the (2,3,1) and (3,2,1) orderings would be classified as having stronger incentives. But given our behavioral assumptions about voters' probability estimates—that is, our inclusion of a stochastic term allowing for possible errors in estimating the parties' likelihood of winning—even the zero incentive ordering includes some possible (albeit minimal) incentive for tactical voting. Accordingly, we adjust our three categories of incentives to minimal, moderate, and strongest. The “minimal” class thus includes (1,2,3), (1,3,2) and (3,1,2); the “moderate” class includes (2,1,3); and the “strongest” class includes (2,1,3) and (2,3,1).

But these three categories—like the work of Kselman and Niou—consider only the case of a single district. In empirical cases, the single district is embedded in the national contest, and as in the United Kingdom, it is possible to imagine casting the decisive vote in the district and in the nation. With perfect knowledge of the true probabilities, one cannot cast a decisive vote in the nation unless one does so at the district level too.¹⁹ However, with any uncertainty about the true probabilities, the assumption about subjective probability distributions means that there is some nonzero probability of being decisive, no matter what the most likely case may be. (That is, even voters who think that they will not be decisive at the local level have a nonzero probability of being so.) Thus, there may be a small probability of casting a decisive vote in the nation but not the district, at least in terms of how voters respond to the survey questions asked. The result of

adding the national level is that the table is now three-by-three. We applied the formal logic of Kselman and Niou to this case (it flowing obviously, given their original results) with one exception. By assumption, the national effect is necessarily small, unless it interacts with a genuine incentive to cast a tactical vote locally. That is, we build into the model our assumption that tactical voting nationally *requires* interaction with the local conditions, whereas the reverse is not true. Voters have incentives to vote tactically in the district based only the strategic circumstances in that district, no matter the national conditions. This results in the three-by-three array reported in table 2.1, where the entries denote our extension of the Kselman-Niou formal derivations. The numbers in the cells reflect our expected ranking of each of the nine cells in terms of the likelihood (and thus incidence) of tactical voting. Thus, the bottom-right cell, in which voters would face the strongest incentives at both the local and national levels, is assigned a 1, because we would expect those voters to have the highest incentives to vote tactically. The 2 cell—in which voters still face the strongest incentives at the local level but only moderate incentives at the national level—is directly above cell 1 because our theory suggests that constituency-level incentives will dominate national-level incentives. The three lowest-rated cells—those labeled 7, 8, and 9—all come in the first column of the table, where the constituency-level incentives are minimal, but within this column the incentives fall along with the national-level incentives.

TABLE 2.1. Theoretical Expectations of Incentives to Deviate from First Preference by National- and Constituency-Level Expectations

		Constituency		
		Minimal (1,2,3), (1,3,2), (3,1,2)	Moderate (2,1,3)	Strongest (2,3,1), (3,2,1)
National	Minimal (1,2,3), (1,3,2), (3,1,2)	9	6	3
	Moderate (2,1,3)	8	5	2
	Strongest (2,3,1), (3,2,1)	7	4	1

Taken together, two hypotheses concerning voter preferences and party viabilities follow from our extension of Kselman and Niu's framework to differentiate between perceived competitiveness at the national and constituency levels:

- H1.** Tactical voting across the respondents as a whole will conform to the relative ordering described in table 2.1. That is, the incidence of *secondvote* equaling 1 will be lowest for the cell labeled 9 and highest for the cell labeled 1.
- H2.** A voter's choice to vote tactically, as measured by the incidence of *secondvote* equaling 1, will depend on the anticipated outcomes in the nation as a whole and within the voter's constituency.

These macrolevel hypotheses describe how we expect the incidence of tactical voting to be distributed across the 2010 British electorate in the aggregate. Specifically, we expect that national- as well as constituency-level incentives will drive voters' decisions to vote tactically, although as the rank-ordering of cells indicates, we anticipate fewer tactical votes as a consequence of national conditions than of local conditions.

Microlevel Hypotheses

For our macrolevel model of the *aggregate* levels of tactical voting across strategic contexts, we created ordinal rankings of voters' preferences among the three major parties and expectations about their electoral chances. But the data provide more information than simple ordinal rankings. The 2010 BES survey asked respondents to provide both types of measures on 11-point scales that we can treat as cardinal. We can then use these interval measures to create expected-utility variables and thus to test a microlevel model of *individual* decisions to vote tactically.

The theory of strategic voting implies that only some (indeed perhaps none) of those who prefer the trailing parties should vote tactically. For example, if voters like (or dislike) their second- and third-most-preferred parties roughly equally, that small difference would obviate the rationale for voting tactically. Or if a voter's second-most-preferred party has just about the same chance of winning as the favorite party (as in a landslide being won by the least-preferred party), that vote would be wasted in either

case, and the voter could continue to vote for her favorite, if likely third-place-finishing, party. To put these and other similar comparisons together, voters will vote tactically only if the expected utility of voting for their second choice is larger than the expected utility of voting for their first-choice party.

We can put these informally discussed hypotheses together into a clearer form. Notationally, let p denote probability terms, b denote preference terms (measured in cardinal utilities), and let subscripts 1, 2, and 3 denote the parties in the order of voter preference. We are concerned with the expected utility of voting for Party 1 compared to that for voting for Party 2, and so on. Hence, we use the term p_{12} to represent the difference in the probability of Party 1 winning if the voter votes for that party and the probability of Party 2 winning if the voter votes instead for that party. A large value for p_{12} indicates an expectation that Party 1 is much more likely than Party 2 to win, *ceteris paribus*; a negative value implies an expectation that Party 2 will outperform Party 1. Similarly, b_{12} represents the difference in utility if Party 1 is elected and if Party 2 wins—it indicates just how much the voter prefers Party 1 to 2. Values for b_{12} will always be positive, but larger values indicate a stronger preference for Party 1, while values closer to 0 suggest more indifference between the parties. The full term, pb_{12} , is the product of the expectation differential and the utility differential for Party 1 and Party 2.²⁰ The variable pb_{13} is the analogous term expressing the product of the expectation and utility differentials of Party 1 and the least-preferred party, and pb_{23} is the comparison between the second- and third-most-preferred parties. With this notation, we can write the following equation:

$$\Pr(\text{secondvote} = 1) = f(pb_{12}, pb_{13}, pb_{23}) \quad (1)$$

Furthermore, we can derive the following hypotheses, where the variable to be explained is the probability of voting for the second-most-preferred party (or where *secondvote* equals 1):

- H3.** As pb_{12} increases, the chances of voting for the second-most-preferred party (Party 2) should *decrease* (that is, the incentives to vote tactically should *decrease*), whether that is because Party 1 has an increasingly large chance of winning, because the voter has an increasingly strong preference for that party over the second-most-preferred party (Party 2), or both.²¹

- H4.** As pb_{13} increases, the chances of voting for Party 2 should *decrease* (as the incentives to vote tactically should *decrease*), whether that is because Party 1 has an increasingly large chance of winning, because the voter has an increasingly strong preference for that party over the least preferred party (Party 3), or both.
- H5.** As pb_{23} increases, the chance of voting for Party 2 should *increase* (and the incentives to vote tactically should *increase*), whether that is because Party 2 has an increasingly large chance of winning, because the voter has an increasingly strong preference for Party 2 over Party 3, or both.

This microlevel model allows us to make predictions about the probability that individual respondents will vote for their second-most-preferred party. Specifically, the model predicts that voters will be most likely to deviate from their sincere preferences when the theory of strategic voting suggests that they have the strongest incentives to vote tactically.

Together, our models' macro- and microlevel predictions for the 2010 British election offer more precise expectations for the incidence and distribution of tactical voting than previous work examining the theory of strategic voting. The specifications of the microlevel models are, to a large extent, similar to those employed by those studying strategic voting in other elections (e.g., Abramson et al. 1992; Merolla and Stephenson 2007). The difference is that we compare estimates obtained when using voter assessments of both *national*- and *constituency*-level viabilities.

Results and Analysis

The percentage of voters who reported that they intended to vote for the party they liked the most varied considerably throughout the campaign. Figure 2.2 presents the *topvote* proportion over time for the electorate overall and for each party. The plot shows that in the early stages of the campaign, the Conservative Party was receiving the intended vote of a high proportion of its supporters, Labour was capturing a smaller proportion of the intended votes of its supporters, and the Lib Dems were receiving a much lower proportion of the intended votes of their supporters, just as the theory of strategic voting predicts given that the Lib Dems were in third place in most English constituencies. In other words, early on in the race strategic Conservative voters and Labour voters could vote straight-

forwardly, while only Lib Dem voters faced any strategic incentives to vote tactically. This changed following the first televised debate, which featured a strong performance by Lib Dem prime ministerial candidate Nick Clegg. The consequence was a dramatic change in the strategic setting, making the Lib Dems a strategically viable choice in many districts. At the same time, Labour usually fell into a near tie or even into third place. As a further result, the Lib Dems began capturing more of the intended vote of their supporters. For the remainder of the campaign, the Conservatives continued their strong performance among their supporters, while Labour and the Lib Dems captured similar but lower proportions of the intended vote of their supporters.²² All of these findings are exactly what we would expect overall if voters were strategic. Of course, more precise information about individual constituencies will render a more exact reflection of the strategic context respondents to the BES faced in their respective districts.

Most respondents for whom we have data reported an intention to vote for their most preferred party (7,237 of 7,660, 94.5%). Of the 423 respondents who reported an intention to deviate from their top choice, 396 (93.6%; 5.1% of the total respondents) indicated that they would be voting for their second choice, while just 27 (6.4%; 0.35% of the total respondents) indicated an intention to vote for their third choice. Thus, most voters voted for their most preferred party (whether sincerely or strategically), while within the pool of possible tactical voters, the vast majority were voting for their second-most-preferred party, as predicted by the theory of strategic voting.²³

The second component of voters' expected-utility calculations are their estimations of the efficacy of their votes—that is, the likelihood that it will affect the outcome. Like the vast majority of scholars who have studied this problem, we assume that this personal efficacy of an individual's vote is closely related to and thus proxied by the perceived closeness of the contest: the closer the vote is expected to be in the nation or the constituency, the more likely that one vote will affect the outcome. The BES asked respondents to estimate the likelihood that each party would win their individual constituencies as well as the likelihood that each party would win the national election. We used these measures to estimate voters' constituency- and national-level expectations.²⁴

Macrolevel Results

We first consider the evidence supporting the claims of the macrolevel model regarding aggregate levels of tactical voting across the different strategic contexts the voters faced. Table 2.2 fills in the cells of the three-

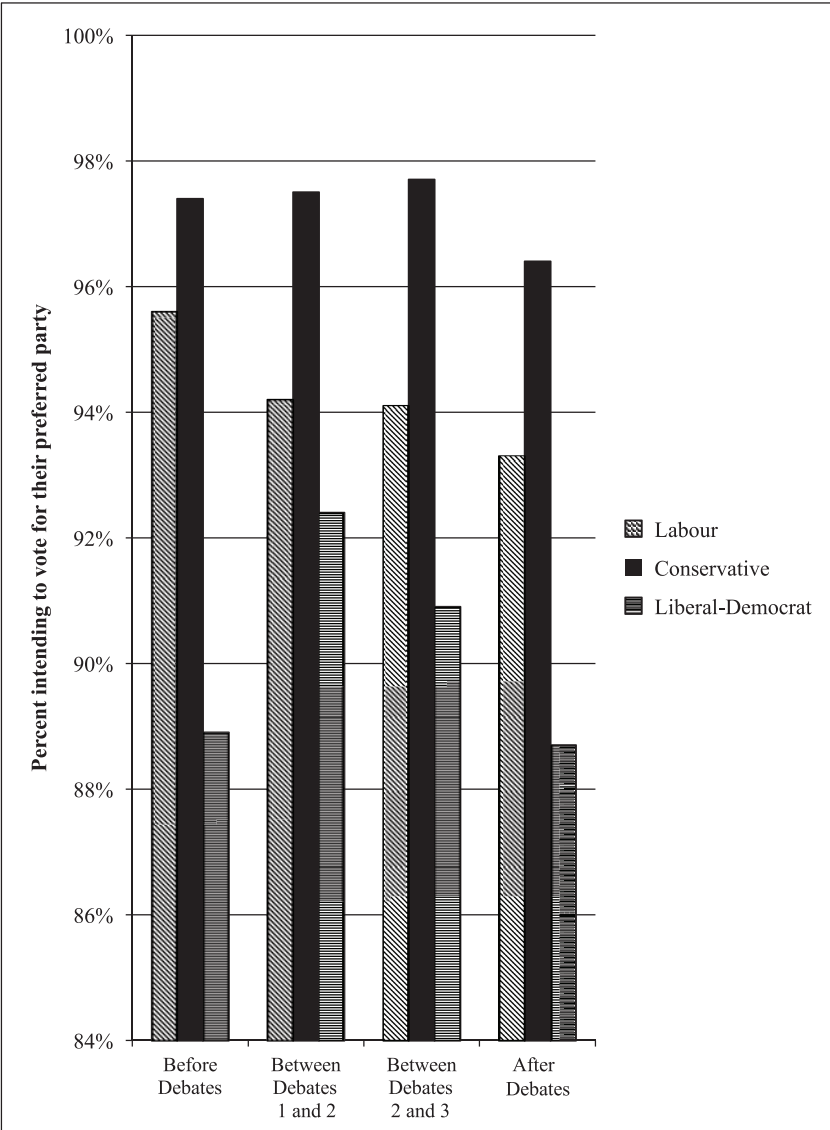


Fig. 2.2. *topvote* Proportion by Party and by Date

by-three table presented in table 2.1 using the actual observed proportion (and percentage) of respondents in each strategic context who reported an intention to vote for their second-choice party. The results in Table 2.2 support H1 (the hypothesis that the incidence of tactical voting should follow the rank-ordering of cells in table 2.1). Looking first at constituency-level incentives, we see that the incidence of tactical voting increased as expected—that is, tactical voting percentages increase across each row from minimal through moderate to the strongest incentives. Just 1.39% of voters who found themselves in the strategic context with minimal incentives to vote tactically reported an intention to vote for their second-choice party.²⁵ In contrast, 8.76% of those facing moderate incentives voted for their second-choice party, and 27.1% of those facing the strongest incentives did so. The differences between these categories are statistically significant. Thus, as predicted, voters' decisions about voting tactically do appear to be based on their expectations regarding the outcome within their local constituency.

Table 2.2 also supports the hypothesis that voters' strategic calculations were influenced by their national-level expectations. Voters in the strategic context with minimal national-level incentives to vote tactically did so just

TABLE 2.2. Proportion and Percentage of Voters Reporting an Intention to Vote for Their Second-Choice Party, by Incentive Category

	Constituency			
	Minimal (1,2,3), (1,3,2), (3,1,2)	Moderate (2,1,3)	Strongest (2,3,1), (3,2,1)	Total
	Minimal (1,2,3), (1,3,2), (3,1,2)	12 259 (4.63%)	68 299 (22.7%)	93 2332 (3.99%)
	Moderate (2,1,3)	10 82 (12.2%)	7 30 (23.3%)	26 186 (14.0%)
	Strongest (2,3,1), (3,2,1)	17 104 (16.3%)	47 122 (38.5%)	71 458 (15.5%)
National	Total	39 445 (8.76%)	122 451 (27.1%)	190 2976 (6.38%)

3.99% of the time, while those facing moderate and the strongest such incentives did so 14.0% of the time and 15.5% of the time, respectively. The differences in proportion between minimal national incentives and both moderate and the strongest national incentives are statistically significant. The differences in the incidence of *secondvote* among voters facing moderate and the strongest incentives is not statistically significant, although, as predicted, the rate of voting for the second-choice party was higher in the strongest incentive category than in the moderate category. The data thus support the inference that both constituency- and national-level expectations factored into voters' decisions to vote tactically for their second-choice party.

Table 2.2 provides further evidence in support of H2 (tactical voting depends on the interaction between national and local strategic conditions). Table 2.2 supports this interaction between the constituency- and national-level incentives and the incidence of *secondvote* across the nine different strategic contexts, and table 2.3 illustrates this phenomenon a bit more directly. It shows the ordering of the actual rate of tactical voting across these nine different contexts; that ordering can then be compared with the theoretical expectations set out in table 2.1. Of the nine different contexts, just one was out of order according to our theoretical expectations (the actual cell with the sixth-highest incidence of *secondvote* was associated with the strategic context we expected to have the eighth-highest rate). Table 2.3 also reports for each cell—starting with the cell labeled 1 at the bottom right—which cell next in the ordered ranking is the first to have a statistically significant different rate of *secondvote*. Thus although the difference between cells 1 and 2 is as expected, it is not statistically significant; however, the difference between cells 1 and 3 is both as expected and statistically significant. Given the overall rate of tactical voting,²⁶ the small number of respondents who fell into some of the various strategic contexts,²⁷ and the fine grain of our theoretical predictions, table 2.3 offers strong support for the notion that tactical voting depends on both constituency- and national-level incentives and the idea that constituency-level incentives tend to dominate strategic considerations regarding an intention to vote for a second-choice party. Moreover, the fact that most voters voting for their second-choice party were found in the strategic contexts with the highest incentives for tactical voting indicates that in the 2010 British election, strategic considerations trumped any other voter motivations for deviating from their most preferred parties, such as casting a protest vote or a bandwagon vote.²⁸

A sharp decline occurred in the absolute number of respondents in each

category of increasingly favorable incentives for tactical voting. About 60% of all respondents fell into the cells where we expected that strategic voters would engage in nearly no tactical voting. Conversely, only 4% of respondents faced a strategic context in which the incentives to vote tactically were the strongest. It is thus unsurprising that the overall percentage of those casting tactical votes is relatively low, even if every voter in England reasoned strategically. The great majority faced the straightforward strategy of voting for their sincere (that is, most preferred) choice. The vast majority of voters perceived themselves as facing a strategic context offering relatively weak or even no incentives to vote tactically. Careful examination of the full data array indicates that the variation in tactical voting seems to result more from constituency-level factors than national factors (see Lanoue and Bowler 1998 for similar findings from Canada). This is a helpful observation because, while reasonable observers disagreed about the outcome expected nationally, the only “true” variation in national competitiveness was genuine (but relatively modest) variation over time in expectations about the election results. Conversely, considerable true variation occurred in competitiveness across the various constituencies.

Finally, the concentration of the highest proportion of tactical voting in the cells marked strongest also supports the idea that an interaction occurred between strategic considerations at local and national levels. As table 2.3 shows, tactical voting increased far greater than merely linearly

TABLE 2.3. Actual Ordering of Incidence of *secondvote* (and Next-Ranked Cell with a Statistically Significant Different Level of *secondvote*)

		Constituency		
		Minimal (1,2,3), (1,3,2), (3,1,2)	Moderate (2,1,3)	Strongest (2,3,1), (3,2,1)
National	Minimal (1,2,3), (1,3,2), (3,1,2)	9 (N/A)	7 (9)	3 (5)
	Moderate (2,1,3)	6 (7)	5 (7)	2 (7)
	Strongest (2,3,1), (3,2,1)	8 (9)	4 (7)	1 (3)

and was especially high only when conditions were ripe for tactical voting at both levels. Thus, in addition to concluding that the local level provided the stronger context for strategic reasoning to induce tactical choices, we may also conclude that the strategic context's support for tactical voting at both the local and national levels raised the incidence of reported tactical voting to quite high levels—that is, to where more than a third of such relevant respondents chose to vote tactically.

Microlevel Results

To test our microlevel model of individual tactical voting and the related hypotheses, H3–H5, we estimate a series of models of tactical voting using individuals' expected-utility differentials.²⁹ That is, we estimate a probit-regression form of equation 1 using the approach developed by Abramson et al. (1992). The right-side variables are the 2010 BES data on feeling thermometers (for the *b* terms) and constituency- and national-level electoral expectations (for the *p* terms).³⁰ The models include covariates measuring the strength of respondents' reported partisan identification for the most preferred party (*pid1*, ranging from 0 to 3), a dummy variable indicating whether respondents were contacted by the most preferred party (*contact1*), and a dummy variable indicating whether respondents were contacted by the second-most-preferred party (*contact2*).³¹ The coefficient estimates for the *pb* variables provide the direct test of H3–H5.

We first estimated separate models for constituency- and national-level expectations. We then created two dummy variables, *tactnat* and *tactcon*, indicating whether the respondent voted in a strategic context—nationally and locally, respectively—that suggested tactical voting and ran two additional models including them. Table 2.4 presents the results.³² We proceeded in this fashion because of the high level of multicollinearity that led to explosive increases in standard errors of estimates and related signs of very high levels of multicollinearity (see the appendix to this chapter). Thus, the inclusion of *tactnat* and *tactcon* presents the only viable way of including the two levels in one model. It represents a sort of fixed effect for one level, allowing fuller tests of hypotheses of variables measured at the other level.

As expected, all four models found a negative and statistically significant relationship between *secondvote* and the *pb*₁₃ terms (supporting H4), and the coefficients appear to be large. Again as expected, a positive and statistically significant relationship between *secondvote* and the *pb*₂₃ terms (supporting H5) was estimated for the constituency-level measure, but the

counterpart at the national level was small, incorrectly signed, and not significantly different from 0. Three of the four models estimate a negative relationship between *secondvote* and the pb_{12} terms (supporting H3). None of these estimated coefficients, however, is statistically significant at the 0.05 level. Thus, there is clear positive support for the overall microlevel model, but the results vary with respect to individual terms.³³ In particular, there is greater (if not quite complete) support for the constituency-level measures than for the national-level measures, for which only the estimate coefficient for the pb_{13} term was large and statistically significant.

The positive and statistically significant coefficient for *tactnat* in Model 3 supports H1 and the idea that national-level incentives matter for tactical voting, even in the presence of and controlling for constituency incentives (which supports H2).³⁴ Thus the data from the 2010 BES suggest

TABLE 2.4. Probit Regression Results

Probit Model	Model 1	Model 2	Model 3	Model 4
(Intercept)	-1.27* (0.11)	-1.19* (0.10)	-1.37* (0.15)	-1.76* (0.15)
pb12con	-0.09 (0.73)		0.43 (0.93)	
pb13con	-4.38* (0.38)		-4.64* (0.49)	
pb23con	5.14* (0.58)		5.58* (0.72)	
pb12nat		-1.39 (0.84)		-0.19 (1.03)
pb13nat		-1.76* (0.45)		-1.86* (0.57)
pb23nat		-0.23 (0.72)		-0.15 (0.93)
tactnat			0.27* (0.10)	
tactcon				1.11* (0.11)
pid1	-0.32* (0.04)	-0.25* (0.04)	-0.28* (0.05)	-0.31* (0.05)
contact1	-0.32* (0.09)	-0.58* (0.08)	-0.30* (0.11)	-0.31* (0.10)
contact2	0.51* (0.10)	0.71* (0.09)	0.44* (0.12)	0.46* (0.12)
N	3,704	3,766	2,413	2,471
AIC	1270.78	1462.33	841.88	892.90
BIC	1,444.86	1,636.87	1,027.11	1,078.90
log L	-607.39	-703.16	-388.94	-414.45

Note: Standard errors in parentheses; * indicates significance at $p < 0.05$.

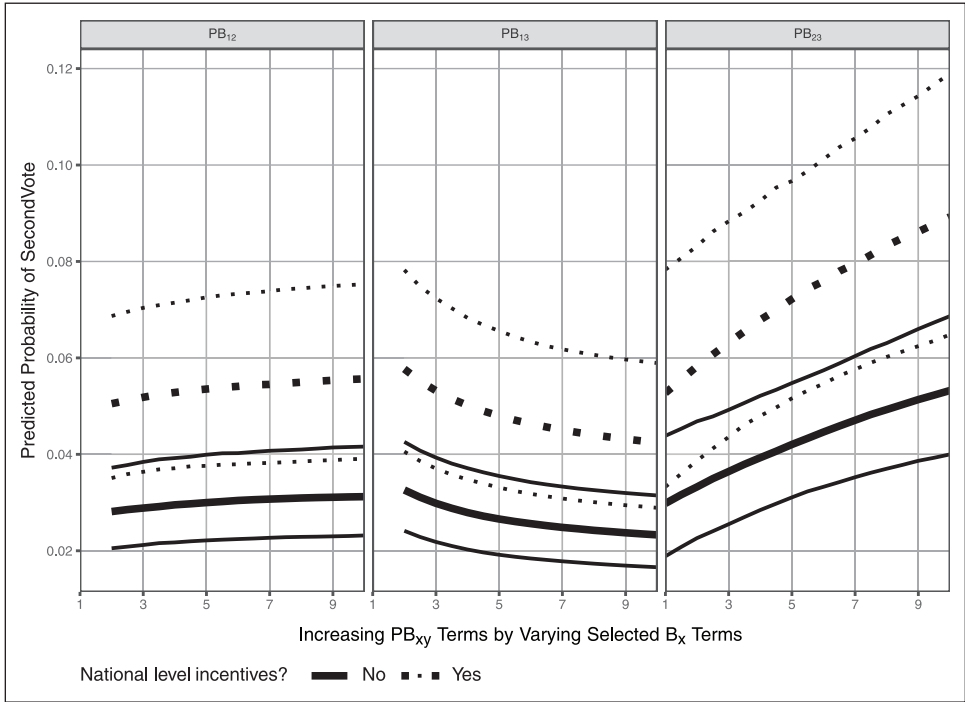


Fig. 2.3. Predicted Probabilities Showing Effects of National-Level Incentives

that the behavior of the British electorate was consistent with our theory of strategic voting. To examine the nonlinear relationship between the independent variables and *secondvote* in our probit regression, figure 2.3 illustrates a series of first-differences plots using Model 3. The plots show how the presence of national-level incentives to vote tactically affect the predicted values for *secondvote* over a range of values for a selected component of the pb_{xy} terms while holding all else constant.³⁵ We achieve this by simulating 1,000 times the predicted probability that a respondent would declare an intention to vote for Party 2 across specified values for the independent variables using the probit model.³⁶ For example, figure 2.3(b) contains curves showing the relationship between pb_{13} and *secondvote* for voters with national-level incentives to vote tactically and for voters without such incentives. Both curves show the theoretically expected negative relationship between pb_{13} and *secondvote*—as the expected utility from Party 1 increases, the likelihood of voting for Party 2 declines. The predicted values for *secondvote* are lower for the range of pb_{13} when *tactnat* is 0, which

is also consistent with our expectations. Similarly, figures 2.3(a) and 2.3(c) each depict two curves—one with *tactnat* equal to 1 and one with *tactnat* equal to 0—showing the relationship between pb_{12} and pb_{23} , respectively, and *secondvote*, holding all other variables constant. The upward slope of the curves for pb_{12} in figure 2.3(a) is contrary to our expectations but statistically insignificant, and it nevertheless shows the theoretically expected relationship between the existence of national-level incentives and likelihood of voting for Party 2. Figure 2.3(c) conforms to all our expectations.

High collinearity led us to run separate estimations using the respondents' national- and constituency-level viability assessments. One reason this is not surprising is that one component of the *pb* terms, the respondents' evaluations of the parties, is the same across contexts. Nonetheless, we both assessed the predictions of our microlevel models *and* assessed whether improved predictability occurs when results from the model employing national viability assessments are considered.

We assessed the predictions of our microlevel models by comparing the predictions of the regressions with the actual results observed in our sample. To do so, we reconsidered table 2.2, our reporting of *secondvote*, sorted by strategic context. We repopulate the table cells using several methods: by performing a series of 100,000 draws of *secondvote* values from the full sample (excluding entries for which data were incomplete); by filling all cells with the mean value of *secondvote* (5.17%); by filling all cells with the modal value of *secondvote* (0); by filling the cells with the values predicted by the model using only constituency-level expectations (Model 1); by filling the cells with the values predicted by the model using only national-level expectations (Model 2); and by filling the cells with the values predicted by a model using both constituency- and national-level expectations (Model 3). We then calculated the root-mean-square error (RMSE) for each method compared with the actual results from table 2.2. Figure 2.4 presents the results. The plot shows the density plot of the RMSEs for the 100,000 bootstrapped cells. The Average Deviation vertical line depicts the RMSE from using the mean value of *secondvote* to fill all cells. The No Deviation vertical line depicts the RMSE from using the modal value of *secondvote* for all cells. The Constituency Only vertical line depicts the RMSE from using the predictions from the model using only constituency-level expectations. The National Only vertical line depicts the RMSE from using the predictions from the model using only national-level expectations. And the National + Constituency vertical line depicts the RMSE from using the predictions from the model using both constituency- and national-level expectations.

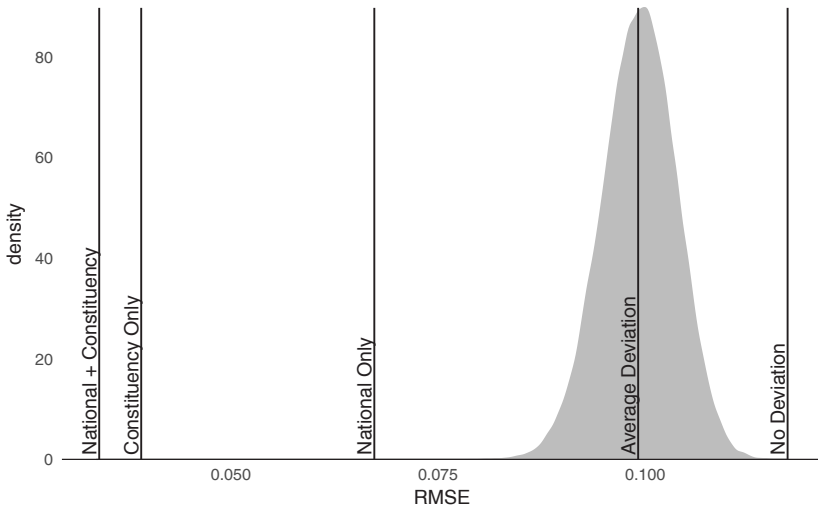


Fig. 2.4. Comparison of RMSE

Figure 2.4 shows that the predictions of all three models significantly outperform either null hypothesis (that is, either the mean or modal values of *secondvote*). Moreover, all three models outperform an overwhelming majority of the predicted probability tables generated by randomly permuted data. Among the three models, National + Constituency has the most predictive power. Both Constituency Only and National Only estimates of tactical voting based on the strategic context help explain the variance in tactical voting. But the difference between Constituency Only and National Only confirms our earlier finding—consistent with our theory—that constituency-level incentives tend to drive the decision to vote tactically more than do national-level incentives.

Conclusion

Some observers argue that voters in a democratic society should reveal nothing but their true preferences in the voting booth. But voters value their votes and when the appropriate circumstances present themselves in a way to make those votes consequential. That is, they engage in the same sort of trade-offs between policy and winning that torture practicing politicians. In every election under FPTP with many districts, voters will

have concerns about “wasting” their votes by casting a vote for a party with no chance of winning. The 2010 British election and the 2010 BES dataset present a rich and varied context in which to rigorously test fine-grained predictions derived from the theory of strategic voting. We find strong support for four of our five hypotheses, which together provide a quite precise explanation of how individuals’ decisions to vote tactically vary by strategic context.

Most English voters in the 2010 UK election faced a strategic context that allowed them to vote straightforwardly in accordance with their sincere preferences. After all, the theory of tactical voting suggests that voters have incentives to strategically deviate from their top-choice candidate or party when they believe their second-choice option has a better chance of defeating their last-choice alternative. In the 2010 UK election, then, the phenomenon of tactical voting occurred infrequently among Conservative voters, because their party typically ran first or second in the polls. Among Labour and Lib Dem voters, however, the strategic context more often suggested voting *against* the worst option than voting *for* the favorite option. Moreover, such voters took into account likely national outcomes in addition to the probable election results in the local constituency. Fully understanding the strategic context facing potential tactical voters in the 2010 UK election requires looking at the relative preferences regarding the candidates and the relative expectations for the various candidates in both local and national races. The evidence presented here suggests that voters were aware of their electoral context and voted tactically (or not) in accordance with the predictions of a rational-choice theory of strategic voting.

This chapter constitutes a novel attempt to tease out how national- and constituency-level expectations factor into strategic voting. By taking advantage of a very large dataset, we show that both constituency- and national-level expectations influence vote intentions and model voting behavior utilizing both constituency- and national-level expectations consistent with the calculus of voting. Our models confirm that the combinations of constituency- and national-level expectations and preferences predict whether or not voters intend to vote for their favorite party. We find evidence that although constituency-level viability estimates are more powerful, national-level expectations do drive decisions to vote tactically even in noncompetitive constituencies. Thus, empirical models that rely solely on constituency-level factors to explain tactical voting and estimate its effects on national elections (see, e.g., Kim and Fording 2001) may underestimate the frequency and impact of tactical voting. Similarly, studies seeking to estimate the effects of tactical voting on national results that

restrict their analyses to voters who expect their preferred party to finish third (and thereby exclude voters who expect that their favorite party will finish second behind their second-most-preferred party nationally or locally; [e.g., Kiewiet 2013]) may also be underestimating the effects of tactical voting.

As we hypothesized, respondents are most likely to vote for a party other than their most preferred when both national- and constituency-level expectations predict tactical voting because the favorite party is in last place. While constituency conditions outweighed national conditions in determining the casting of a tactical vote, as our theory implies and figure 2.4 makes clear, both were shown to be significant and substantial forces in shaping strategic voting decisions. We also find tactical voting when only constituency expectations or national expectations predict such behavior, including when the favorite party is expected to finish second behind the second-most-preferred party.

The theory of strategic voting assumes that voters struggle with a difficult calculus in making voting decisions. To vote rationally and strategically, a voter needs to know the relative standing of the parties. Fluid national polls and highly variable constituency-level considerations complicate such calculations. Nevertheless, we found that tactical voting conformed to a variety of sometimes quite specific, testable hypotheses derived from rational-choice theory. Voters, like all other political actors, tend to make trade-offs based on rational calculations in their political best interests.

APPENDIX

This study presents evidence that constituency- and national-level considerations influence voters' strategic decisions regarding voting. Ideally, we would be able to show additional evidence for such interactions via our probit regressions. In fact, we ran several additional models that included terms to estimate the interactions between constituency- and national-level expectations. One such model simply interacted the various constituency and national pb terms; another interacted simply the constituency and national p terms; and a third interacted the constituency and national p terms, normalized across the various comparison pairs (12, 13, and 23).

The interactive terms did not add to our model's explanatory power. Of the nine interactive terms tested across the three models, only one was statistically significant. The standard errors associated with the estimated coefficients for these interactive terms were quite high.

Not surprisingly, issues with multicollinearity appear to be to blame.

When we calculated the correlation coefficient between the variables included in our models, we found high values. These high correlations existed within our base model: the pb_{12} term for the constituency level was correlated with the corresponding national-level term at 0.471. The similar measures for the pb_{13} and pb_{23} terms were 0.384 and 0.290, respectively. And the correlations between the pb_{12} and pb_{13} terms were high (0.544 for the constituency term, 0.643 for the national term) because they incorporated much of the same information. This is an unavoidable artifact of our modeling approach as well as our data. The b terms we used for individuals were based on feeling thermometer scores for the various parties—the BES did not collect different scores for the particular candidates. And the respondents' expectations regarding the outcomes in their local constituencies and the national race also tended to be highly correlated.

But the correlations between the base pb terms and the interaction terms was even higher. For example, the interaction between the constituency-level pb_{12} term and the interactive pb_{12} term we created for the normalized model was 0.850, while the similar terms for pb_{13} and pb_{23} were 0.893 and 0.881, respectively. These high correlations resulted in multicollinearity issues that forced us to abandon our hopes of modeling interactions between constituency- and national-level incentives.

NOTES

1. A hung parliament is simply a case in which no one party wins a majority of seats in Commons and therefore can form the government on its own. Since World War II, no party has won a majority of the vote, but the leading party almost always sees its plurality of votes translated into a majority of seats. The 2010 election was one of those rare exceptions: the Conservatives held a large plurality of seats and formed a majority government by coalescing with the Lib Dems, who had finished third in votes and in seats.

2. As Brennan and Hamlin (1998) show, what they call expressive voting is neither simple nor simple-minded. What this chapter calls strategic voting, they refer to as instrumental voting. They carefully consider the possibility that everyone might simultaneously have a mixture of instrumental and expressive considerations, and they outline models for that circumstance, much as Fiorina (1976) does (see chapter 1).

3. Murr (2013, 15) finds that in UK elections between 1974 and 2005, if British citizens used even a randomly selected national campaign poll to predict the eventual winner of the election, then they would be correct at least 80% of the time.

4. Kiewiet (2013), however, finds that many Labour voters responded to constituency-level signals to cast tactical votes for the Lib Dems from 1983 to 2005.

5. This is similar to what Reed (1990) found with respect to the slow development of Duvergerian results in postwar Japan.

6. Most previous work on tactical voting asserted that it is restricted to supporters of parties that are expected to finish third out of three parties (see, e.g., Alvarez, Boehmke, and Nagler 2006; Ordeshook and Zeng 1997), but Kselman and Niou (2010) demonstrate that voters have incentives to cast rationally tactical votes in some circumstances where the most preferred party is second to the second-most-preferred party (see also Blais and Nadeau 1996, which looks at tactical voting among voters whose second-most-preferred party has a higher expectation of winning than their most preferred party).

7. That is, voters perceive their chances of being pivotal in the nation as the chances of being pivotal in selecting the local candidate and the chances that that winning candidate is pivotal in the parliament in terms of government formation.

8. These scholars assume that the voters have some knowledge about the closeness of the race in their constituency, but the scholars can only observe incumbency, a variable that makes a great deal of difference in the chances of a nonincumbent party winning that seat.

9. We assume that there is a normally distributed variance in estimation, as reported by the “how close” measure. Obviously, if we had available complete subjective probability distributions, we could exploit a more fully developed treatment of the assumed stochastic term.

10. This chapter employs data from the 2010 “rolling cross-sectional” Campaign Internet Panel Survey (CIPS) wave of the 2010 BES. After completing a precampaign survey over the Internet, respondents were asked to complete the CIPS at a randomly selected time so that representative subsamples of the panel responded on each day of the campaign. Respondents were then asked to complete a follow-up survey after the election. CIPS had a total sample size of 14,973, and respondents to the internet waves of the BES are randomly selected from YouGov’s pool of more than 350,000 Britons. The survey firm employs complex recruitment techniques, matching methods, and weighting procedures to produce representative samples of target populations. On the similarity of results obtained via this and probability-based sampling methods for the 2005 BES, see Sanders et al. 2007.

11. We excluded respondents who expressed a vote intention for a party other than the three national parties because the BES did not include feeling thermometers for smaller parties such as the United Kingdom Independence Party or British Independence Party. The survey did include feeling thermometers for the Scottish National Party and Plaid Cymru, but we excluded non-English respondents from our analyses because of the unique regional effects of these two parties.

12. Some respondents reported the same feeling thermometer scores for different parties (i.e., ties). With only 11 unique scores to assign with the feeling thermometers and at least three parties to score, respondents might tie two parties even if they had a slight preference for one over the other. When a respondent reported an intention to vote for one of the tied parties, we used that vote intention to break the tie. In all other cases, the ties remained. This is a conservative procedure in that ties were broken, if at all, in a direction that limits the extent of tactical voting at least as observed in the data.

13. Of course, voters may deviate from their true preferences for reasons other than tactical voting, and just because voters cast a vote for their top choice does not mean they are not behaving strategically.

14. Less than 0.40% of respondents (27 out of 6,791) indicated an intention to vote for their third-favorite party.

15. Among the 396 voters voting for their second-favorite party, 170 said they “really prefer[red] another party” and 73 said they “vote[d] tactically.” Among the remaining such voters, 67 said “the party has the best policies,” 32 said “the party has the best leader,” and 54 cited “other reasons.”

16. This difference is statistically significant with a two-tailed p -value of less than 0.0002. The 95% confidence interval around the difference in percentages of 51.6% is 46.6% to 56.5%.

17. While two voters may face the same strategic context of, say, 1,2,3, which party is designated 1—that is, the most preferred—can differ from voter to voter. Further, the expectation gap between the first- and second-place parties may differ considerably from voter to voter. But for this macro model, we are concerned only with ordinal rankings. The cardinal expectation (and preference) scores will be considered in the micro model.

18. Those six orderings are (1,2,3), (1,3,2), (2,1,3), (2,3,1), (3,1,2), and (3,2,1).

19. Casting a decisive vote in the nation means that the voter cast a decisive vote in the district and that the candidate who thereby won became the MP whose seat transformed his/her party into a majority within the Commons.

20. Thus $pb_{12} = (p_1 - p_2)(b_1 - b_2)$.

21. More technically, it is increasing not in probabilities of a party winning but of a vote being pivotal in creating a winner. These two probabilities will be the same (we assume) as the probability of winning increases from 0 to 0.5. Since virtually no one believed any party had a probability of winning greater than 0.5 in this election (at least when constraining probabilities to sum to one), the two probabilities are purely monotonically increasing in each other, so we use the simpler (and empirically available) measure of the probability of a party winning the election.

22. Given that the BES interviewed across the full campaign period, these changes indicate that prospective voters faced changing national conditions, which means that true changes in expectations occurred over that time. This empirical variation provides us with unusual leverage. In addition, the BES interviews were done to reflect a (small) random sample of the respondents each day.

23. In specifying our independent variables, we follow Abramson et al. 1992 and develop measures of tactical voting derived from measures of respondents’ reported feelings about the national parties and their expectations regarding the electoral performance of the parties. However, the BES did ask a more direct question about voters’ motivations for casting their ballots. Among English voters, 5.1% stated they had “voted tactically,” and another 7.4% reported voting the way they did because their truly preferred party had “no chance of winning.” On the similarities and differences in the conclusions about tactical voting with the direct and indirect measurement, see Blais, Young, and Turcotte 2005.

24. The 2010 BES includes data on the respondents’ constituencies, including the breakdown of the vote. Media lists of battleground constituencies drawn during the 2010 campaign closely correspond to the constituencies that had the smallest winning margins in 2005. See, e.g., <http://news.bbc.co.uk/2/shared/election2010/results/>

25. Kselman and Niou (2010) argue that *no* tactical voting can occur in such

cells and that any *secondvotes* in such cells must result from other reasons, such as a protest vote or a bandwagon vote. Given our relaxation of the perfect knowledge of probabilities assumption regarding voters' estimates of the parties' chances, our theory, in contrast, permits some (albeit very little) tactical voting within such strategic contexts.

26. In cells with the highest incentives for and incidence of tactical voting, we observed nearly 40% of respondents reporting an intention to vote for their second-choice party.

27. Of the 2,976 respondents for whom data are reported in table 2.2, 1,774 (59.6%) were within a strategic context that provided minimal incentives at both the constituency and national levels to vote tactically, while just 4.10% were within a strategic context that provided the strongest incentives from constituency- and national-level considerations.

28. Of course there were additional (and new) parties (e.g., the United Kingdom Independence Party) that could have attracted protest votes that the three long-standing UK parties did not. United Kingdom Independence Party, which was sparked when Nigel Farage took over as its leader in 2009, continued to influence British politics at least through the Brexit vote, after which Farage resigned as leader, leaving the party's future uncertain.

29. That is, we estimate a model explaining *secondvote* as a function of pb_{12} , pb_{13} , and pb_{23} where pb_{xy} is equal to

$$(p_x - p_y) * (b_x - b_y)$$

30. Kselman and Niou argue that models of tactical voting that include voters who face no incentives to vote tactically are misspecified, but because our model estimates both straightforward and tactical strategic voting, we model all voters, not just those who face some incentive to vote tactically.

31. Other covariates considered but rejected for failing to improve model fit include measures of attention to the 2010 campaign, education level, income, and reported feelings of political efficacy.

32. These models were estimated using the Zelig package (Imai, King, and Lau 2012) in the R computer language (R Core Team 2012).

33. The set of pb variables collectively is statistically significant.

34. Of course, the very large and statistically significant coefficient for *tactcon* in Model 4 further supports H2.

35. Because the various pb_{xy} terms contain the same components (e.g., both pb_{12} and pb_{13} have as components p_1 and b_1), we had to construct specific scenarios to illustrate the effects of only one of the pb_{xy} terms. To create the plot showing the effects of varying pb_{12} , we varied b_1 , the feeling-thermometer score for Party 1, and left constant p_1 , the expectation that Party 1 will win. But to eliminate any effects of pb_{13} , we set p_1 equal to p_3 . We followed an analogous procedure for the other two plots, varying b_1 and setting p_1 equal to p_2 to show the effect of pb_{13} and varying b_2 and setting p_1 equal to p_2 to show the effect of pb_{23} .

36. The range of these 1,000 simulated plots provides an illustration of the confidence intervals of our estimates. We present the 90% confidence interval around our estimates.

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THREE

Strategic Voting in Changing Times

The 2016 Election in Spain

Ignacio Lago

As chapter 1 discussed, there are both nationwide and district-level logics for strategic voting. The 2016 election in Spain offers an interesting scenario for examining the rationales behind them. Proportional representation (PR) elections in Spain have given rise to a considerable amount of district-level strategic voting since the 1970s (Cox 1997; Gunther 1989; Lago 2008, 2012; Selb 2012). As most of the districts select five or fewer seats, there is room for strategic voting to affect the allocation of seats among parties. However, the government composition has been much less relevant in voters' calculus of voting. All elections have led to single-party governments. For decades, even when no party received a majority, it was relatively easy for the party with a plurality to get the support of subnational parties in exchange for increased regional power and without having to make substantial changes to national economic or social policies.

The December 2015 election dramatically changed the institutional incentives for strategic voting. First, two new parties, the far-left Podemos (We Can) and the center-right Ciudadanos (Citizens) emerged as strong competitors, though with unequal results across districts. Second, for the first time after the twelve national elections held since the restoration of democracy, the parliament failed to choose a prime minister, resulting in an early election in June 2016. Thus, the 2016 election was Spain's first in which possible agreements between national parties to form a government

were an issue during the campaign, thereby increasing the possibility of strategic voting.

This chapter examines the strategic behavior of voters in the June 2016 election to determine how quickly voters' calculus of voting is updated in an established democracy when incentives for strategic voting change. Specifically, the chapter investigates whether voters strategically deserted Podemos and Ciudadanos in districts where they had poor chances of winning seats, and whether voters coordinated around those parties with better chances of being in the government after the election. In other words, this chapter discusses two of the three kinds of outcomes under PR that might motivate strategic voting discussed in chapter 1—supporters' desire to have their party win more seats, and voters' seeking to affect which parties will be in government after the election. The data come from an Internet survey conducted by the Making Electoral Democracy Work project (www.chairelectoral.com/medw.html) during the election campaign.

Arguments

The electoral system for Spain's lower chamber (Congreso de los Diputados) provides strong incentives for strategic voting to affect the allocation of seats among parties. Elections occur under the d'Hondt formula, with closed party lists and a 3% threshold at the district level (which might matter only in the two biggest districts, Madrid and Barcelona). The 350 MPs in 2016 were elected in 52 districts with magnitudes ranging from 1 (Ceuta and Melilla) to 36 (Madrid). The mean district magnitude was 6.73, and the median was 5. Most of the districts (27 of 52) selected 5 or fewer seats. For decades, Spain has had two major political parties, the center-left Socialist Party (PSOE) and the center-right Popular Party (PP); a minor party, the formerly communist United Left (IU); and many subnational parties, particularly in Catalonia and the Basque Country. In the eleven elections held from 1977 to 2011, the best third-party results were the IU's 10.64% of the votes and 21 seats in 1996. Not surprisingly, a substantial body of research has provided robust evidence of strategic voting in small districts, in particular among IU supporters (García Viñuela and Artés 2012; Gunther 1989; Lago 2008, 2012; Selb 2012). In Gunther's words (1989, 842),

This *prima facie* case for the presence of sophisticated voting is strongly corroborated when the voting behavior of these respon-

dents is broken down by province in accord with the number of deputies sent to the Cortes from each district. Respondents with highly favorable attitudes toward the third- and fourth-place parties in large provinces were about twice as likely to vote for them as sympathizers of those same parties in small provinces.

Conversely, which parties would be in government had never been an issue, since all previous Spanish elections had led to single-party governments, with the winning party taking between 159 seats (1993) and 202 seats (1982) in the first eleven elections held after the restoration of democracy (a majority requires 176 seats). When the party winning the election did not reach the majority of seats, the shared expectation was that getting the support of subnational parties would be relatively easy. Both the PSOE and the PP behaved in this way. To the best of my knowledge, the only estimates of strategic voting to affect the government formation are provided by Lago (2005). Most Spanish elections between 1979 and 2000 show no evidence of this type of strategic voting, and in general terms, national-level strategic voting is much weaker than it is at the district level.

Although institutional arrangements have remained unchanged, in the 2016 election the incentives for behaving strategically at both the district and national levels changed substantially. The emergence of Podemos and Ciudadanos, mainly as a consequence of the economic crisis and widespread corruption (Orriols and Cordero 2016), in the December 2015 election had tremendous effect. As table 3.1 shows, they received 20.8% of the votes and 69 seats and 14.1% of the votes and 40 seats respectively. Their vote shares exhibit a larger variation across districts than do the shares of the two largest parties. While Podemos and Ciudadanos got seats in 71% and 50% of the districts, respectively, this share was substantially higher for the PP (94%) and the PSOE (96%). In other words, the number of voters who had the incentive to vote strategically substantially increased over previous elections. Table 3.2 displays the voters' left-right placement of the four main parties.

For the first time since the restoration of democracy, the 2016 election presented voters with clear incentives to coordinate around those parties with a better chance of joining the government after the election. The inability to choose a prime minister after the December 2015 election became a crucial issue in the 2016 campaign. After the 2015 election, Felipe VI first nominated Mariano Rajoy, the leader of the PP, to form a new government, but Rajoy turned down the mandate, postponing his candidacy by arguing that he had a verified majority against him. Felipe's

next choice, PSOE leader Pedro Sánchez, accepted the mandate but failed to pass an investiture vote on March 2, winning support from only 131 MPs (PSOE + Ciudadanos + a minor regional party, Canary Coalition) and being rejected by 219. At the same time, as figure 3.1 shows, the PSOE trailed Unidos Podemos in the polls conducted before the election, the first time the PSOE had fallen behind another leftist party since the restoration of democracy. In sum, PSOE supporters had room to engage in strategic behavior if they cared about the parties that would be in government after the election.

In the 2016 campaign, party leaders clearly stated their goals for government formation after the election. The PSOE leader declared, “We will not support a PP government or support [Podemos leader] Pablo Iglesias as the president.”¹ However, according to Iglesias, “Everyone is clear that we will not have an absolute majority. Any formula of government implies an agreement, and . . . we want to govern with the PSOE.”² Rajoy proposed “a grand coalition with the PSOE.”³ And Ciudadanos’s leader, Albert Rivera, declared his party’s willingness “to sit down and negotiate with PP and PSOE a plural, broad, and overarching government. But only if it is to change things.”⁴

TABLE 3.1. Results of Spanish National Elections, 2015 and 2016

		Party				
	PP	PSOE	Podemos ^a	Ciudadanos	IU ^b	Others
2015	28.9% 123 seats (49 districts)	22.2% 90 seats (50 districts)	20.8% 69 seats (37 districts)	14.1% 40 seats (26 districts)	3.7% 2 seats (1 district)	14.0% 28 seats —
2016	33.0% 137 seats (50 districts)	22.7% 85 seats (49 districts)	21.1% 70 seats (38 districts)	13.1% 32 seats (20 districts)	— — —	10.2% 26 seats —

^aIn 2015, Podemos + En Comú + Compromís + En Marea; in 2016, Podemos + En Comú + Compromís + En Marea + UP – UPeC.
^bUnidad Popular: Izquierda Unida + Unidad Popular en Común.

TABLE 3.2. Voters’ Left-Right Placements in Spain, 2016

Party				
	Unidos Podemos	PSOE	Ciudadanos	PP
Mean	3.14	4.03	5.36	6.62
Std. Dev.	1.61	1.70	1.40	1.45
N	503	283	250	337

Source: Data from MEDW survey, 2016.

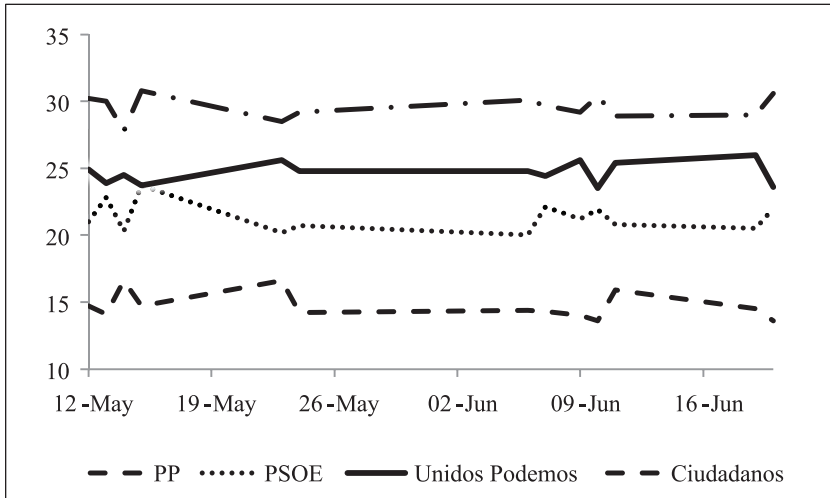


Fig. 3.1. Pre-election Polls (%). (Data from <http://www.argos.gva.es/es/encuestas/>)

So did the supporters of Podemos and Ciudadanos and the PSOE respond to the incentives to behave strategically? The incentives for district- and national-level strategic voting differ for the supporters of the three parties. First, I expect that district-level strategic considerations should be more important for Unidos Podemos than for Ciudadanos's supporters for two reasons. First, Spain has for decades had more leftist parties than rightist parties, meaning that voter coordination around viable parties has been an issue for leftist voters but not for rightist voters. In addition, in 2016 Podemos and IU formed a preelectoral coalition, Unidos Podemos, and strategic voting has been widespread among IU supporters for decades. All else equal, Unidos Podemos's supporters should be more aware of the incentives to behave strategically than the Ciudadanos supporters. Moreover, Unidos Podemos is a viable competitor in more districts than Ciudadanos. I do not expect that voters strategically deserted the PSOE for district-level considerations because it was viable in more districts than Podemos (2015) or Podemos plus IU (2016).

Second, voters motivated by the desire to affect the government composition had more incentives to strategically desert Ciudadanos than Unidos Podemos in favor of the PP and the PSOE, respectively. According to the twelve surveys published between mid-May (when Podemos and IU agreed to form their coalition) and six days before the election (see figure

3.1), Unidos Podemos was ahead of the PSOE by between 1 and 6 points. However, Ciudadanos supporters had strong incentives to vote strategically. The 15-point difference in the December 2015 election remained more or less constant during the 2016 campaign. As table 3.3 shows, when asked about parties' chances of being in the government after the election (with 0 = very unlikely and 10 = very likely), voters clearly saw Unidos Podemos's chances as greater than those of the PSOE. Similarly, PP supporters saw their party's chances as 1 point greater than those of Ciudadanos. Both differences are statistically significant at the 0.01 level. Finally, in contrast with the 2015 election, Unidos Podemos supporters faced no incentives to vote strategically for the PSOE, which was doing slightly better in polls.

Data and Methods

The survey was conducted June 13–26, 2016, and closed before the election started on June 26. A representative sample of 2,278 people were interviewed online.⁵ The questionnaire included vote intention and two questions regarding respondents' perceptions of the various parties' chances of joining the government after the election and of winning at least one seat in the respondent's district.⁶

The empirical analysis focuses on those voters who had the opportunity to vote strategically—that is, those respondents whose first preference was Unidos Podemos, Ciudadanos, or PSOE.⁷ There are three dichotomous dependent variables. When explaining pre-election vote intention for Unidos Podemos, the variable takes the value 1 if the respondent intends

TABLE 3.3. Preferred Party's Chances of Joining the Government after the Election (mean value)

Party	Chances of Joining Government	<i>t</i> -Test (unpaired)
PP	7.37 (2.17)	$t = 5.97^{***}$ $N = 716$
Ciudadanos	6.36 (2.20)	
PSOE	6.72 (2.13)	$t = -2.57^{***}$ $N = 790$
Podemos	7.49 (2.13)	

Note: Standard deviations in parentheses; *** $p < 0.01$.

to vote for Unidos Podemos and 0 if the respondent intends to vote for another party. When explaining pre-election vote intention for Ciudadanos, the variable takes the value 1 if the respondent intends to vote for Ciudadanos and 0 if the respondent intends to vote for another party. Finally, when explaining pre-election vote intention for the PSOE, the variable takes the value 1 if the respondent intends to vote for the PSOE and 0 if the respondent intends to vote for another party.

As table 3.4 illustrates, the great majority of respondents intended to vote for their first preference, especially in the case of Unidos Podemos. In other words, at a first glance, relatively little strategic voting occurred. Given that the dependent variables are dichotomous, logistic regressions have been run with clusters for districts.

The two key independent variables are voters' perceptions of Unidos Podemos, Ciudadanos, and PSOE's chances of joining the government after the election and of winning at least one seat in the respondent's district. Both are measured using a scale going from 0 (very unlikely/no chance at all) to 10 (very likely/certain to win). There are three controls in the models. First, the party's rating using an 11-point feeling thermometer ranging from 0 (dislike) to 10 (like) is included. We know that the formation of electoral expectations is particularly sensitive to wishful thinking: voters with strong partisan preferences tend to overestimate the chances of their preferred party (Mutz 1998, chapter 6; Blais and Bodet 2006; Guinjoan et al. 2014; Meffert et al. 2011). Second, the models include a political awareness scale going from 0 (no information at all) to 2 (maximum level of information).⁸ Third, the age (in years) of respondents is included.

Table 3.5 provides descriptive statistics for the variables. As the table shows, 95% of respondents whose first preference was Podemos intended to vote for Unidos Podemos, 79% of respondents whose first preference

TABLE 3.4. Individuals' First Preferences and Vote Intentions, 2016

First Preference	Vote Intention						
		Unidos					
		PP	PSOE	Podemos	Ciudadanos	Other	Total
	PP	327	0	0	8	13	348
	PSOE	3	267	1	16	12	299
	Unidos	0	5	417	1	12	435
Podemos							
Ciudadanos	20	11	9	229	23	292	

Source: Data from MEDW survey, 2016.

Note: Numbers in each cell indicate the number of individuals.

was Ciudadanos intended to vote for Ciudadanos, and 93% of respondents whose first preference was the PSOE intended to vote for the PSOE. The empirical analysis tests the extent to which strategic considerations affect those who stick to their first preference.

Table 3.6 shows how those individuals whose first preference is Podemos, Ciudadanos, or the PSOE rated the four main parties' chances of winning seats in the respondent's district. Both Podemos and PSOE

TABLE 3.5. Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Unidos Podemos vs Other party (N = 429)				
Vote intention	0.95	0.20	0	1
Podemos's rating	8.51	1.59	1	10
Unidos Podemos's chances of joining government	7.38	2.08	0	10
Unidos Podemos's chances of winning seats	8.38	2.16	0	10
Information	1.08	0.53	0	2
Age	42.64	13.86	18	81
Ciudadanos vs Other Party (N = 277)				
Vote intention	0.79	0.41	0	1
Ciudadanos's rating	7.87	1.76	0	10
Ciudadanos's chances of joining government	6.55	2.09	0	10
Ciudadanos's chances of winning seats	7.58	2.54	0	10
Information	1.07	0.53	0	2
Age	46.28	13.42	18	80
PSOE vs Other Party (N = 249)				
Vote intention	0.93	0.25	0	1
PSOE's rating	8.10	1.48	4	10
PSOE's chances of joining government	6.93	2.08	0	10
PSOE's chances of winning seats	8.45	1.96	0	10
Information	1.00	0.57	0	2
Age	49.29	12.72	18	80

TABLE 3.6. Respondents' Assessments of Parties' Average Chances of Winning Seats in the Respondent's District

	Party			
	Unidos Podemos	PSOE	Ciudadanos	PP
Podemos supporters	7.83 (2.57)	6.76 (3.20)	5.80 (3.33)	6.37 (3.60)
Ciudadanos supporters	6.26 (3.29)	7.21 (3.07)	7.33 (2.66)	7.52 (3.09)
PSOE supporters	6.26 (3.03)	7.81 (2.25)	6.11 (2.91)	6.85 (3.20)

Source: Data from MEDW survey, 2016.

Note: Standard deviations in parentheses.

supporters gave the highest chances of winning seats to their favorite party, while Ciudadanos supporters credited better chances to the PP than to Ciudadanos. In general terms, respondents' assessments of a party's chances declined as the ideological distance between the respondent and the party increased. This finding provides evidence of wishful thinking and strong ideological preferences.

Results

Table 3.7 shows the results of the estimates. In all the models, the party's rating has the expected positive sign, but the findings are statistically significant (at the 0.01% level) only for Unidos Podemos and Ciudadanos. The more respondents like Unidos Podemos and Ciudadanos, the higher their probability of voting for them. The gap between the ratings of the favorite party and the other three main national parties is much lower for the PSOE's supporters than for the Podemos and Ciudadanos supporters, meaning that the party's rating does not significantly increase the probability of voting for the PSOE. The level of political information and age

TABLE 3.7. Vote Intention in the 2016 National Election in Spain

	Models		
	1 Unidos Podemos vs. Other Party	2 Ciudadanos vs. Other Party	3 PSOE vs. Other Party
Podemos/Ciudadanos/PSOE like/dislike rating	0.74*** (0.16)	0.37*** (0.11)	0.06 (0.23)
Podemos/Ciudadanos/PSOE's chances of being in the government	-0.11 (0.17)	-0.019 (0.125)	0.099 (0.147)
Podemos/Ciudadanos/PSOE's chances of winning seat(s) in the district	0.35** (0.11)	-0.16 (0.10)	0.017 (0.245)
Information	-0.98 (0.54)	0.48 (0.26)	0.32 (0.60)
Age	0.021 (0.024)	0.018 (0.018)	0.042 (0.036)
Constant	-3.43** (1.66)	-1.34 (1.16)	-1.19 (1.51)
Pseudo R ²	0.44	0.09	0.06
N	424	274	247
# of clusters	43	46	45

Note: Standard errors in parentheses; ** $p < 0.05$; *** $p < 0.01$.

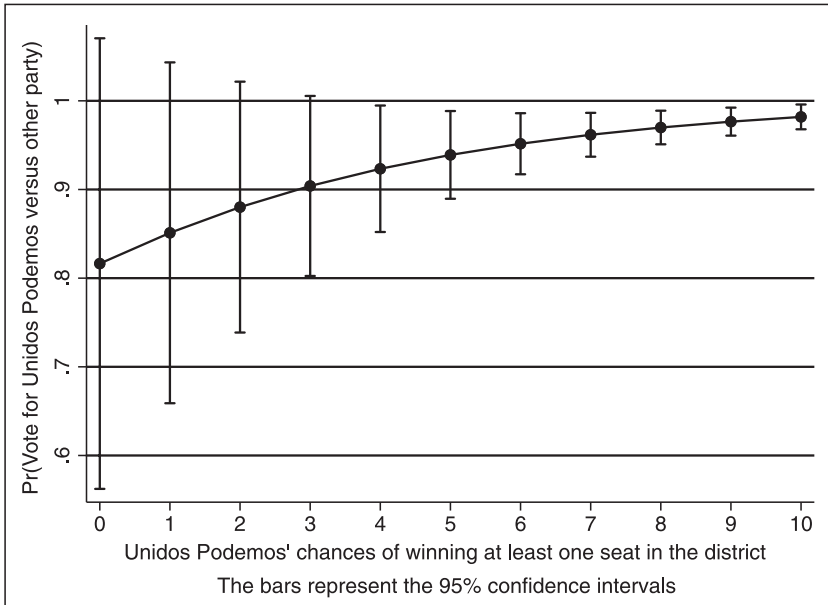


Fig. 3.2. The Impact of the Chances of Winning a Seat in the District on the Probability of Voting for Unidos Podemos

do not significantly affect the probability of supporting Unidos Podemos, Ciudadanos, and the PSOE.

When explaining why respondents intended to vote for Unidos Podemos instead of any other party, Unidos Podemos's chances of winning at least one seat in the respondent's district (Model 1) positively affect the probability of supporting Unidos Podemos and are statistically significant at the 0.05 level: the better the chances attributed to Unidos Podemos, the more likely a respondent is to support the party. Figure 3.2 shows the effect of the variable. For those respondents whose first preference is Unidos Podemos and who think that the party has no chance of winning a seat in the district (value 0), the probability of supporting the party is 0.82; for those who think that the party is certain to win seats (value 10), it is 0.98. However, Unidos Podemos's chances of joining the government after the election do not make a difference for respondents: the variable is not statistically significant, and the coefficient is close to 0.

When explaining the decision to support Ciudadanos rather than another party, Ciudadanos's chances of being in government and of winning at least one seat in the district do not significantly affect the vot-

ing decision. The two variables are far from statistically significant at the conventional levels. Similarly, the PSOE's chances of joining the government and of winning at least one seat in the district are not relevant when accounting for the decision to vote for the PSOE or any other party. Thus, district-level factors are more relevant than national-level factors in explaining strategic voting in Spain. This finding is in line with the evidence provided by Daoust (this vol.) for Canada.

Parties' chances of winning seats in the district have differing impact for Unidos Podemos and Ciudadanos for two reasons. First, Ciudadanos's supporters are not completely aware of its chances of winning the seat, since voter coordination around viable parties has not been an issue for rightist voters. Table 3.8 examines the accuracy of assessments of Unidos Podemos's and Ciudadanos's chances of winning a seat in the district. I regress the 0–10 scale on a dummy variable capturing whether the party won seats in the district in the 2015 election.⁹ If voters are well informed about parties' viability, attributed chances in those districts in which the party won seats should be greater than in those districts in which the party won no seats.

As table 3.8 shows, the chances of Unidos Podemos are 3.25 points greater in districts where it won seats than in those where it did not, and the variable is statistically significant at the 0.05 level. However, there is no statistically significant difference in Ciudadanos's chances in the two types of districts. In addition, many districts have very few respondents whose first preference is Ciudadanos. Those districts where Ciudadanos won no seats in 2015 had only 55 Ciudadanos sympathizers, and only 1 voted for the PP. Those districts where Ciudadanos won at least one seat in the 2015 election had 191 Ciudadanos sympathizers, 25 of whom voted for the PP.

Finally, it is puzzling that the parties' chances of joining the government make no difference for voters in an early election held after the par-

TABLE 3.8. Accuracy of Expectations, 2016

	Unidos Podemos	Ciudadanos
Seat in the District in the Previous Election	3.25** (1.22)	0.66 (1.72)
Constant	7.02*** (0.92)	8.69*** (1.45)
R ²	0.002	0.0003
N	774	708
# of Clusters	47	50

Note: Standard errors in parentheses; ** $p < 0.05$; *** $p < 0.01$.

ties failed to reach an agreement to choose a prime minister. Table 3.9 examines the importance of the formation of a government for voters in 2016 relative to 2011. Respondents in both Catalonia and Madrid cared more about which parties formed the government in 2011 than in 2016, a result that warrants further research.

Conclusions

Spain’s June 2016 election provides an ideal scenario to see how quickly voters react to a dramatic change in the incentives to behave strategically as a consequence of the emergence of new national parties winning seats in many but not all districts and the failure to elect a prime minister six months earlier. The pool of voters with incentives to vote strategically—to affect both the allocation of seats among parties and the formation of a government—substantially increased in comparison with previous elections.

The study finds only a small amount of planned strategic desertion when explaining the decision to vote for Unidos Podemos instead of another party: the probability of voting for Unidos Podemos slightly increases along with the respondent’s belief that the party is more likely to win a seat in the district. However, there is no evidence of strategic desertion motivated by the desire to affect the government composition or strategic consideration at the district level when accounting for the decision of supporting Ciudadanos and the PSOE.

TABLE 3.9. Importance of Government Formation to Individual Voters, 2011 and 2016

	Sample		
	Spain	Catalonia	Madrid
2011 election	—	7.36 (2.59) N = 933	7.81 (2.44) N = 962
2016 election	7.29 (2.66) N = 2,217	6.31 (2.92) N = 531	7.55 (2.84) N = 232

Source: Data from MEDW survey, 2016.
Note: Standard deviations in parentheses. N = number of respondents. The election was held on November 20, 2011. The data for 2011 come from pre-election surveys in Barcelona and Madrid conducted between November 10 and November 18, with representative samples of 773 (Barcelona) and 976 (Madrid) individuals interviewed. All surveys conducted by Harris/Decima (now Nielsen), relying on panels of respondents. The sampling was based on a stratified, quota-based approach. Quotas were set by controlling for age, gender, and education status. For further details see www.chairelectoral.com/medw.html

Three reasons explain the very low amount of strategic desertion overall. First, voters do not seem particularly concerned about which parties join the government. In line with the experimental evidence provided by Blais et al. (this vol.), Spanish voters did not update and use the information about the parties' chances of being in government when making vote choices. Second, Ciudadanos's supporters were much less aware than Podemos's supporters of the incentive to behave strategically at the district level. Finally, wishful thinking and strong ideological preferences hamper strategic behaviors.

NOTES

1. <http://www.elmundo.es/espana/2016/06/20/57679a8846163f695f8b456e.html>
2. <http://www.elmundo.es/espana/2016/06/21/5768538fca4741440a8b4578.html>
3. <http://www.lavanguardia.com/politica/20160621/402667693916/entrevista-rajoy-8-al-dia-streaming.html>
4. <http://www.lavanguardia.com/politica/20160620/402624990066/si-los-extremos-se-imponen-al-centro-espana-seguira-bloqueada.html>
5. The analysis is weighted for age, gender, region, and education.
6. The operationalization of strategic voting in this chapter is slightly different than in other chapters as a consequence of the availability of data. For example, respondents' beliefs about parties' chances of being in government are available only for their preferred party. The variables in the models capture preferences and beliefs only about the preferred party.
7. The specific question in the survey capturing the first preference is categorical: "All in all, which party do you like the most?"
8. The survey includes two questions about factual political knowledge: "Please indicate whether the following statement is true or false: A party needs to get at least 3% of the votes across the whole country in order to be represented in Parliament" and "Please indicate whether the following statement is true or false: The leader of the party with most votes automatically becomes the Prime Minister." Each right answer scores 1; wrong answers or "don't know/no answer" score 0.
9. A focus on the results of Podemos or of Podemos and IU together makes no difference.

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FOUR

Support for Minority Government and Strategic Voting

Jean-François Daoust

First-past-the-post (FPTP) electoral systems are known to produce single-party majority governments (most of the time). This winner-take-all system is largely responsible for the fact that Canada had a majority government 20 out of 28 times in the twentieth century by allocating a disproportionate bonus of seats to large parties. However, things changed at the beginning of the twenty-first century: in three consecutive elections between 2004 and 2011, no party won a majority of seats, and the 2004 election produced the first minority government since 1979. This new dynamic might have changed voters' calculus of voting as they integrated considerations related to the possible formation of a minority government. That is, Canadians had been accustomed to majorities, but the events of the 2000s might have caused them to rethink their expectations.

The 2015 Canadian election is particularly well suited to explore this possible new dynamic because polls predicted an unprecedented three-way horse race between the main parties—the Conservative Party of Canada (CPC), the New Democratic Party of Canada (NDP), and the Liberal Party of Canada (LPC)—each of which led in the polls at least once during the campaign. The NDP was ahead at the beginning of the campaign, while the Tories and Liberals competed for first place during the final weeks. This environment provided a nearly perfect “coordination dilemma” (Cox 1997), as the Left was divided between the Liberals and the NDP and faced

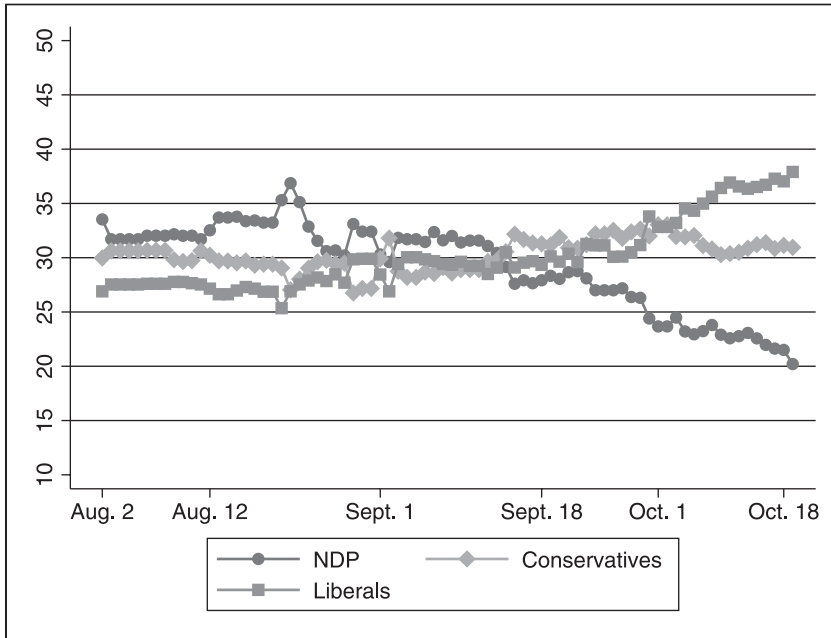


Fig. 4.1. Poll Results and the Decline of the NDP. (Note: each observation represents a poll result.)

a united right in the CPC. The stage was set for voters to at least consider the possibility of voting strategically, providing a unique opportunity to understand voters' strategic motivations. Poll results illustrated this situation throughout the campaign. As figure 4.1 shows, in the middle of the campaign, no party had a significant lead. However, in the last weeks, it became clear that the NDP could not form the next government because the party was trailing in Ontario, which sends the most representatives to the parliament. By early September, the number of people intending to vote for the NDP declined dramatically, while the Liberals seemed to gain from those desertions.

As chapter 1 discusses, the study of strategic voting developed under FPTP assumptions (Downs 1957; Riker and Ordeshook 1968). The logic appeared very simple, with the focus on single-member districts (or for presidential elections, the nation conceived as a single district). Strategic voting has been defined as a vote that takes into account the preferences regarding candidates and expectations regarding outcomes. It is often evaluated as a two-step process (Blais and Nadeau 1996), where the researcher

first scrutinizes whether voters have incentives to desert strategically (that is, their preferred parties are not viable) and then examines whether voters supported their preferred party *between the viable parties*.

In its purest form, strategic voting thus derives from a local calculus only, since voters cast a single vote that counts solely at the local level. However, as chapter 1 suggests, this vote at the local level could impact national considerations. For instance, the selected (local) representative will contribute to collective national outcomes such as the selection of the prime minister in a parliamentary system or the leadership of the House in a presidential system. Hence, at least indirectly, local votes can shape national outcomes. While chapter 1 suggests that national considerations might matter for strategic voting, this chapter argues that the preference for minority government is one of the national considerations that affects a voter's calculus. Because minority governments have become more common, at least in the Canadian case, preferences about the size of the government could also matter.

This chapter considers theoretical arguments related to minority governments and coalitions and their impact on strategic voting. The chapter then tests these arguments via two different approaches using data from the Making Electoral Democracy Work project. The conclusion discusses the relevance of national considerations even in FPTP electoral systems.

National Determinants of Strategic Voting

We already know quite a lot about the individual determinants of strategic voting as commonly defined and as referred to in chapter 1 (see table 1.1). Political sophistication is one of the most studied determinants of strategic voting. Most of the time, the relationship is positive: more sophisticated voters are more likely to vote strategically (Black 1978; Blais and Turgeon 2004; Merolla and Stephenson 2007), although some authors find null results (Blais and Gschwend 2011; Daoust 2015; Duch and Palmer 2002). Partisanship is also known to impact the proclivity to vote strategically. The literature is unequivocal: voters who are more partisan are less likely to vote strategically as the expressive costs of desertion increase (Gschwend 2007; Plescia 2017, 155). Somewhat related to partisanship, the intensity of preferences is known to negatively influence voters' proclivity to cast strategic votes—that is, more intense voters are less likely to desert their preferred options (Blais 2002). This is a direct impact, but there is also an indirect one. Voters who really like a party or a candidate are more likely

to display wishful thinking and to believe that their preferred choice has some chance of winning (Blais and Turgeon 2004). Hence, such voters do not find it rational to desert.

However, given the likely outcome of a minority government, some *national* considerations might influence voters to desert strategically even in FPTP electoral systems where voters cast only one vote and this vote is at the local level. By national considerations, I mean considerations that are not related to the local level—that is, the constituency. This is even more likely because the Canadian media typically cover national polls and focus on which party is leading nationally and whether it has enough support to form a majority government.

There are many theoretical reasons to believe that national considerations may influence voters' choices in Canada. First, voters who believe that it is better to have a government with a majority of seats may desert their first choice to increase the chances of another party winning at least 170 of the 338 seats. This assumes, of course, that for some voters, the utility of having a majority rather than minority government outweighs the expressive benefits of voting for their first choice. Second, when they integrate new considerations, voters are more tempted to change their votes. It appears that such was the case in 2015, when political pundits talked a lot about the possibility of a minority government and the possibility of a two-party coalition, which has only happened once (during the First World War). We know that novelties bring voters to reconsider their choices (Marcus, Neuman, and MacKuen 2000), which means that those who have stances on new issues are more likely to change their behavior.

Furthermore, voters may have different preferences regarding majority or minority governments. First, there are strategic considerations. On the one hand, supporters of small parties could benefit from a minority government by exerting a greater influence in the legislation than their share of seats might suggest (Thomas 2007). On the other hand, supporters of major parties might also prefer a minority government in a particular context: for example, if they expect their preferred party to lose the upcoming election. "For them, a minority outcome might be preferable to a legislature controlled by their major party opponents." (Dufresne and Nevitte 2014, 828). Finally, Russell (2008) argues that minority governments are viewed as being more associated with open-style democracy and more consensual politics, with a tighter process of checks and balances and a government more likely to compromise or bargain. Hence, on top of strategic considerations, some voters' principles might lead them to view minority government as better.

Institutional rules shape a variety of outcomes and thus ways in which “winning” is defined. In the Canadian case, it is necessary to take into account the decision-making calculus utility function associated with possible outcomes at the local and the national levels, since citizens vote at the district level as well as indirectly for the government. Preferences about majority versus minority governments shape this utility function. For example, a supporter of the NDP may prefer a victory by the party at both the local and national levels but likely does not expect the NDP to form the next government. If this voter also prefers minority governments, she may consider deserting her preferred option in order to support a party that could form a minority government at the national level. As the LPC is spatially closer to her than the CPC, the two most preferred outcomes are likely

$$\text{NDP(Minority)} > \text{LPC(Minority)}$$

However, even if she prefers minority government to majority government, she may prefer a majority government by her preferred party over a minority government by her second choice. Hence, the preferred outcomes are

$$\text{NDP(Minority)} > \text{NDP(Majority)} > \text{LPC(Minority)}$$

In both cases, if the voter concludes that the two first options are not possible, since the NDP will not win the most seats, she rationally turns to the third option. This is a case of national strategic voting because it is shaped by preferences regarding the formation of the national government. The analysis in this chapter identifies exactly this kind of vote: strategic voting as a consequence of national considerations. More precisely, the chapter analyzes strategic voting resulting from preferences regarding minority government.

Data and Case Study

To tackle the possibility that attitudes toward minority government affect strategic voting, I use the Making Electoral Democracy Work datasets (Blais 2010) for the Canadian election of 2015. The project conducted three surveys in British Columbia, Ontario, and Quebec, with 1,879, 1,891, and 1,864 respondents, respectively, in the first wave conducted in the two weeks before Election Day. A second wave of the surveys was conducted

during the two weeks following the election, with a return-to-sample rate of 73%. I weighted the data so that the reported vote matches the official outcome in each province. This is necessary because third parties are over-represented and their supporters are more likely to desert strategically.

In the 2015 Canadian federal election, incumbent prime minister Stephen Harper of the CPC lost office to the LPC and its leader, Justin Trudeau. As table 4.1 shows, the Conservatives received 32% of the votes and 29% of the seats. The Liberals won with 39% of the votes and 54% of the seats. The NDP came third, garnering 24% of the votes and 20% of the seats. In Quebec, the Bloc Québécois received 20% of the votes and 13% of the province’s seats. Finally, the Greens obtained 3% of the votes and one seat (in British Columbia, where the party is strongest). No other party received more than 1% of the votes at the national level.

Strategic Voting in the 2015 Canadian Election

Tackling national strategic voting ideally requires measures of preferences, expectations about election outcomes at the local and national levels, and vote choice. The Making Electoral Democracy Work data provide these measures. To calculate strategic voting, I rely on the approach proposed by Blais and Gschwend (2011), counting as strategic voters anyone who does not vote for their preferred party, leader, or local candidate. This strongly

TABLE 4.1. Votes and Seat Shares, 2015

	British Columbia	Ontario	Quebec	Canada
CPC	30 (24)	35 (66)	17 (15)	32 (29)
LPC	35 (41)	45 (27)	36 (51)	39 (54)
NDP	26 (33)	17 (7)	25 (21)	20 (13)
Bloc Québécois	N/A	N/A	20 (13)	5 (3)
Greens	8 (2)	3 (0)	2 (0)	3 (0.3)
<i>Total</i>	99 (100)	100 (100)	100 (100)	99 (100)

Note: Cell entries are vote shares (%). Seat shares (%) are in parentheses.

correlates with other measures of strategic voting and is the best option offered by the data.

Empirically, the approach consists of three steps, as I successively take into account party, leader, and local candidate preferences. The preferred party is the one that scores the highest on a 0–10 party-liking scale. In the case of ties, respondents were asked a follow-up question where they had to indicate which party they like the most. The same applies to the preferred leader. In the case of a tie, the preferred leader is the one whom the respondent thinks would be the best prime minister. Finally, respondents were asked if they liked a particular candidate in their district, and if so, from which party.

A vast majority of voters—77% of the electorate—supported their preferred party. This means that 23% of voters did not do so. This proportion goes down to 18% when the condition of not voting for the preferred leader is added. Finally, when those who supported their preferred local candidate are removed, 14% of the total electorate satisfies these three

TABLE 4.2. Strategic Voters

Proportion of voters who did not vote for their preferred party	22.6%
Proportion of voters who did not vote for their preferred party or their preferred leader	17.8%
Proportion of voters who did not vote for their preferred party, their preferred leader, or their preferred local candidate	14.4%

TABLE 4.3. Preferred Party and Vote Choice among Strategic Voters

	CPC	NDP	LPC	Bloc	Greens	Total
CPC	0 (17)	22 (35)	20 (35)	2 (5)	20 (14)	64 (14)
NDP	20 (23)	0	30 (51)	20 (48)	51 (36)	120 (26)
LPC	54 (64)	100 (77)	0	18 (44)	65 (46)	238 (52)
Bloc	4 (5)	6 (5)	2 (3)	0	4 (3)	16 (4)
Greens	4 (7)	2 (2)	7 (11)	2 (4)	0	15 (4)
Total	82 (100)	130 (100)	58 (100)	42 (100)	141 (100)	454 (100)

Note: Number of observations are in cells with the percentages in parentheses. The preferred party is indicated by the column and the vote choice by the row. Hence, the diagonal entries would represent sincere voting.

criteria, which do not capture pure strategic voting but do identify a voting behavior that is highly correlated with strategic voting. The three steps are described in table 4.2.

Table 4.3 compares sincere preferences and actual votes for the 456 strategic voters, showing which party they preferred and which party they supported. Because nearly all voters do not expect the Greens to be a viable option, they are disproportionately represented. Overall, most of the strategic desertion comes from NDP and Green supporters, and most goes to the Liberals. More specifically, 64% of the Conservatives who voted strategically opted for the Liberals, as did 77% of NDP strategic voters and 52% of strategic Greens. Finally, small variations occurred among the three provinces. More strategic voting occurred in British Columbia (17%) and less in Ontario (11%), with Quebec right in the middle (14.5%). Second, the Liberals benefited less from strategic voting in Quebec, since strategic voters from the Bloc Québécois were slightly more likely to choose the NDP than the Liberals.

The Impact of Attitudes toward Minority Government and Coalitions

To isolate the impact of opinions regarding minority government, different conditions were elaborated, and they strongly suggest that voters deserted for national considerations. For each party, I isolated voters who were defined as strategic, who did not expect their preferred party to win the most seats, and who preferred a minority government. I repeat the exercise for each party. Voters were asked “Which party do you think will win the most seats in this election?” and “Do you think it is better to have a majority government, a minority government or does it make no difference?” Table 4.4 displays the results.

A substantial proportion of voters—92 of the 452 strategic voters (20%; 3% of the total electorate)—satisfy all the criteria. The criteria I use are consistent with an interpretation that some of the strategic voters were mobilized by national considerations.¹ Minor parties such as the Greens are overrepresented because they are more likely to express positive attitudes toward minority government. Among Greens supporters, 43% saw minority government as the best option, while only 13% of the Conservatives’ electorate did so.

To determine whether attitudes toward minority government have an independent impact on strategic voting, I run a logistic regression using a

dependent variable coded 1 if the voter is a strategic deserter and 0 otherwise. Table 4.5 shows the results. The main independent variable of interest is minority government. It is a dummy coded 1 if the respondent believes that it is better to have a minority government and 0 if the respondent answers that a majority is better, believes that it makes no difference, or does not know. Among the electorate, 28% believes that a minority government is better.

I also control for the impact of sociodemographic variables, preferences for parties and leaders, political information, and partisanship. Age is a continuous variable from 18 to 94; sex is a dummy, with female as the reference category; and education is a dummy coded 1 if the respondent has completed at least some university. Political information is an index that asked the respondent to identify pictures of leaders from the major par-

TABLE 4.4. The Impact of National Considerations on Strategic Voting

	Model 1 b/se
Age	-0.022*** (0.00)
Female	-0.199 (0.13)
Education (University)	0.262* (0.13)
Political information	-1.243*** (0.35)
Local not viable	0.896*** (0.15)
Partisanship	-0.142 (0.14)
Leader polarization	-0.006 (0.01)
Party polarization	-0.137*** (0.03)
Minority government	0.441** (0.14)
Province (reference = BC)	
Quebec	-0.420** (0.18)
Ontario	-0.725*** (0.17)
Constant	0.162 (0.34)
Pseudo R^2	.10
N	2,643

* $p > .05$; ** $p > .01$; *** $p > .001$.

ties (appendix to this chapter). Partisanship captures the effect of feeling close to a party. Party polarization is the absolute difference between the score attributed to the preferred party and the score attributed to the second preferred party. Leader polarization is the absolute difference between the score given to the preferred leader and the score given to the second choice leader. These indicators of preference must be taken into account because the expected-utility-maximizing choice reflects the intensity of voters' preferences.

Furthermore, identifying whether national considerations affect strategic voting requires controlling for the fact that some voters have local incentives to desert. Hence, the Local not viable variable is a dummy controlling for voters whose preferred party is not viable in the local context—that is, when their preferred party is perceived as not among the district's top two contenders.

The results display strong support for the influence of attitudes toward minority government on strategic voting. The Minority government variable is significant at $p < .01$. Furthermore, it is positive, meaning that voters who believe that it is better to have a minority government are more likely to desert strategically. However, the magnitude of the impact is quite limited, which is not surprising and is in line with the previous test that isolated national strategic voters using particular criteria. Voters who believe that minority governments are better have a 17.5% chance of deserting, whereas those who do not share that belief have a 12.6% of doing so. The attitude toward minority government thus increases the likelihood of strategic desertion by 4.9 percentage points. In light of the fact that 14.4% of voters were defined as strategic, we can say that around 5% of voters are strategic because of national considerations. It is also likely that the indi-

TABLE 4.5. National (Minority Government) Considerations among Strategic Considerations

Preferred party	Does Not Expect the Preferred Party to Win at the National Level	Is Defined as Strategic Voter	Prefers Minority Government	Number of Voters Meeting These Criteria/Number of Strategic Voters from Party
CPC	Yes	Yes	Yes	4/72 (6%)
NDP				9/138 (7%)
LPC				7/51 (14%)
Bloc Québécois				14/46 (30%)
Green				58/145 (40%)
All				92/452 (20%)

rect nature of the national outcomes reduces their saliency to the determination of the vote relative to the more immediate case of an expected close contest in the constituency.

Table 4.4 indicates not only that national determinants have an impact on strategic voting but also that the local level and context matter. First, the Local not viable variable illustrates that voters whose preferred options are not viable in their districts are far more likely to desert. This strongly suggests the existence of strategic voting as a consequence of local considerations and that it is twice as important as national considerations in the voter's calculus. Context also matters, as shown by dummy variables demonstrating that the extent to which voters act strategically is not uniformly distributed in the country. Both Ontario (5.2 percentage points) and especially Quebec (2.8 percentage points) display less strategic voting than does British Columbia.²

Finally, individual determinants are also part of the story. Indeed, feeling close to a party increases the expressive cost of strategic voting and is thus negatively associated with strategic voting, but that association is not significant. Furthermore, the level of political information is negatively correlated with strategic voting, a finding that differs from other studies, which have found a positive but not significant relationship (Blais and Gschwend 2011; Daoust 2015; Duch and Palmer 2002). Education, however, displays a positive sign, meaning that sophistication but not information might be positively related to strategic voting.

Conclusion

Canada's minority governments between 2004 and 2011 likely altered voters' calculus. While I cannot analyze voters' considerations before and after this period, I do find that a preference for minority government was integrated as a strategic consideration in the Canadian federal 2015 election.

My study finds that one in five strategic voters would be driven by national considerations and that attitudes toward minority government had an independent impact of 3.1 percentage points on the proclivity to cast a strategic vote—a realistic and nonnegligible effect. However, local considerations appear to be much more prominent among strategic voters. Hence, it is not surprising that the variable capturing the effect of the viability of a voter's preferred party displays a greater impact, reflecting the local impact on the strategic calculus.

The two methods I used offer different ways to analyze the impact of

national considerations on strategic voting, but both reveal that information related to the local level has more impact than national considerations. However, they also reveal that mobilizing national considerations accounted for about one in five strategic voters and that a favorable view of minority government increases the likelihood of strategic desertion from 12.6% to 17.5%, a substantial amount. Thus, scholars of strategic voting should not disregard national considerations—they are relevant and make important contributions to the study of strategic voting.

APPENDIX

TABLE A4.1. Attitudes toward Minority Government

	(1) b/se
Age	0.010*** (0.003)
Education (University)	0.095 (0.087)
Female	-0.281** (0.086)
Preferred party (ref=Conservatives)	
NDP	1.432*** (0.136)
Liberals	0.960*** (0.132)
Greens	1.777*** (0.144)
Bloc	2.107*** (0.298)
Political information	1.229*** (0.230)
Partisanship	0.062 (0.089)
Province (ref=BC)	
Quebec	-0.085 (0.118)
Ontario	-0.134 (0.104)
Constant	-3.215*** (0.252)
N	2,992
pseudo R ²	0.069

Note: Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Political Information Assessment

Below there are names of four parties and pictures of eight different people. Four of the people are party leaders in the FEDERAL election, one from each party. Match leaders with Conservative Party of Canada; New Democratic of Canada; Liberal Party of Canada; Green Party of Canada.

Conservative Party of Canada: Picture of Stephen Harper
 New Democratic Party of Canada: Picture of Thomas Mulcair
 Liberal Party of Canada: Picture of Justin Trudeau
 Green Party of Canada: Picture of Elizabeth May
 [Quebec Only] Bloc Québécois: Picture of Gilles Duceppe

NOTES

1. A logit regression (see table A4.1) shows that supporters of the LPC, NDP, Bloc Québécois, and the Greens are more likely to prefer minority government than are supporters of the CPC. However, the magnitude of the impact is greater for nonmainstream parties. The Greens and the Bloc Québécois are most in favor of minority government. This makes sense using strategic considerations, as those small parties might hope to obtain the balance of power in the case of a minority government.

2. These results do not change before or after the addition of controls.

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Information on Party Strength and Strategic Voting

Evidence of Non-Effects from a Randomized Experiment

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Chapter 1 of this volume makes clear that strategic voting is born of the marriage of expectations and preferences. In first-past-the-post electoral systems, individuals are said to vote strategically when they abandon their preferred choice because it is perceived as having little or no chance of winning (Blais et al. 2001). While strategic voting can and does occur in any voting system (Blais, Loewen, and Bodet 2004; Cox 1997), it is thought to be most prevalent in single-member district plurality elections. However, many studies suggest that strategic voting may not be as frequent as is often assumed. Supporters of one of the top two candidates in a constituency have no reason to abandon their first choice because their strategic and sincere incentives align (Aldrich, Blais, and Stephenson, this vol.; Alvarez, Boehmke, and Nagler 2006). The rate of strategic voting is much higher when we consider only those facing a strategic dilemma. Blais and Nadeau (1996) find that about 6% of all voters cast strategic ballots in the 1988 Canadian federal election, but this number represents 28% of voters who actually faced a strategic dilemma. Even within that subgroup, however, a majority of voters stick with their preferred party (Abramson et al. 2010).

Prior work suggests that at least two reasons account for the relative

infrequency of strategic voting (Blais 2002). First, many voters have strong preferences for one party and are indifferent toward all the others. Second, voters are not very good at determining the viability of parties in their constituency (Blais and Bodet 2006; Blais and Turgeon 2004). Many engage in wishful thinking, overestimating the chances of their preferred party. Polling information can affect perceptions of party chances (Blais, Gidengil, and Nevitte 2006). However, not all individuals use the objective, probabilistic information provided by a party's level of support to inform their vote decision effectively (Loewen, Hinton, and Sheffer 2015). In this chapter, we gather further evidence about the effects of information. Are voters more likely to vote strategically when given objective information about the standings of candidates and parties? Given the framework put forth in chapter 1, increasing the accuracy and accessibility of information that informs voters' expectations should induce strategic behavior.

To explore this question, we embedded an experiment in an online survey of voters in the 2015 Canadian federal election. This was a highly competitive election in which two center-left parties (the Liberal Party and the New Democratic Party) competed to be the principal challenger to the incumbent Conservative Party. Several groups organized to facilitate strategic behavior among supporters of non-Conservative parties.¹ In the end, the Liberals went from sitting third in the polls to holding a majority of seats in the House of Commons. Accordingly, strategic voting was encouraged in this election and was central to the strategy of the two principal opposition parties.

Our experiment was limited to those voters who were in a clear position to vote strategically—that is, those who expressed a vote intention for a party that was in third place or worse in their constituency and who expressed a second choice for a party that was among the top two in their constituency. These individuals should have the strongest motivation to be strategic—their own preference has little chance of winning, and they are not indifferent between the more likely options. Among this subset, we randomly assigned respondents to receive information on the relative standing and vote shares of candidates in the constituency, of the parties nationally, or neither.

Somewhat surprisingly, our results demonstrate that receiving simple information on projected vote shares and candidate/party standings did not change the overall rate of strategic voting. This non-effect holds across levels of voter interest, levels of voter optimism, and the campaign period as well as across alternative operationalizations of vote choice.

Our evidence of no effect is important for the practice of elections,

the operation of single-member plurality systems, and our understanding of voting behavior. Studies of strategic voting and the theoretical framework in chapter 1 suggest that expectations, informed by polls, are key factors in strategic behavior. Indeed, political actors regularly try to persuade voters to cast strategic ballots. Such attempts at behavioral change occur via simple flyers, Facebook posts, emails, and websites, and these attempts frequently involve presenting simple quantitative data about who is likely to win in an election. Our experiment speaks directly to the efficacy of such attempts to induce strategic voting. We describe our experiment and sample before presenting our principal results and further tests. We then propose an explanation of our null results and conclude with a discussion of the limitations and extensions of our study.

Sample

In the 2015 Canadian federal election, we embedded a simple experiment within an online survey of a large number of voters, the Local Parliament Project (localparliament.ca) (Loewen, Rubenson, and Koop 2018). The survey interviewed nearly 40,000 Canadians. A broadly representative sample was commissioned from Research Now, a large survey sample provider. The instrument was administered through Qualtrics. Respondents were asked a series of questions related to leader evaluations, voter participation, vote intention, a large battery of issue positions, and sociodemographics (see the appendix to this chapter). Our experiment includes 5,090 respondents. We also have postelection vote choice data for 1,194 respondents.

Experiment and Expectations

The experiment was limited to those who indicated earlier in the survey that they intended to vote for a party that was in third place or worse in their constituency and whose indicated second choice was among the top two in the constituency—in other words, people who had an incentive to vote strategically and care about the outcome. ThreeHundredEight, a poll aggregator that partners with the Canadian Broadcasting Corporation, provided us with updated estimates of constituency-level and national vote totals every three days. Respondents were assigned to one of three conditions: **Control** received no information; **Local** received estimates of the local standings of the candidates; **National** received estimates of the standings of the parties nationally (see appendix to this chapter).

After being presented with the treatment, respondents were asked to provide an estimate of their confidence in these numbers and presented with between 9 and 13 additional questions. Finally, respondents were asked about their likelihood of voting for the four principal parties (Conservative, Liberal, New Democrat, and Green) plus the Bloc Québécois in Quebec: “All in all, what are the chances that you will vote for the following parties?” Responses were given on a scale that ranged from No Chance (1) to Absolutely Certain (10).²

Our experiment allows us to test for two possible mechanisms that may cause strategic voting. The first is that voters receive information about the viability of candidates locally—in this case, the nonviability of their preferred candidate in their constituency and the viability of the other two candidates—and choose to abandon their initial choice for their preferred choice between the top two candidates. This is in keeping with the idea that voters should feel most able to affect the outcome in their own district. Given the relative rarity of local polls, local candidate viability information should also be more novel. The second is that voters receive information about the national race and change their vote accordingly. This is an often faulty inference, yet it might regularly be made since attention to which party will form the government is more common than attention to local races. Information about the national race is likely to be more familiar to voters.

We also explore three possible sources of heterogeneous effects. The first is political interest. Those who are more interested and engaged in politics should be better able to understand the logic and necessity of strategic voting. We thus expect that any treatment effects will be greater among those with higher political interest. We measure this with a 0–10 measure of political attention. Second, we consider voter optimism. We asked voters about the chances that each party would win the election in their constituency. We expect that those who are more optimistic about their preferred party’s chances will be less responsive to treatments (Blais and Bodet 2006; Blais and Turgeon 2004).³ Third, we test for heterogeneous effects according to the day of the treatment. We expect that our treatments should have a greater effect as the campaign evolves, since voters will have a greater interest in making an effective choice.

Balance

Table A5.3.1 in the appendix to this chapter reports a test of sample balance. Assignment to treatment is unrelated to the joint distribution of age,

gender, income, province, vote intention, partisan identification, and attention to politics.

Estimation

Our estimation of effects relies on two dependent variables. First, we estimate the relative probability that individuals will vote for the party they intend to support (Party A) versus the party indicated as their second choice on the condition that the second choice is in the top two parties in the constituency (Party B).⁴ These quantities are derived from the question on the likelihood of voting for each party. We convert these into a relative probability of the form $1-(A/(A+B))$. This measure is increasing in B and decreasing in A. Intuitively, those with a higher quantity are more likely to vote strategically.

This measure has two desirable properties. First, it allows us to detect a change in the likelihood of voting strategically even when individuals have not yet decided to change their votes. It is, in other words, more sensitive than a simple dichotomous measure. Second, it does not require respondents to correctly sum probabilities to one. Instead, it converts relative probabilities into a common measure.⁵

Our second measure leverages a postelection survey of a subset of those in the experiment. The measure captures whether individuals reported voting the way they indicated in the survey (0) or switched their votes to the preferred party between the top two parties in their constituency (1).

We estimate a model with dummy variables for both treatments. For our tests of heterogeneous effects, we interact these treatments with our moderators of interest. We include controls for age, gender, and strength of partisan identification, which we expect to decrease strategic voting.

Results

Table 5.1 presents descriptive information about our dependent variable. Overall, the probability of strategic voting is .33. Among the control group it is .33; for the local treatment condition, the mean is .33; the mean for the national treatment is .32. There is thus no apparent difference, a sharp contrast to our expectations as well as those in the strategic voting literature. Our second dependent variable indicates that the proportion of our sample that voted for their second choice rather than their nonviable initial choice

is .17. Again, this figure does not vary significantly across the treatment and control groups.

Table 5.2 presents results for estimations of the relative probabilities assigned to voting for the first-choice (that is, the initially indicated choice) and second-choice parties. Positive coefficients indicate a greater likelihood of deserting for the more viable party. Beginning with Model 1, some variables behave as expected. Stronger partisans have lower probabilities of desertion. Desertion also decreases as voters are surveyed closer to voting day. However, we find no effect for our treatments.

Models 2–4 consider the possibility of heterogeneous effects. It is possible that our overall null results are masking different effects among sub-

TABLE 5.1. Distribution of Dependent Variables

	Control			Local Treatment			National Treatment		
	<i>N</i>	Mean	SE	<i>N</i>	Mean	SE	<i>N</i>	Mean	SE
Likelihood of Desertion	1,043	0.328	0.006	2,065	0.330	0.004	1,982	0.324	0.004
Likelihood of Vote Switch	266	0.162	0.023	471	0.161	0.017	457	0.177	0.018

TABLE 5.2. Change in Relative Probability of Voting for Second Preferred Party Rather Than Preferred Party

	Model 1		Model 2		Model 3		Model 4	
	B	p	B	p	B	p	B	p
Local treatment	−0.001	0.829	0.028	0.154	0.003	0.848	−0.008	0.610
National treatment	−0.006	0.397	−0.011	0.583	−0.001	0.922	−0.018	0.257
Survey day	−0.001	0.000	−0.001	0.000	−0.001	0.068	−0.001	0.000
Interest			0.008	0.000				
Optimism							0.000	0.334
Interest*Local			−0.005	0.096				
Interest*National			0.001	0.834				
Survey Day*Local					0.000	0.746		
Survey Day*National					0.000	0.751		
Optimism*Local							0.000	0.644
Optimism*National							0.000	0.390
Age	−0.002	0.000	−0.002	0.000	−0.002	0.000	−0.002	0.000
Gender	−0.011	0.029	−0.005	0.283	−0.011	0.029	−0.011	0.029
Strength of Party ID	−0.048	0.000	−0.053	0.000	−0.048	0.000	−0.047	0.000
Constant	0.497	0.000	0.454	0.000	0.494	0.000	0.509	0.000
<i>N</i>	5,090		5,090		5,090		5,090	
Adjusted <i>R</i> ²	0.070		0.077		0.070		0.070	

Note: Dependent variable is relative likelihood of voting for second preferred party (B) rather than preferred party (A), calculated as 1 − (A/(A + B)). Model is OLS.

sets of the sample. Beginning with Model 2, we see that although political interest increases the probability of desertion, it does not condition the effects of the treatment, and the coefficients on the treatments themselves remain statistically insignificant, as in Model 1. Model 3 conditions effects based on the campaign day of interview. Once again, the treatment coefficients are not statistically significant, nor are there heterogeneous effects. Finally, Model 4 presents results when treatments are conditioned by optimism about the chances of the preferred party winning the constituency seat. Once again, there are no apparent treatment effects.

Finally, table 5.3 presents the results of a model predicting a switched vote in the postelection survey. As with table 5.2, all models suggest no significant treatment effects. This finding lends credibility to the evidence of no effects because this model tests for strategic voting using a different outcome measured roughly a month after the election.

Limitations and Discussion

Our results indicate that when presented with simple and objective quantitative information about the relative local or national competitive posi-

TABLE 5.3. Likelihood of Switching Vote from Preferred Party to Second Preferred and More Viable Party

	Model 1		Model 2		Model 3		Model 4	
	B	p	B	p	B	p	B	p
Local treatment	-0.035	0.869	0.492	0.454	0.180	0.668	-0.386	0.404
National treatment	0.076	0.718	0.390	0.568	0.384	0.350	-0.358	0.439
Survey day	-0.014	0.001	-0.014	0.002	-0.007	0.454	-0.014	0.001
Interest			0.151	0.053				
Expectations							-0.014	0.033
Interest*Local			-0.086	0.357				
Interest*National			-0.056	0.565				
Survey day*Local					-0.007	0.552		
Survey day*National					-0.010	0.377		
Optimism*Local							0.007	0.393
Optimism*National							0.008	0.297
Age	-0.015	0.006	-0.018	0.002	-0.015	0.006	-0.016	0.005
Gender	-0.032	0.840	0.053	0.747	-0.036	0.824	-0.019	0.906
Strength of Party ID	-0.422	0.000	-0.484	0.000	-0.425	0.000	-0.396	0.000
Constant	-0.063	0.864	-0.908	0.135	-0.267	0.550	0.691	0.166
N	1,194		1,194		1,194		1,194	
Pseudo R ²	0.032		0.039		0.033		0.040	

Note: Estimates are from logistic regressions.

tions of parties, voters are unlikely to use this information to update their probabilities of voting for other parties or to switch their votes. We are thus faced with a puzzle: How can we reconcile this information with the consistent findings of strategic voting in single-member plurality systems? More specifically, how can these results be squared with the empirical regularity that strategic voting is more likely to occur when a voter's first choice is objectively farther from the top two parties? We can think of five possible (non-mutually-exclusive) explanations.

First, our experiment presented respondents with a very thin slice of information. Voters were given only the relative standings of parties and an estimate of vote shares. They did not receive any prompts about how to use this information—that is, to vote for their second-preference party. Accordingly, the lack of a treatment effect may result from a failure to provide enough relevant information to induce voters to take action.

Second, quantitative information as such might do little to facilitate strategic voting. Instead, voters embedded in social networks may assume that the vote intentions of their friends and acquaintances are representative of the wider population and decide whether to vote strategically based on this information (Tsang and Larson 2016). As a result, noncompetitive parties may experience desertion without voters relying on quantitative information. This type of effect is consistent with the evidence of poll effects provided by Blais, Gidengil, and Nevitte (2006).

Third, voters might respond to qualitative information about whether their preferred party has a chance of winning. Our treatment simply presented the estimated vote shares for the various parties and did not highlight the fact that the respondent's preferred party was not viable. Voters may require more direct information to consider adjusting their vote.

Fourth, our nonresults may be a function of our sample. Our experiment was limited to respondents who indicated a preference for a party in third place or worse. Some voters may already have decided to vote strategically. Such voters would be excluded from this study. However, members of a substantial fraction of our sample were willing to reconsider their vote choices. Only 18% indicated that they were absolutely certain of their vote.

Fifth, our presentation of the treatment information may not have generated sufficient attention from respondents. However, when we conditioned treatment effects on the average amount of time that a respondent spent considering survey questions as a proxy for survey effort, we found no conditional effects. Survey effort as such does not seem to drive the lack of treatment effects.

The elephant in the room is the simplest explanation of all: the expectations about strategic voting are faulty. In this chapter, we have demonstrated that the presentation of simple quantitative information about the relative standings of parties during a real election campaign does not induce those who support third-place or worse parties to desert. This result is at odds with other research that argues for the importance of accurate expectations—although we provided accurate information, it made no difference for behavior. Given the novelty of these findings and the reality of strategic behavior demonstrated in other chapters in this volume, further work should explore the conditions under which voters—in the context of real elections—can be persuaded to abandon their preferred parties.

APPENDIX 5.1: VARIABLES

Likelihood of deserting—The likelihood that an individual will vote for their second preferred party. Respondents are asked: “All in all, what are the chances that you will vote for the following parties?” Variable is calculated as $1 - (A/[A+B])$ where A is the likelihood of voting for the party they identify when asked for their vote intention and B is the likelihood of voting for the party they identified as their second choice.

Vote switch—Whether an individual switched a vote from the intended vote to one of the top two parties in their constituency. Coded 1 if vote was switched, 0 if it was not switched.

Vote choice—Used to determine the respondent’s vote intention: “Which party do you think you will vote for?” Response categories (order randomized): the Conservative Party, the Liberal Party, the New Democratic Party, the Bloc Québécois, the Green Party, Undecided.

Second choice—Used to determine the respondent’s second choice. “And what would be your second choice?” Response categories do not include the party that was their vote choice (order randomized): the Conservative Party, the Liberal Party, the New Democratic Party, the Bloc Québécois, the Green Party, don’t know.

Strength of Party ID—For those who indicate that they usually think of themselves as a partisan: “How strongly [party] do you feel?” Response categories: very strongly, fairly strongly, not very strongly, don’t know.

Local Treatment—Dummy variable indicating whether the individual received the local information treatment.

National Treatment—Dummy variable indicating if the individual received the national information treatment.

Survey day—Variable reading 0 to 54, indicating when in the campaign the interview was conducted. Higher numbers occur closer to election day.

Interest—"Some people are very interested in politics. Others are not interested at all. On a scale of 0–10 where 0 means you are not interested at all and 10 means you are very interested in politics, how interested would you say you are?"

Gender—Dummy indicating if the subject is male (0) or female (1).

Age—Continuous variable indicating age in years.

Optimism—Respondents' estimation of the chances that the preferred party will win the election in their constituency, ranging from 0 to 100. "Thinking now about where you live, how likely is each party to win your constituency?"

APPENDIX 5.2: TREATMENTS

The experiment was limited to those who indicated earlier in the survey that they intended to vote for a party that was in third place or worse in their constituency and whose indicated second choice was among the top two in the constituency. ThreeHundredEight, a poll aggregator that partners with the Canadian Broadcasting Corporation, provided us with updated estimates of constituency-level and national vote totals every three days. Respondents were assigned to one of three conditions: Control received no information; Local received estimates of the local standings of the candidates; National received estimates of the standings of the parties nationally. The information took the following form:

Estimates of the share of the vote that each party would likely get in (LOCAL: each constituency/NATIONAL: Canada as a whole) if the election were to be held today, given the results of the previous elections and the most recent polls. These estimates have been

calculated by ThreeHundredEight (www.threehundredeight.com). According to these calculations, the share of the vote that the various parties would get in (LOCAL: your constituency/NATIONAL: Canada as a whole) if the election were held today is the following.

Conservative Party:	XX%
New Democratic Party:	XX%
Liberal Party:	XX%
Bloc Québécois:	XX%
Green Party:	XX%
Other:	XX%

APPENDIX 5.3: BALANCE

TABLE A5.3.1. Balance Test for Respondents

	Local Treatment			National Treatment		
	Coef.	Std. Error	P > z	Coef.	Std. Error	P > z
Age	-0.003	0.003	0.205	0.001	0.003	0.819
Female	0.111	0.079	0.162	0.017	0.080	0.830
Income						
\$20k-\$40k	-0.115	0.175	0.509	-0.023	0.177	0.898
\$40k-\$60k	0.004	0.169	0.983	0.111	0.171	0.517
\$60k-\$80k	-0.195	0.172	0.257	-0.111	0.174	0.524
\$80k-\$100k	-0.098	0.177	0.580	-0.114	0.180	0.528
\$100k-\$120k	-0.224	0.184	0.225	-0.162	0.187	0.384
\$120k-\$150k	-0.192	0.193	0.320	-0.310	0.198	0.118
\$150k-\$200k	0.046	0.213	0.830	-0.195	0.222	0.378
\$200k or more	0.326	0.248	0.189	0.492	0.248	0.047
Don't Know	-0.147	0.260	0.573	-0.030	0.260	0.908
Province						
British Columbia	0.053	0.168	0.753	-0.031	0.170	0.858
Manitoba	0.175	0.242	0.470	0.242	0.242	0.317
New Brunswick	0.115	0.279	0.682	0.040	0.283	0.888
Newfoundland and Labrador	0.152	0.230	0.511	0.067	0.234	0.776
Northwest Territories	-0.002	1.238	0.999	-14.132	837.795	0.987
Nova Scotia	-0.299	0.281	0.288	0.121	0.267	0.649
Nunavut	-0.155	0.880	0.860	-0.032	0.880	0.971
Ontario	-0.028	0.149	0.853	0.050	0.150	0.737
Prince Edward Island	1.307	0.770	0.090	1.253	0.774	0.106
Quebec	0.018	0.167	0.916	-0.021	0.169	0.902
Saskatchewan	0.126	0.263	0.633	0.178	0.264	0.502
Vote Choice						
Conservative Party	-0.140	0.153	0.358	-0.042	0.153	0.784
New Democratic Party	-0.019	0.132	0.886	0.090	0.133	0.497
Bloc Québécois	0.299	0.257	0.246	0.070	0.270	0.796
Green Party	0.121	0.145	0.406	0.078	0.147	0.594
Party Identity						
Conservative	0.167	0.152	0.273	0.105	0.153	0.495
New Democrat	-0.177	0.139	0.202	-0.213	0.139	0.126
Bloc Québécois	-0.172	0.234	0.462	-0.312	0.244	0.201
Green Party	-0.365	0.170	0.032	-0.279	0.171	0.103
None of these	-0.029	0.157	0.855	-0.162	0.159	0.310
Don't know	0.030	0.190	0.876	-0.052	0.193	0.788
Political Attention	0.040	0.017	0.021	0.024	0.017	0.172
Constant	0.632	0.261	0.016	0.524	0.264	0.047
N	5,090					
Chi Squared Likelihood Ratio	75.49					
Probability	0.199					
Pseudo R ²	0.007					

TABLE A5.3.2. Balance Test for Respondents included in Vote Switch

	Local Treatment			National Treatment		
	Coef.	Std. Error	P > z	Coef.	Std. Error	P > z
Age	-0.003	0.003	0.205	0.001	0.003	0.819
Female	0.111	0.079	0.162	0.017	0.080	0.830
Income						
\$20k-\$40k	-0.115	0.175	0.509	-0.023	0.177	0.898
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Constant	0.632	0.261	0.016	0.524	0.264	0.047
N	5,090					
Chi Squared Likelihood Ratio	75.49					
Probability	0.199					
Pseudo R ²	0.007					

NOTES

1. Two principal examples are Leadnow's Vote Together campaign and strategicvoting.ca.
2. These responses were recoded on a 0 to 9 scale so that a 0 corresponds to no chance at all.
3. Note, however, that optimists could also be more likely to change, as the information that is provided differs more substantially from their prior beliefs than for non-optimists.
4. We note again that those whose second choice is not among the top two placed parties in the constituency are not included in the experiment.
5. We have also performed analyses with other operationalizations of the dependent variable: $1 - (A/T)$, where T equals the sum of the chances given to all other parties, and an ordinal three-category variable, with the highest category corresponding to another party receiving a higher score than A , the lowest category to A obtaining the highest score, and the middle category to a tie between A and another party. The results were similar.

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Expected Electoral Performance, Candidate Quality, and Voter Strategic Coordination

The Case of Japan

Carolina Plescia

Conventional rational choice theory sees voters as utility maximizers, deciding how best to use their vote to affect their preferred election outcome. Voter strategic coordination can influence the electoral results by increasing the vote share of strong candidates (or parties) at the expense of weaker ones. Hence, understanding how and why voters come to think that some candidates (or parties) are more likely to win than others is key to understanding how a democracy chooses its elected officials and consequently the policies those elected officials enact. In this chapter, I consider the case of single-member plurality elections—that is, elections in which each district elects only one representative and that representative is chosen by receiving a plurality of the vote.

To make good strategic decisions—that is, to avoid wasting their votes—voters must know the relative vote distribution of candidates in the electoral district. With such information in hand, voters can vote strategically and ultimately coordinate on the two strongest candidates. Voter coordination thus depends on voter information, and the strategic voting model requires that voters clearly understand who is leading and who is trailing (e.g., Cox 1997; Myatt 2007; Blais et al., this vol.). While most scholars

implicitly assume that voters have ready access to such information, voters in mass elections are never certain of the electoral results and in some circumstances will not have access to objective information about who is trailing in the electoral race (e.g., Myatt and Fisher 2004; Clough 2007).

This chapter investigates the claim that all else being equal, the number and quality of district-level *challenger* candidates represents information helping or hindering voter strategic coordination. While it is well known that voters are largely uninformed about political matters either because they are inattentive or because of the enormous complexity of the political system, potential candidates who run against each other in the district “differ in their valence (or quality), which is perfectly observable and is valued by all voters” (Galasso and Nannicini 2011, 79). In this regard, candidate quality has the potential to operate as a heuristic for voters in low-information situations and help them coordinate strategically. Quality is related not only to whether the candidate previously held elective office, as more commonly measured in the existing literature (e.g., Jacobson 1989; Burden 2009), but also—and more importantly—to the extent to which the candidate is related to the district and has a well-established base of supporters. This feature becomes relevant for voter strategic coordination. In fact, given that formidable challengers have more incentives and opportunities to develop effective candidacies and hence a better chance to challenge the top candidate in the district, voters can use the information they have gathered from knowing who contests the elections to make inferences about the distribution of support in their district.

Specifically, one quality challenger may give an impression that the seat is more contested than it really is, increasing competition between the two strongest candidates and fostering voter strategic coordination. In fact, as chapter 1 discusses, strategic voting is more likely in competitive, uncertain settings where voter chances of influencing the result are the greatest. Conversely, multiple quality challengers in a district can hinder voter strategic coordination, increasing uncertainty about the relative standing of the trailing candidates and ultimately undermining voter ability to coordinate on the two front-runners. Hence, strategic coordination will be higher in those districts where the incumbent faces a quality challenger than in districts where the incumbent faces multiple quality candidates or no quality candidates.

To test these propositions, this chapter uses extensive data from the single-member district (SMD) tier of the mixed-member electoral system in Japan’s lower house elections covering the period 1996–2009. Japan is a particularly fitting case because the electoral system as well as the contex-

tual features of Japanese politics create different types of district contenders with varying political skills and local support bases. I show that changes in patterns of competition at the district level are correlated with changes in the number and quality of challenger candidates. However, simply comparing districts at any time can be problematic: in fact, quality challengers do not emerge randomly; rather, their occurrence depends on the prospects of victory (e.g., Hainmueller and Kern 2008; Ariga et al. 2016). Hence, to support the claim that challenger quality affects strategic coordination, I implement a treatment-effects model that corrects the endogeneity bias.

The results indicate that the presence of one quality challenger candidate significantly increases competition, thereby increasing voter strategic coordination. Conversely, more than one quality challenger hinders voter strategic coordination by creating informational noise in the electoral race. The findings are corroborated at the individual level using survey data covering Japanese national elections in 2003 and 2005, indicating that the observed patterns result from voter strategic coordination and not only from personal votes for specific candidates.

Challenger Quality and Voter Strategic Coordination

As chapter 1 discusses, scholars assert that voters care about election outcomes and do not want to waste their votes—that is, vote for a candidate or party unlikely to win the election. The objective discrimination against candidates with no chance of winning the district race depends on voter perception of the closeness of the race between the two front-running candidates in that district and the relative distribution of support for trailing challengers (Cain 1978). On the former, the closer the district race is, the more uncertain the result between the two front-runners, the more likely supporters of weaker candidates are to feel that there is a reason for them to vote strategically. Another necessary condition for strategic coordination is that the identity of the leading challenger is known to voters (Cox 1997). The more competition and uncertainty among the trailing candidates, the less likely voters are to coordinate on the two front-runners. But how can voters reach certain expectations about who is winning and who is trailing?

The two sources of objective information available to voters most commonly considered by the existing literature are the outcome of the previous election and opinion polls.¹ Past performance can provide an independent cue to voters who fear wasting their votes on candidates unlikely to succeed (Cox 1997; Lago 2008). Yet doubts remain about the extent to which

it is reasonable to expect that such information is relevant for a significant number of voters. In addition to the fact that time erodes voters' memories, parties' popularity may have changed substantially since the last election (Selb 2012), and new candidates may have entered the electoral competition (Crisp, Potter, and Lee 2012). Polls can serve as a coordination signal, providing voters with results and trends based on pre-election polls (Forsythe et al. 1993; Gschwend 2007). However, district-level forecasts are rarely available, and national polls are not very relevant for predicting the outcome of elections in specific constituencies (Blais and Bodet 2006).

Given voters' uncertainty about electoral outcomes, the relative qualifications of incumbents and challengers and the existence of a costly electoral challenge can convey important information to the voters (Gordon, Huber, and Landa 2007). While the existing literature has usually focused on incumbent quality (e.g., Hainmueller and Kern 2008; Eggers et al. 2015), challenger characteristics have the potential to determine elections by shaping the electoral campaign itself (Scheiner 2005; Burden 2009). Formidable challengers surely have more incentives and opportunities to develop effective candidacies and hence a better chance to challenge the top candidate in the district, thereby influencing the district race and increasing competition at the district level (Karp et al. 2002; Moser and Scheiner 2005).

The literature often makes a crude distinction between quality and non-quality candidates by defining them respectively as those who have previously held elective office and those who have not (e.g., Jacobson 1989; Burden 2009). According to the general argument underlying the incumbency bonus, the difference in the political relevance of certain candidates should create a support party bonus (Stokes 1992; Stone and Simas 2010). To be sure, incumbency status is a shorthand indicator for a number of factors, among them name recognition as a result of media exposure and a larger war chest. The potential to shape the electoral race, however, is also related to candidates' ability to develop a substantial organized base of support at the district level, including access to organized teams of campaign workers and to local spending, door-to-door electoral canvassing, and so forth. In this regard, quality becomes a shorthand indicator for candidate visibility and for the electoral support that the candidate can mobilize at the district level, which impinges directly on voter expectations about the electoral outcome. Hence, candidate quality operates as a heuristic for voters who do not want to waste their votes: knowing who contests the elections helps voters to make inferences about the distribution of support for district-level candidates. One quality challenger may give the impres-

sion that the seat is more vulnerable than it really is, thereby increasing competition and voter strategic coordination on the two front-running candidates. Conversely, having more than one quality challenger creates uncertainty about who the main challenger is, boosting the complexity of the voting decision environment and ultimately hindering voter strategic coordination. All else being equal, I expect that strategic coordination will be higher in those instances where the incumbent is challenged by one quality contender and will be lower where there are multiple quality challengers or no quality challenger.

Types of District Competition in Japan

Japanese elections provide an excellent case study because the electoral system as well as the contextual features of Japanese politics create different types of district contenders and a variety of district-level competitions. The analysis examines electoral behavior from the introduction of the mixed-member electoral system in 1996 through the fifth election held under this system (2009). The mixed-member system has two tiers. In the first tier, 300 members (reduced to 295 in 2013) are elected in SMDs; in the second tier, 200 members (reduced to 180 in 2000) are elected from closed party lists in 11 region blocs according to proportional representation (PR) (Reed 2005). In particular, parties devote much attention to the district-level competition since the SMD vote for candidates has a large effect on the final composition of the parliament, thereby raising the stakes of the SMD elections (Estevez-Abe 2006; Pekkanen, Nyblade, and Krauss 2006). The two tiers of the system work independently of each other and, as chapter 1 discusses, each vote may be sincere or strategic on its own terms (Plescia 2016; Harfst, Blais, and Bol, this vol.). In this chapter, I focus exclusively on the SMD tier.

By and large today, two types of parties exist: majority-seeking parties, such as the Liberal Democratic Party (LDP) and the Democratic Party of Japan (DPJ), and non-majority-seeking parties, such as the Social Democratic Party (SDP), the Japanese Communist Party (JCP) and the religious party, Koumei.² Each party can nominate only one candidate per electoral district; not all parties run candidates in every district. In Japan as in other countries, the number of candidates at the district level tends to diminish slowly over time yet rarely reaches the Duvergerian voting equilibrium $m + 1$ (Reed 1990; Ariga et al. 2016). While in every SMD there is one seat to

be awarded, and technically only one incumbent who has won the district in the previous election, there can be many different challengers.³

First, challenger quality is related to previous parliamentary experience. In this regard, it is possible to distinguish several challengers of quality. A feature of mixed-member electoral systems is the *dual candidacy* provision, according to which a candidate endorsed by a party runs in an SMD contest and appears on the party's PR list (McKean and Scheiner 2000). *Zombie incumbents* are those who lost in the SMD district but were resurrected and elected to the parliament through party lists (Pekkanen, Nyblade, and Krauss 2006). These resurrected winners usually behave as pure representatives of their respective districts because their efforts to be visible in their district increase their chance to win an SMD seat or a resurrected PR seat in the following election (Bawn and Thies 2003). *Shadow incumbents* are candidates previously elected to the parliament from that SMD in the past but not in the immediately preceding election. Other groups of challengers include those who have never represented that specific district before but still enjoy increased visibility at the district level either because they ran as part of a tag-team—Costa Rica arrangement—with a candidate who ran in the SMD in previous elections (*quasi-incumbent*)⁴ or because they had previously been part of the lower house of the parliament (*fading incumbents*).⁵

Second, quality is related to the ability to develop a substantial organized base of support at the district level and local-level experience, a crucial feature in the Japanese case (Scheiner 2005, 137) as well as elsewhere (e.g., Karp et al. 2002). Specifically, the candidate support organization (*koenkai*) in Japan is designed to cultivate and deliver an organized vote for the candidate on Election Day (Scheiner 2005). This category of candidates, whom I call *star challengers*, includes all candidates who have never served in parliament before and thus are not part of any of the previously discussed categories of challengers, yet they are likely to receive a surplus of support at the district level because they are part of the district and have a well-established base of supporters.⁶ Such challengers include former prefectural governors and local assembly members, former city mayors or upper house members from that district, or candidates who inherited a district from a close relative.⁷

Using this classification, table 6.1 shows that of the 1,446 incumbent candidates who ran between 1996 and 2009, about 66% won re-election, almost 11% lost their SMDs but were resurrected in the PR tier of the electoral system, and a little more than 23% lost their seats. The rate of success is lower for quality challengers than for incumbent candidates but

much higher than for low-quality challengers. The rate of election in the SMDs is 50% for tag candidates, 34% for zombies, 35% for shadows, 25% for fading candidates, and 51% for star challengers but only 6% for non-quality candidates. Although I cannot control for how many of these candidates also run in the PR contest, table 6.1 shows that the rate of election under PR is 6% for tag candidates, 23% for zombie, 17% for shadow, 27% for fading, and 18% for star challengers, but only 5% for non-quality challenger candidates. Table 6.1 also displays average spending figures by type of candidate. The resources available to quality challengers do not differ substantially from those of incumbent candidates but are very different from the spending rates of non-quality challengers.⁸

Data and Methods

The first test of voter strategic coordination uses aggregate election data. The underlying idea behind this test is that if the proposed model of behavior is correct, all else being equal, strategic coordination will be higher where the incumbent is challenged by one quality contender and lower where there is more than one quality challenger and where an incumbent faces no quality challenger. Because the expectations apply to cases in which an incumbent is running for reelection, the empirical analysis is restricted to district elections in which one incumbent participates.⁹ To measure voter strategic coordination, I employ a recently proposed modification of Cox’s (1997) commonly used second-to-first loser’s vote (SF) ratio. Cox’s SF ratio takes on a minimum of 0 if elites manage to coordinate on only two competitors before the election or if voters desert all candidates other than the winner and the main challenger. In contrast, the SF ratio’s maximum,

TABLE 6.1. Types of Candidates and Electoral Performance

Type of Candidate	Won SMD	Lost SMD but Elected in PR	Not Elected	N	Mean (SD) of Spending in 1,000 US\$
<i>Incumbent</i>	65.9%	10.8%	23.3%	1,446	116.5 (42.8)
<i>Quality challenger</i>					
Tag	50.0%	6.3%	43.8%	48	121.8 (48.2)
Zombie	33.9%	23.0%	43.0%	330	88.7 (41.5)
Shadow	35.2%	16.9%	47.9%	284	91.3 (44.2)
Fading	24.7%	27.3%	48.1%	77	100.3 (47.1)
Star	51.6%	18.0%	30.5%	256	101.9 (43.1)
<i>No quality challenger</i>	5.0%	4.6%	90.3%	3,173	48.6 (41.1)

Aldrich, John H, André Blais, and Laura B Stephenson. *The Many Faces of Strategic Voting: Tactical Behavior In Electoral Systems Around the World*. E-book, Ann Arbor, MI: University of Michigan Press, 2018, <https://doi.org/10.3998/mpub.9946117>. Downloaded on behalf of 3.139.107.241

one, will be obtained if the expected vote shares of first and second losers are too close for voters to decide which of the two to desert. A common criticism of the SF ratio pertains to its inability to correctly identify non-Duvergerian equilibria in lopsided elections (Gaines 1999). For example, Cox's ratio will report a non-Duvergerian equilibrium in an SMD with three candidates receiving 90%, 5%, and 5% of the votes, respectively (SF ratio = $5/5 = 1$). Selb (2012) proposes a slight modification of the SF ratio that corrects this shortcoming: the minimum of the first-loser's-to-(last)-winner's ratio and the second-to-first loser's ratio (mSF ratio). The mSF captures a sharp distance in the distribution of votes either between the first and second loser or, in lopsided elections, between the winner and the first loser, as indicated by an mSF value close to 0. In neck-and-neck races between the (last) winner and the first and second loser (a clear three-way tie) where instrumental voters have no incentive to desert their preferred choice—that is, a truly non-Duvergerian equilibrium—the mSF ratio still assumes values close to unity. Hence, the lower the ratio, the higher the degree of strategic coordination.¹⁰

An empirical analysis of the effect of the number of quality candidates on strategic coordination at the district level compares the mSF ratio of districts with one quality challenger to those with none or more than one. The quality challengers are all those candidates classified as zombie, shadow, fading, and star challengers. Table 6.2 displays the values of the mSF ratio in those different scenarios, comparing them with a simple count of the number of candidates. The upper part of the table shows that the SF and the mSF ratios increase as the number of candidates in the district gets larger, indicating declining levels of strategic coordination. The lower part of the table shows that the values of the two ratios remain

TABLE 6.2. Competition and the Number of Quality Candidates

	SF Ratio	mSF ratio	Margin (%)	Districts (N)
<i>N (Candidates)</i>				
3	0.24 (0.17)	0.22 (0.14)	10.88 (8.56)	627
4	0.40 (0.24)	0.37 (0.20)	9.02 (7.46)	441
5	0.51 (0.26)	0.47 (0.23)	7.27 (6.91)	175
6	0.57 (0.24)	0.53 (0.20)	5.44 (4.67)	46
> 6	0.61 (0.27)	0.55 (0.23)	5.20 (3.79)	18
<i>Type of competition</i>				
No quality challenger	0.34 (0.21)	0.31 (0.21)	12.15 (9.15)	534
1 quality challenger	0.32 (0.24)	0.29 (0.16)	7.70 (6.18)	663
> 1 quality challenger	0.60 (0.25)	0.55 (0.21)	5.49 (4.61)	109

Note: Calculations exclude open seats and districts with only two candidates.

stable in districts where there is no or just one quality challenger, although the ratios are lower in the latter case. However, the values of the ratios increase sharply when the number of quality challengers is larger than one. The actual number of candidates per district is only marginally related to the number of quality challengers. The two variables are clearly positively related, but the correlation coefficient is very low ($r = 0.3$). The table also displays the mean values of vote share margin between the SMD winner and the runner-up in that election: competition increases (i.e., margin values decrease) as the number of candidates or quality challengers increases.

Simply comparing the districts this way, however, is problematic. The number of quality candidates is clearly an endogenous product of the competition; in fact, parties tend to nominate quality candidates in those districts where the chance of victory is greater. One solution to the problem of nonrandom selection would be to add control variables that at least in part can account for the observed heterogeneity across districts. This, however, would not properly correct for the endogeneity issue, and the addition of control variables may produce biased estimates (Barnow, Cain, and Goldberger 1980). Because of the problem of nonrandom selection involved in quality challengers entering the race where they have better chances of success, for the first test using aggregate data, I use a treatment-effects model.

The treatment-effects model is becoming increasingly popular in political science (e.g., Schneider et al. 2003; Maeda 2008). This model consciously examines the two processes simultaneously—that is, whether or not the subjects receive the treatment and what factors affect the occurrence of the treatment. The first stage of the estimation process uses pertinent factors to predict the occurrence of quality challengers. The second stage estimates the “treatment effect”—the impact of the number of quality challengers—on voter strategic coordination. Controlling for the selection of quality challengers enables the isolation of the marginal impact of the number and quality of candidates on voter strategic coordination from the factors that lead to placement of these candidates in specific districts in the first place. I present the results of the treatment-effects model next to those obtained using a naive Ordinary Least Square (OLS) regression model.

The second test of strategic voting relies on individual-level data leveraging on pre- and postelectoral survey data covering the 2003 and 2005 elections. Examining these survey data enables us to test vote choice while directly controlling for voters’ preferences regarding candidates and expectations about the electoral outcome. The individual-level data also allow for a more direct measurement of the respective weights that voters give to strategic considerations and sincere preferences.

Empirical Findings at the Aggregate Level

The aggregate-level analysis proceeds in two steps employing a multinomial treatment-effects model (Deb and Trivedi 2006).¹¹

First Stage: Model Setup

The dependent variable in the first stage is the treatment effect: whether the district has no challenger of quality or more than one compared to the control group, where there is only one challenger of quality. Which factors affect the quality and the number of quality candidates in a district? The first factor is the vote share margin between the SMD winner and the runner-up in the previous election (PrevMargin): the larger the values of the PrevMargin variable, the less competitive the district is and the less likely it is that challenger parties will enter the race and waste strong candidates. Since the competitiveness in the previous election is needed to calculate this variable, the first postreform election (1996) cannot be included in the empirical models.¹² The second factor takes into account Japanese parties' capacity to nominate slates of qualified candidates for SMDs. Because of its historic dominance and many incumbents, the LDP is best situated to locate high-quality candidates with strong local support. For this reason, I include a dummy variable in the model for the presence or absence of an LDP incumbent (LDPincumbent), which should scare away strong opponents. Third, voters' incentives to coordinate strategically are known to be affected by elites' coordination. Hence, the third factor included in the model is a dummy variable that measures, at the district level, whether the opposition (to the LDP) has coordinated around a strong Democratic Party of Japan candidate.¹³ Coordination by the opposition increases the chances of a quality challenger but reduces the chances of more than one. Finally, the fourth factor is the number of candidates who contested the district in the previous election (PrevNcands), which is likely to affect the dependent variable: the larger the number of previous candidates, the more likely that more than one quality challenger will arise and the less likely that only a single quality candidate will arise.

First Stage: Results

Table 6.3 shows the results of the first-stage regression. As expected, the PrevMargin variable has a significant positive impact on the likelihood that a district will have no quality challenger and a negative effect on the

likelihood that a district will have more than one: the less competitive the district is, the larger the advantage of the incumbent candidate and the less likely an opposition party is to run a quality challenger. The variable measuring the number of candidates who have contested the district in the previous election has no significant impact on the likelihood of the absence of a quality challenger. However, the larger the previous number of candidates contesting the elections, the higher the chances of finding more than one quality challenger. The presence of an LDP incumbent has a positive effect on the likelihood that there will be no quality challengers and a negative effect on the likelihood of multiple quality challengers, but these findings are statistically significant only in the second case. Coordination by the opposition parties has the expected negative sign, but it is not statistically significant. Overall, and as hypothesized, the findings indicate that the number and quality of challenger candidates clearly depend on past electoral results.

Second Stage: Model Setup

In the second stage, the dependent variable is the mSF ratio. The right side of the equation includes the key independent variable (the trichotomous treatment variable, whether there is no quality challenger, more than one, or just one), the current number of candidates, and the previous vote margin. All else being equal, a larger number of candidates decreases voter

TABLE 6.3. Multinomial Treatment-Effects Model: First-Stage

Ref: 1 Quality Challenger	Dependent Variable: Treatment	
	No Quality Challenger	> 1 Quality Challenger
PrevMargin	0.141*** (0.013)	-0.059+ (0.031)
LDP incumbent	0.252 (0.178)	-0.741* (0.288)
Coordination_DPJ	-0.331 (0.254)	-0.651 (0.525)
PrevNcands	0.128 (0.092)	0.344** (0.127)
Constant	-2.210*** (0.415)	-2.968*** (0.598)
N	1,048	
BIC	709.88	
AIC	605.83	
LL	-281.92	

Note: Standard errors in parentheses; + $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

coordination and thus increases the mSF. Contrarily, the more competitive the district in the previous election, the more voters will fear wasting their votes, resulting in lower mSF values. Again, coordination by elites is likely to influence strategic voter coordination by reducing the number of quality alternatives available to voters. I include two variables to capture elite coordination: one that measures coordination by the center-right government party, the LDP, and one for the coordination of the opposition parties around the main center-left party, the Democratic Party of Japan. I also control for the characteristics of the SMDs in terms of the level of urbanization, which is known to be strongly related to parties' popularity in Japan. I added a variable measuring the proportion of the district's population that lives in census-defined urbanized areas (Urban).¹⁴

Second Stage: Results

Table 6.4 reports the results of the second stage of the multinomial treatment-effects model. It also reports the results from a naive OLS model. Focusing first on the key independent variable, table 6.4 shows a statistically significant and positive effect of the two treatment variables in both the second stage of the multinomial treatment-effects model and the OLS model. To illustrate this result, I calculated the marginal effect of the treatment variable on the predicted value of the mSF ratio (figure 6.1). Starting with the non-quality challenger treatment, the marginal effect is about 0.035—that is, the value of the mSF ratio is on average 0.035 points higher (meaning less strategic coordination) in those districts where there is no quality challenger than in districts where incumbents are challenged by quality candidates. This difference is significant at $p < 0.05$. A naive OLS model predicts the same positive effect, albeit a more modest one—0.024. The marginal effect of more than one quality challenger is 0.135—that is, the mSF ratio is about 0.135 points higher when there are multiple quality challengers compared to districts with just one quality challenger. This difference is significant at $p < 0.001$. Again the naive OLS model predicts the same positive effect but this time at slightly higher rate—0.185.

Table 6.4 also shows a positive coefficient for the variable measuring the number of candidates: this means that the larger the number of candidates, the lower the level of voter coordination. The table also indicates that the larger the previous margin of votes between the winner and the loser (that is, the less competitive the district was), the lower the strategic coordination today; however, the coefficient is not statistically significant. The coordination by the opposition or the LDP also increases strategic

coordination, but the effect is significant only for the opposition. Finally, urbanization has a positive impact on strategic coordination. In sum, it is clear that when the district is contested by one quality challenger, levels of voter strategic coordination are higher than in cases when the incumbent faces no or multiple quality challengers.

Empirical Findings at the Individual Level

Finally, I use survey information about voter preferences and expectations to predict the type of vote choice—that is, sincere versus strategic—and evaluate the findings of the aggregate-level analysis. Voter coordination around a main challenger by deserting lower-ranked candidates might result from personal support for the quality challenger, which qualifies as sincere voting rather than as an attempt to influence the electoral results.

TABLE 6.4. Multinomial Treatment Effects Model: Second-Stage

	Dependent Variable: mSF Ratio	
	Second Stage	Naive OLS Model
Ref: 1 Quality Challenger		
Treatment: No Quality Challenger	0.120* (0.059)	0.024* (0.012)
Treatment: >1 Quality Challenger	0.461*** (0.089)	0.185*** (0.021)
Ncands	0.281*** (0.026)	0.073*** (0.007)
PrevMargin	-0.001 (0.003)	-0.001 (0.001)
Coordination_LDP	-0.014 (0.042)	0.007 (0.012)
Coordination_opposition	-0.438*** (0.057)	-0.088*** (0.016)
Urbanization	0.269*** (0.068)	0.052** (0.019)
Constant	-3.528*** (0.128)	-0.016 (0.031)
N	1,048	1,048
Lambda (constant)	1.035*** (0.041)	
Adj. R ²		0.251
BIC	709.88	-763.553
AIC	605.83	-803.198
LL	-281.92	409.599

Note: Standard errors in parentheses; + $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < .001$.

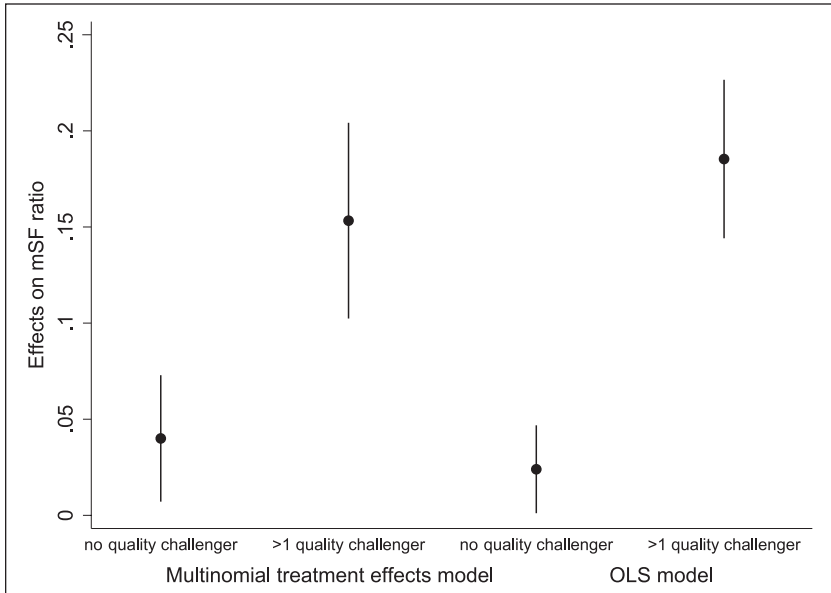


Fig. 6.1. Average Marginal Effect of Quality Challengers on mSF Ratio (95% CI)

To test whether the patterns observed result from strategic coordination rather than personal voting, I employ survey data from the JES III project.¹⁵ While the JES survey was conducted in ten waves, I am interested only in those waves covering the pre- and postelectoral periods of the lower house elections, so I use Waves D, E, J, and K for the 2003 and the 2005 national elections.¹⁶ Japanese surveys contain district identifiers, enabling researchers to link survey responses to aggregate-level district information. Also, for each election, each respondent was interviewed both before and after the election. The pre-electoral wave allows us to measure preferences and expectations, while the postelectoral wave is used to measure vote choice, thus minimizing the potential problem that answers given after the elections may be affected by the electoral outcome.

At the start of the pre-electoral interview, respondents are shown a card with the pictures of the candidates running in the district and are asked which candidates they know. Table 6.5 reports the mentions by type of candidates. Incumbents are among the most well-known types of candidates: nearly 69% of them are mentioned in 2003 and 66% in 2005. However, the rates of mention are not much lower for the different types of challengers except for the challengers of no quality, who are least known. Respondents

are also asked to score known candidates using a feeling thermometer from 0 (very much dislike) to 100 (like the candidate very much). The table shows that average feeling scores are very similar across mentioned candidates, and none of the specific types of candidates enjoys a surplus in terms of feelings, although non-quality challengers again average lower values.

Model Setup

As chapter 1 discusses, a sincere vote describes a situation in which the voter chooses the most preferred candidate from a menu of alternatives. Nonsincere voting instead describes a situation in which voting goes against sincere preferences. I define a vote in the SMD as sincere when the voter supports the most preferred candidate and 0 otherwise.¹⁷ In our data, about 74% of the respondents voted sincerely in the SMD, choosing the most preferred candidate with the SMD vote, and about 26% voted for a less preferred candidate.

The empirical models include a variable that takes into account the number of quality challengers running in each district. To confirm the results at the aggregate level, we should find that voters are less likely to

TABLE 6.5. Candidates, Quality, and Respondents' Knowledge

	2003 Election			2005 Election		
	Mention		Feeling Score Mean (SD) ^a	Mention		Feeling Score Mean (SD) ^a
	Yes	No		Yes	No	
<i>Incumbent</i>	68.9%	31.1%	55.6 (20.0)	65.7%	34.3%	55.9 (19.8)
<i>Obs</i>	1,560	705	1,525	1,015	530	992
<i>Tag</i>	67.5%	32.5%	53.9 (20.5)	70.3%	29.7	50.2 (20.8)
<i>Obs</i>	110	53	108	45	19	45
<i>Zombie</i>	49.9%	50.1%	48.6 (20.5)	52.3%	47.7%	49.4 (20.3)
<i>Obs</i>	252	253	236	287	262	275
<i>Shadow</i>	63.3%	36.7%	53.0 (19.2)	52.9%	47.1%	49.7 (22.3)
<i>Obs</i>	295	171	291	126	112	124
<i>Fading</i>	48.4%	51.6%	51.2 (24.1)	43.5%	56.5%	52.8 (26.0)
<i>Obs</i>	106	113	104	20	26	20
<i>Star</i>	55.2%	44.8%	50.4 (20.5)	52.2%	47.8%	51.1 (17.8)
<i>Obs</i>	262	213	256	129	118	127
<i>No Quality Challenger</i>	25.8%	74.1%	44.5 (10.5)	27.5%	72.5%	42.0 (22.1)
<i>Obs</i>	1,215	3,481	1,151	751	1,983	697

Note: Since some respondents refuse to score candidates, the number of rated candidates is always lower than the number of mentioned candidates.

^aFeeling scored of mentioned candidate.

vote sincerely where the incumbent faces a quality challenger than in districts where the incumbent faces multiple or no quality candidates. The models also include a series of important individual- and aggregate-level variables. At the aggregate level, I include a commonly employed measure of district competitiveness: the more competitive the district, the more likely voters are to vote strategically.

At the individual level, I control for feelings for the top party and the top candidate as well as the differences in score between the first and the second scored candidates. These variables are measured using a feeling thermometer from 0 (very much dislike) to 100 (like the candidate or the party very much). I expect that the higher the feelings for the most preferred party or candidate, the more utility the voter gets in voting sincerely. The models also include voter expectations about the electoral outcome. One way of measuring expectations is by using an indirect measure that captures the most preferred candidate's *margin of contention*. The margin of contention is measured by taking the difference between the votes gained by the most preferred candidate and the candidate who finished second. By definition, this variable is positive when the preferred candidate is in third position or lower, 0 when the preferred candidate finishes second, and negative if the preferred candidate wins (e.g., Fisher 2004). The larger the value, the less likely the voter should be to vote sincerely, since the most preferred candidate is unlikely to win. Japanese surveys also allow us to directly measure expectations. The survey asked respondents a closed-ended question about their perceptions of their preferred candidates' chances of winning the SMD: "How close of a race do you think the SMD where you live will be?" I categorize the most preferred candidate as noncompetitive when the respondent chose "Even if I vote, the candidate I support will have a hard time winning" and 0 otherwise.¹⁸ Since it is quite likely that voting strategically is related to voters' interest, I also control for interest in politics.

Results

Table 6.6 shows the results of two parsimonious models of sincere vote, one in which expectations are measured indirectly (Model 1) and one when a direct measure is used (Model 2). Focusing first on the key independent variable, the type of district competition has a significant effect on sincere voting. All else being equal, Model 1 shows that the odds of casting a sincere vote are 33% higher ($\exp(0.288) = 1.33$) where there are no quality challengers contesting the election than in situations where the incum-

bent faces a quality challenger, holding preferences and expectations constant. The odds of casting a sincere vote are 52% higher ($\exp(0.417) = 1.52$) where there is more than one quality challenger than in situations where there is only one quality challenger, although the results are significant only at $p > 0.1$. Model 2, where I control for direct expectations, shows that the odds of casting a sincere vote are 38% higher ($\exp(0.325) = 1.38$) where there are no quality challengers contesting the elections and 45% higher ($\exp(0.376) = 1.45$) where there is more than one quality challenger than in situations where there is only one quality challenger. These findings confirm the results gathered using aggregate-level data.

Both models find that personal feelings for the top-ranked candidate have a positive effect on voting sincerely, as do the other two feeling ther-

TABLE 6.6. Sincere and Strategic Voting in the 2003 and 2005 Lower House Elections: Multilevel Logit Models

	Dependent Variable: Sincere Vote	
	Model 1	Model 2
Ref. 1 Quality Challenger		
No Quality Challenger	0.288* (0.120)	0.325** (0.120)
> 1 Quality Challenger	0.417+ (0.221)	0.376+ (0.221)
Feeling for Top Party	0.015*** (0.003)	0.014*** (0.003)
Feeling for Top Candidate	0.049*** (0.004)	0.049*** (0.004)
Score Second-Best Candidate	0.020*** (0.001)	0.022*** (0.001)
Interest in Politics	-0.046 (0.072)	-0.022 (0.072)
Margin of Contention	-2.096*** (0.514)	
Expected Performance		-0.601*** (0.140)
PrevMargin	0.004 (0.008)	0.001 (0.008)
Constant	-4.541*** (0.321)	-4.423*** (0.321)
N	2,142	2,142
BIC	2242.20	2240.75
AIC	2179.84	2178.38
rho	0.02	0.02
	0.01	0.01

Note: Standard errors in parentheses: + $p < 0.1$, * $p < .05$, ** $p < .01$, *** $p < .001$.
Logit random effect models by district. The models include fixed effect by year (not shown).

nometer variables. For every one unit increase in the 0–100 scale of feeling for candidates, the odds of casting a sincere vote grow by 5% ($\exp(0.049) = 1.05$). The effect of feeling for parties and the difference score is lower but is still positive and significant. Interest, however, has no effect on vote choice. Concerning expectations, the less competitive the preferred candidate, the less likely the respondent is to vote sincerely, as expected. The results hold for both indirect (Model 1) and direct (Model 2) measurements of expectations. The previous vote margin has the expected positive effect on sincere voting, but the coefficient is not statistically significant. The evidence points to the conclusion that the rate of strategic coordination is higher in those districts where one quality challenger faces an incumbent compared to those districts where zero or multiple quality challengers run for elections, a result that provides support for the findings at the aggregate level.

Conclusion

Without common knowledge about who is trailing in the electoral race, voter coordination on the strongest two alternatives is unlikely to succeed (Cox 1997; Myatt 2007). Studying where and how voters get the information they need to make informed decisions is key to understanding strategic voting and ultimately election outcomes (Blais et al., this vol.). This chapter showed that the resources and talents of challenger candidates have a significant impact on vote choice. The presence of one quality challenger significantly increases competition, thereby increasing voter strategic coordination. However, the presence of multiple quality challengers hinders voter strategic coordination by creating noise in the electoral race. The findings are corroborated at the individual level, indicating that the observed patterns result from strategic coordination, not merely from personal votes for specific candidates. Candidate quality operates as one important heuristic voters use to understand the competition at the district level and avoid wasting their votes. Knowing who contests the elections helps voters to make inferences about the distribution of support for the district-level candidates. This has important implications for democratic elections and party strategy.

First, the common view that citizens barely engage with the complexity of the political world should not discourage scholars from examining where and how voters gather the information they need to make informed decisions. The local environment in general and the presence

of a quality challenger in particular can convey important information to voters and can greatly help them to form reasonable expectations about the electoral outcome. In addition, a party's capacity to win elections is related not only to its ability to run the right number of candidates but also to its ability to find the right candidate for each district, which may increase voter coordination across the board. In this regard, politicians also have good incentives to behave strategically via enhanced allocation of resources to the district or the selection of more appealing candidates. This issue merits future investigation, since even sincere supporters of minority parties may vote for one of the two main contenders not because they are strategic but because the strategic behavior of parties has accommodated their preferences.

There are good reasons to believe that inferences can be made from plurality to PR systems with regard to the effect of candidate quality and voter strategic coordination. In fact, voters can use the quality of national candidates to make inferences about the distribution of support for the different parties at the national level, especially in those instances where new leaders or new parties contest the elections for the first time (Lago, this vol.). Focusing on voter information may provide explanations for previously unexplored cases and in general may explain all those cases where objective predictions cannot be made but where coordination on two parties or candidates is found.

NOTES

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1. The literature has often stressed that people also form expectations about a candidate's chances of winning a district on the basis of personal preferences. In this case, perceptions about who is trailing in the race are distorted by existing political preferences (e.g., Price 2000).

2. Japan has had many party mergers and splits, but they are beyond the scope of this chapter. See Reed 2005; Reed, Scheiner, and Thies 2012.

3. In this chapter I look at competition in about 1,500 districts covering the elections of 1996, 2000, 2003, 2005, and 2009. Of these, about 0.2% were contested by only two candidates, about 3% were open-seat elections with no incumbent running, and about 7% had more than two incumbents. The two-incumbent cases exist only for the 1996 elections, the first election following the end of the single-nontransferable-vote system, which used multimember districts.

4. Tag-team members run for the same SMD. One candidate runs in the SMD, while the other runs only in the PR contest, and they switch positions for the next election (Dabney 2009). The LDP and Koumei, for example, make such arrangements.

5. Data come from different sources. Aggregate voting records for the 1996–2009 elections, spending data, and candidate status derive from Masahiko and Yanai 2013. By-elections and Costa Rica arrangements come from Steven Reed's dataset, available at <http://www.fps.chuo-u.ac.jp/~sreed/DataPage.html>. Additional information on candidate curriculum derives from different sources, including the House of Representatives website (http://www.shugiin.go.jp/internet/index.nsf/html/index_e.htm); and Reed 2004; Scheiner 2005; Dabney 2009.

6. Hence, a candidate who was a star challenger at $t - 1$ at time t will be considered an incumbent if she won the SMD, a zombie if she won in the PR, and still a star challenger if she lost.

7. In Japan, the practice of inheriting districts is common within families of very successful politicians. Inheriting a seat effectively provides a candidate with the entire existing organization of the deceased candidate (Scheiner 2005).

8. Disclosure of campaign spending usually is not very accurate (Dabney 2009). Yet, the ceiling on spending typically is set high enough that candidates do not usually reach or exceed the limits (Carlson 2007).

9. Since the number of districts without an incumbent and with more than one is very low, including all districts produces very similar results.

10. In 83% of the district election observations, the mSF equates the SF ratio. Hence, using the SF ratio would not change substantive conclusions.

11. The analysis uses the *mtreatreg* command in Stata 14, which estimates the two steps simultaneously (Deb 2006). The model is estimated using maximum simulated likelihood.

12. I do not need to control for whether the district is an open seat or for the presence of more than one incumbent candidate because such cases exist only for the 1996 elections.

13. Coordination takes into account whether the Democratic Party of Japan candidate has been “recommended” by another party in the same camp. Data from Steven Reed's dataset available at: <http://www.fps.chuo-u.ac.jp/~sreed/DataPage.html>

14. Data from Steven Reed's dataset available at: <http://www.fps.chuo-u.ac.jp/~sreed/DataPage.html>

15. The JES III Project is run by Kenichi Ikeda, University of Tokyo; Yoshiaki Kobayashi, Keio University; and Hiroshi Hirano, Gakushuin University; data are available at http://www.coecce.keio.ac.jp/data_archive_en/data_archive_jesIII.html

16. Waves A, B, G, and H cover the pre- and postelection periods for the House of Councillors elections in 2001 and 2004. Wave C covers the 2003 prefectural assembly election.

17. For the 10% of respondents who gave equal rankings to multiple candidates, a sincere vote is a vote for one of these candidates.

18. The category of 0 includes the following answers: (a) “Even if I don't vote, the candidate I support will be elected”; (b) “Even if I don't vote, the candidate I support will gather just enough votes to be elected”; (c) “If I vote, the candidate I support will be elected”; and (d) “If I don't vote, the candidate I support may have a hard time winning.” “Don't know” and unclear answers (e.g., “I have not decided which candidate to support” and “There are no candidates I support”) are

dropped from the analysis. However, since they constitute a small percentage of respondents, including “Don’t Know” and unclear answers as 0 does not change the substantive conclusions.

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Strategic Coalition Voting in Belgium

The 2014 Federal and Regional Elections

Tom Verthé and Stefanie Beyens

Voters harboring strategic voting motives veer from their preferred party or candidate expecting to influence the outcome of an election. As chapter 1 points out, for some voters, an election's outcome is the composition of parliament; others wish to have an impact on who governs. Majoritarian systems and their single-party executives obviously make this easier for their electorates, as the party that wins a majority of parliamentary seats usually heads the government. But when election results tend to be translated into coalition governments, being strategic in the voting booth requires an extra expectation—that is, who will (successfully) negotiate with whom? Still, we assume that for voters who grew up in these systems, this extra step in their potential reasoning will not take an extraordinary amount of effort. To test whether this assumption holds, we study Belgium, a federal country with a history of (oversized) coalitions, complex government formations, and two separate party systems. If Belgian voters were able to vote strategically in the 2014 elections, then this provides an affirmative answer to the research question, “Does strategic voting happen even in the least likely cases?” If strategic voting can happen in Belgium, it can happen anywhere.

In 2014, Belgium organized simultaneous elections for the European, federal (i.e., national) and regional parliaments, an excellent opportunity to study strategic voting in a complex system. Belgium's state structure has

been federal since 1993. It contains three territorial regions (Flanders is Dutch-speaking, Wallonia is French-speaking, and Brussels is bilingual) and three language communities (Flemish, French, and German, which is the smallest and was added after the First World War). Belgium's peculiar federalism, based on both territorial and linguistic divisions, is the result of decades of state reform, and the outcome of each round of reform is considered only a temporary compromise. While these particulars make the country unique (and difficult to understand), they also provide an interesting case for the study of strategic voting. Especially when several elections occur simultaneously, Belgium presents its electorate with many opportunities to act strategically in the voting booth. Given our interest in strategic voting with governing coalitions, we focus only on the federal and regional levels, as the European Union's governing body (the Commission) is not directly elected through its parliament. This chapter thus focuses on elections at the Belgian federal and the Flemish and Walloon regional levels.

The elections for the federal Chamber of Representatives and the regional parliaments use a semi-closed list system, and seats are allocated according to the proportional D'Hondt system, with a 5% vote share threshold at the district level. The medium-sized, multimember electoral districts for both elections follow the provincial boundaries (except for the Walloon regional elections). The rapid succession of state reforms since the 1970s—from a unitary to a federal structure—has also affected the configuration of Belgian parties. Most important, Belgium does not have one statewide party system; rather, it has two major party systems that are based on Dutch and French language groups.¹ These party systems are geographically distinct and overlap only in the Brussels electoral district.² As a consequence, an overwhelming majority of the population cannot vote for parties belonging to another language group. This has resulted in a hyperfragmented party landscape, where most parties have an ideological sister party on the other side of the language border. Having two party systems in one country stands in the way of a clearly structured competition because government formation is also affected. The federal government coalition is constitutionally required to include both language groups, although there is no formal requirement for a double majority. As a result, the previous federal government consisted of 6 parties, the current federal parliament hosts 13 parties (6 Dutch- and 7 French-speaking), and over the past 20 years, every party (except for the most extreme ones) has been part of a government coalition at one level or another. In sum, therefore, Belgium has two party systems that, in 2014, simultaneously had to form governments at the regional (one party system per region) and federal (two

party systems together) levels. The complexity of this setting might confound and discourage even the most rational voters from trying to maximize their utility.

Chapter 1 clearly shows that opportunities to vote strategically occur more often than we think, however. There is also no reason to assume that Belgian voters would be intrinsically less inclined to want to influence the composition of their government(s). Moreover, the obvious complexities of the case should not be exaggerated: Belgium remains a typical case of a proportional representation (PR) system with a coalition government. When we analyze strategic voting within each party system separately, the thresholds that apply to parties in other PR systems with coalition governments are the same: getting into parliament (district viability) and being part of the coalition (government viability) (see Lago, this vol.). This means, in practice, that we expect voters to abandon their most preferred party when it either has little chance of getting a single seat in the electoral district or has little or no chance of getting into government (or a combination of the two). Instead, they will choose an ideologically proximate party that has a higher district or government viability. When we analyze strategic coalition voting for the federal level, however, the dual party system complicates matters. Voters wishing to influence the composition of the Belgian government have to make predictions about two elections: one in the Dutch-speaking party system and one in the French-speaking party system. A Belgian government does not need a majority in the separate language groups, but it does need an equal number of ministers from each language group. Inevitably, a Belgian coalition will require parties from both linguistic communities to negotiate an agreement. This has become more complicated by the recent success of a Flemish nationalist party (Nieuw-Vlaamse Alliantie [N-VA]) that has no sister party on the other side of the language border and that is ideologically disinclined to cooperate with French-speaking parties not in favor of more independence for the regions.

Does that leave the strategic coalition voter powerless at the Belgian level? Arguably no, as until 2014, the composition of regional governments tended to mirror the composition of the Belgian government, and vice versa. Moreover, Belgium's traditional party families—Christian democrats, social democrats, and liberals—still have parties representing the ideology on each side of the language divide, albeit at different strengths. Coalition cues were also given leading up to the 2014 simultaneous elections: the continuous hostility played out in the press between what turned out to be the largest French-speaking party (Parti Socialiste [PS], the social

democrats) and the largest Dutch-speaking party (N-VA) made it unlikely that they would be coalition partners. Still, the reasons are nothing more than speculation, and individual voters might have widely varying perceptions about party viability at various levels.

Until recently, few studies have examined strategic voting behavior in Belgium. Verthé et al. (2017) have used the 2014 Making Electoral Democracy Work (MEDW) and PartiRep data to compare the relative effect of government and district viability on vote choice. Their results show that both viabilities have a substantial, distinct, and positive effect on vote choice and support the notions set out in the framework in chapter 1 about which outcomes may shape strategic voting behavior in PR systems. We must not neglect the classic notion of the wasted-vote logic—whether parties have a chance to win a seat in the voter’s district—in PR systems as well. Both government and district viabilities should be included in analyses to fully understand the complexity of vote choice in such systems. However, Verthé et al. focus only on the probabilistic estimation of the impact of both viabilities on vote choice, while this chapter explores actual strategic voting behavior and adds a deterministic angle by proposing a set of criteria that allow us to identify strategic coalition voters and their characteristics.

This chapter focuses only on government viability and its role in strategic voting in Belgium. One could argue that this viability is also the most important one from both a substantive and a quantitative point of view. Substantively, the scientific literature on power in contemporary parliamentary democracies agrees that the executive branch of the government has taken up a dominant position (Norton 1990; Mair 2013). Media coverage also overwhelmingly favors party leaders, ministers, and heads of government over MPs or parliament (Bittner 2011; Karvonen 2012). From a purely quantitative point of view, the composition of government is an aspect that (potentially) concerns far more voters than the number of small-party supporters who worry about the threshold of parliamentary representation.

The 2014 Elections

Before delving into the perceptions of voters, we need to take a closer look at the 2014 Belgian elections. Belgium uses a PR system for all of its elections and it combines two party systems at the federal level, resulting in one of the most fragmented parliaments among modern democracies (Lijphart 1999). In none of the parliaments included in this study did any

party obtain more than 40% of votes or seats, and in all cases, at least three parties obtained more than 15%. This is not a new feature of the Belgian party system; all federal and regional governments since the 1960s have been coalitions. The tradition of mirroring the partisan composition of the federal executive across linguistic groups (e.g., including both the French- and Dutch-speaking liberal parties, social democrats, and so forth) has led to government coalitions that contained up to six parties. Coalitions at the regional level are usually smaller (two or three parties), but no region has ever been governed by a single majority party.

Over the past few decades, coalition formation in Belgium has also been quite uncertain because parties no longer follow the ideological proximity criterion. On multiple occasions, parties from the left and the right have governed together (De Winter, Swyngedouw, and Dumont 2006), at times skipping the center parties altogether. Furthermore, the bulk of the Belgian parties, including green and regionalist parties, have been part of government coalitions at either the federal or regional level or both. Only the extreme left (Partij van de Arbeid /Parti du Travail [PVDA/PTB]) and the extreme right (Vlaams Belang [VB], Parti Populaire [PP], and Front National [FN]) have never been part of a coalition government (plus the small libertarian party, Lijst Dedecker [LDD]). This means the coalition formation game is very open.

While the general picture of coalition formation in Belgium shows an open competition between a large number of ideologically diverse parties, this is not necessarily the case for each election year. Parties could strategically coordinate before the election and form pre-electoral alliances or send out coalition signals to influence voting behavior. In 2014, however, they did not do so. Coalition signals in Belgium are usually rather weak, and 2014 was no exception. Only the green parties (ECOLO and Groen) had announced before the elections that they would enter a government coalition together. Even though positive coalition signals were largely absent, all other parties informally yet publicly agreed to shun the radical right parties (Vlaams Belang, PP, and FN) as a consequence of their extreme positions on immigration issues and other matters—under no circumstances would those parties be involved in coalition negotiations. Only one other negative coalition signal occurred. The Walloon social democrats (PS) and the Flemish regionalists (N-VA), each of which is the largest party in its region, are on opposite sides of two of the main cleavages in Belgian politics, linguistics and socioeconomics, and both parties made it very clear they would not govern together at the federal level under any circumstance (Dandoy, Reuchamps, and Baudewyns 2015).

The federal coalition ultimately was composed of the Flemish regionalists (N-VA) and Christian democrats (Christen-Democratisch en Vlaams [CD&V]) and the two liberal parties (Mouvement Réformateur [MR] in Wallonia, Open Vlaamse Liberalen en Democraten [Open VLD] in Flanders). At the regional level, however, the frequent practice of more or less symmetric governments was abandoned, and the Walloon government was formed by the social democrats (PS) and Christian democrats (Centre Démocrate Humaniste [CDH]), while the Flemish government mimicked the ideological composition of the federal level: regionalists (N-VA), Christian democrats (CD&V) and liberals (Open VLD).

Data and Variables

Our analyses use data from two separate surveys conducted in the weeks preceding Election Day (May 25, 2014). Each survey sampled between 500 and 1000 respondents per region. Data for the regional elections comes from the Making Electoral Democracy Work project (MEDW),³ which conducted an online survey using quota sampling to ensure sample diversity. The federal data originates from the PartiRep project,⁴ which organized a face-to-face survey with a randomly selected representative sample of adult citizens in the national population registry.

This chapter explores strategic coalition voting and does not study district viability.⁵ Neither of the surveys included a question on perceived district viability. Even though this means that we present only a partial picture of overall strategic voting, government coalition formation is at the core of the political struggle, and only very small parties (and therefore an equally small number of supporters) confront issues of district viability.⁶ This means that our estimate of strategic coalition voting will inevitably underestimate the full extent of strategic voting among the Belgian population in 2014.

We follow a two-pronged approach as suggested by Blais et al. (2006)—an indirect and a direct method. The indirect (probabilistic) approach examines the effect of party preference, ideological distance, and government viability (independent variables) on vote choice (dependent variable) by estimating a conditional fixed-effects logit model. *Vote choice* is the party for which respondents intend to vote in the federal or regional election. All of the independent variables are measured on an 11-point scale. *Party preference* is measured by asking the respondents to indicate the extent to which they like each of the parties included in the analysis on a scale from

0 (not liking at all) to 10 (liking a lot). *Ideological congruence* is constructed on the basis of two variables: the first variable is measured by asking the respondents how they rate each of the parties' ideological positions on a scale from 0 (extreme left) to 10 (extreme right); the second variable measures the respondents' ideological position by asking them to place themselves on the same scale. We created an index based on the absolute difference between the positions of the respondent and the party on the left-right scale. A low value would indicate ideological closeness, while a high value would indicate ideological remoteness. To facilitate the interpretation of the direction of the effects in our analysis, we inverted this index by taking the maximum ideological distance between a respondent and the party (10) and subtracting the original measurement of ideological distance. This leaves us with an index of ideological congruence that goes from 0 to 10, where 0 indicates a very low ideological congruence and 10 a very high ideological congruence. *Government viability* is measured by asking respondents to rate the chances that each of the parties will be part of the next federal or regional government coalition on a scale from 0 (very unlikely) to 10 (very likely).⁷

We next use the direct, deterministic method, which requires voters to meet certain predetermined criteria to be considered strategic coalition voters. We first determine the extent of sincere versus insincere voting and then subsequently identify those respondents whose insincere vote intention can be explained by considerations concerning government viability. We then estimate a binomial logistic regression model to examine the provenance of strategic coalition voters. This model includes some other variables. *Political interest* is measured on an 11-point scale in both surveys, with 0 indicating that respondents had no interest at all, and 10 indicating that they were very interested. However, the PartiRep election study measured only a general interest in politics, while MEDW inquired about both general political interest and interest in this particular election. For analyses regarding the regional elections, we therefore created a composite scale by adding both types of interest and dividing the result by two. *Political knowledge* is measured differently in the two surveys. MEDW showed the respondents pictures of 10 politicians, 5 of whom were party presidents, and 5 party names (N-VA, CD&V, Socialistische Partij Anders [SPA], PS, and MR). Respondents were asked to correctly match the party presidents to their parties, thereby creating a 6-point scale that we used as a proxy for general political knowledge. The PartiRep survey also provides us with political knowledge questions that result in a 6-point scale but uses a different approach. Five multiple-choice political knowledge questions—

with four options per question—were asked, with each question targeting a different dimension or government level.⁸

Based on respondents' answers on the party preference questions, we constructed two new variables that summarize distributional characteristics we consider relevant for strategic coalition voting. The first one is the *intensity of the party preference*, which is calculated by subtracting the lowest value attributed to any party from the highest value attributed to any party. This variable thus shows us the range between the most and least preferred parties, which we believe might influence the odds that a respondent is a strategic coalition voter. The lower this value, the weaker the respondent's preferences and the more likely that other party attributes (such as government viability) might influence the vote intention. It is of course also possible that the overall range of party preference values does not truly matter in swaying voters away from their pure preference. Why would it matter that a respondent attributed a 0 to their least preferred party and a 10 to the most preferred one if all of the other parties receive a 5? A much more precise indicator for the influence of individual voters' preference structures on strategic coalition voting is the *distance between the two most preferred parties*. We therefore subtracted the preference score of the second-most-preferred party from that of the most preferred party. The lower this value, the higher the likelihood that a voter might be tempted to cast a strategic coalition vote.

Results

Indirect Method

We start our analysis with the probabilistic approach to examine whether parties' perceived government viability has an effect on intended vote choice. To do so, we estimated a conditional logit model that includes the respondent's evaluation of party preference, government viability, and ideological congruence on a left-right scale. Table 7.1 presents the results of this analysis. The unit of analysis is respondent/party, which means the parties are treated as choice options with attributes (the independent variables) that vary by party and are nested in the respondent. In Models 1–3, we introduce the independent variables step by step. We can observe that the strongest determinant of vote choice is the expressed preference intensity for a party. The more that respondents like a party, the more likely they are to vote for it. This effect stays strong throughout all of our models. As

TABLE 7.1. Conditional Fixed-Effects Logistic Regression: Does Government Viability Influence Vote Intention?

	Model 1			Model 2			Model 3			Model 4		
	Regional		Federal	Regional		Federal	Regional		Federal	Regional		Federal
	Coeff.	Sig.		Coeff.	Sig.		Coeff.	Sig.		Coeff.	Sig.	
Preference	1.59 (.10)	***		1.35 (.08)	***		1.53 (.10)	***		1.28 (.08)	***	
Ideological Congruence							0.26 (.05)	***		0.23 (.03)	***	
Government Viability										0.11 (.03)	***	
Preference* Ideological Congruence										0.06 (.03)	*	
Preference * Government Viability										0.01 (.02)		
Number of Observations	6,581		8,845	6,581		8,845	6,581		8,845	6,581		8,845
(Respondent*Party)												
Naegelkerke R ²	0.69		0.59	0.70		0.60	0.71		0.64	0.71		0.64

Source: Data from MEDW (regional elections), PartiRep (federal elections).
Note: Both samples weighted according to age, gender and education. Significant * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Robust standard errors in parentheses.

the ideological congruence between the respondent and a party increases, the likelihood of voting for that party increases as well. When we add the independent variable that we are actually interested in, we see that government viability has a positive significant effect on vote choice and that this effect is distinct from ideological proximity or party preference.

We do not, however, claim that party preference, ideological congruence, and government viability do not interact. On the contrary, since strategic coalition voting takes place when voters make a choice between two parties that they at least somewhat like, we should expect an interaction between these two variables. The same goes for the preference value attributed to a party and its (perceived) ideological congruence with the respondent. We can expect that parties that are ideologically more proximate to a respondent's position will score better on the preference scale and that this in turn will lead to a higher likelihood of voting for that particular party. These variables are, however, only moderately correlated (Pearson's r varies between 0.42 and 0.56). Therefore, we introduced two interaction terms in Model 4. To interpret the effect of this interaction, we plotted the marginal effects in figures 7.1 and 7.2.

Figure 7.1 shows that ideological congruence has a significant (and increasingly strong) positive marginal effect on vote choice for those parties that are at least somewhat liked (thus scoring five or more on the preference scale). At first glance, the effect seems to be negative for parties that are disliked, even though the 95% confidence intervals show us that it is impossible to determine whether the marginal effect is positive or negative below a preference value of five for the regional and three for the federal elections. We assume that voters have many reasons not to vote for parties they dislike and that this has no impact on strategic voting considerations, which come into play when voters weigh secondary attributes of parties they at least somewhat like.

Figure 7.2 reveals a similar pattern: the marginal effect of government viability on vote choice is positive for parties that are at least somewhat liked, while the direction of the effect for parties that are disliked cannot be determined in the case of the regional elections. The effect size of government viability varies. For the regional elections, the marginal effect increases as the party preference value increases, whereas the angle of the slope for the federal elections is not clear. At a first glance the effect appears to decrease slightly as party preference values rise, but when we take into account the 95% confidence interval, it becomes clear that the effect might just as well be stable or increase, just as it does for the regional level. Since the effect is positive across all preference values for the federal

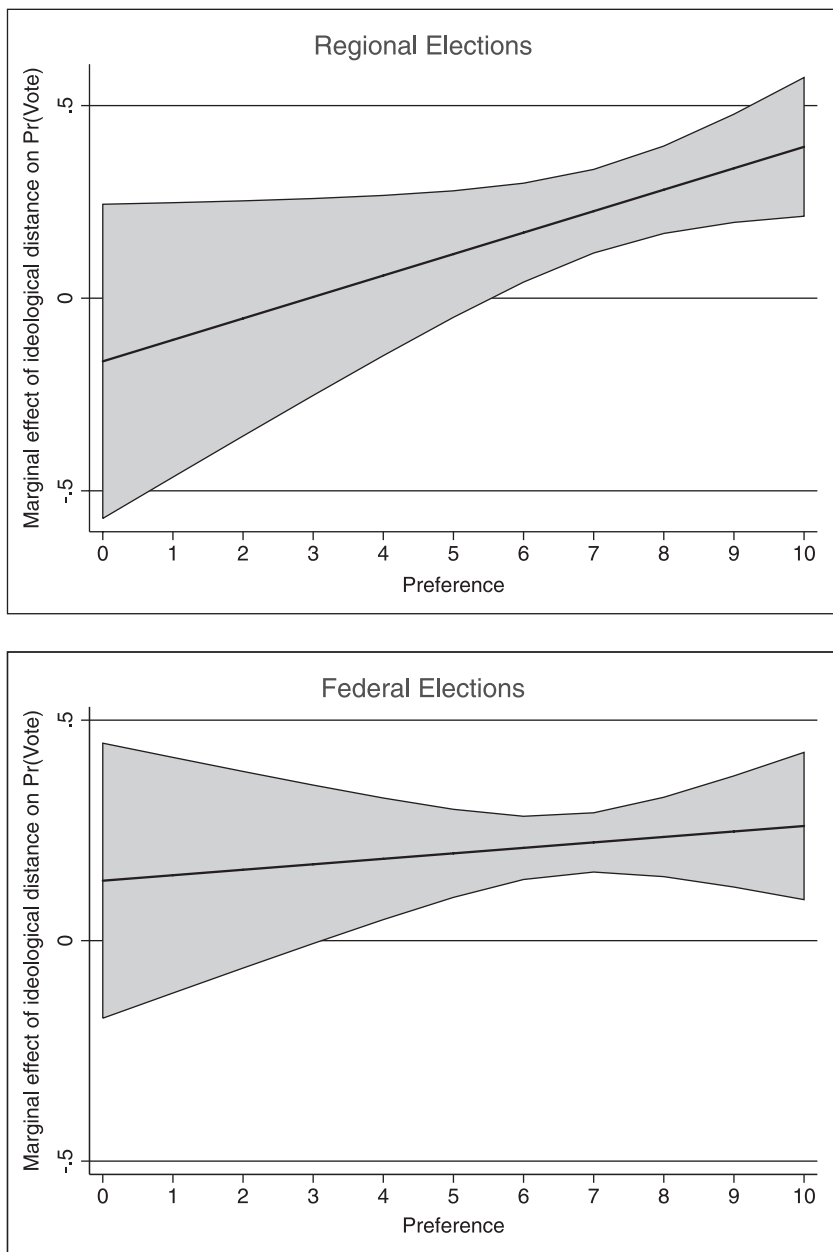


Fig. 7.1. Marginal Effect of Ideological Congruence

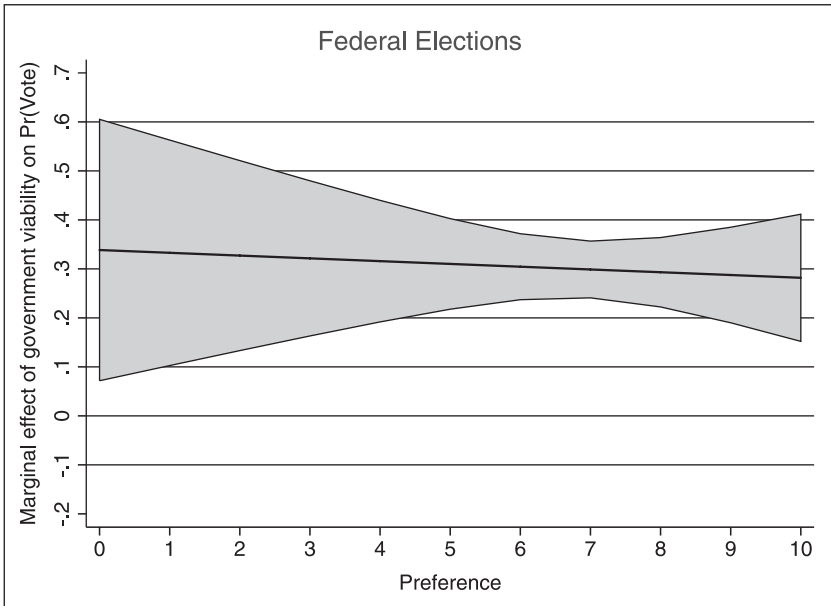
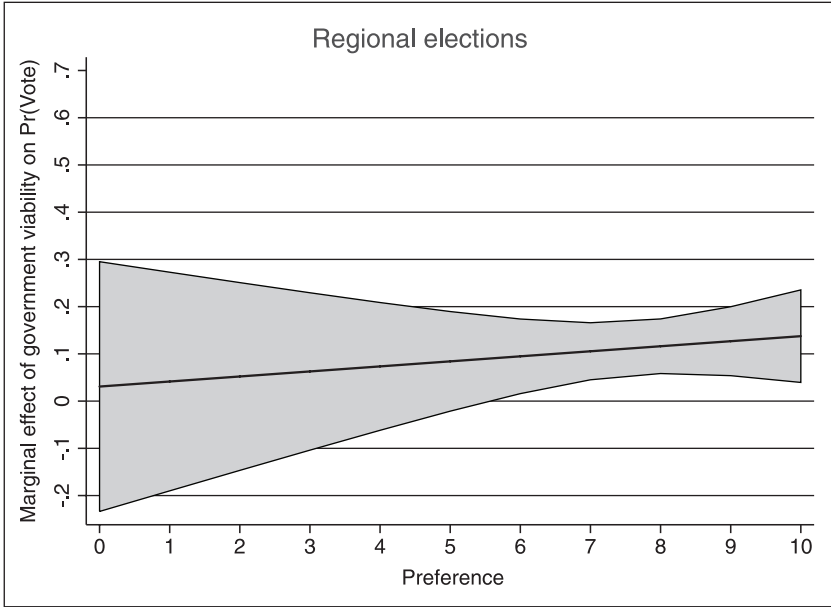


Fig. 7.2. Marginal Effect of Government Viability

elections and at high preference values at the regional level, this does not affect the substance of our findings: voters make strategic choices between parties they at least somewhat like. The indirect approach thus shows us that Belgian voters take into account their perceptions of parties' government viability when deciding for whom to vote. The observation that the effect of government viability on vote choice is much stronger overall at the federal level also seems to indicate that second-order election effects (Reif and Schmitt 1980) are at play here and that voters consider the federal level more important than the regional one when it comes to coalition formation. However, this interpretation is based on tentative evidence from a single election year, and we did not ask respondents to provide separate scores for their party preference levels for each level of government. A more elaborate and longitudinal research design is needed to explore the role of government viability as an indicator of second-order election effects with greater certainty.

Direct Method

All types of pure strategic voting require voters to abandon their preferred party for a less preferred party while taking into consideration their expectations about election outcomes. This means we need a stepwise approach to identify respondents with only one preferred party, then pure sincere voters, and finally the proportion of insincere voters whose vote intention has higher government viability than their preferred party.

Table 7.2 shows that voters in the two elections have more or less equally distributed party preferences. Two-thirds of the respondents in both surveys show a clearly distinct party preference, while one-third have two or more tied party preferences. Since we are looking only into the comparison of pure strategic voting and pure sincere voting (see chapter 1), we move forward with the group of respondents with a single preferred party. Table 7.3 indicates that three-quarters of that group intends to vote sincerely, which leaves us with one-quarter of insincere voters who could potentially have strategic motives to abandon their preferred party. The overall number of insincere voters of course hides the fact that not all parties suffer equally from insincere voting (i.e., abandonment in favor of another, less favored party).

Table 7.4 shows some interesting variation between the parties and between the two election levels. The levels of sincere voting for the federal elections show a pattern that follows expectations from the strategic voting literature. Supporters of smaller and ideologically more extreme par-

TABLE 7.2. Distribution of the Number of Preferred Parties among Respondents

	Regional		Federal	
	<i>N</i>	%	<i>N</i>	%
Single Preferred Party	1,310	67.3	1,320	66.6
Two Tied Preferred Parties	376	19.3	341	17.2
More than Two Tied Preferred Parties	261	13.4	322	16.2
<i>Total</i>	1,947	100	1,983	100

Source: Data from MEDW (regional elections), PartiRep (federal elections).

TABLE 7.3. Proportion of Sincere and Insincere Voters

	Regional		Federal	
	<i>N</i>	%	<i>N</i>	%
Sincere voters	966	73.7	1,005	76.1
Insincere voters	344	26.3	315	23.9
<i>Total</i>	1,310	100	1,320	100

Source: Data from MEDW (regional elections), PartiRep (federal elections).

TABLE 7.4. Proportion of Sincere Voters per Preferred Party (Loyal Voters)

<i>Flanders</i>	%	Population	<i>Wallonia</i>	%	Population
Regional					
<i>N-VA</i>	92.0	200	<i>PS</i>	91.3	126
<i>CD&V</i>	86.1	86	<i>MR</i>	92.1	164
<i>Open VLD</i>	90.0	70	<i>CDH</i>	84.1	63
<i>SPA</i>	84.7	98	<i>ECOLO</i>	91.2	57
<i>VB</i>	89.3	28	<i>PTB</i>	78.7	47
<i>Groen</i>	92.5	53	<i>FDF</i>	68.2	22
<i>PVDA</i>	81.5	27			
Federal					
<i>N-VA</i>	92.6	190	<i>PS</i>	93.6	220
<i>CD&V</i>	87.6	121	<i>MR</i>	96.4	110
<i>Open VLD</i>	82.2	73	<i>CDH</i>	94.9	78
<i>SPA</i>	88.5	78	<i>ECOLO</i>	72.2	115
<i>VB</i>	76.9	26	<i>PTB</i>	76.3	38
<i>Groen</i>	63.3	79	<i>FDF</i>	14.3	7
<i>PVDA</i>	61.1	18			

Source: Data from MEDW (regional elections), PartiRep (federal elections).

ties abandon their parties more often than do supporters of larger center parties. While the center parties have a share of loyal supporters that tops 80% in Flanders and 90% in Wallonia, the smaller parties have between 60 and 77% of loyal voters in Flanders and 75% in Wallonia (with the *Fédéralistes Démocrates Francophones* [FDF] as an outlier, potentially as a consequence of the low overall number of FDF supporters). Even though these observations agree with the theory, the comparison with the regional elections is striking and shows remarkable differences for some parties. For the regional elections, the levels of sincere voting are lower for the center Walloon parties (PS, MR, and CDH) and are higher for the smaller, ideologically more extreme parties (ECOLO, PTB, FDF).⁹ The same goes for their Flemish counterparts: supporters of *Vlaams Belang*, *Groen*, and *PVDA* remain more loyal at the regional level. For *Groen* and *ECOLO*, the numbers are truly striking: only 63% and 72% of their respective supporters intended to vote sincerely at the federal level, while this proportion rises to 92% at the regional level. The Flemish liberals experienced a similar increase (from 82% to 90%). Since table 7.3 shows relatively similar proportions of insincere voting across both levels, we should be careful in drawing firm conclusions. The deterministic approach seems to show tentative support for the interpretation that the federal election was considered a first-order election, eliciting strategic behavior by supporters of small or ideologically more extreme parties to promote a left- or right-wing coalition.

The final step in our direct approach is determining the proportion of strategic coalition voters. Table 7.5 shows that on average, half of all insincere voters (across both elections) indicated that their vote intention had a higher perceived government viability than their preferred party.¹⁰ We consider this group the strategic coalition voters. For the federal elections, the proportion of strategic coalition voters is higher (58%) than for the regional elections (42%). If we look at the absolute numbers provided in table 7.4, the proportion of strategic coalition voters in the entire population is a mere 2.4% for the regional elections and a more reasonable 7.5% for the federal elections. The very low number of respondents—especially for the regional elections—who can firmly be placed either within or outside of the group of strategic coalition voters results from a substantial number of missing values. To reach the end of our deterministic funnel, respondents had to provide us with answers to a myriad of questions, and for all of those questions they had to provide information for multiple parties. These requirements drastically reduce our sample, and the online survey method used for the regional election data might be one

of the reasons why the number of strategic voters is higher for the federal elections, where interviews were carried out face-to-face. This suspicion is also fueled by the fact that when comparing proportions, the difference between the two elections is still substantial but far less steep. If we take a less conservative approach to estimate the proportion of strategic coalition voters among the total population, we could use the proportion of strategic coalition voters among those who provided us with the necessary information to make that determination and extrapolate that to the number of insincere voters. If we use this estimate and compare it to the total survey population, the proportion of strategic coalition voters rises to 7.4% in the regional elections and slightly increases to 9.2% in the federal elections. Again, the proportion of strategic coalition voters provides only a partial picture of overall strategic voting because we concern ourselves solely with pure strategic voting (see chapter 1) and because this chapter deals solely with the role of government viability in strategic voting, while district viability might also be a factor for small-party supporters. These percentages are quite close to findings in other studies that deal with insincere, tactical, or strategic voting (see, e.g., Alvarez and Nagler 2000; Abramson et al. 2009; Bargsted and Kedar 2009).

Table 7.6 shows that as far as strategic coalition voting is concerned, the smaller, ideologically more extreme parties still pay the price for their lower government viability even though the population at the regional level is so small that conclusions for individual parties should be taken with a grain of salt. For the federal elections, the population is larger and the pattern is more definite with regard to individual parties. For the federal election, it is clear that the green parties (who represent roughly 45% of the strategic coalition voters, on average) and the extreme left PVDA/PTB (14%) severely suffer from strategic coalition voting in both parts of the country. In Flanders, 9% of the strategic coalition voters listed the extreme right Vlaams Belang as their preferred party. If supporters considered these parties more viable for entering postelection coalitions, their vote shares would increase considerably (for simulations, see Verthé et al., 2017).

TABLE 7.5. Proportion of Strategic Coalition Voters

	Regional		Federal	
	<i>N</i>	%	<i>N</i>	%
Higher government viability	31	41.9	99	57.9
Equal or lower government viability	43	58.1	72	42.1
<i>Total</i>	74	100	171	100

Source: Data from MEDW (regional elections), PartiRep (federal elections).

Now that we have identified the Belgian strategic coalition voters, can some individual-level characteristics help explain the likelihood of membership in this group? To answer this question, we estimate a binomial logit model with membership in the group of strategic coalition voters as a dependent variable.¹¹ Our first model includes only age and gender as independent variables. The second group of elements comes from the classic voting literature and is just as important for understanding or explaining strategic voting in first-past-the-post systems as under PR rules. In this model we add political interest and knowledge under the assumption that to engage in strategic considerations, a voter needs to be knowledgeable enough to understand the stakes of the election and its potential outcomes and interested enough to be willing to act on these perceptions. (For more on the role of political sophistication in strategic voting, see Blais et al., this vol.; Plescia, this vol.). This assumption can be easily challenged, however. Voters need not actually be well informed; they must simply be convinced that they are well informed and willing to act on that conviction. One could even argue that a certain degree of irrational hubris is an essential personality trait for voters who assume that their individual votes can influence election outcomes (Downs 1957; Buchanan and Tullock 1962; Brennan and Lomasky 1993). Our third model includes two variables calculated on the basis of respondents' party preference ratings. A first assumption would be that voters with outspoken preferences are less likely to switch among parties because of coalition considerations (Blais et al. 2006; for a similar argument on partisanship, see Daoust, this vol.). People who put their preferences aside because of coalition considerations probably have less strong party preferences. In addition, the intensity of preferences across the entire range of parties may matter less than the difference in preference inten-

TABLE 7.6. Distribution of Strategic Coalition Voters across Preferred Parties

<i>Flanders</i>	%	<i>N</i>	<i>Wallonia</i>	%	<i>N</i>
Regional					
N-VA, CD&V, Open VLD, SPA	17.6	3	PS, MR, CDH	42.9	6
VB, Groen, PVDA	82.4	14	ECOLO, PTB, FDF	57.1	8
<i>Total</i>	100	17	<i>Total</i>	100	14
Federal					
N-VA, CD&V, Open VLD, SPA	35.8	19	PS, MR, CDH	10.9	5
VB, Groen, PVDA	64.2	34	ECOLO, PTB, FDF	89.1	41
<i>Total</i>	100	53	<i>Total</i>	100	46

Source: Data from MEDW (regional elections), PartiRep (federal elections).

TABLE 7.7. Binomial Logistical Regression—Determinants of Strategic Coalition Voters

	Model 1			Model 2			Model 3		
	Regional	Federal		Regional	Federal		Regional	Federal	
	Coeff.	Sig.		Coeff.	Sig.		Coeff.	Sig.	
Age	-0.02 (.01)		-0.02 (.01)	* (.01)		-0.14 (.01)	* (.01)		-0.01 (.01)
Gender	-0.18 (0.40)		0.5 (.23)	* (.24)		0.32 (.24)			0.26 (.24)
Political interest						-0.2 (.09)			-0.03 (.05)
Political sophistication						-0.12 (.09)	*		-0.22 (.09)
Intensity of party preference									-0.06 (.06)
Distance between preferred party #1 and #2								*	-0.42 (.17)
N	854		1,170			854			1,170
Naegelkerke R ²	0.01		0.03			0.02			0.06

Source: Data from MEDW (regional elections), PartiRep (federal elections).
Note: Both samples weighted according to age, gender, and education. Significant * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.
Robust standard errors in parentheses.

sity between the two highest-rated parties. Voters who like their preferred party a lot and their second preference only a bit less can be assumed to be more likely to give in to strategic coalition considerations than voters who likes their second preference a lot less than the first.

Table 7.7 shows the results of our three logit models. According to these results age, gender, and political interest have no significant effect on the probability of being a strategic coalition voter. Political knowledge does seem to have an effect on this probability for the federal election, yet the direction is the opposite what we would expect from most strategic voting literature. This would mean that less knowledgeable voters are more likely to cast a strategic coalition vote. The effect size is similar for the regional elections but is not statistically significant. This finding might result from the much lower proportion of strategic coalition voters in the regional election sample. We could not explain this phenomenon. More sophisticated voters may have more outspoken party preferences, since there is a weak correlation (Pearson's $r = 0.20$) between overall preference intensity and political knowledge. However, there is no correlation between political knowledge and the preference structure variable that actually has a significant effect on strategic coalition voting tendencies (the distance between the two most preferred parties). Our full model, which includes variables based on individual voters' party preference rankings and their distribution, indeed shows preference ratings across the entire range of parties on the ballot do not determine whether a voter will cast a strategic coalition vote; rather, casting a strategic coalition vote depends on the closeness of the preference intensities of the two most preferred parties. This provides support for the basic assumption that strategic voting in PR systems happens when voters make a choice between two or more parties that they like and decide to let their vote depend on secondary attributes (in this case, perceived government viability).

Conclusions

Although the institutional complexity of the Belgian political context creates some peculiar obstacles for voters who wish to vote strategically, these obstacles by and large disappear when we treat the two main regions as the separate party systems they are: they then become quite typical examples of PR systems with coalition governments. We focus on government viability to study strategic voting in Belgium because government viability is arguably more important than district viability in a country that has not known

a single-party government in the last six decades. However, both types of viability should be taken into account for a full picture of strategic voting in Belgium.

Our indirect approach—a conditional fixed-effects logit model—shows that government viability indeed has a significant positive effect on vote choice and that this effect is distinct from ideological congruence and party preference. The marginal effect does vary according to voters' preference ratings. For the regional elections, the effect starts out weak but increases as preference ratings are higher, while the effect for the federal elections is stronger overall, but the direction cannot be determined. Our direct, deterministic method shows that roughly one-quarter of voters with a single preferred party intend to vote insincerely. At the federal level, the smaller, ideologically more extreme parties are clearly more likely to be abandoned by their potential electorate than are their larger, centrist adversaries, which points in the direction of strategic voting, even though all parties suffer from disloyal supporters to some extent. The results from both the direct and indirect methods do seem to indicate that second-order effects are at play here and that voters consider the federal level more important than the regional one with regard to coalition formation. To determine how many voters actually voted strategically on the basis of considerations concerning government viability, we split the group of insincere voters into those who attributed a higher government viability to their vote intention than to their preferred party and those who did not. When we extrapolate this proportion to the entire electorate, we see that between 7 and 9% of the population cast a strategic coalition vote. This number is consistent with previous studies that examined strategic voting in PR systems. Finally we estimated a binomial logit model to explore which individual-level characteristics increase the likelihood that a voter will be a strategic coalition voter. This analysis shows that for both election levels, the closeness of preference intensity between the two most preferred parties influences the probability of strategic coalition voting. The smaller the difference in the preference ratings of the two highest-rated parties, the more likely that voters will abandon their preferred party and cast a strategic coalition vote.

Our results thus confirm our expectation that strategic voting is present in a context as seemingly complex as the Belgian one and that the framework proposed in chapter 1 can be applied to this case. The underlying dynamics for strategic (coalition) voting in Belgium seem to be quite similar to those found in other party and electoral systems, even though the simultaneous elections might have provoked some second-order election effects. A sizable portion of the population does not want to waste its vote

on a party that is in one way or another considered not viable, and as voters' party preferences move closer to each other, they become more likely to allow their vote choice to depend on their perceptions regarding the potential election outcome rather than party preference.

NOTES

1. The very small German-speaking community elects its own community parliament. The members of this linguistic community vote as Walloon citizens for the Walloon regional parliament. For more information on the distinctions among Belgian communities and regions, see Deschouwer 2009.

2. Because of this particular feature, we do not consider the election of the Brussels regional parliament or the Brussels electoral district for the federal election. Voters are not preregistered as belonging to any particular language group, so they can choose which party system in which to cast their votes. This further complicates the study of strategic voting behavior in Brussels and, more important, renders it incomparable to the other regions. Since this option was also available for voters in the *faciliteitengemeenten/communes à facilités*, respondents from these municipalities were also removed from the federal election sample. For good general descriptions of the specificity of the Belgian party system, see De Winter, Swyngedouw, and Dumont 2006; Deschouwer 2009.

3. www.chairelectoral.com/medw.html

4. www.partirep.eu

5. For a comparison between the effect of district and government viability on vote choice, see Verthé et al. 2017.

6. There is a formal electoral threshold of 5% at the district level.

7. The MEDW survey did not ask this question for the extreme right Vlaams Belang because of the “cordon sanitaire”—the informal agreement between the other parties not to engage in coalition formation with Vlaams Belang at any level. For the regional data, all values of government viability for Vlaams Belang are automatically coded 0 for all respondents.

8. Respondents were asked to identify the president of the federal Chamber of Representatives (André Flahaut), which party was not a member of their respective regional government (Open VLD/MR), which party was not a member of the federal government (N-VA), how many member states are in the EU (28); and which institutions form the federal parliament (Chamber and Senate).

9. We have compared the distribution of the preference structure variables (preference intensity and the distance between the two most preferred parties) between supporters of the smaller, more extreme parties and those of the larger, center parties to examine whether systematic differences in preference structures between these two groups could be (at least in part) responsible for the differences in terms of sincere voting levels. However, our analyses show that these distributions are extremely similar, which means that other party attributes should underpin this dynamic.

10. The population we examine keeps getting smaller, not only because we intentionally drop parts of the original population because of imposed deterministic

restrictions but also because the required information to apply these restrictions keeps increasing and we suffer from attrition as a result of missing values. A comparison of table 7.3 and table 7.4 shows this phenomenon.

11. Because of the small proportion of strategic coalition voters we should opt for a rare-events logit model. We did perform a penalized maximum likelihood estimation method (Firth logit model), which reduces biases in samples with rare events as a dependent variable. This method does, however, not allow probability weights that correct for sampling biases. Because the effect directions, sizes and significance levels deviate minimally between this method and the normal logistical regression corrected by probability weights, we opted to report these results in order to stay consistent with the other logistical regression models in this chapter.

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Voting Strategically in Two-Vote Elections

Philipp Harfst, André Blais, and Damien Bol

Voters do not always cast a vote for their most preferred candidate or party. They sometimes vote for their second, third, or even fourth option to increase the probability of affecting the final electoral result. We thus assume that voters are instrumental in the sense that they care about the outcome of the election. Most of the literature on strategic voting is focused on single-member district (SMD) elections (plurality or majority rule) (e.g., Abramson et al. 2010, this vol.; Alvarez and Nagler 2000; Blais and Nadeau 1996; Blais et al. 2001, 2011, this vol.; Daoust, this vol.; Franklin, Niemi, and Whitten 1994). Under this electoral system, voters have strong incentives to desert their first preference if it has little chance of winning the election in their district—that is, if it is not viable. This in turn reduces the number of parties running in the election.

Recently, some studies have pointed out the existence of similar and alternative forms of strategic voting under proportional representation (PR) (e.g., Bargsted and Kedar 2009; Duch, May, and Armstrong 2010; Lago, this vol.; Lebon et al., this vol.; Meffert and Gschwend 2010; Verthé and Beyens, this vol.). However, relatively little is known about strategic voting under two-vote electoral systems such as the German mixed-member system (an exception is Plescia, this vol.). While chapter 1 develops an encompassing theoretical approach to potential strategies in mixed-member elections, we are not aware of any study giving a comprehensive and simultaneous empirical account of the different strategies voters could adopt. To fill this gap, we use unique data from surveys that were specifi-

cally designed to study these strategic votes and were conducted during the 2013 German federal election and the 2013 Bavarian and Lower Saxon regional elections.

Previous Work on Strategic Voting in Two-Vote Elections

We define as strategic voters' decisions to vote for a party (or the candidate of a party) that is not their most preferred party to affect the outcome of the election (Blais et al. 2001). Typically, this situation occurs when the party is not viable, meaning that it has little chance of winning a seat. A sincere vote (a vote for the preferred party) is not necessarily devoid of strategic considerations, since voters may vote for their preferred parties partly because they perceive that party as viable (Abramson et al. 2010; Aldrich, Blais, and Stephenson, this vol.). Nonsincere votes are not necessarily strategic. Voters can decide to support the second or third option for reasons that have nothing to do with their willingness to affect the electoral outcome (for example, by mistake; Lau et al. 2014). However, this chapter is confined to situations where strategic considerations lead voters to support a party that is not their preferred option.

Consequently, we adopt a definition of strategic voting that differs slightly from the one used in chapter 1. That chapter considers as strategic any vote that is based on a combination of preferences and expectations about the possible outcome of the election. From that perspective, a vote for a preferred party based at least partly on the perception that the party is viable is deemed strategic. In contrast, we focus on "pure" strategic voting—that is, where strategic considerations are decisive and lead voters to desert their preferred option.

Mixed-member electoral systems are an interesting testing ground for the analysis of strategic voting since they entail two electoral tiers with two different electoral rules. They thus create two sets of incentives for voters. This chapter analyzes German federal and regional elections (in Bavaria and Lower Saxony) for which this electoral system is used. Voters cast a vote for a candidate in a local constituency under an SMD plurality system. They cast another vote for one of the closed party-lists in a multimember constituency under a closed-list PR system (except in Bavaria's regional election, where the party list is open). In this PR tier, the total number of seats that a party gets depends on the number of list votes received, with the proviso that a party needs to get at least 5% of the party-list vote (or at least three constituency seats in the case of the federal election) to be

eligible for PR seats (for federal electoral rules, see Mader 2014; Saalfeld 2005; for Lower Saxony, see Meyer and Müller-Rommel 2013; for Bavaria, see Schultze 2014).

Most of the literature on strategic voting in the context of a mixed-member electoral system in Germany (and in other countries using the same system) has primarily focused on ticket-splitting (i.e., not voting for the same party in the two electoral tiers) based on either aggregate (Bawn 1999; Cox 1997; Roberts 1988) or survey data (Gschwend 2007; Karp et al. 2002; Pappi and Thurner 2002; Plescia 2016). These studies show that the closer the race in a district between the candidates engaged in the SMD system, the bigger the difference of votes parties receive in the two electoral tiers. These studies explain this pattern by strategic voting: voters in close SMD contests do not vote for the same party as in the PR tier to oppose their least favorite candidate among those that have some chance of winning (Bawn 1999; Moser and Scheiner 2005, 2009). Further, Gschwend, Johnston, and Pattie (2003) reveal that, in Germany, the two biggest parties—the Christian Democrats (Christlich Demokratische Union/Christlich-Soziale Union [CDU/CSU]) and the Social Democrats (Sozialdemokratische Partei Deutschlands [SPD])—are the main beneficiaries of ticket-splitting in the SMD tier because supporters of smaller parties of the same bloc (right and left, respectively) act strategically. In the same vein, Gschwend and Pappi (2004) demonstrate that the clarity of coalition alternatives or ideological blocs significantly increases the share of ticket-splitting in the country.

With survey data, Herrmann and Pappi (2008), Gschwend (2007), Karp et al. (2002), and Pappi and Thurner (2002) show that at least some ticket-splitters can be labeled strategic voters as they desert the candidate of their most preferred party in the SMD tier if this candidate has little chance of winning. Gschwend (2007) and Shikano, Herrmann, and Thurner (2009) also find that some voters engage in coalition insurance voting. In particular, supporters of the CDU/CSU sometimes vote for the junior coalition partner (Freie Demokratische Partei [FDP]) as they fear this small party might not receive enough votes to pass the 5% threshold. Finally, Karp (2006) finds evidence supporting the idea that ticket-splitting and strategic voting are more frequent among highly knowledgeable voters.

However, Jesse (1988) and Schoen (1999) show that a substantial amount of split tickets in Germany do not fulfill basic criteria of rationality and cannot be characterized as strategic. In fact, these authors find that between 13% and 21% of split tickets are “strategically wrong”—that is, voters chose a candidate of a small party in the SMD tier and voted for a

large party in the PR tier. This proportion may even be larger in New Zealand, where ticket-splitting is more frequent (Karp et al. 2002).

The literature thus usually studies strategic voting in two-vote elections through the lens of ticket-splitting. But a substantial proportion of split-ticket voting is not driven by strategic considerations. Many split-ticket voters actually have strong preferences for a candidate who is not from their preferred party in their local constituency. Then, they sometimes cast a sincere split-ticket vote as they vote for their preferred candidate in the SMD tier and for their preferred party in the PR tier (Plescia 2016, this vol.; Riera and Bol 2017). Furthermore, in theory, a straight ticket vote can be strategic. Imagine the case of supporters of a small party that has no chance of winning either in the SMD or in the PR tier. These voters might desert their most preferred party in both instances and cast two votes for the same viable party. If this were the case, focusing exclusively on ticket-splitting would underestimate strategic voting. In this chapter, we examine strategic voting independently from ticket-splitting. However, we also evaluate the extent to which the two are related.

The literature on strategic voting in two-vote elections typically focuses on one single type of strategic voting—either the desertion of a nonviable candidate in the SMD tier or the desertion of a senior coalition partner to save a junior coalition partner in the PR tier. Building on the theoretical framework sketched out in chapter 1, which relates strategic voting to voters' preferences and perceptions of election outcomes, we provide a comprehensive and simultaneous empirical account of the different strategies voters can adopt in two-vote elections. In addition, we examine the possibility that voters strategically defect from their favorite party in the PR tier if this party is not viable, thereby introducing a third variety of PR strategic voting that very much resembles strategic voting in SMD elections. We then evaluate how these three strategies relate to each other and whether they differ in terms of determinants.

Three Types of Strategic Voting in Two-Vote Elections

In two-vote elections, a variety of types of strategic voting can be theoretically identified. In this chapter, we focus on the three that we assume to be the most frequent. The first concerns the vote in the SMD tier and directly relates to the idea developed by Duverger (1951) and Cox (1997): under plurality rule, supporters of a small party have incentives to desert the candidate of this party to maximize the chances of influencing the electoral

outcome. (This type of strategic voting is very common in first-past-the-post systems; see Aldrich, Blais, and Stephenson, this vol.; Blais et al., this vol.) The rationale is that voters anticipate that some candidates have no chance of being elected and instead vote in favor of the candidate of their most preferred party among those perceived as viable.

In line with most of the literature on strategic voting in plurality systems (Abramson et al., this vol.; Blais et al., this vol.; Daoust, this vol.; Lago, this vol.), we account only for considerations located at the district level when we analyze the SMD vote. For example, we ignore potential considerations regarding which party will form the government. This choice is particularly appropriate for a study focused on Germany, as the vote in the SMD tier does not have any impact on the partisan composition of the parliament and the government. The PR tier fully compensates for potential distortions between votes and seats brought about by the SMD tier.

Under plurality rule, each constituency has at most two viable candidates (Cox 1997). The intuition is that voting for a candidate who comes third or lower in terms of (perceived) chances is a wasted vote. This candidate never stands a chance of being elected. Yet a single vote could make a difference between the top two contenders. All voters should thus vote for their most preferred candidate between these two to maximize the chances of affecting the electoral outcome. We call this strategy strategic local desertion.

The other two types of strategic voting in two-vote elections apply to the vote in the PR tier (see also the description of strategic voting in PR systems in Aldrich, Blais, and Stephenson, this vol.). The first is similar to local strategic desertion: voters may be reluctant to waste their votes on a party that is very unlikely to obtain enough votes to gain at least one seat in this electoral tier. The rationale is that a wasted vote has no impact on the electoral outcome. In other words, even in the PR tier, voters have incentives to desert their most preferred party if it is not viable. We call this strategic list desertion.

The potential number of viable parties in the PR tier is rather large, especially in Germany, where numerous seats are allocated through these districts. However, some small parties still do not receive enough votes to gain even one seat. In Germany, the minimum number of votes a party must receive to be included in the allocation of seats in the PR tier is easy to identify: a party must obtain at least 5% of the votes nationwide to enter parliament.¹ So strategic list desertion entails voters thinking that their most preferred party will receive less than this threshold. In many PR countries, a small district magnitude creates “natural thresholds” (Lijphart

1994). However, this is not the case in Germany, as seats are allocated based on national vote shares in a single nationwide district (598 seats).

The second type of strategic voting in the PR tier is more complex. It starts with several assumptions, partly confirmed by the analysis of the Israeli case by Blais et al. (2006): (1) voters anticipate that the government that is going to be formed after the election is likely to be a coalition government, (2) voters care about which parties will be part of this coalition, and (3) they know which parties are potential coalition partners of the most preferred party. If these assumptions are true, and if uncertainty exists about whether the partners of the most preferred party will obtain enough votes to gain at least one seat in parliament (in Germany, this concerns the 5% threshold), voters have incentives to cast a vote for these partners. The rationale is that the votes for these partners will be wasted if they do not obtain enough votes to gain at least one seat in parliament. By voting for a partner party, voters increase the likelihood that the coalition will win a majority of seats and form the government. We call this strategic coalition insurance voting. Although this possibility may seem very unlikely at first glance given the number of conditions required for it to occur, several studies show that coalition insurance voting is rather common in democracies with stable coalitions and a threshold (Gschwend 2007; Pappi and Thurner 2002; Shikano, Herrmann, and Thurner 2009). In Germany, this type of strategic voting is well known, even in the mass media, where it is usually referred to as *Leihstimme* (borrowed or leased vote).

This chapter shows that all three forms of strategic voting occur in mixed-member systems. This implies that different strategies can be used with regard to each of the two votes in varying combinations. In consequence, strategic voting can take different forms, of which split-ticket voting is only one. In addition, mixed-member systems, with their two votes, open up the option to vote strategically at a comparatively low cost at the local SMD level since there is a second PR vote. We should therefore observe a higher proportion of strategic local candidate votes than strategic list votes.

Furthermore, several individual determinants have been shown to be associated with the probability of casting a strategic vote in the literature. Most important, Blais (2002) and Gschwend (2007) find that as the strength of voters' preference for a party increases, the likelihood that they will vote strategically decreases. Consistent with the discussion in Aldrich, Blais, and Stephenson (this vol.), when the intensity of voters' preference for a party is high, they are more reluctant to desert this party for another one, even for strategic reasons.

Indeed, we show that the strength of party preference is negatively associated with the probability to engage in strategic local and list desertion (following our definition). However, we also see that this effect of the intensity of preference is smaller regarding coalition insurance voting. When voters desert the senior coalition partner for the junior coalition partner to save it from falling below the representation threshold, they do not have to accept that their preferred party (i.e., the senior coalition partner) will lose. To the contrary, if the overall coalition wins, the voter's most preferred party will dominate the government.

Strategic Voting in Two-Vote Elections: Empirical Perspectives

Data and Operationalization

To study strategic voting, we use four original pre- and postelection panel surveys conducted in 2013 in two German regions via the Making Electoral Democracy Work project (Blais et al. 2017). The elections covered are the regional election in Lower Saxony (January), the regional election in Bavaria (September), and the German federal election in both regions (September, one week after the Bavarian regional election). The surveys are online quota-based surveys that guarantee a balanced and diverse sample regarding age, gender, education, and geographical area. As far as we can tell, these are the first surveys conducted in Germany that include all the questions needed to identify strategic voters (party preferences, vote choice, and perceptions of the likely outcome of the election at both the district and the national or regional level).

In Lower Saxony, we use different samples for the regional and federal elections. In each case, we contacted about 1,000 persons. In Bavaria, we use a single sample of around 4,000 persons for the two elections. In both regions, the pre-election survey lasted around 20 minutes and was conducted within the two weeks preceding the elections. The postelection surveys lasted around 10 minutes and were conducted during the week following the election. We use the postelection questionnaire to measure vote choice and the pre-election questionnaire to measure party preferences and the likely (perceived) outcome (at both the local and national or regional level).

Strategic voting can be measured directly or indirectly (Blais, Young, and Turcotte 2005). We adopt a direct approach—that is, we lay out the

conditions that must be met for a vote to be construed as strategic. We operationalize these conditions with the questions included in the Making Electoral Democracy Work surveys.

The first step is to establish the most preferred party of each of the respondents.² Party preferences are measured in the pre-election survey through a simple and direct question asking respondents to rate each of the parties on a 0–10 scale, where 0 means that the person does not like the party at all and 10 means that the person likes it a lot. The preferred party is simply the party that has the highest rating.

The main problem with this approach is the presence of ties. In our case, about 24% of respondents give the highest rating to two or more parties.³ We adopt the approach followed by Blais and Gschwend (2010) and use the party identification question to break ties. This decreases the share of respondents with tied party list preferences to a bit more than 16%. Remaining ties in preferences for individual candidates were broken whenever respondents indicated that they liked a candidate in the SMD tier.⁴ About 29% of respondents reported having a preference for a local constituency candidate, and among those, the share of voters with a congruent list and candidate preference was particularly high among supporters of the two large parties (CDU/CSU and SPD)—around 90%. In the case of small-party supporters (Greens, Left, FDP, Pirates, AfD, Free Voters), the share of congruent supporters ranges from 49% (Left) to 67% (Free Voters). This leaves us with 8% of ties in preferences for local candidates. Whenever one of these tied respondents votes for one of the tied most liked parties or candidates, we assume that the party or candidate is her sincere and therefore nonstrategic choice.

Appendixes A and B to this chapter reveal the distribution of party preferences in our four surveys crossed with the two reported votes.⁵ Unsurprisingly, the great majority of people vote for their preferred party in both the SMD and PR tiers. Quite a substantial minority do, however, vote for a different party, especially in the SMD tier and especially among supporters of small parties.

The fact that quite a few people do not vote for their preferred party suggests the presence of strategic voting. A total of about 17% of respondents cast nonsincere votes in the PR tier, while about 15% did so in the SMD tier. However, a nonsincere vote is a necessary but not sufficient condition to classify a vote as strategic. We also need to consider voters' perceptions of the likely outcome of the election before we can assess whether this behavior is strategic.

Strategic Local Desertion

A strategic local desertion is a vote in the SMD tier cast for the candidate of the party voters prefer among those that are perceived as viable by supporters of parties with little chance of winning in their constituency. Because each SMD has at most two viable candidates, two conditions must thus be fulfilled for a local desertion to be construed as strategic: (1) the preferred candidate must be perceived as not among the top two contenders in the constituency and (2) respondents must vote for the candidate of the party they prefer among those top two contenders. We establish the respondents’ perceived viable top contenders based on responses to questions about the chances (on a 0–10 scale) of the candidate of each party winning in the constituency. The two candidates with the highest ratings are considered viable; others are considered nonviable.⁶

Table 8.1 shows the proportion of voters who find themselves in a strategic local desertion situation—that is, they believe that the candidate of their preferred party is not among the top two candidates. On average, 12% of all respondents satisfy this condition, although the proportion varies slightly from one election to the other. Table A8.3 shows that at least 40% of the small parties’ supporters perceive their party as nonviable in the SMD tier, while no more than 7% of large parties’ supporters feel the same way.

Table 8.1 shows that on average, 4% of the respondents can be considered strategic local deserters because they are in a strategic local desertion situation and cast a vote for the candidate of their most preferred party between the top two contenders in their constituency. This share varies across elections, reaching its lowest score in the Bavarian regional election (3%) and its highest score in the Lower Saxon national election (6%).

TABLE 8.1. Strategic Local Desertion

	Bavaria		Lower Saxony		Mean
	Regional	National	Regional	National	
Voters in a Strategic Local Desertion Situation	9.9%	12.4%	10.1%	15.4%	12.0%
Strategic Local Deserters	2.7%	4.3%	3.5%	6.1%	4.2%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	27.0%	34.9%	34.7%	39.8%	34.1%
N	3,462	3,122	595	588	

Aldrich, John H, André Blais, and Laura B Stephenson. *The Many Faces of Strategic Voting: Tactical Behavior In Electoral Systems Around the World*. E-book, Ann Arbor, MI: University of Michigan Press, 2018, <https://doi.org/10.3998/mpub.9946117>. Downloaded on behalf of 3.139.107.241

At first glance, these rates seem relatively low. However, they are calculated on the basis of all respondents, many of whom have no reason to cast strategic local desertion votes since they perceive the candidate of their preferred party as viable. The percentages are considerably higher if we consider only those voters who faced the decision to vote sincerely or strategically in the SMD tier (that is, voters for whom the candidate of their preferred party is not one of the top two contenders). As the bottom row of table 8.1 shows, on average 34% of the voters facing a strategic dilemma cast a strategic local desertion vote.

Table A8.4 shows the rate of strategic local desertion votes by party. While virtually none of the supporters of the two large parties cast strategic local desertion votes, between 8% and 51% of the small-party supporters do so. Furthermore, (the few) large-party supporters who (in most cases erroneously) believe that the candidate of their most preferred party is not viable seldom desert their party. By contrast, those voters in a strategic situation who prefer a small party cast a strategic vote in large proportions.

Strategic List Desertion and Coalition Insurance Voting

A strategic vote in the PR tier can take the form of either a strategic desertion from a small party that is considered to have little chance of crossing the 5% threshold or a coalition insurance vote if large-party supporters are uncertain about whether a small prospective coalition partner will gain 5% of the votes.

In each of the two regional elections, two parties were at risk of falling below the 5% threshold and are therefore potential victims of strategic list desertion. In Lower Saxony, it was uncertain whether FDP and the Left—both present in the outgoing parliament—would pass the hurdle, while the Free Voters had virtually no chance. In Bavaria, only the FDP was in a critical position with regard to the 5% threshold. The Left never stood a chance in the region, and the Free Voters were almost certain to pass the 5% threshold.

The federal election also applies a 5% threshold, but at the national level. Therefore, small parties had very different prospects. Although the Left was not viable at the regional level in Bavaria and possibly in Lower Saxony, its supporters could be nearly certain that the party would enter the federal parliament as a consequence of its strong standing in eastern Germany. By contrast, the Free Voters, however strong in Bavaria, stood no chance of entering the federal parliament. Finally, the FDP occupied an uncertain position.

The first necessary condition for a strategic list desertion is that respondents believe that their preferred party is unlikely to cross the 5% hurdle in the PR tier. We use respondents’ evaluations of their preferred party’s chances to gain representation in parliament. The relevant question uses a scale ranging from 0 (no chance at all) to 10 (certain to win). This question was not asked for parties that were certain to pass the threshold (CDU, CSU, SPD, and the Greens), since we assume that the supporters of these four parties cannot be strategic list deserters. Altogether, an average of 83% of our respondents prefer one of these four parties, and we are thus interested in the other 17%. We interpret those who say that the chances that their preferred party obtaining at least 5% of the votes are between 0 and 5 on the 11-point scale as “pessimists” and thus as willing to consider strategic list desertion. To classify a vote as strategic list desertion, pessimist respondents have to cast their vote in the PR tier for the party they prefer most among the large parties that are certain to gain parliamentary representation (CDU, CSU, SPD, the Greens) or any other party that they consider likely to gain a seat in parliament.

Among all respondents, on average 5% believe that their party has little chance of reaching the 5% threshold (see table 8.2). When we only look at the supporters of the small parties that were not certain to win representation, the share of pessimists goes up to 44%, on average. It is lowest in the Bavarian regional election (22%) and tops 50% in both the Bavarian national and the Lower Saxon regional elections.

The strategic list desertion rate (an average of 2%) is much lower than strategic local desertion. The share of voters who desert their preferred party in the PR tier because the party is not viable rises to 33% when we

TABLE 8.2. Strategic List Desertion

	Bavaria		Lower Saxony		Mean
	Regional	National	Regional	National	
Voters in a Strategic List Desertion Situation	2.7%	7.0%	4.0%	6.4%	5.0%
Voters in a Strategic List Desertion Situation (among Small-Party Supporters)	22.2%	52.0%	57.0%	44.1%	43.8%
Strategic List Deserters	0.7%	1.7%	1.4%	3.0%	1.7%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	25.9%	24.6%	34.0%	47.0%	32.9%
N	3,462	3,122	595	588	

consider only voters who are pessimistic about the chances of their party gaining representation in parliament (that is, those who are in a strategic list desertion situation). It is lowest in Bavaria (about 25%) and reaches 47% in Lower Saxony's federal election.

When we look at strategic list deserters by party (see appendix, table A8.5), we observe that on average 14% of small-party supporters strategically abandon their most preferred party in the PR tier. This share is considerably higher among pessimistic small-party supporters. Close to one-third of those voters who believe that their most preferred small party has little chance of crossing the 5% hurdle strategically desert this party.

We now turn to coalition insurance voting. A coalition insurance vote is cast when a supporter of a large party deserts it in the PR tier to support a junior coalition partner that is perceived at risk of not crossing the 5% threshold. This time, we thus concentrate on voters who prefer a large party (CDU/CSU, SPD) and check whether they believe that the junior coalition partner is at risk of falling below the 5% threshold. To do so, we use the question measuring the chances of a party entering parliament. We operationalize uncertainty as an evaluation of the coalition partner's chances ranging from 2 to 8 points on the 11-point scale. Since there is no rating for the chances of the Greens entering parliament, we look only at CDU/CSU supporters and their propensity to support the FDP (in all elections). Since the coalition signals of the Free Voters to the SPD before the Bavarian regional election were at best unclear, we assume that SPD supporters had no incentive for a coalition insurance vote in this instance.

At first glance, coalition insurance voting seems rare. On average, it concerns only about 3% of all our respondents (see table 8.3). However, remarkable differences occur between elections that provided voters with quite contrasting incentives with regard to strategic coalition voting. While the polls saw the FDP at risk during the whole year under consideration, the signal sent by parties concerning coalition insurance voting differed drastically in these three elections. First, during the Lower Saxon regional election campaign, the governing CDU emphasized its close connection to its junior coalition partner. Furthermore, leaders did not actively oppose the possibility that their supporters would cast a coalition insurance vote, and some individual candidates even encouraged supporters to do so. Second, the Bavarian Christian Democrats campaigned for an absolute majority (which they ultimately received) and did not even signal that they might form a coalition with the FDP. During the federal campaign, although the FDP leaders called on CDU supporters to vote for the FDP in the PR tier, all the candidates and leaders of the senior coalition

partner clearly opposed this call. The appeal for coalition insurance voting therefore was much stronger in the Lower Saxon regional election than in other elections. The FDP’s borrowed votes campaign proved successful for the party, which attracted a considerable number of strategic coalition insurance votes (7%), a proportion much higher than in the other surveys (between 1% and 3%). And the difference is even more impressive when we look only at CDU supporters in Lower Saxony: the rate of coalition insurance voters drops from 13% in the regional election to only 5% in the national survey. These results confirm Gschwend and Pappi’s (2004) as well as Merolla’s (2009) finding that the decision to vote strategically is strongly affected by the messages conveyed by the parties and their elites during the campaign.

Combining Different Types of Strategic Votes

On average, 9% of all voters engage in strategic voting in at least one of the three ways (see table 8.4). The least frequent type is strategic list desertion (1% on average), while the most frequent is strategic local desertion (4% on average) when we consider respondents who cast only one strategic vote. On average, 1% of all voters cast two strategic votes, a possibility that is not often mentioned in the literature. About 43% of those who desert their most preferred list because they perceive it as nonviable in the PR tier also desert their favorite candidate in the SMD tier. Conversely, only 16% of those who cast strategic local desertion votes also cast a strategic list desertion votes.⁷

TABLE 8.3. Coalition Insurance Voting

	Bavaria		Lower Saxony		Mean
	Regional	National	Regional	National	
Voters in a Coalition Insurance Voting Situation	49.4%	50.1%	37.8%	36.9%	43.6%
Coalition Insurance Voters	1.5%	3.1%	6.5%	2.0%	3.3%
Coalition Insurance Voters (among CDU/CSU supporters)	2.5%	5.1%	13.1%	4.5%	6.3%
Coalition Insurance Voters (among Voters in a Coalition Insurance Voting Situation)	3.1%	6.1%	17.2%	5.5%	8.0%
N	3,462	3,122	595	588	

Strategic Voting and Ticket-Splitting

Another question that we can address with our data is the relationship between strategic voting and ticket-splitting (i.e., voting for two different parties in the SMD and PR tiers). On average, more than one-fifth (23%) of all our respondents are split-ticket voters. But how much of this split-ticket voting can be traced back to strategic considerations? It cannot be a majority, since only 7% of votes are strategic. In fact, in our sample, only 26% of split-ticket votes can be considered strategic (see table 8.5). Not surprisingly, the share of strategic voting is much lower among straight-ticket voters (3%). Another way to look at these data is to say that only two-thirds of strategic voters are split-ticket voters. The bottom line, however, is that many split-ticket votes are not strategic, while a substantial proportion of straight tickets are. It is thus possible to cast a straight ticket for strategic reasons. This is the case, for example, if respondents hold a preference for a small party and its candidate that they perceive to be chanceless in both the SMD and PR tiers. These numbers underline the need to clearly distinguish ticket-splitting and strategic voting.

Determinants of Strategic Voting in Two-Vote Elections

We now turn to the analysis of the individual determinants of strategic voting. We run logit models predicting the probability of casting at least one of the three types of strategic votes and then each of them separately on the entire four-election sample that we weight to correct for the oversampling of Bavarian voters. In each case, we include only respondents who were potential strategic voters. For example, while predicting strategic local desertion, we include only respondents whose preferred party is not viable

TABLE 8.4. Combinations of Strategic Voting

	Bavaria		Lower Saxony		Mean
	Regional	National	Regional	National	
All Strategic Voters	4.7%	8.3%	10.9%	10.1%	8.5%
Strategic Local Deserters Only	2.4%	3.5%	3.0%	5.0%	3.5%
Strategic List Deserters Only	0.4%	0.9%	0.8%	1.9%	1.0%
Coalition Insurance Voters Only	1.5%	3.1%	6.5%	2.0%	3.3%
Strategic Local and List Deserters	0.3%	0.8%	0.5%	1.1%	0.7%
<i>N</i>	3,462	3,122	595	588	

in their district. If their preferred party is viable, it is impossible for them to cast a strategic vote (according to our definition).

Our key independent variable is the strength of the respondent's preference for a party. Our expectation is that the greater this preference, the less likely the respondent is to cast a strategic vote. Respondents who really like a party might feel reluctant to vote for another party, even for strategic reasons. This variable is constructed by taking the difference between the rating voters give their most preferred party and the rating given to the second-most-preferred party, rescaled from 0 to 1. We use this relative indicator instead of the absolute rating of the most preferred party to account for the possibility that some voters give very high or very low ratings to all parties.

We also include the respondent's knowledge of politics as a covariate.

TABLE 8.5. Split-Ticket and Strategic Voting

	Straight-Ticket Voting	Split-Ticket Voting	Total
Bavarian Regional Election			
No Strategic Voting	77.4%	18.0%	95.4%
Strategic Voting	2.3%	2.3%	4.7%
Total	79.7%	20.3%	100.0%
N	2,665	797	3,462
Bavarian National Election			
No Strategic Voting	77.4%	14.4%	91.7%
Strategic Voting	2.8%	5.5%	8.3%
Total	80.1%	19.9%	100.0%
N	2,415	707	3,122
Lower Saxon Regional Election			
No Strategic Voting	71.2%	18.0%	89.1%
Strategic Voting	1.8%	9.1%	10.9%
Total	72.9%	27.1%	100.0%
N	405	190	595
Lower Saxon National Election			
No Strategic Voting	73.5%	16.4%	89.9%
Strategic Voting	3.0%	7.1%	10.1%
Total	76.5%	23.5%	100.0%
N	430	158	588
Mean			
No Strategic Voting	74.9%	16.7%	91.5%
Strategic Voting	2.5%	6.0%	8.5%
Total	77.3%	22.7%	100.0%
N	5,915	1,852	7,767

Our intuition is that political knowledge increases the probability that the respondent will cast a strategic vote. Some level of political knowledge is required to evaluate and reflect on the parties' chances of winning (Blais and Turgeon 2004). Black (1978) and Alvarez, Boehmke, and Nagler (2006) find that political knowledge is positively associated with the probability of casting a strategic vote. This variable is measured with the use of eight questions for which respondents had to match leaders and slogans to parties. Five of these questions were asked in the pre-election questionnaire, while three were asked in the postelection survey. We add up the number of correct answers to create an indicator of political knowledge that we rescale from 0 to 1. As an alternative measure of political knowledge, we also include a dummy that indicates whether or not the respondent holds a university degree. In addition, we include a series of control variables. First, we control for whether respondents voted strategically with their other votes (PR vote in the case of SMD vote, and vice versa). Second, we control for age and gender and include election dummies.

Table 8.6 shows the results of these analyses. Model 1 estimates the individual determinants of all possible strategies for all our respondents concerned with at least one possible form of strategic voting. As expected, the greater the strength of party preference, the lower the probability that the voter will cast a strategic vote. Also as expected, the higher the level of formal education, the higher the probability of casting a strategic vote. Both effects are statistically significant at a level of $p < 0.01$.

Models 2–4 look at each of the three possible strategies individually. These models reveal that the impact of party preference is similar for all types of strategic voting. Turning to the impact of political knowledge, we find that it does not always have the expected effect on the probability of casting a strategic vote. While the effect is positive and statistically significant at a level of $p < 0.1$ for strategic local desertion and the strategic list desertion, it is null for the coalition insurance vote. The empirical evidence therefore only mildly confirms our expectations, a finding that is in line with other studies that find no relationship between political knowledge and the propensity of casting a strategic vote (Blais and Gschwend 2010; Duch and Palmer 2002). A university degree, which is also an indicator of a respondent's cognitive abilities, has a positive and statistically significant effect (at a level of $p < 0.01$) on the probability of casting a strategic local desertion vote or a coalition insurance vote.

Conclusion

This chapter focuses on strategic voting in two-vote elections. Relying on survey data from three German elections held in 2013, we find that on average about 9% of voters cast at least one strategic vote. Only a minority of voters confront a strategic situation, since most voters prefer parties that have good chances of winning in both tiers and are not in coalition with junior partners that might fall below the 5% threshold. Although we are looking only at pure strategic voting, many more voters are at least partly strategic, even though they end up supporting their preferred option.

The most prevalent type of strategic vote is strategic local desertion

TABLE 8.6. Individual Determinants of Strategic Voting

	All Strategies	Strategic Local Desertion	Strategic List Desertion	Coalition Insurance Vote
	b/se	b/se	b/se	b/se
Strength Party Preference	-2.203*** (0.37)	-1.088* (0.60)	-2.042* (1.12)	-1.702*** (0.56)
Political Knowledge	0.340 (0.22)	0.680* (0.35)	1.112** (0.56)	-0.211 (0.35)
University Degree (0/1)	0.502*** (0.10)	0.646*** (0.17)	-0.509 (0.35)	0.569*** (0.16)
Age	0.009** (0.00)	0.003 (0.01)	0.012 (0.01)	0.019*** (0.01)
Gender (0 = male / 1 = female)	-0.126 (0.10)	-0.249 (0.16)	0.383 (0.28)	-0.085 (0.16)
Bavarian Regional Election (0/1)	-0.948*** (0.17)	-0.420 (0.27)	-0.823* (0.46)	-0.595* (0.34)
Bavarian National Election (0/1)	-0.528*** (0.16)	-0.208 (0.26)	-1.139*** (0.41)	0.073 (0.32)
Lower Saxon Regional Election (0/1)	0.427* (0.22)	0.230 (0.39)	-0.063 (0.64)	1.245*** (0.38)
Strategic List Desertion (0/1)		1.823*** (0.31)		
Coalition Insurance Vote (0/1)		./. ^a (.)		
Strategic Local Desertion (0/1)			1.910*** (0.31)	./. ^a (.)
Constant	-1.625*** (0.32)	-0.915* (0.51)	-1.770** (0.80)	-3.284*** (0.55)
N	4,582	1,041	479	3,357
p	0.000	0.000	0.000	0.000
Pseudo R ²	0.0488	0.0771	0.157	0.0628

^a omitted due to collinearity.

Note: * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

(4%, compared to 2–3% for strategic list desertion and coalition insurance voting). We also find that strategic voting is only weakly related to ticket-splitting. Only two-thirds of all strategic voters are split-ticket voters, while the remainder are straight-ticket voters—that is, they desert their preferred party in both the SMD and PR tiers.

Although small, these proportions should be interpreted in the light of our measurement. The conditions we use to establish each of the three sorts of strategic voting are rather restrictive. Using a very similar measurement, Blais et al. (2009) find around 3% and 5% of strategic voting in national elections in Canada and the United Kingdom, although these two countries use an SMD plurality system that is supposed to give strong incentives for this behavior.

In a second step, we analyze the determinants of strategic voting in two-vote elections. We find that partisan strength has a negative effect on the probability of casting a strategic vote, regardless of its type. Partisans are reluctant to vote for another party, even if doing so is in their best strategic interest. Finally, our analysis also demonstrates that political knowledge has a positive effect on the probability of casting a strategic vote with the exception of the coalition insurance vote. In Germany at least, even voters with low levels of political knowledge seem to understand the logic behind this particular type of strategic vote.

APPENDIX A

TABLE A8.1. Party Preference and Vote in the SMD Tier, by Party

	CDU/ CSU	SPD	Greens	Left	FDP	Pirates	AfD	Free Voters
Bavarian Regional Election								
CDU/CSU	91.7%	2.8%	0.6%	0.1%	1.2%	0.2%	./.	3.4%
SPD	5.0%	87.5%	2.8%	1.2%	0.2%	0.0%	./.	3.4%
Greens	4.0%	29.9%	60.6%	0.5%	0.0%	1.1%	./.	3.8%
Left	5.2%	26.4%	3.4%	60.2%	0.0%	0.9%	./.	4.0%
FDP	32.9%	6.3%	1.6%	0.0%	49.6%	3.9%	./.	5.6%
Pirates	16.9%	12.8%	3.8%	3.3%	2.0%	56.4%	./.	4.8%
Free Voters	11.5%	14.7%	2.0%	1.8%	1.2%	1.3%	./.	67.5%
<i>Total</i>	58.7%	20.9%	7.0%	2.2%	1.9%	1.8%	./.	7.6%
<i>N</i>	1,480	638	219	84	76	64	./.	238
Bavarian National Election								
CDU/CSU	92.0%	3.1%	0.7%	0.4%	1.6%	0.4%	0.5%	1.8%
SPD	4.6%	89.0%	3.8%	1.3%	0.0%	0.0%	0.8%	0.3%
Greens	3.9%	37.0%	56.8%	0.3%	0.3%	0.8%	0.5%	0.6%
Left	2.2%	24.4%	2.8%	64.7%	0.0%	0.0%	4.0%	3.2%
FDP	36.1%	6.1%	0.0%	0.0%	53.0%	4.7%	0.0%	2.5%
Pirates	11.1%	10.2%	3.2%	3.4%	1.7%	61.5%	4.3%	6.0%
AfD	26.6%	7.6%	0.8%	2.2%	1.7%	1.0%	54.8%	5.7%
Free Voters	23.9%	23.4%	4.1%	1.2%	3.5%	0.5%	6.0%	33.9%
<i>Total</i>	55.3%	24.4%	7.0%	3.1%	2.3%	1.7%	2.9%	3.3%
<i>N</i>	1,587	791	223	117	83	69	132	120
Lower Saxon Regional Election								
CDU/CSU	90.2%	6.6%	1.0%	0.1%	1.5%	0.6%	./.	./.
SPD	4.9%	87.4%	5.0%	1.0%	0.7%	1.1%	./.	./.
Greens	8.3%	38.7%	47.8%	2.8%	0.9%	1.4%	./.	./.
Left	0.0%	33.7%	3.5%	59.5%	0.0%	3.4%	./.	./.
FDP	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	./.	./.
Pirates	17.6%	28.3%	5.3%	0.0%	0.0%	48.8%	./.	./.
<i>Total</i>	42.0%	40.5%	8.9%	3.0%	2.7%	2.9%	./.	./.
<i>N</i>	172	261	80	29	13	40	./.	./.
Lower Saxon National Election								
CDU/CSU	93.1%	4.1%	0.7%	0.0%	0.7%	0.0%	1.5%	0.0%
SPD	6.5%	83.5%	5.0%	2.1%	0.8%	0.4%	1.4%	0.3%
Greens	2.8%	52.7%	40.8%	1.8%	0.0%	0.0%	1.9%	0.0%
Left	4.2%	35.8%	8.9%	48.5%	0.0%	0.0%	2.5%	0.0%
FDP	77.7%	0.0%	9.5%	0.0%	12.8%	0.0%	0.0%	0.0%
Pirates	29.0%	7.5%	0.0%	8.3%	0.0%	48.3%	6.9%	0.0%
AfD	22.5%	19.5%	0.0%	3.0%	3.0%	7.4%	44.7%	0.0%
Free Voters	31.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	68.9%
<i>Total</i>	44.2%	38.1%	6.5%	4.5%	1.4%	1.7%	3.1%	0.4%
<i>N</i>	193	245	42	47	8	15	34	4

Note: The percentages add up to 100% horizontally. In the first column, the first line indicates that 91.7% of voters who prefer the CSU in the Bavarian regional election vote for that party.

TABLE A8.2. Party Preference and Vote in the PR Tier, by Party

	CDU/ CSU	SPD	Greens	Left	FDP	Pirates	AfD	Free Voters
Bavarian Regional Election								
CDU/CSU	86.8%	3.8%	1.2%	0.2%	2.4%	0.2%	./.	5.4%
SPD	3.4%	85.5%	4.9%	1.2%	0.5%	1.2%	./.	3.2%
Greens	5.6%	22.4%	63.7%	0.8%	0.9%	1.4%	./.	5.4%
Left	7.3%	24.3%	2.2%	59.3%	1.5%	0.9%	./.	4.3%
FDP	18.3%	6.4%	1.5%	0.0%	69.4%	1.3%	./.	3.0%
Pirates	14.0%	11.1%	2.7%	2.1%	2.7%	54.5%	./.	12.9%
Free Voters	12.0%	15.2%	2.0%	1.6%	2.7%	2.5%	./.	63.9%
<i>Total</i>	51.2%	22.1%	9.2%	2.3%	3.5%	2.1%	./.	9.6%
<i>N</i>	1,498	818	355	111	203	96	./.	381
Bavarian National Election								
CDU/CSU	88.4%	2.3%	1.0%	0.7%	4.7%	0.4%	1.5%	1.1%
SPD	3.9%	87.6%	4.6%	1.4%	0.5%	0.5%	1.4%	0.2%
Greens	4.6%	13.0%	78.2%	1.6%	1.0%	0.0%	1.3%	0.3%
Left	3.9%	14.4%	2.3%	75.8%	0.0%	0.0%	3.6%	0.0%
FDP	14.5%	3.5%	0.0%	0.0%	80.5%	0.0%	0.0%	1.5%
Pirates	4.8%	4.1%	0.0%	11.8%	1.7%	69.4%	6.5%	1.7%
AfD	6.3%	4.0%	0.0%	2.2%	0.0%	2.1%	83.2%	2.3%
Free Voters	18.5%	19.9%	3.4%	2.1%	4.1%	0.6%	9.0%	42.3%
<i>Total</i>	51.2%	20.9%	8.9%	4.0%	5.3%	2.0%	4.5%	3.1%
<i>N</i>	1,391	671	277	155	202	83	225	118
Lower Saxon Regional Election								
CDU/CSU	76.6%	4.4%	2.2%	0.0%	16.4%	0.4%	./.	./.
SPD	4.9%	82.4%	7.8%	1.0%	3.6%	0.4%	./.	./.
Greens	7.8%	15.0%	71.5%	1.8%	1.9%	1.9%	./.	./.
Left	0.0%	18.6%	17.5%	63.8%	0.0%	0.0%	./.	./.
FDP	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	./.	./.
Pirates	9.7%	37.1%	3.5%	3.3%	0.0%	46.4%	./.	./.
<i>Total</i>	36.9%	33.4%	14.0%	3.2%	10.2%	2.2%	./.	./.
<i>N</i>	135	191	142	34	50	43	./.	./.
Lower Saxon National Election								
CDU/CSU	91.5%	2.3%	0.0%	0.3%	5.4%	0.0%	0.2%	0.3%
SPD	5.5%	85.5%	3.7%	1.3%	1.7%	0.4%	1.9%	0.0%
Greens	2.8%	16.3%	74.0%	4.1%	0.0%	0.0%	1.7%	1.1%
Left	8.4%	16.2%	8.7%	61.7%	0.0%	0.0%	5.0%	0.0%
FDP	13.9%	0.0%	9.5%	0.0%	76.6%	0.0%	0.0%	0.0%
Pirates	11.7%	29.9%	8.0%	12.5%	0.0%	31.1%	6.9%	0.0%
AfD	20.1%	12.9%	0.0%	0.0%	0.0%	4.5%	62.5%	0.0%
Free Voters	0.0%	62.2%	0.0%	0.0%	0.0%	0.0%	0.0%	37.8%
<i>Total</i>	91.5%	2.3%	0.0%	0.3%	5.4%	0.0%	0.2%	0.3%
<i>N</i>	168	216	53	58	20	15	53	5

Note: The percentages add up horizontally. In the first column, the first line indicates that 86.8% of voters who prefer the CSU in the Bavarian regional election vote for that party.

TABLE A8.3. Voters in a Strategic Local Desertion Situation, by Party

	CDU/ CSU	SPD	Greens	Left	FDP	Pirates	AfD	Free Voters	<i>Total</i>
Bavarian Regional Election									
	0.6%	6.9%	40.9%	58.5%	55.6%	48.7%	./.	25.1%	9.9%
<i>N</i>	9	35	124	60	45	41	./.	51	365
Bavarian National Election									
	0.3%	5.1%	47.7%	67.3%	56.3%	58.1%	45.3%	45.8%	12.4%
<i>N</i>	4	26	120	70	36	36	48	61	401
Lower Saxon Regional Election									
	3.8%	3.2%	34.4%	70.8%	100.0%	36.2%	./.	./.	10.1%
<i>N</i>	6	6	32	20	4	12	./.	./.	80
Lower Saxon National Election									
	1.9%	2.9%	51.1%	62.7%	51.1%	72.3%	56.7%	100.0%	15.4%
<i>N</i>	3	5	29	39	4	12	15	4	111
Mean									
	1.7%	4.5%	43.5%	64.8%	65.8%	53.8%	51.0%	57.0%	12.0%

TABLE A8.4. Strategic Local Desertion by Party

	CDU/ CSU	SPD	Greens	Left	FDP	Pirates	AfD	Free Voters	<i>Total</i>
Bavarian Regional Election									
Strategic Local Deserters	0.1%	0.3%	12.6%	12.1%	23.8%	10.6%	./.	7.6%	2.9%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	11.4%	4.8%	30.9%	20.6%	42.8%	21.8%	./.	30.3%	26.2%
<i>N</i>	1,536	493	303	102	84	82	./.	199	2,799
Bavarian National Election									
Strategic Local Deserters	0.1%	0.5%	21.8%	18.5%	29.1%	9.3%	14.1%	19.2%	4.7%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	25.0%	10.5%	45.7%	27.5%	51.6%	16.0%	31.2%	41.9%	36.2%
<i>N</i>	1,440	493	250	105	65	62	111	134	2,660
Lower Saxon Regional Election									
Strategic Local Deserters	0.0%	1.6%	13.7%	26.7%	0.0%	20.3%	./.	./.	4.0%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	0.0%	50.0%	39.7%	37.7%	0.0%	56.2%	./.	./.	33.1
<i>N</i>	150	169	95	27	4	35	./.	./.	595
Lower Saxon National Election									
Strategic Local Deserters	0.0%	0.0%	25.0%	25.9%	51.1%	19.7%	19.0%	0.0%	6.7%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	0.0%	0.0%	49.0%	41.3%	100.0%	27.2%	33.5%	0.0%	39.5%
<i>N</i>	141	173	55	56	8	17	26	4	480
Mean									
Strategic Local Deserters	0.1%	0.6%	18.3%	20.8%	26.0%	15.0%	16.6%	8.9	4.5%
Strategic Local Deserters (among Voters in a Strategic Local Desertion Situation)	9.1%	16.3%	41.3%	31.8%	48.6%	30.3%	32.4%	24.1%	33.8%

TABLE A8.5. Strategic List Desertion, by Party

	Left	FDP	Pirates	AfD	Free Voters	Total
Bavarian Regional Election						
Strategic List Deserters (among Small-Party Supporters)	14.8%	6.9%	9.3%	./.	0.0%	5.8%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	27.9%	39.8%	17.9%	./.	0.0%	25.3%
N	102	84	82	./.	199	467
Bavarian national election						
Strategic List Deserters (among Small-Party Supporters)	3.6%	12.1%	8.8%	7.3%	25.0%	12.8%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	13.5%	24.7%	11.3%	16.2%	39.6%	25.0%
N	105	65	62	111	134	477
Lower Saxony regional election						
Strategic List Deserters (among Small-Party Supporters)	13.2%	0.0%	22.1%	./.	./.	15.4%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	24.7%	0.0%	37.9%	./.	./.	28.0%
N	27	4	35	./.	./.	66
Lower Saxony national election						
Strategic List Deserters (among Small-Party Supporters)	11.2%	9.5%	42.1%	22.9%	62.2%	20.4%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	43.9%	100%	42.1%	50.7%	76.7%	48.9%
N	56	8	17	26	4	111
Mean						
Strategic List Deserters (among Small-Party Supporters)	10.7%	7.1%	20.6%	15.0%	20.3%	14.2%
Strategic List Deserters (among Voters in a Strategic List Desertion Situation)	27.5%	41.1%	27.3%	30.2%	27.9%	32.0%

APPENDIX B: WORDING OF SURVEY QUESTIONS

Party Rating

Q17: Please rate each of the following political parties on a scale from 0 [really dislike party] to 10 [really like the party]: [Party]

Party Leader Rating

Q19: Please rate each of the following candidates on a scale from 0 [really dislike party leader] to 10 [really like party leader]: [Party Leader]

Rating of Party's Chance to Cross 5% Threshold

Q23: How likely is each of the following parties to gain enough votes to get into parliament on a scale from 0 [very unlikely] to 10 [very likely]: [Party]

Rating of Party's Chance to Win Local Constituency Race

Q27: Please rate the chances of each party winning the seat in your local district on a scale from 0 [very unlikely] to 10 [very likely]: [Party]

Vote Choice

PQ6: Which party's candidate did you vote for?

PQ7: Which party list did you vote for?

Political Knowledge

All elections:

Q10: Below there are pictures of various political candidates. Please match the candidates that you know with their party: [Party]

Federal Election, Lower Saxony and Bavaria

PQ14A: Can you indicate which party is associated with the following slogan: Together successful?

PQ14B: Can you indicate which party is associated with the following slogan: The WE matters?

PQ14C: Can you indicate which party is associated with the following slogan: Only with us?

Regional Election, Bavaria

PQ14A: Can you indicate which party is associated with the following slogan: And you?

PQ14B: Can you indicate which party is associated with the following slogan: . . . keep(s) promises.

PQ14C: Can you indicate which party is associated with the following slogan: BAVARIA.

Regional Election, Lower Saxony

PQ14A: Can you indicate which party is associated with the following slogan: Tackle things. Do it better?

PQ14B: Can you indicate which party is associated with the following slogan: This is how we do it?

PQ14C: Can you indicate which party is associated with the following slogan: This is a good idea?

NOTES

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1. Germany has another representation threshold—a requirement that a party obtain at least three SMD seats. Since 1994, no party that has fallen below the 5% threshold has obtained three SMD seats or more. This chapter thus does not consider this second representation threshold.

2. In this chapter, we focus mostly on party preferences. Voters sometimes have candidate preferences that are so strong that they are willing to desert the most preferred party to support their favorite candidate (Plescia, this vol.).

3. Throughout the chapter, we confine ourselves to respondents who reported having voted for one of the parties included in our surveys: CDU/CSU, SPD, Greens (Bündnis 90/Die Grünen [GRÜNE]), Left (Die Linke [DIE LINKE]), Free Democrats (FDP), Pirates (Piratenpartei Deutschland [PIRATEN]), Alternative for Germany (Alternative für Deutschland [AfD]), and Free Voters (Freie Wähler [FREIE WÄHLER]). These parties combined to receive more than 97% of the vote in each of the four elections. We also exclude abstainers.

4. For the exact wording of this and all other questions, see appendix B to this chapter.

5. All analyses reported in this chapter are weighted according to the vote in the PR tier and are standardized across samples to 1,000 standard units. This helps us to calculate more precise estimates of the number of strategic voters. In the tables, we also report the initial *N* of every sample.

6. There can be more than two candidates if there are ties for first or second place. In the case of ties, we consider all candidates, regardless of whether they are tied for first or second place.

7. None of our respondents combined a strategic local desertion vote with a coalition insurance vote, a finding that results from our definition of the coalition insurance strategy. Those who are susceptible to engage in a coalition insurance vote have a first preference for either the CDU or CSU and are likely to consider these parties one of the top two contenders in the constituency (at least in the two regions from which we draw our sample).

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Strategic Voting in Multiwinner Elections with Approval Balloting

*An Application to the 2011 Regional Government
Election in Zurich*

Karine Van der Straeten, Romain Lachat,
and Jean-François Laslier

In most cantons in Switzerland, the regional government is elected under an original voting rule, according to which voters can vote for several candidates in a multimember, majority election (Lutz and Strohmman 1998; Vatter 2002). In multimember districts, elections usually follow some proportional, list-based rule. Majority or plurality elections in multimember districts are quite rare, although they have been used more frequently in the past—for example, in the United States and in the United Kingdom (Cox 1984). There are only few examples of current national elections held under such a system, and they are mainly limited to two-member districts (Blais and Massicotte 2002). This is, for example, the system used at the federal level in Switzerland for the election of the upper chamber (e.g., Lachat 2006). However, the case on which this chapter focuses is remarkable because of the large magnitude of the district. Indeed, in the canton of Zurich, the seven members of the government are elected in a single district, and voters are allowed to cast up to seven votes.

How should strategic voters vote in such multiwinner elections with approval balloting? Laslier and Van der Straeten (2016) have recently pro-

posed a theory of strategic voting in such elections. In this chapter, we summarize that theory's main assumptions and predictions and, using survey data collected during the 2011 election of the Zurich canton's government, study whether individual behavior is consistent with the theory. We compare the observed voting behavior with the predictions of our model regarding both aggregate-level results (number of votes used, distribution of candidate votes) and percentage of correct predictions at the voter-candidate level. The model fares quite well in predicting individual-level observations. Roughly 70% of the individual decisions on candidates are consistent with a model of rational voting.

The chapter begins by describing the exact electoral formula as well as the context of the 2011 Zurich regional election. We then turn to the assumptions and predictions of a strategic voting model in such elections and check whether these predictions are consistent with both aggregate results and individual behavior. Next, we discuss strategic versus sincere voting before offering some concluding thoughts.

The Electoral Context

This study focuses on the April 2011 election for the regional government in the Swiss canton (the regional unit of the Swiss federal state) of Zurich. In this canton, the government, composed of seven members, is elected in a single electoral district. The election is based on a two-round system in which candidates need to receive a majority of the votes to be elected in the first round.

In the first round, citizens can cast as many votes as there are seats to be filled (i.e., up to seven votes). However they can also cast fewer votes. "Cumulative voting"—that is, giving several votes to the same candidate—is not allowed. Votes can be given to any citizen with the right to vote in that election. In other words, votes are not limited to an official list of candidates determined before the election. Nonetheless, most votes are concentrated on the well-defined set of registered candidates who have been nominated by the parties or who have made their candidacy public in some other way. The possibility of giving a vote to any eligible citizen, however, means that a significant proportion of the votes go to additional persons. In the April 2011 election, this was the case for 8% of the votes cast.

Candidates are elected in the first round if they reach some minimal majority threshold (and get one of the seven highest vote totals). This

threshold is equal to the total number of candidate votes cast (that is, individual votes for candidates), divided by twice the number of seats and rounded up to the next integer. As most citizens partially abstain by using only some of their seven votes, this threshold is substantially lower than one based on the absolute majority of voters. This implies that a candidate can be elected in the first round while being supported by fewer than half of the citizens.¹ In practice, it means that all candidates in Zurich are usually elected in the first round. No second round has been necessary in recent history.² In fact, the number of candidates who pass this majority threshold is often larger than the number of seats, in which case those with the highest vote totals are elected.³

In the (largely hypothetical) second round, citizens can cast as many votes as seats remain to be filled (that is, the total number of seats in the government minus the number of candidates elected in the first round). As in the first round, votes can be given to any eligible citizen. This implies that parties can put forward new candidates in the second round. The candidates with the highest vote totals are elected.

The election in Zurich took place on April 3, 2011, with nine registered candidates from six political parties seeking the seven seats:

- two left-wing parties: the Social-Democrats (SP), with two candidates, and the Greens (GPS) with one candidate;
- two parties in the center: the Evangelical People's Party (EVP) and the Christian-Democrats (CVP), each with one candidate;
- two right-wing parties: the Liberals (FDP), with two candidates, and further on the right the Swiss People's Party (SVP), also with two candidates.

Table 9.1 presents the candidates' names and party affiliations as well as the official electoral results (ranking the candidates by decreasing number of votes obtained). The seven members of the regional executive were elected in the first round. Eight of the nine registered candidates, received more votes than the minimal majority threshold (84,034 votes). Our analysis focuses on explaining the votes for the registered candidates for several reasons. We have very little information about nonregistered citizens who receive votes. We do not have voters' evaluations of these persons, and their nominal vote counts are not even recorded in the official election results.

A Simple Model of Strategic Voting

Laslier and Van der Straeten (2016) have proposed a “trembling hand” theory of strategic voting in multiwinner elections with approval balloting, in the manner of Myerson and Weber (1993) or Laslier (2009). In such elections, a fixed-sized committee of M members is to be elected from a fixed set of K candidates. Voters cast ballots for (“approve”) candidates, giving at most one vote to a candidate (no cumulative voting); they can approve at most V candidates (in the case of Zurich, $V = M$). The M candidates with the highest vote totals are elected. Ties, if any, are randomly broken.⁴

This theory relies on three main assumptions:

ASSUMPTION 1: Voters’ preferences regarding committees are additively separable across candidates in the following sense: each voter has a utility function for candidates, and the utility for any given committee is simply the sum of the utilities for the M candidates composing this committee.

ASSUMPTION 2: When voting, voters are purely instrumental (no expressive motives).

ASSUMPTION 3 (“trembling ballot” assumption): There exists a tiny probability that any vote might be misrecorded: any YES vote for a candidate can wrongly be recorded as a NO vote, and sym-

TABLE 9.1. Official Results of the Zurich Governmental Election, April 3, 2011

Candidate	Votes	Result
Mario Fehr (SP)	137,035	Elected 1st round
Thomas Heiniger (FDP)	134,061	Elected 1st round
Ernst Stocker (SVP)	129,943	Elected 1st round
Ursula Gut (FDP)	129,349	Elected 1st round
Markus Kägi (SVP)	123,159	Elected 1st round
Regine Aeppli (SP)	121,144	Elected 1st round
Martin Graf (GPS)	120,815	Elected 1st round
Hans Hollenstein (CVP)	118,487	
Maja Ingold (EVP)	68,996	
Others	93,485	
Number of Candidate Votes Cast	1,176,474	
Number of Voters	273,256	
Majority Threshold	84,034	

Source: Statistical Office of the Canton of Zurich.

Note: The total number of voters includes only individuals who cast valid ballots.

metrically, any NO vote for a candidate can wrongly be recorded as a YES vote. Mistakes are independent across candidates and across voters.

Assumption 2 clearly places this theory in the group of models studying the calculus of voting as investment,” as chapter 1 proposes. This is an example of a “pure” theory of instrumental voting, because the assumption about valuing outcomes in terms of who wins and who loses is the single attribute of elections that matters to voters.

Assumption 1 states that a voter’s utility for any given committee is simply the sum of the utilities for the candidates composing this committee. This assumption makes sense in situations where each member of the committee (here, government) is quite autonomous in making decisions, so that his or her contribution can be ascertained by itself, independently of the other members. This seems a reasonable assumption in the case at hand, but it rules out situations where the only important thing for voters is, say, to get a majority in the committee or situations where voters care about diversity (when the value of getting one additional candidate elected on the committee would depend on how many candidates from the same party, gender, or group are likely to be elected).⁵

Assumption 3 guarantees that whatever the profile of ballots cast by the voters, all electoral outcomes (realized scores of candidates) have a positive probability.

How should a rational voter vote under such assumptions? In rational models of strategic voting, voters cast their votes by anticipating their influence on the outcome. The first step in voters’ reasoning is therefore to consider all the events (that is, the distribution of other voters’ votes) such that the individual voter is in a position to cast a decisive vote. Indeed, whenever that voter is not pivotal, all actions yield the same payoff—the same set of candidates is elected. Voters then need to assess the likelihood of these pivot events to compute the expected utility associated with each possible ballot. Under these assumptions, a rational voter should act as follows (Proposition 11 in Laslier and Van der Straeten 2016):

Step 1: Given her anticipations about the behavior of other voters, the voter identifies the set of candidates she expects to be elected (denoted by c_1 to c_M) or not (denoted by c_{M+1} to c_K), according to the scores she expects for them:

$$\hat{s}(c_1) > \hat{s}(c_2) > \dots > \hat{s}(c_M) > \hat{s}(c_{M+1}) > \dots > \hat{s}(c_K),$$

where $\hat{s}(c_k)$ denotes the expected scores of candidate c_k .

- Step 2: For $1 \leq k \leq M$, define candidate c_k 's "main contender" as c_{M+1} , and for $M+1 \leq k \leq K$, define candidate c_k 's "main contender" as c_M .
- Step 3: The voter ranks the candidates according to (the inverse of) their distance, in terms of expected votes, from the main contender.
- Step 4: The voter considers all the candidates in turn, according to the priority order defined in Step 3. As long as the voter does not hit the vote budget constraint (V votes), she votes for a candidate if and only if her utility for this candidate is larger than her utility for the main contender.

Two candidates are critical: the *weakest expected winner* (c_M) and the *strongest expected loser* (c_{M+1}). The intuitive content of this rule is that the elected committee will probably be $\{c_1, \dots, c_M\}$. But if something different happens as a consequence of the voter's vote, what can it be? If one of the expected winners were to be replaced by a candidate who was expected to lose, it would most likely be c_{M+1} —the one with the highest score. Therefore, to decide whether to approve an expected winner or not, the voter should compare that candidate to its main contender, c_{M+1} . If an expected loser were elected because of the voter's vote, which expected winner would be replaced? The answer is most likely the weakest expected winner, c_M , and the same reasoning leads the voter to compare the expected losers to their main contender, the expected weakest winner. The two types of reasoning concur with respect to c_M and c_{M+1} : the voter approves the preferred one and not the other.

Given the limited number of votes, the voter considers the candidates lexicographically, in the order defined in Step 3. In this order, candidates are ranked according to their distance from their most likely contender (in number of expected votes). This is equivalent to ranking them by their decreasing probability of being caught in a tie for election. Indeed, our trembling ballot assumption (Assumption 3) implies that the most likely pivot event is a tie between the two candidates who are expected to rank in the M and $M+1$ positions (here candidates c_M and c_{M+1}). What is the next most likely pivot event? All the other pivot events imply some reversals of the expected order among candidates. What is the next pair of candidates between which the voter is most likely to be pivotal? Our assumptions imply that it will be either c_M and c_{M+2} or c_{M-1} and c_{M+1} , depending on whether the difference in expected scores between c_M and c_{M+2} is larger or smaller than the difference in expected scores between c_{M-1} and c_{M+1} . Indeed, they are the two pairs that require the least order reversals compared to the expected outcome. Similarly, other pivot events can be ranked by decreasing probability of occurrence.

An Empirical Evaluation of the Strategic Model

Data

Our analysis is based on data collected as part of the Making Electoral Democracy Work project (Blais 2010). A two-wave panel survey was conducted, with respondents interviewed during the two weeks before the April 3, 2011, parliamentary and governmental elections in the canton of Zurich and again during the week following the election. The first wave included 1,192 respondents, 842 of whom also completed the second questionnaire.⁶ These surveys were conducted online by Harris/Decima, relying on a panel of respondents from Link, a Swiss polling firm. The sampling was based on a stratified, quota-based approach. Quotas were set by controlling for age, gender, and education status. The participation rate was 36% in the pre-electoral wave and 71% in the postelectoral wave.

To test our strategic voting model, we need information about:

1. the citizens' preferences for the candidates,
2. their anticipations about the scores of the candidates,
3. their actual vote choice.

Citizens' preferences for the candidates: To construct individual preferences for the candidates, the pre-electoral wave used a series of questions:

Please rate each of the following candidates on a scale from 0 to 10, where 0 means you strongly dislike that candidate and 10 means that you strongly like that candidate.

Citizens' anticipations about the scores of the candidates: The survey did not ask about respondents' anticipations about the electoral outcomes. To test our theory, we therefore had to make some assumptions about their anticipations. We assume that citizens' correctly anticipate how other voters are going to vote. (For an analysis assuming that citizens base their expectations on pre-electoral polls, see appendix A.)

Citizens' actual vote choice: Vote choice was measured either in the pre-electoral wave or in the postelectoral wave, depending on when respondents cast their vote. Advance postal voting is widespread, and about half of the respondents in the pre-electoral wave had already voted. In the post-electoral wave, we assessed respondents' voting choice by asking,⁷

For the cantonal government election you had up to 7 votes. Which candidates did you vote for? (up to 7 answers possible)

- Regine Aepli (SP)
- Ursula Gut (FDP)
- Thomas Heiniger (FDP)
- Ernst Stocker (SVP)
- Markus Kägi (SVP)
- Hans Hollenstein (CVP)
- Mario Febr (SP)
- Maja Ingold (EVP)
- Martin Graf (Greens)
- Other candidate
- Don't know

Given that some respondents had already voted when answering the pre-electoral wave, our sample is not limited to respondents who participated in both panel waves. Of the 1,192 respondents, 502 can be included in the analysis: 451 respondents were excluded because they did not vote, while another 239 were excluded because they did not evaluate one or more candidates. Table 9.2 compares the official electoral results of the candidates with those observed in our sample.

TABLE 9.2. Distribution of Votes for the Registered Candidates in the Election and in the Sample

Candidates	Official Election Scores		Sample Scores		Sample Relative Bias
	Votes	% of voters	Votes	% of voters	in % ^b
Mario Fehr (SP)	137,035	50.1	298	59.4	+18.4
Thomas Heiniger (FDP)	134,061	49.1	268	53.4	+8.8
Ernst Stocker (SVP)	129,943	47.6	221	44.0	–7.4
Ursula Gut (FDP)	129,349	47.3	257	51.2	+8.2
Markus Kägi (SVP)	123,159	45.1	202	40.2	–10.7
Regine Aepli (SP)	121,144	44.3	272	54.2	+22.2
Martin Graf (GPS)	120,815	44.2	269	53.6	+21.2
Hans Hollenstein (CVP)	118,487	43.4	263	52.4	+20.8
Maja Ingold (EVP)	68,996	25.2	154	30.7	+21.5
Average Number of Votes per Ballot ^a	4.0		4.4		
Number of voters	273,256		502		

^a For the nine registered candidates only.

^b The sample relative bias is the difference between the percentages of votes for the candidate in the sample and in the election divided by the percentage of votes in the election.

All candidates except the ones from the SVP (the most right-wing party) received higher scores in our sample than in the official election results. The bias is moderate for the two FDP (moderate right) candidates (about 8 or 9%), and is larger for the remaining center and left-wing candidates (around 20%). The existence of a left-wing bias in our sample does not pose a problem for testing our model because all our analyses are conducted at the individual level: the objective is to check whether each individual in our sample casts votes that are consistent with the recommendation of the strategic model.

In our sample, the average number of votes for candidates per ballot is 4.4, which is larger than what is observed in the official election (4.0).⁸ Therefore our sample slightly overestimates the number of votes per ballot (+11%). The most plausible explanation for this difference is that our study excluded voters who could not evaluate all nine candidates, thus restricting our sample to well-informed voters. Some evidence suggests that lack of information about the candidates is correlated with casting fewer votes (see Lachat and Kriesi 2015). Figure 9.1 provides more information about the number of votes cast by respondents in our sample, showing the distribution of the number of votes for the nine candidates per ballot. The modal number of votes per ballot is 7 (23% of the ballots). Ballots with a single name are the least frequent (7%).

Table 9.3 provides the means and the standard deviations of the evaluations received by the candidates (on a 0–10 scale). We observe a strong correlation (coefficient of 0.92) between the electoral score and the mean evaluation of the candidates.

Empirical Method

For each voter, we compute the strategic recommendation as defined by the model, and compare it to the actual vote. To vote strategically, voters must start by anticipating the scores of the different candidates to evaluate the likelihood that they might get involved in a tie (or a near tie). We assume here that they form anticipations that are, on average, perfect. That is, their anticipations are such that the average expected scores of the candidates coincide with the official scores. (Appendix A presents the results of a series of replications in which expectations about candidate chances are based on poll results instead.)

Table 9.4 presents all the information about the context of the election that is needed to establish the strategic recommendation for each voter:

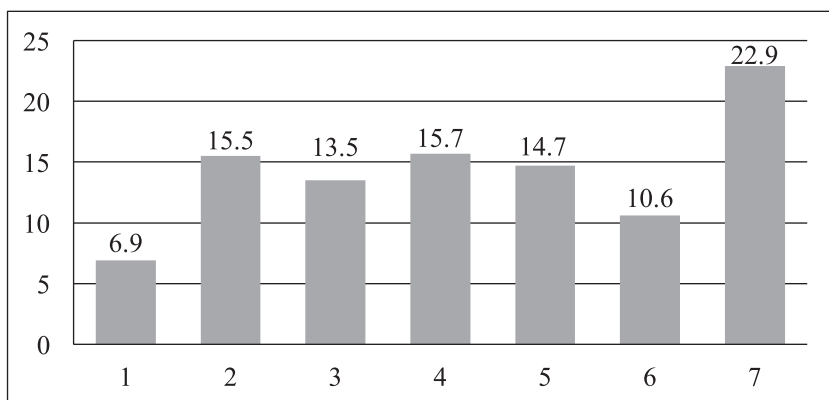


Fig. 9.1. Distribution of the Number of Votes per Ballot (% of Ballots)

TABLE 9.3. Evaluations and Scores of the Registered Candidates in the Sample

Candidates	Sample Evaluations		Sample Electoral Scores
	Mean	Standard Deviation	% of Voters
Mario Fehr (SP)	5.54	3.27	59.4
Thomas Heiniger (FDP)	5.39	2.64	53.4
Ernst Stocker (SVP)	4.48	3.40	44.0
Ursula Gut (FDP)	5.12	2.74	51.2
Markus Kägi (SVP)	4.33	3.35	40.2
Regine Aeppli (SP)	5.11	3.09	54.2
Martin Graf (GPS)	5.31	3.17	53.6
Hans Hollenstein (CVP)	5.16	2.66	52.4
Maja Ingold (EVP)	4.38	2.86	30.7

- Step 1: It establishes the set of expected winners (shaded in light gray) and the set of expected losers (no shade), based on the number of votes they are expected to receive (column 2), where by assumption, their expected number of votes coincides with their score in the official election.⁹ In particular, the names of the two critical candidates—the weakest expected winner (Martin Graf) and the strongest expected loser (Hans Hollenstein)—are written in bold characters.
- Step 2: For each candidate, column 3 identifies the main contender. For all candidates expected to be winners, the main contender is the strongest expected loser (Hans Hollenstein), whereas for all candidates expected to be losers, the main contender is the weakest expected winner (Martin Graf).

- Step 3: The distance (in expected votes) between each candidate and the main contender (column 4) yields the priority order in which voters should consider the candidates (column 5).
- Step 4: The voter considers all the candidates in the priority order that appears in column 5. Until voters hit the vote budget constraint (seven votes), they vote for each candidate if and only if the utility for this candidate is larger than the utility for the candidate’s main contender.¹⁰

So far, we have neglected nonregistered citizens who received votes. Although nonregistered names receive a substantial number of votes (93,485), they are dispersed among many different people. It is not possible to know how many votes the strongest nonregistered candidate received, as these votes are not broken down by individual candidates in the vote counting process. Nonetheless, we can be confident that the distance between any of these persons and their main contender (the weakest expected winner, Martin Graf) is much larger than all the distances computed for registered candidates. Therefore, their probability of being part of a pivot event is negligible compared to the probabilities of the registered candidates. Introducing these candidates into our analysis would not alter the strategic recommendation regarding the vote for (or against) the registered candidates.

Our analysis also neglects the minimal majority threshold needed for election in the first round. What happens to our strategic reason-

TABLE 9.4. Information Needed to Establish the Strategic Recommendation

Candidates	Expected Number of Votes	Main Contender	Distance to Main Contender (Expected Number of Votes)	Priority Order
Mario Fehr (SP)	137,035	H. Hollenstein	18,548	7
Thomas Heiniger (FDP)	134,061	H. Hollenstein	15,574	6
Ernst Stocker (SVP)	129,943	H. Hollenstein	11,456	5
Ursula Gut (FDP)	129,349	H. Hollenstein	10,862	4
Markus Kägi (SVP)	123,159	H. Hollenstein	4,672	3
Regine Aepli (SP)	121,144	H. Hollenstein	2,657	2
Martin Graf (GPS)	120,815	H. Hollenstein	2,328	1
Hans Hollenstein (CVP)	118,487	M. Graf	2,328	1
Maja Ingold (EVP)	68,996	M. Graf	51,819	8
Others	93,485			

Aldrich, John H, André Blais, and Laura B Stephenson. *The Many Faces of Strategic Voting: Tactical Behavior In Electoral Systems Around the World*. E-book, Ann Arbor, MI: University of Michigan Press, 2018, <https://doi.org/10.3998/mpub.9946117>. Downloaded on behalf of 3.139.107.241

ing described so far if this majority requirement is explicitly taken into account? There are now two types of pivot event featuring candidate c :

- (1) There exists another candidate c' such that candidates c and c' are caught in a tie (or a near tie) for the $M = 7$ th rank, and both of them are above the majority threshold. In this case, the voter is pivotal in changing the chances of candidates c and c' to be elected during the first round.
- (2) Candidate c is ranked $M = 7$ th or above, and that candidate gets a number of votes (from other voters) equal to the majority threshold minus one vote. In that case, the voter can make the candidate a first-round winner rather than a first-round loser (who might win election during the second round).

Our analysis omits the second scenario because in the Zurich election, the top eight candidates are all well above this threshold (84,034 votes), and their distance from the threshold is much larger than the distance from their main contender.¹¹

Results

Our model predicts which ballot every voter should cast, depending on that voter's preferences (all voters sharing the same anticipations about outcomes). We look at the model predictions from two different angles. First, we compare aggregate-level predicted results to observed aggregate-level outcomes. Second, we compute the number of correct predictions at the voter-candidate level.

Figure 9.2 indicates our sample's observed and predicted scores for each candidate. The observed score of a candidate is the fraction of voters in our sample who vote for this candidate. The predicted score of a candidate is the score that this candidate would receive if all the voters voted according to our strategic voting model. Indeed, our strategic voting model predicts whether each voter should vote for each candidate. We then aggregate these individual predictions to compute the predicted scores at the candidate level.

The strategic model performs quite well in explaining the electoral scores in the sample (correlation coefficient 0.97). The largest relative error is found for the last candidate, Maja Ingold, whose score is overestimated by the strategic model.

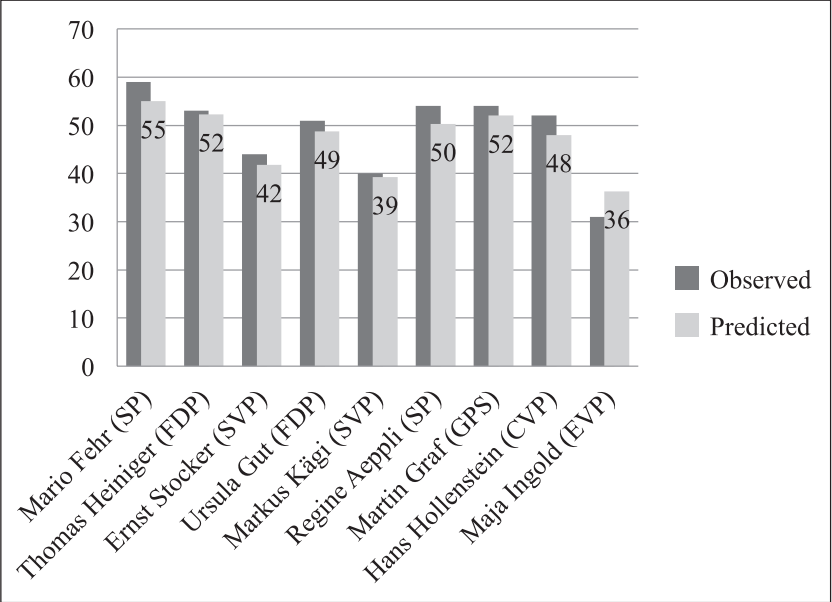


Fig. 9.2. Candidate Scores, Observed and Predicted (% of Voters)

The $M + 1$ rule, according to which voters should concentrate on a group of top candidates the size of which is equal to the district magnitude (M) plus 1 (Cox 1997), does not apply here.¹² All candidates, including the ninth candidate, can get a significant number of votes.

Figure 9.3 shows the observed and predicted distributions of the number of votes per ballot in our sample. Again, the correlation coefficient is quite high: 0.71. Our strategic voting model predicts an average of 4.2 votes per ballot, while the sample yields 4.4 votes per ballot. Nevertheless, as figure 9.3 shows, the model fails to predict the mode of the observed distribution at 7 votes per ballot: compared to the strategic voting recommendation, the sample has too many full ballots.

As a complementary way to assess the performance of the strategic model, we now compute its percentage of correct predictions, at the voter-candidate level. We have 502 respondents voting for 9 registered candidates for a total of 4,518 voter-by-candidate observations. Table 9.5 shows the percentages of correct predictions for each candidate and on average.

An average of 69% of predictions were correct. This number can be decomposed by candidate and by the sign of the strategic recommendation (positive = a vote for the candidate; negative = don't vote for the candidate).

Aldrich, John H, André Blais, and Laura B Stephenson. *The Many Faces of Strategic Voting: Tactical Behavior In Electoral Systems Around the World*. E-book, Ann Arbor, MI: University of Michigan Press, 2018, <https://doi.org/10.3998/mpub.9946117>. Downloaded on behalf of 3.139.107.241

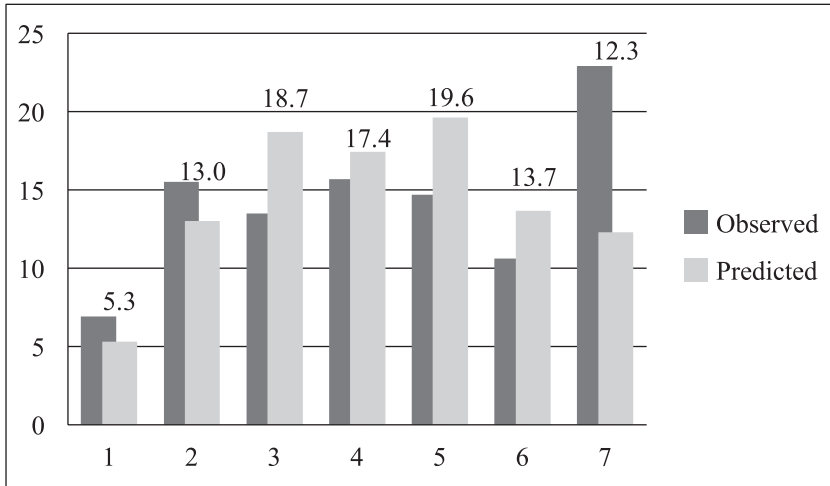


Fig. 9.3. Number of Votes per Ballot (%)

TABLE 9.5. Percentage of Correct Predictions, per Candidate

	% of Positive Predictions	% of Correct Predictions among Positive Predictions	% of Negative Predictions	% of Correct Predictions among Negative Predictions	Average % of Correct Predictions
Mario Fehr (SP)	55	84	45	70	78
Thomas Heiniger (FDP)	52	64	48	59	62
Ernst Stocker (SVP)	42	73	58	77	75
Ursula Gut (FDP)	49	63	51	60	61
Markus Kägi (SVP)	39	70	61	79	75
Regine Aepli (SP)	50	78	50	70	74
Martin Graf (GPS)	52	78	48	73	76
Hans Hollenstein (CVP)	48	63	52	58	60
Maja Ingold (EVP)	36	36	64	72	59
Average	47	69	53	69	69

Table 9.5 also provides such decompositions. The table shows that the average percentage of correct predictions is the same whether the strategic recommendation was negative or positive. Consistent with the observation made in figure 9.2 that the rational model overestimates Maja Ingold score, table 9.5 shows that only 36% of voters who were predicted to vote for her actually did so. This is the only instance where the percentage of correct predictions falls below 50%.

Finally, we construct a general indicator of individual rationality by

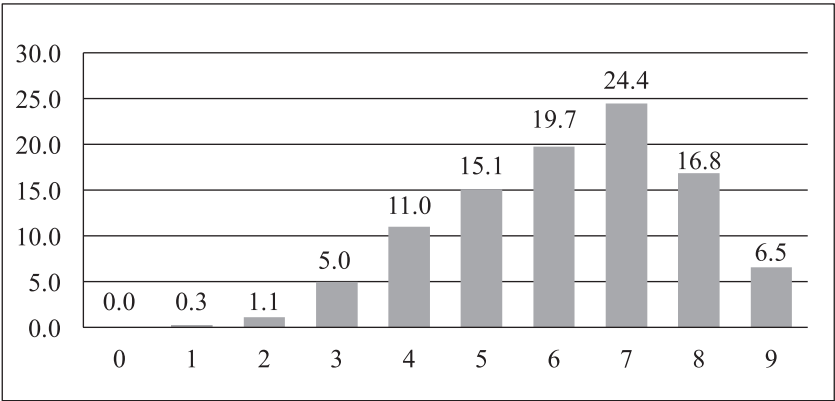


Fig. 9.4. Number of Correct Predictions by Ballot (% of Ballots)

counting the number of candidate votes correctly predicted on each individual ballot. If a voter’s behavior was fully consistent with our theory, we should be able to correctly predict the votes for each of the nine registered candidates. Figure 9.4 below depicts the distribution of this indicator.

Although only 6.5% of the ballots are fully consistent with the nine strategic candidate-level recommendations, the model made at least seven correct predictions for almost half of the ballots (47.7%). Consequently, we conclude that the strategic voting model performs fairly well in explaining individual voting decisions.

Strategic versus Sincere Voting?

There is no straightforward operationalization of *sincere voting* under approval balloting. As chapter 1 discusses, sincere voting is the calculus of voting as consumption whereby a voter decides whether to vote for a candidate depending on the “expressive benefits” derived from voting for this candidate. When a voter has a single vote to cast, this model has a straightforward recommendation: voters should vote for the candidate they like most. The same holds if voters cast a fixed number of votes larger than one: voters should vote for their preferred candidates. The recommendation is much less straightforward when voters can choose to cast any number of votes (possibly up to some cap). Where should voters draw the line between the candidates associated with positive and negative expres-

sive benefits? How does that threshold relate to voters' evaluations of the candidates?

For the purposes of this discussion, we label a ballot as sincere in accordance with Brams's (1982) definition: if voters approve a candidate, they also approve all the candidates to whom those voters give a strictly higher evaluation. With this definition of sincere voting, the sincere voting model (contrary to the strategic model) does not make a single precise prediction about the ballot a voter should cast. With a maximal number of V votes to cast, any ballot such that the voter votes for her v preferred candidates, with v no larger than V , is a sincere ballot. For this reason, there is no obvious benchmark of a sincere voting model that could be tested on the data. Nevertheless, to better understand the qualitative properties of strategic voting in this context, it is interesting to explore whether the recommendations derived from the strategic voting model are generally consistent with this notion of sincerity. As Laslier and Van der Straeten (2016) point out, strategic voting may in theory entail casting nonsincere ballots (Proposition 4). Our findings show that in this election, the strategic recommendation satisfies this notion of sincerity in most cases.

All of the eight candidates with the highest expected scores (the seven expected winners plus the strongest expected loser) have a priority order of at most 7, which means that the constraint on the number of votes (the voter is allowed to cast at most $M = 7$ votes) is not binding when the voter decides whether to vote for these candidates. It is straightforward to check that if the strategic recommendation implies voting for one of these eight candidates, it also implies voting for all the candidates with higher evaluation. Indeed, if voters prefer Hans Hollenstein (the strongest expected loser) to Martin Graf (the weakest expected winner), they should vote for all candidates they prefer to Hollenstein plus Hollenstein, whereas if voters prefer Graf to Hollenstein, they should vote for all candidates they prefer to Hollenstein but not for Hollenstein. Both cases imply sincere voting among the top eight candidates.

For the last candidate, Maja Ingold, sincerity can be violated in only two types of situations:

- (1) Voters have used their seven votes when considering the first eight candidates and have no votes left to vote for Maja Ingold even if she is preferred to Martin Graf (her main contender) and some of the expected winners for whom the voters have already voted.

- (2) Voters still have (at least) one vote left, and there exists an expected winner c other than Martin Graf such that the voters have the following ranking in their utility for the candidates: $u(\text{Hollenstein}) > u(c) > u(\text{Ingold}) > u(\text{Graf})$. Such voters should vote for Ingold (who is preferable to her main contender, Graf) but not vote for the expected winner c (since she likes c less than the main contender, Hollenstein).

The Ingold example is useful in that it illustrates the two potential reasons why the strategic recommendation might not be sincere in general:

- (1) The constraint on the number of votes is binding.
- (2) The expected winners are compared to the strongest expected loser, whereas the expected losers are compared to the weakest expected winner. (If all candidates were compared to the same benchmark, sincere voting would result, neglecting the constraint on the number of votes.)

In our data, the strategic recommendation quite often leads to a sincere ballot. For more than 90% of the voters in our sample, the strategic model predicts that the voter should cast a sincere ballot. To get a more precise quantification of this small minority of nonsincere cases, we compute the number of pairs of candidates for whom sincerity is violated. We consider that sincerity is violated on a set $\{c, c'\}$ of any two candidates if and only if the voter votes for one candidate and does not vote for the other although the voter prefers the latter to the former. Table 9.6 reports the distribution of the number of pairs that violate sincerity. Only 0.57% of pairs (not ballots) violate sincerity.

Contrary to what happens in a single-member district elections ($M = 1$), where strategic voting contradicts sincerity whenever a voter's preferred candidate is not one of the two front-runners, the strategic recommendation in the Zurich election does not violate a basic notion of sincerity. The low number of violations of sincerity is related to the fact that the number of candidates is very close to the number of seats.

The standard definition of sincerity (Brams 1982) does not make a

TABLE 9.6. Distribution of the Number of Pairs Violating Sincerity per Ballot

Number of Pairs in a Ballot That Violate Sincerity	0	1	2	3	4	5	Total
% of ballots	90.2	3.2	3.6	2.0	0.6	0.4	100

unique precise recommendation regarding the ballot a voter should cast. Indeed, it does not specify where voters should draw the line between approved candidates and unapproved candidates. Building a model of sincere voting that delivers unique predictions requires some additional assumptions regarding the drawing of this line. Appendix B proposes several such sincere voting models and assesses their performance with the Zurich data.

Conclusion

The way canton governments are elected in Switzerland provides an interesting case study of multinominal approval-type voting. We studied the rational voting paradigm using data from the 2011 Zurich cantonal election. Following Laslier and Van der Straeten (2016), rational optimization often suggests that voters should approve of many candidates, a theoretical conclusion that matches our observations. In the details of the individual approvals, the explanatory power of the strategic voting model that we tested is on the order of 70%.

These results are encouraging in the sense that a purely theoretical model rendered a good number of nontrivial facts. But the election we studied has some quite specific and unusual features, and caution must be used when generalizing our findings to other contexts. Because the number of candidates (nine) was only slightly larger than the number of seats available (seven), the strategic model's predictions rarely contradict some basic notion of sincerity. In addition, no candidate was clearly sure to be elected: the final score of the best-elected candidate was not so different from the score of the eighth-ranked candidate. Further analysis using the model in other situations would be welcome.

APPENDIX A: ALTERNATIVE ASSUMPTIONS ABOUT THE ANTICIPATIONS

In the strategic voting model, the weakest expected winner and the strongest expected loser play key roles. Voters' decisions are based on a comparison of the expected winners with the strongest expected loser and of the expected losers with the weakest expected winner. In the official results of the 2011 Zurich election, the scores received by the different candidates were very close. In particular, the weakest winner (Martin Graf) receives votes from 44% of the voters, while the strongest loser (Hans Hollenstein) receives votes from 43% of the voters (a gap of only 2,328 votes). Moreover,

TABLE A9.1. Score, Rank, Main Contender, Distance from Main Contender and Resulting Priority Rank, for Each Candidate, Using as the Basis for Anticipations the Official Results and the Poll Results

Candidates	Official Results					Poll				
	Distance to main contender					Distance to main contender				
	%	Rank	Main contender	Priority Order	%	Rank	Main contender	Priority Order	% points	Priority Order
Mario Fehr (SP)	50	1	H. Hollenstein	7	46	3	M. Kägi	11	11	5
Thomas Heiniger (FDP)	49	2	H. Hollenstein	6	43	4	M. Kägi	8	8	4
Ernst Stocker (SVP)	48	3	H. Hollenstein	5	40	6	M. Kägi	5	5	2
Ursula Gut (FDP)	48	4	H. Hollenstein	5	41	5	M. Kägi	6	6	3
Markus Kägi (SVP)	45	5	H. Hollenstein	2	35	8	M. Graf	4	4	1
Regine Aeppli (SP)	44	6	H. Hollenstein	1	49	1	M. Kägi	14	14	7
Martin Graf (GPS)	44	7	H. Hollenstein	1	39	7	M. Kägi	4	4	1
H. Hollenstein (CVP)	43	8	M. Graf	1	48	2	M. Kägi	13	13	6
Maja Ingold (EVP)	25	9	M. Graf	19	19	9	M. Graf	20	20	8

the scores of the other candidates are also quite close, since the candidate with the highest score (Mario Fehr) receives the votes of 50% of the voters. Only the weakest candidate (Maja Ingold) receives substantially fewer votes (25%). So it might have been very difficult for voters to correctly predict the expected scores of the different candidates. Indeed, some evidence for this difficulty is provided by the results of a poll conducted by IsoPublic on March 22, 2011, two weeks before the first round of the election. Table A9.1 reports the results of this poll along with the official election results.

The poll correctly predicts Ingold's low score, ranking her last. It also correctly puts Martin Graf as the weakest expected winner. However, the poll suggests that Markus Kägi should be the strongest expected loser (although he was elected and finished fifth). These results indicate that voters probably had difficulty correctly predicting the candidates' scores and the resulting priority order used to derive the strategic recommendation. Table A9.1 also provides the identity of each candidate's main contender as well as that candidate's priority rank based on both the official results and the poll results.

We have replicated the main analysis using these poll results instead of the official results as the basis for the anticipations. (Detailed results available upon request.) The overall numbers of correct predictions at the individual level are very similar in both analyses. The overall average percentage of correct predictions with the polls is 68%, versus 69% with official results. However, using the official results, we predicted an average of 4.23 votes per ballot, which is only slightly below the observed average of 4.39 votes, while using poll results, the model predicts an average of 4.9. The poll results predicted a substantially larger number of full or almost full ballots (with 6 or 7 votes). This is a consequence of having a far-right candidate (Markus Kägi) rather than a centrist candidate (Hans Hollenstein) as the strongest expected loser. The strongest expected loser is the main contender for most candidates. Since Kägi enjoys a lower level of sympathy than does Hollenstein in our sample, the strategic voting model predicts more votes on average for the other candidates and thus more votes per ballot. This finding highlights the fact that the precise consequences of the strategic recommendations (e.g., number of votes per ballot) are quite sensitive to the identity of the two critical candidates.

APPENDIX B: MODELS OF SINCERE VOTING

To develop a model of sincere voting that delivers unique predictions, one possibility is to consider that when voters have up to M (the size of the

committee) votes to cast, as is the case in Zurich, they use all of these votes to state their preferences about the best possible committee. This possibility is refuted by the observation that many of the ballots in our sample featured fewer than seven positive votes.

Alternatively, rather than considering the whole committee, voters may evaluate the candidates separately and vote only for candidates considered “good enough.” There thus must be some (possibly voter-specific) threshold a candidate has to pass to receive a vote. In practice, that threshold could be a utility level (e.g., 5 in our data where voters evaluate candidates on a 0–10 scale). Or voters could use the average evaluation that they give to the different candidates, in which case voters would vote for candidates who are above average. The problem for evaluating the performance of

TABLE B9.1. Predicted Scores of the Candidates (Percentages of Voters), Various Sincere Voting Models

	Observed	Threshold = 4.5	Threshold = 5	Threshold = 5.5	Threshold = Mean
Mario Fehr (SP)	59	63	59	55	61
Thomas Heiniger (FDP)	53	63	57	50	58
Ernst Stocker (SVP)	44	48	45	42	44
Ursula Gut (FDP)	51	59	52	44	50
Markus Kägi (SVP)	40	47	43	37	41
Regine Aeppli (SP)	54	61	55	50	55
Martin Graf (GPS)	54	60	55	50	54
Hans Hollenstein (CVP)	52	63	55	46	55
Maja Ingold (EVP)	31	47	41	34	39
<i>Correlation</i>		0.90	0.96	0.96	0.95

TABLE B9.2. Distribution of the Predicted Number of Votes per Ballot (Percentages of Ballots), Various Sincere Voting Models

Number of Votes	Observed	Threshold = 4.5	Threshold = 5	Threshold = 5.5	Threshold = Mean
0	0	1,4	2,1	4,4	0
1	6,9	2,2	3,1	4,2	0,8
2	15,5	6,0	7,9	12,5	3,5
3	13,5	9,2	13,1	17,1	13,9
4	15,7	15,3	19,6	21,1	28,7
5	14,7	19,7	19,8	15,5	33,1
6	10,6	13,9	13,2	9,8	13,8
7	22,9	15,3	21,2	15,3	6,3
<i>Mean</i>	4,39	5,11	4,63	4,01	4,56
<i>Correlation</i>		0.70	0.83	0.77	0.38

TABLE B9.3. Correct predictions, among positive predictions, negative predictions and on average, per candidate, Various Sincere Voting models

	% of positive predictions	% of correct predictions among positive predictions	% of negative predictions	% of correct predictions among negative predictions	Average % of correct predictions
Threshold = 4.5					
Mario Fehr (SP)	63	86	37	86	86
Thomas Heiniger (FDP)	63	72	37	80	75
Ernst Stocker (SVP)	48	82	52	92	87
Ursula Gut (FDP)	59	69	41	75	72
Markus Kägi (SVP)	47	78	53	93	86
Regine Aeppli (SP)	61	80	39	85	82
Martin Graf (GPS)	60	80	40	85	82
Hans Hollenstein (CVP)	63	71	37	79	74
Maja Ingold (EVP)	47	52	53	88	71
<i>Average</i>	57	75	43	85	79
Threshold = 5					
Mario Fehr (SP)	59	89	41	83	87
Thomas Heiniger (FDP)	57	75	43	76	75
Ernst Stocker (SVP)	45	84	55	90	87
Ursula Gut (FDP)	52	73	48	72	73
Markus Kägi (SVP)	43	81	57	90	86
Regine Aeppli (SP)	55	83	45	81	82
Martin Graf (GPS)	55	82	45	82	82
Hans Hollenstein (CVP)	55	74	45	75	74
Maja Ingold (EVP)	41	56	59	87	74
<i>Average</i>	51	78	49	82	80
Threshold = 5.5					
Mario Fehr (SP)	55	92	45	81	87
Thomas Heiniger (FDP)	50	79	50	72	76
Ernst Stocker (SVP)	42	88	58	88	88
Ursula Gut (FDP)	44	78	56	70	74
Markus Kägi (SVP)	37	86	63	87	86
Regine Aeppli (SP)	50	87	50	78	83
Martin Graf (GPS)	50	86	50	79	82
Hans Hollenstein (CVP)	46	80	54	71	75
Maja Ingold (EVP)	34	62	66	86	78
<i>Average</i>	45	83	55	80	81
Threshold = mean					
Mario Fehr (SP)	61	89	39	86	88
Thomas Heiniger (FDP)	58	75	42	76	75
Ernst Stocker (SVP)	44	87	56	89	88
Ursula Gut (FDP)	50	75	50	73	74
Markus Kägi (SVP)	41	83	59	89	87
Regine Aeppli (SP)	55	83	45	82	82
Martin Graf (GPS)	54	83	46	82	82
Hans Hollenstein (CVP)	55	74	45	74	74
Maja Ingold (EVP)	39	60	61	87	77
<i>Average</i>	51	79	49	82	81

“sincere voting” is that many models, and therefore many predictions, are consistent with this general idea of sincere voting.

We replicate the main analysis for four such sincere models, three with some absolute utility thresholds (4.5, 5, and 5.5), and one with a voter-specific threshold equal to the average of the evaluations given to the different candidates by the voter. Table B9.1 shows the predicted scores of the candidates (analogous to figure 9.2 for the strategic model). Table B9.2 shows the predicted number of votes per ballot (analogous to figure 9.3 for the strategic model). Table B9.3 shows the percentage of correct predictions at the voter-candidate level (analogous to table 9.5 for the strategic model).

Table B9.1 shows that all sincere models perform quite well in explaining the aggregate scores of the candidates, with a correlation coefficient above 0.90 (0.97 for the strategic model). However, the performance of the sincere models is quite heterogeneous regarding the number of votes cast per ballot (table B9.2); in particular, the model using the voter-specific threshold of the mean evaluation seems to perform quite poorly (correlation coefficient of 0.38), whereas the best-performing sincere model uses as a threshold the absolute value of 5. Finally, table B9.3 shows that these models are consistent with roughly 80% of the individual decisions on candidates, a slightly higher number than the strategic model obtained (70%).

These analyses suggest that the best-performing sincere voting models use as a utility threshold the absolute value of 5 or 5.5 (on the 0–10 scale). The performance of these sincere models depends heavily on specific ad hoc assumptions about how voters draw the line between the candidates they like and those they do not. In addition, because the votes and evaluations were obtained simultaneously, some voters may not have derived their votes from their numerical sincere evaluations but rather scaled their personal evaluation scheme to make the middle grade (5) the threshold of approbation. This makes the comparison with the performance of the more parsimonious strategic model difficult.

NOTES

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1. In the election on which we focus, the majority threshold corresponded to 31% of voters.
2. This holds for general elections, which take place every four years. However, in the case of partial elections following a government member's resignation,

second rounds are more common. While most other Swiss cantons use a similar electoral system to elect their government, the way in which the first round majority threshold is set varies among cantons (Vatter 2002). Most common is a more restrictive threshold equal to the number of valid ballots (rather than candidate votes cast) divided by two and rounded up to the next integer. With this alternative system, a second round is usually necessary.

3. This observation proves useful when checking whether we can apply the strategic voting theory of Laslier and Van der Straeten (2016), which pertains to one-round elections, to the election under study here.

4. The voting rules studied in Laslier and Van der Straeten (2016) have only one round of votes, whereas the Zurich election potentially has two.

5. For strategic considerations about how elected officials will interact once elected, see Daoust, this vol.; Verthé and Beyens, this vol.

6. These figures exclude respondents who started but did not complete the questionnaire as well as respondents who appeared unengaged—for example, because they gave illogical responses or completed the survey too quickly.

7. A similar question was asked in the preelectoral wave for voters who used advanced postal voting.

8. If nonregistered candidates are included, the average number of votes per ballot is 4.3.

9. Because a voter's anticipations are defined as taking into account all other votes but not the voter's own vote, full rigor would require a table for each voter with computations excluding his or her own vote. Given the scores obtained by the candidates, however, doing so would not change the ordering of candidates or the strategic recommendation, so we reason for all voters based on the figures in table 9.4.

10. In some cases in our sample, respondents give the same evaluation (on a 0–10 scale) to a candidate and to the main contender. This situation has two possible interpretations: the voter either is perfectly and exactly indifferent between the two candidates or actually prefers one candidate over the other but given the finite 11-point scale is bound to give them the same evaluation. We consider the latter explanation more plausible and consequently transform these cases into strict preferences. Since we do not know which candidate the voter prefers, we simply assume that with probability $\frac{1}{2}$ she likes one candidate better, and with probability $\frac{1}{2}$ she likes the other candidate better. Each voter in the sample who exhibits such an indifference is decomposed into 100 observations, each given a weight of $1/100$ in the sample. For each of these 100 observations corresponding to one single voter, if the voter happens to give the same evaluation to any two candidates c and c' , the reported indifference between candidates c and c' is broken randomly, where each strict preference is assigned the same probability.

11. The only candidate below the majority threshold is Maja Ingold. For this candidate, the most likely first-type events involve her tying (or almost tying) with the weakest expected winner (Martin Graf), and that she receives more votes than Hans Hollenstein, in which case she will cross the majority threshold. The second type of event requires both the seventh- and eighth-ranked candidates to fall below the majority threshold, which requires many more mistakes and is therefore much less likely than the first type of event. Our arguments here are quite infor-

mal: developing more formal arguments would be complicated by the fact that any mistake (misrecorded vote) on a candidate affects both the candidate's individual score and the majority threshold. More precisely, if a positive vote for a candidate is wrongly recorded as a negative vote, the candidate's score decreases by one vote and the majority threshold decreases by about $1/14$. For this analysis, we consider voters as neglecting the possibility of a second round when deciding whether to vote for Ingold.

12. Indeed, the $M + 1$ rule typically applies to party-list PR systems, in which voters can vote for only *one* list (see chapter 1). The electoral system considered here is quite different in that voters can cast more than one vote and candidates with the highest number of votes are elected.

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Sincere Voting, Strategic Voting

A Laboratory Experiment Using Alternative Proportional Systems

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Voters vote sincerely when they vote systematically according to their preferences; they vote strategically if they try to influence the outcome of the election by adapting their behavior to what they anticipate concerning other voters' behavior as well as to the voting rule—that is, if their votes are influenced by their expectations about attainable outcomes. As chapter 1 points out, in a given election, strategic considerations may not conflict with sincerity. However, the political science literature usually uses the adjective *strategic* for what should really be called nonsincere or strategic and nonsincere. This chapter sheds some light on the distinctions among strategic, sincere, and nonsincere voting.

As soon as three or more options are available, voting becomes a complex decision. The question of strategic nonsincere voting has attracted much attention from economists concerned with the theoretical aspects of elections. The definition of a sincere vote is unambiguous when the form of the ballot and the possible votes match precisely what can be termed the opinion or the preference of the voter. Such is the case when the voter is required to provide the name of a single candidate or party. In such cases, a sincere vote consists of selecting the voter's first preference, whatever the context, and an incentive for voting strategically is to “desert non-viable

candidates” (Cox 1997, 80). Such is also the case in the setting of Arrovian preferences, where voters are required to submit as their vote their ranking of the candidates from best to worse. The formal social choice literature has reached the conclusion that, in this setting, rationality cannot always match sincerity (Gibbard 1973; Satterthwaite 1975).

But the definition of sincerity and therefore the study of the question of strategic voting, is not so straightforward with other forms of voting. For example, the literature on strategic voting in mixed-member systems has concentrated on the ticket-splitting phenomenon, an issue that is obviously absent from the study of single-winner elections but that raises new questions about expressive voting (see Harfst, Blais, and Bol, this vol.). Another instance is approval voting, which this chapter studies: if voters can vote for as many candidates as they want, then even sincere voters must decide—and this is already a kind of strategic decision—how many candidates to approve: only her single-most-preferred candidate, or the best two, the best three, and so forth (see Lachat, Laslier, and Van der Straeten, this vol.).

Conversely, the notion of strategic voting (sincere or not) is also not straightforward outside of the first-past-the-post context. The conceptual guidelines are provided by the theory of rational behavior as used in game theory. Rational behavior is characterized by intentions (in general expressed as preferences about outcomes) and by reasonable beliefs about how possible outcomes derive from possible actions. It is difficult to test the predictability of formal models of strategic behavior, since surveys can hardly provide all the necessary information on the original preferences (Sauger et al. 2012). By offering a way to control preferences (through monetary incentives), laboratory experiments have helped to bring to light what actual strategic behavior is and what type of cognitive process it involves (Rietz 2008; Blais, Laslier, and Van der Straeten 2016).

But some ambiguities remain. First, monetary incentives in the laboratory are likely to overstate strategic behavior compared to a real political context (Igersheim et al 2016). Second, the substantive definition of strategic behavior is fuzzy insofar as it heavily depends on the voting rule and the political context (Baujard et al. 2014). Showing that a gap exists between the basic political preference and the observed voting behavior is a first step but is not sufficient. To characterize strategic behavior, this gap must also reflect an intention to individually influence the collective decision.

Third, the theory of rationality is intrinsically linked to the idea that rational actors have a unique goal in making their decisions (expressed by their preference relation or utility function), probably because they are weighing in a consistent manner their conflicting objectives. But once again,

some voting rules seem to offer the possibility of fulfilling several goals at one time. Mixed-member systems, two-round elections, and approval voting are all institutions that might be understood this way by voters.

These three points frame this chapter's study. The experiment is run in the laboratory, but rather than using monetary-induced preferences, it is based on a real political situation: the 2014 European Parliament election. We first asked participants to directly give their opinion on the various lists. Then we asked them how they would vote under three variants of proportional representation: voting for one (and only one) list; approving several lists; and a kind of cumulative voting. In this way, all participants offered four opinions on the actual lists proposed in the official election.

This protocol allows us to compare the votes with the opinions at the individual level for the three rules. We describe large amounts of not-simply-sincere voting and launch a debate on whether these selective choices can uncontroversially be explained by strategic intentions, even for a larger definition of preferences.

The chapter first presents the contextualized experiment and the issues it raises before analyzing how voters use the voting rules and the opinion grades. We then highlight the sincerity or nonsincerity of the voters' behavior from one voting system to the next and clarify and measure the choices that can be considered strategic before judging the consistency between sincere and strategic voting.

Design of the Experiment

The experimental data used in this chapter were collected during 11 laboratory sessions, each with 21 participants. Six sessions were held in Rennes and 5 in Ecully, in suburban Lyon, France, on the sidelines of a noncontextualized monetarily controlled experimentation. Anonymity of responses was guaranteed by the fact that all participants used paper ballots that they slipped into an urn before leaving the room.

Political Context

The experiment was performed during the campaign period preceding the May 2014 European Parliamentary elections. Members of the European Parliament (MEP) are elected under proportional systems that vary across countries. France uses a typical closed-list system and is divided into eight districts. The electoral rule is proportional, with a threshold of 5%. French

citizens, and thus probably most participants in the survey, are used to the closed-list system, which is common in there.

Elections are independent from one district to the other. The main parties propose lists in all districts, but some other lists—for example, regional ones—are specific. The city of Rennes (Brittany) belongs to the West electoral region, which would elect 9 MEPs and which had 25 lists on the ballots. The city of Ecully-Lyon (Rhône-Alpes) belongs to the Southeast electoral region, which would elect 13 MEPs and which had 23 lists.

Despite the different numbers of MEPs to be elected, only six lists can be considered viable in each district—the ones presented by the six main French political parties (see appendix A). These lists are also the ones whose scores exceeded 5% of votes in the real official vote,¹ a result predicted by the polls. Because no other list could hope to elect candidates in either region, these were quite clearly the only viable lists.

Experimental Protocol

At the beginning of the session, each participant received a leaflet containing the official campaign material of the various lists (one page for each list) and time to read these documents. The three voting rules were then explained to the participants, and they were asked to vote under each of the three rules. They were also asked to evaluate the different parties on a scale of 0 to 20.

Participants were presented with paper ballots (see appendix A) and invited to first express their opinion on the various lists (OP21) and then to vote in the following order: (1) for a single list as in the official voting (ONE), (2) by providing support to as many lists as they want, knowing they bring a full vote to each of them (LAppr), (3) by providing support for as many lists as they want knowing they share their unique vote between them (LSplit). Participants received specific instructions:

OP21: Evaluations of the Parties. The variable OP21 contains either the evaluation of each party on the 21-step numerical scale (0–20) or the answer *No opinion*. The “Opinion” page of the ballot pointed: “Apart from any voting procedure, we wish to know anonymously your opinion of the different French political parties presenting lists for the European elections of May 2014. At the extremes, you will give 20/20 to a party whose program perfectly matches your opinion and 0/20 to a party that is totally opposite to what you think. If you cannot decide on a political party, write *NOP* (no opinion) in the box.” Given the way we phrased the question,

there are reasons to think that OP21 conveys reliable information about the voters' true political rankings of parties in terms of ideological congruence. The 0–20 scale is the standard scale in used in France to grade school essays and exams, so it is a familiar way for the participants to evaluate quality: 10/20 is usually the minimum grade (or average rating) required to pass a test. Second, the scale is sufficiently wide to express precise opinions, even with a large number of competing lists. Third, voters have the option to declare that they have no opinion.

ONE: One-Name Voting (the Official Voting Rule). Here the voter simply votes for one list. As the participants were reminded, the number of seats allocated to a party depends on the number of votes that party receives. The seats are allocated to the parties that pass the threshold in proportion to their vote shares.

LAppr: List-Approval Rule. Here, voters approve as many lists as they want. Voting for two or more lists gives one full point to each list: the approval score of a list is the number of voters who approved the list. The seats are allocated to the parties that pass the threshold in proportion to their approval scores.²

LSplit: Split-My-Vote Rule. Here, voters can split their unique vote among as many lists as they want. Voting for two lists gives half a point to each list, voting for three lists gives a third of a point to each, and so on. The vote score of a party is the sum of points received this way. The seats are allocated to the parties that pass the threshold in proportion to their vote scores.

Definitions and Expectations

We trusted that even in the absence of monetary incentives, participants would play the game and answer the fake vote questions by really trying to imagine how they would vote in these hypothetical scenarios.³ Similarly, we can hope that our opinion question (OP21) was an opportunity for participants to honestly express their perceptions of the lists. This direct access to voter preferences and the three voting procedures tested allow us to raise several issues related to sincere and strategic voting.

The simplest issue is to estimate the amount of sincere and strategic voting in the official vote, which forces the voter to select a single list, via an analysis of the types of parties that participants select. When the vote has to be unique, voters are considered sincere if they choose the party to which they give the highest evaluation (or one of the parties to which

they give the highest evaluation) and are considered strategic (in the broad sense) if they choose a viable party. However, more complex questions arise from the two original voting rules that we used, which have not, to our knowledge, been studied in the literature.

Under both the LAppr and LSplit rules, voters can vote for as many parties as they want. Under these conditions, sincere voters should support all parties that have a grade higher than or equal to a threshold that they set. The multiplication of votes is more costly under LSplit, where the support given to each party weakens as the number of parties increases, than under LAppr, where the voter gives an entire vote to each selected party. We thus expect the selection of parties to be slimmer under LSplit than under LAppr. The proportion of sincere voters should therefore be higher under LAppr than under LSplit and, a fortiori, than under ONE.

The notion of strategic behavior is more difficult to grasp under procedures with multiple votes. Under the LSplit rule, which discourages the dispersion of votes, rational voters might at first glance always wish to concentrate their votes on a single party to maximize the efficiency of the vote. However, ballots on which voters take advantage of the opportunity to support multiple parties can also be interpreted strategically. We regard as strategic two types of ballots: those in which only viable parties are supported (type 1 strategy), and those in which the only excluded parties are nonviable parties that are at least as well evaluated as the supported parties (type 2 strategy).

Under the LAppr rule, the same choices between supported and unsupported parties seem more difficult to justify insofar as supports have the same weight regardless of their number. Nevertheless, these choices can be rationalized: we call this behavior the sophisticated strategy, and as for the LSplit rule, we distinguish type 1 and type 2 sophisticated strategies. Logically, such behavior should be rare.

The rational theory provides three expectations:

1. The proportion of sincere voters should be the largest in LAppr and the lowest in ONE. More generally, the coincidence between preferences and votes should be the best under LAppr and the worst under ONE.
2. The proportion of strategic voters should be the highest in ONE and the lowest in LAppr.
3. The number of supported parties should be smaller under LSplit than under LAppr.

*Examples of Sincere and Nonsincere and Strategic and
Nonstrategic Ballots under Multivote Systems*

We delineate our definitions of sincere voting and of strategic voting by examining examples of ballots that can be cast when multiple voting is possible for given political preferences. In the example in table 10.1, parties B and C are equally preferred (grade 18), as are D, E, and F (grade 15). Four parties are viable.

Concerning sincerity:

- On ballots 1 and 2, voters are simply sincere. All supported candidates have a strictly better opinion grade than unsupported ones.
- On ballot 3, the voter is sincere but selective: She does not support candidate B, who has the same grade (18) as the lowest-graded supported candidate, C.
- On ballots 4 and 5, voters are insincere. Some of the unsupported candidates have better opinion grades than supported ones (on ballot 4, B is better evaluated than D; on ballot 5, A is better evaluated than B).

Concerning strategy:

- On ballots 1 and 3, only viable parties are supported. Voters thus show a type 1 strategic behavior.

TABLE 10.1. Examples of Ballot Types

Party List	Opinion Grade	Viability ^a	Ballot 1	Ballot 2	Ballot 3	Ballot 4	Ballot 5
A	20	V	X	X	X	X	
B	18	NV		X			X
C	18	V		X	X	X	X
D	15	V				X	
E	15	NV					
F	15	NV				X	
G	10	NV					
H	8	V					
I	5	NV					
J	0	NV					
Sincerity			Sincere	Sincere	Sincere but Selective	Insincere	Insincere
Strategy			Strategy type 1	Nonstrategic	Strategy type 1	Strategy type 2	Nonstrategic

^aV = viable; NV = nonviable.

- On ballot 4, the voter supports both viable and nonviable parties, but she deserts nonviable parties (B and E) that have at least the same opinion grade as supported ones. Because this behavior benefits the viable parties she prefers and sustains, it is considered strategic (type 2).
- On ballots 2 and 5, voters are nonstrategic. Either they support their preferred candidates indifferently whether they are viable or nonviable or they do not support viable lists that are strictly better evaluated than supported ones.

Use of Voting Rules and Expression of Opinions

Consistency among Rules

The experimental sessions provided 126 ballots in Rennes (3 of which were not filled and thus are not valid) and 105 ballots in Lyon, for a total of 228 useful ballots.

The multiple-votes rules, LSplit and LAppr, introduce flexibility, but it seems reasonable to expect that voters would not, under these rules, stop voting for the unique party they select under the official rule. We therefore call ballots inconsistent where the party chosen under the official rule is no longer chosen under the alternative rule. There are very few such ballots. The chosen candidate according to ONE is also among the supported candidates in LAppr or in LSplit on between 96 and 99% of the ballots (table 10.2).

In addition, the prospect of sharing a single vote should lead participants to support fewer lists under the LSplit rule than under the LAppr rule, with the lists supported under LSplit also supported under LAppr. Table 10.2 shows that 96.05% of ballots demonstrate this type of consistency. All these observations regarding consistency confirm the quality of the collected data.

TABLE 10.2. Consistency Checks

Consistency	Consistency	Consistency
ONE/LSplit	ONE/LAappr	LSplit/LAppr
96.49%	99.13%	96.05%

The Use of Opinion Grades

Despite the documents at their disposal and the time that they had to study them, participants often experienced difficulties in evaluating all the presented lists. Only 54 of the 228 participants graded all the lists. On average, a ballot contains 5.1 “no opinion” answers.

Table 10.3 summarizes the information about opinion grades. As expected, participants generally used the whole 0–20 scale to express their preferences for the proposed political parties. The average difference between the lowest and highest grades is 15.5. Beyond the size of this gap, most participants chose to precisely specify their opinion about the lists, using on average 8.8 different grades.

We call the party that attracted the best grade in OP21 the preferred party. Given the meaning of the 0–20 scale, it is unsurprising to observe that all the participants attributed a grade of at least 10 to their preferred party (minimax). In addition, no participant gave the worst-rated party a score above 10 (maximin). The distribution of the grades leads to an average awarded grade of 7.84, well below this threshold.

Multiple Votes under LSplit and LAppr

Figure 10.1 portrays the voting behavior of participants in the experiments. A large proportion of participants used the possibilities offered by both alternative voting rules to support multiple lists simultaneously. Unsurprisingly, all but six participants supported as many or more parties under LAppr as under LSplit. The average number of supported lists is 1.84 with LSplit and 3.3 with LAppr.

Looking at the ballots in more detail shows that 32.89% of participants exactly reproduced their official vote under the LSplit rule. A total of 28.53% of voters also chose to express exactly the same support under LSplit and LAppr. Eighteen participants (7.89%) chose to retain the same single list under all three voting rules.

TABLE 10.3. Evaluations of the Lists

Proportion of evaluated lists	Average grade	Maximin	Minimax	Average Amplitude of Grades
78.95%	7.84	10	10	15.5

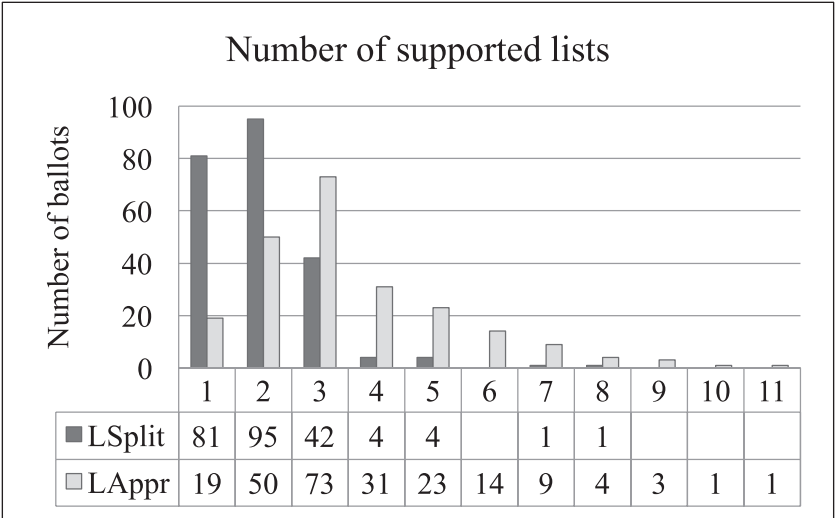


Fig. 10.1. Distribution of the Number of Supported Lists under the LSplit and LAappr Rules

Because the average number of supported lists is significantly larger than one under LSplit, the average level of opinion scores for supported lists is lower under the LSplit rule (15.51) than under the official rule (16.10). This means that, with LSplit, participants have extended their support to lower-rated parties—that is, parties ranked lower in their preference order. As figure 10.2 shows, the increase in the number of supported parties from LSplit to LAappr translates into a further decrease in the average score (to 14.56).

All these elements reinforce our assessment that participants approached our experiment with seriousness and precision, validating our decision to undertake behavioral analysis based on these opinion grades. We now turn to the sincerity of the voters’ choices under the different voting rules and the extent to which these choices can be considered strategic in relation to the viability of the lists.

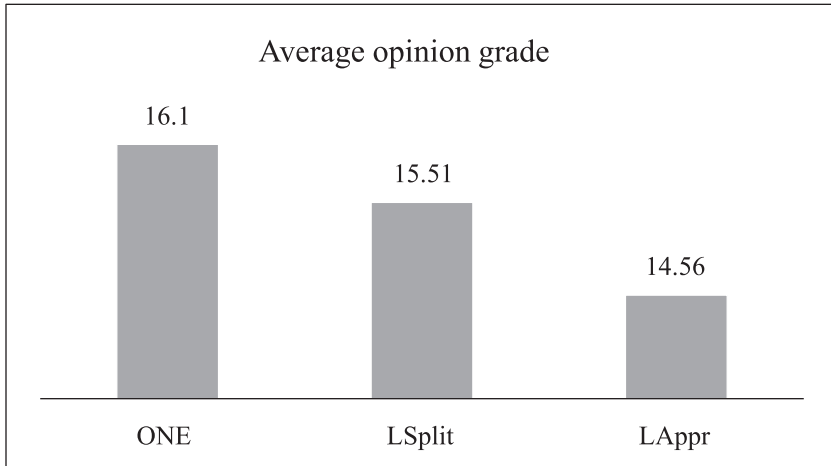


Fig. 10.2. Average Opinion Grade of Supported Lists under the Different Voting Rules

Evidence of Sincere Voting

Voting Rules and Proportion of Sincere Ballots

The analysis of sincerity is based on the comparison between the preferences of participants, which we assume to be captured by OP21, and the choices they expressed through each of the voting rules (see table 10.4). We distinguish three categories of ballots: (1) “sincere” ballots, on which all unsupported list(s) have lower opinion grades than the supported ones; (2) “insincere” ballots, on which some unsupported list(s) have better opinion grades than supported ones; and (3) “sincere but selective” ballots, on which some unsupported list(s) have the same opinion grade as the worst-rated of the supported lists.

In the “sincere but selective” category, a significant difference exists between the ONE rule and the others. Under ONE, sincere voters are

TABLE 10.4. Voting Rules and Sincere Voting

	ONE	LSplit	LAppr
Sincere	62.7%	60.1%	50.9%
Sincere but Selective	25.9%	17.1%	21.5%
Insincere	11.4%	22.8%	27.6%

forced to choose between their favorite lists, so they are obliged to be selective. This is not the case under LSplit and LAppr, which confer the possibility of supporting as many lists as desired and thus do not oblige voters to be selective.

*The Possibility of Multiple Votes Does Not
Promote Sincere Voting*

The single-list vote results indicate that only 11.4% of voters cast non-sincere ballots and that 25.9% had to choose one among their favorite parties. Table 10.4 provides more details about participants' decisions under the LSplit rule compared with the ONE rule. As the decline in the average rating indicates, voters have not used the opportunity to support multiple lists solely to make their votes exactly match their stated preferences. In fact, the proportion of ballots on which the supported lists have strictly better opinion grades than unsupported lists (sincere ballots) has slightly decreased. The percentage of ballots on which at least one unsupported party has a higher grade than the least-favorite supported parties (insincere ballots) increased to 22.8%. Many participants clearly chose to give additional votes to parties without following the order of their preference, deliberately selecting parties with lower grades for (part of) the vote.

Under the LSplit rule, many ballots therefore seem to reflect some degree of insincere choice. In addition to the insincere ballots, some ballots (17.1%) gave the same opinion grade to the lowest of the supported and unsupported parties, insofar as the rule allows voters to support all parties simultaneously.

Thus, the importance of this “selective” voting (sincere or not) can be estimated at around 40%. This is obviously very high, and it is legitimate to ask whether the obligation to share a single vote could cause such behavior. The comparison with the list-approval rule may now help to determine whether LAppr frees voters from precisely this constraint.

As for the LSplit rule, the usual definition of “sincere” behavior under approval voting simply requires that the voter approves all candidates above a threshold and none below. It is logically possible that strategic intentions should lead to nonsincere ballots (Brams and Fishburn 1978), but this phenomenon is rather counterintuitive, and some models even rule it out for large electorates (Laslier 2009). If approval balloting is used to elect several candidates, nonsincere rational behavior should also be quite rare (Laslier and Van der Straeten 2016). The same thing should occur in the case of list-approval voting, even if the detailed strategic considerations are

complex. It therefore seems reasonable to expect a large majority of voters to be perfectly sincere—that is, to cast ballots such that all the approved candidates all have better opinion grades than the nonapproved ones.

Nevertheless, this is not what we observe. On 49.1% of the ballots, approval behaviors cannot be said to reflect opinions through a simple threshold. More precisely, 21.5% of the participants approve parties for which they have the same opinion as parties they do not approve, and 27.6% approve parties to which they assign lower grades than parties they do not approve. Some participants exclude their preferred party from their vote under all systems, including under the LAppr rule. In Rennes, for example, 2 voters choose not to approve the unique party to which they give their best opinion grade, and in 7 other cases, one of the parties with the highest grade is not approved.

These results are especially puzzling. Voters are most frequently not sincere (27.6% under LAppr, 22.8% under LSplit, 11.4% under ONE) under approval voting. The possibility of multiple voting seems to generate a greater selectivity than the single vote (49.1% under LAppr, 39.9% under LSplit, 37.3% under ONE). After a cross-sectional study of the (in)sincerity of voters, an analysis of the viability of the supported parties should enable us to verify whether this selectivity is based on strategic considerations.

Sincerity: Fairly Stable Behavior from One Voting System to the Next

Under list-approval voting, only 72.4% of the voters do not rate an unsupported party strictly better than a supported party. This observation leads us to inquire into the stability of sincere behavior from one voting system to the next. Stability is indeed dominant, since 61.8% of voters are sincere (selective or not) regardless of the proposed voting rule, and 85.3% of voters are sincere under the LAppr rule. In contrast, only 6.5% of voters are always insincere—56.8% of insincere voters under the ONE rule.

Evidence of Strategic Voting

Voting Rules and Proportion of Strategic Ballots

It is fairly simple to define strategic voting when voters are forced to choose a single list. If this list is viable, the choice is considered strategic; in the

opposite case, the choice is nonstrategic. The issue becomes more complex under LSplit and LAppr.

Under the LSplit rule, because voters have to split their unique vote, it makes sense to anticipate that they will make strategic choices by deserting nonviable parties. But it is still necessary to precisely define the decisions that will be considered strategic. Overall, a selection of parties can be considered strategic when it increases the support received by a set of parties that are viable and can be labeled as among that voter's favorites. Comparing opinion grades and LSplit votes allows us to determine these favorite viable parties, which are the viable parties that achieve at least a support threshold—the lowest opinion grade voters give to parties they support. In this logic, two types of ballots can be labeled strategic:

- ballots that support only viable parties (type 1 strategic ballots)
- ballots on which unsupported parties are at least as well rated as the most poorly evaluated of the supported parties but are nonviable (type 2 strategic ballots)

We now turn to the strategic question under LAppr. In standard approval voting (for the election of a single candidate), an additional vote for a nonviable candidate is harmless in the sense that the other votes (e.g., for viable candidate) remain equally influential with or without the vote for the nonviable candidate. But this argument needs to be amended when approval voting is used for proportional representation, as in this experiment.

In the proportional representation context, voters may be primarily concerned about increasing the gap between the share of votes obtained by supported parties and the share obtained by unsupported parties. Because seats are allocated in proportion to the total votes received, giving one more vote to a party has two effects. First, it increases the party's score by one—that is, it directly increases the targeted party's vote share, and the size of this effect (for a large electorate) is inversely proportional to the total number of votes. Second, the voter also increases by one the total number of votes, which serves as the denominator in the computation of all the vote shares—that is, it decreases the share of all parties, and the size of this effect is inversely proportional to the square of the total number of votes (a second-order effect, smaller than the main effect). Consequently, such voters (whom we label sophisticated strategic) are better off not voting for small parties that they like but that do not get a sufficient proportion of votes to be elected (see appendix B). The idea of avoiding wasted votes for

nonviable candidates, which is eliminated by approval voting when used for the election of a single candidate, comes back as a second-order effect for sophisticated voters when several candidates are elected.

Under the LAppr rule, two types of ballots are considered sophisticated strategic:

- ballots that give support only to viable parties (type 1 sophisticated strategy)
- ballots on which unsupported parties are at least as well rated as the most poorly evaluated of the supported parties but are nonviable (type 2 sophisticated strategy)

Given these definitions, table 10.5 presents the proportion of strategic votes under the different rules.

More Strategic Behavior under Single Voting

It is logical to assume that the official requirement to support only one list constrains some voters, necessitating strategic choices. For efficiency concerns, they can favor parties that will garner enough votes to be represented in the European Parliament even if those parties are not their preferred party.

Table 10.5 shows that the single-vote rule generates more strategic choices than do multivote rules. Under ONE, 73.3% of voters support viable parties. The opportunity to support several parties under LSplit

TABLE 10.5. Voting Rules and Strategic Voting

	Sincere (%)	Sincere but Selective (%)	Insincere (%)	Total (%)
ONE Rule				
Strategic	48.2	17.1	7.9	73.2
Nonstrategic	14.5	8.8	3.5	26.8
LSplit Rule				
Type 1 Strategic	39.9	10.2	7.3	57.4
Type 2 Strategic	—	4	3.5	7.5
Nonstrategic	19.7	3.1	12.3	35.1
LAppr Rule				
Type 1 Strategic	20.2	5.3	2.6	28.1
Type 2 Strategic	—	7	7	14
Nonstrategic	30.7	9.2	18	57.9

leads to an increase of more than 8 percentage points in nonstrategic ballots. When required to share their unique votes, the vast majority of voters continue to support only viable parties (57.4% cast type 1 strategic ballots). But under LAppr, when multiplying votes is less costly, only 28.1% of voters implement a type 1 sophisticated strategy. Conversely, under LAppr, voters are nearly twice as likely as to exclude some well-rated but nonviable parties (14% cast type 2 strategic ballots) as voters under LAppr (7.5%). Overall, more than 42% of the ballots remain strategic under LAppr.

However, the implementation of a sophisticated strategy in this sense is not the only possible explanation for such behavior. More simply, participants may distinguish between having a good opinion of a party (i.e., it is good for a voter personally) and supporting the party in the election (i.e., it should supply members of parliament). A political preference may presuppose a dichotomous classification (acceptable/nonacceptable); a ranking of political parties from the most to the least preferred; a more sophisticated preference mixing ranking and dichotomous classification; or a quantitative utility. But appreciating a party does not necessarily imply the belief that the party should actually be in charge. Voters may, for example, have a good opinion of a regional party only because they believe that the party is doing a good job as a regional lobby. This could explain why some specialized parties receive very high opinion grades but not many votes. Individuals may thus have different rankings in different contexts, implying a diversity of underlying preference relations for a single individual (see Sen 1977; Igersheim 2007).

Whatever the true justification for strategic behavior under LAppr, this voting rule results in a greater proportion (18%) of nonrationalizable ballots (in the sense that they are neither sincere nor strategic) than under LSplit (12.3%) or ONE (3.5%). More flexibility in the available ballots leads to more complex choices, and arbitration by voters between potentially contradictory objectives may lead to this situation.

Strategic Voting Broadly Compatible with Sincerity

Table 10.5 also shows that sincere voting and strategic voting are not opposites. A very high proportion of voters who have shown strategic behavior with regard to the parties they select are also sincere in the broad sense (selective or not): 65.3% under ONE, 54.1% under LSplit, and 38.5% under LAppr.

Moreover, strategic behavior is much more frequent among voters who make sincere choices than among those who are insincere, regardless of the

method of voting: 73.7% versus 69.3% under ONE, 70% versus 47.4% under LSplit, and 39.7% versus 34.8% under LAppr. In addition, among the 32.5% of voters who are strategic under all three voting systems, 24.1% are also always sincere. Conversely, only 0.8% of the voters are strategic and insincere in all three cases.

However, it would be a little too hasty to conclude that voters do not express selective choices that can be considered strategic. Under LSplit and LAppr, voters who are sincere but selective (without obligation) are in fact more often strategic than those who are simply sincere (83% versus 66.4% under LSplit, 57.2% versus 39.7% under LAppr).

Conclusion

Our experiment found many individual-level discrepancies between participants' opinions and their votes, revealing complex and partly unexpected choices. Contrary to intuition, ballots that are not merely sincere are more frequent when approval-type multiple votes are available than under a single-vote rule. In fact, voters used the flexibility of the LAppr and LSplit voting rules to give support to multiple parties and, perhaps surprisingly, often voted under these rules in apparent contradiction to their own evaluations.

A large proportion of voters' selections among their favorite parties can be interpreted as strategic voting in view of the viability of parties. This proportion is almost as high under LAppr (22%) as under LSplit (25%). Yet the dispersion of votes is less costly under the LAppr rule than when the voter has to split a unique vote, and the large increase in the average number of supported parties shows that voters are well aware of this fact. Two types of explanations could justify such a behavior under list approval voting:

- (1) A sophisticated strategy: In a proportional voting system, not voting for nonviable parties slightly increases the relative score of the viable parties.
- (2) Expressing an opinion and deciding to support a party for election are distinct exercises: Voters may well appreciate small parties, often linked to specific political issues, but may doubt their capacity to field effective members of parliament. Voters may consider a particular party as perfectly representing their ideas (as our opinion question explicitly asked) but believe that the

district candidates presented by this party would not make good MEPs.

In terms of strategic voting, our experiment confirmed the main expected result: the single-vote rule leads to more strategic voting than do multivote systems. Under the single-vote rule, almost all ballots (all but 3.5%) can be rationalized in terms of strategy and/or sincerity. Conversely, when voters' choices become more complicated, the share of such insincere and nonstrategic ballots markedly increases, reaching 12% under LSplit and 18% under LAappr.

This does not mean, however, that some voters simply become illogical: the comparison of votes across rules demonstrates voters' consistency throughout the experiment. Rather, it means that other elements can influence voters' decisions.

In particular, in France, the European Parliament election is an opportunity for a large number of protest votes. In fact, a number of ballots gave good evaluations to the party in government in 2014 (a viable party) but did not provide votes for that party. Voters show that they are ideologically close to this party but oppose its governance practice. The experimental protocol, which allows participants to both express their opinion and vote, may have reinforced this behavior.

Neither the sincere voting nor the strategic voting paradigm entirely explains how opinions translate into votes in our experiment. Having a good or bad opinion of a party is not always sufficient to explain a vote in a certain context. Voting behavior may capture the opinion or the expression of a protest message, or it may capture the willingness to support a party in an election.

APPENDIX A: EXPERIMENTAL BALLOTS

Figures A10.1 and A10.2 show the two ballots used in our experiment. The lists appear in the official order (randomly) determined by the Constitutional Council. The six lists considered viable are:

- Choisir Notre Europe
- Front de Gauche—Rompre avec l'Austérité pour Refonder l'Europe
- Liste Bleu Marine—Non à Bruxelles, Oui à la France
- Liste Europe Ecologie
- Pour la France, Agir en Europe
- UDI MoDem Les Européens

EUROPEAN ELECTIONS: Cumulative voting

With the cumulative voting, you have, as a voter, a **single vote that you can possibly split between several parties.**

So you can vote for as many parties as you want. Be careful, the weight of each vote decreases with the number of selected parties. For example, if you support only one party you bring 1 point to this party; if you vote for 2 parties, you bring to each of them $\frac{1}{2} = 0.5$ point; if you vote for 3 parties, you bring to each one $\frac{1}{3} = 0.33$ point ...

Imagine that each party receives a number of seats proportional to the number of points it gathers, that is the sum of points for that party / total number of completed ballots.

Parties	Ideology	One or more crosses
Pour La France, Agir En Europe	UMP	
Féministes Pour Une Europe Solidaire	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Pirate Sud-Est	DIV	
Communistes	EXG	
Démocratie Réelle	DIV	
Europe Écologie	VEC	
Pour Une France Royale au Cœur de l'Europe	DVD	
Régions et Peuples Solidaires	DIV	
Pour une Europe Utile aux Français	DIV	
Alliance Écologiste Indépendante	DIV	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Front National	FN	
Force Vie	DVD	
L'Europe de la Finance, Ça Suffit ! Place au Peuple !	FG	
Parti Fédéraliste Européen	DIV	
UPR Sud-Est	DVD	
Nouvelle Donne	DVG	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Mayaud Hors Bords	DIV	
Nous Citoyens	DVD	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Choisir notre Europe	UG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

Fig. A10.1. Experimental Ballot from Lyon, Southeast Region (printed on both sides and folded in half)

OPINION

All information you will mark on this ballot is strictly anonymous and will only be used for scientific purposes.

Apart from any voting procedure, we wish to know anonymously your opinion about the different French political parties presenting lists for the European elections of May 2014. At the extreme, you will give 20/20 to a party whose program perfectly matches your opinion; and 0/20 to a party that is totally opposite to what you think. If you cannot decide on a political party, write "NOP" (no opinion) in the box.

The professions of faith of the different parties are at your disposal to help you in your evaluation.

Parties	Ideology	Grade : . . . / 20 or « NOP »
Pour La France, Agir En Europe	UMP	
Féministes Pour Une Europe Solidaire	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Pirate Sud-Est	DIV	
Communistes	EXG	
Démocratie Réelle	DIV	
Europe Écologie	VEC	
Pour Une France Royale au Cœur de l'Europe	DVD	
Régions et Peuples Solidaires	DIV	
Pour une Europe Utile aux Français	DIV	
Alliance Écologiste Indépendante	DIV	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Front National	FN	
Force Vie	DVD	
L'Europe de la Finance, Ça Suffit ! Place au Peuple !	FG	
Parti Fédéraliste Européen	DIV	
UPR Sud-Est	DVD	
Nouvelle Donne	DVG	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Mayaud Hors Bords	DIV	
Nous Citoyens	DVD	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Choisir notre Europe	UG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

EUROPEAN ELECTIONS: « Official » voting

For the election of Members of the European Parliament, vote for only one of the parties presenting a list in the European elections by putting a cross in the corresponding box.

Here and for other experimented voting systems, as in the official voting, imagine that MEPs are allocated proportionally to the votes given to each party, provided that they obtain at least 5% of the votes.

Like your opinions, this vote and the following are totally anonymous.

Parties	Ideology	Only one cross
Pour La France, Agir En Europe	UMP	
Féministes Pour Une Europe Solidaire	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Pirate Sud-Est	DIV	
Communistes	EXG	
Démocratie Réelle	DIV	
Europe Écologie	VEC	
Pour Une France Royale au Cœur de l'Europe	DVD	
Régions et Peuples Solidaires	DIV	
Pour une Europe Utile aux Français	DIV	
Alliance Écologiste Indépendante	DIV	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Front National	FN	
Force Vie	DVD	
L'Europe de la Finance, Ça Suffit ! Place au Peuple !	FG	
Parti Fédéraliste Européen	DIV	
UPR Sud-Est	DVD	
Nouvelle Donne	DVG	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Mayaud Hors Bords	DIV	
Nous Citoyens	DVD	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Choisir notre Europe	UG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

EUROPEAN ELECTIONS: Approval voting

Approval voting gives you the opportunity to vote for as many parties as you wish by entering a cross in the box corresponding to that party or parties.

Imagine that each party receives a number of seats proportional to the number of votes it gathers, that is, the number of approvals for that party / the total number of approvals for all parties.

Parties	Ideology	One or more crosses
Pour La France, Agir En Europe	UMP	
Féministes Pour Une Europe Solidaire	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Pirate Sud-Est	DIV	
Communistes	EXG	
Démocratie Réelle	DIV	
Europe Écologie	VEC	
Pour Une France Royale au Cœur de l'Europe	DVD	
Régions et Peuples Solidaires	DIV	
Pour une Europe Utile aux Français	DIV	
Alliance Écologiste Indépendante	DIV	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Front National	FN	
Force Vie	DVD	
L'Europe de la Finance, Ça Suffit ! Place au Peuple !	FG	
Parti Fédéraliste Européen	DIV	
UPR Sud-Est	DVD	
Nouvelle Donne	DVG	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Mayaud Hors Bords	DIV	
Nous Citoyens	DVD	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Choisir notre Europe	UG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

EUROPEAN ELECTIONS: Cumulative voting

With the cumulative voting, you have, as a voter, a single vote that you can possibly split between several parties.

So you can vote for as many parties as you want. Be careful, the weight of each vote decreases with the number of selected parties. For example, if you support only one party you bring 1 point to this party; if you vote for 2 parties, you bring to each of them $\frac{1}{2} = 0.5$ point; if you vote for 3 parties, you bring to each one $\frac{1}{3} = 0.33$ point ...

Imagine that each party receives a number of seats proportional to the number of points it gathers, that is the sum of points for that party / total number of completed ballots.

Parties	Ideology	One or more crosses
Force Vie	DVD	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Choisir notre Europe	UG	
La France se Réveille	DIV	
Liste Europe Écologie	VEC	
Mouvement Socialiste Alternatif (MSA)	EXG	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Communistes	EXG	
Pour La France, Agir En Europe	UMP	
Citoyens du vote blanc	DIV	
Pour Une France Royale au Cœur de l'Europe	DVD	
Nous te ferons Europe !	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Fédéraliste Européen	DIV	
Front de Gauche - Rompre avec l'austerité pour refonder l'Europe	FG	
Démocratie Réelle	DIV	
Liste Bleu Marine- Non à Bruxelles, Oui à la France	FN	
Nouvelle Donne	DVG	
Décroissance Ouest	DIV	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Féministes Pour Une Europe Solidaire	DIV	
UPR Ouest	DVD	
La Bretagne pour une Europe sociale - Breizhiz dorn-ha-dorn gant poblou Europa	DIV	
Nous Citoyens	DVD	
Pour une Europe des travailleurs et des peuples, envoyons valser l'austerité et le	EXG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

Fig. A10.2. Experimental Ballot from Rennes, West region (printed on both sides and folded in half)

OPINION

All information you will mark on this ballot is strictly anonymous and will only be used for scientific purposes.

Apart from any voting procedure, we wish to know anonymously your opinion about the different French political parties presenting lists for the European elections of May 2014. At the extreme, you will give 20/20 to a party whose program perfectly matches your opinion; and 0/20 to a party that is totally opposite to what you think. If you cannot decide on a political party, write "NOP» (no opinion) in the box.

The professions of faith of the different parties are at your disposal to help you in your evaluation.

Parties	Ideology	Grade: .../20 or « NOP »
Force Vie	DVD	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Choisir notre Europe	UG	
La France se Réveille	DIV	
Liste Europe Écologie	VEC	
Mouvement Socialiste Alternatif (MSA)	EXG	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Communistes	EXG	
Pour La France, Agir En Europe	UMP	
Citoyens du vote blanc	DIV	
Pour Une France Royale au Cœur de l'Europe	DVD	
Nous te ferons Europe !	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Fédéraliste Européen	DIV	
Front de Gauche - Rompre avec l'austerité pour refonder l'Europe	FG	
Démocratie Réelle	DIV	
Liste Bleu Marine- Non à Bruxelles, Oui à la France	FN	
Nouvelle Donne	DVG	
Décroissance Ouest	DIV	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Féministes Pour Une Europe Solidaire	DIV	
UPR Ouest	DVD	
La Bretagne pour une Europe sociale - Breizhiz dorn-ha-dorn gant poblou Europa	DIV	
Nous Citoyens	DVD	
Pour une Europe des travailleurs et des peuples, envoyons valser l'austerité et le	EXG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

EUROPEAN ELECTIONS: « Official » voting

For the election of Members of the European Parliament, vote for only one of the parties presenting a list in the European elections by putting a cross in the corresponding box.

Here and for other experimented voting systems, as in the official voting, imagine that MEPs are allocated proportionally to the votes given to each party, provided that they obtain at least 5% of the votes.

Like your opinions, this vote and the following are totally anonymous.

Parties	Ideology	Only one cross
Force Vie	DVD	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Choisir notre Europe	UG	
La France se Réveille	DIV	
Liste Europe Écologie	VEC	
Mouvement Socialiste Alternatif (MSA)	EXG	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Communistes	EXG	
Pour La France, Agir En Europe	UMP	
Citoyens du vote blanc	DIV	
Pour Une France Royale au Cœur de l'Europe	DVD	
Nous te ferons Europe !	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Fédéraliste Européen	DIV	
Front de Gauche - Rompre avec l'austerité pour refonder l'Europe	FG	
Démocratie Réelle	DIV	
Liste Bleu Marine- Non à Bruxelles, Oui à la France	FN	
Nouvelle Donne	DVG	
Décroissance Ouest	DIV	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Féministes Pour Une Europe Solidaire	DIV	
UPR Ouest	DVD	
La Bretagne pour une Europe sociale - Breizhiz dorn-ha-dorn gant poblou Europa	DIV	
Nous Citoyens	DVD	
Pour une Europe des travailleurs et des peuples, envoyons valser l'austerité et le	EXG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

EUROPEAN ELECTIONS: Approval voting

Approval voting gives you the opportunity to vote for as many parties as you wish by entering a cross in the box corresponding to that party or parties.

Imagine that each party receives a number of seats proportional to the number of votes it gathers, that is, the number of approvals for that party / the total number of approvals for all parties.

Parties	Ideology	One or more crosses
Force Vie	DVD	
Lutte Ouvrière Faire Entendre le Camp des Travailleurs	EXG	
Choisir notre Europe	UG	
La France se Réveille	DIV	
Liste Europe Écologie	VEC	
Mouvement Socialiste Alternatif (MSA)	EXG	
Debout la France ! Ni Système, ni Extrêmes avec N. Dupont-Aignan	DVD	
Communistes	EXG	
Pour La France, Agir En Europe	UMP	
Citoyens du vote blanc	DIV	
Pour Une France Royale au Cœur de l'Europe	DVD	
Nous te ferons Europe !	DIV	
Espéranto Langue Commune Équitable Pour l'Europe	DIV	
Parti Fédéraliste Européen	DIV	
Front de Gauche - Rompre avec l'austerité pour refonder l'Europe	FG	
Démocratie Réelle	DIV	
Liste Bleu Marine- Non à Bruxelles, Oui à la France	FN	
Nouvelle Donne	DVG	
Décroissance Ouest	DIV	
UDI MoDem Les Européens. Liste soutenue par F. Bayrou et J.-L. Borloo	UC	
Féministes Pour Une Europe Solidaire	DIV	
UPR Ouest	DVD	
La Bretagne pour une Europe sociale - Breizhiz dorn-ha-dorn gant poblou Europa	DIV	
Nous Citoyens	DVD	
Pour une Europe des travailleurs et des peuples, envoyons valser l'austerité et le	EXG	

Experimentation CREM and GATE L-SE, European Elections, may 2014

APPENDIX B: SOPHISTICATED STRATEGIC BEHAVIOR
UNDER LIST-APPROVAL VOTING

Sophisticated strategic voters seek to increase the difference in vote share between the main parties they like and the parties they reject. Such voters distinguish among the n proposed lists:

- lists that they appreciate and think may be elected (because they are likely to pass the 5% threshold); let n_1 be the number of such lists
- lists that they appreciate and think cannot be elected (because they probably will not pass the 5% threshold); let n_2 be the number of such lists
- lists that they do not support (i.e., they reject); let n_3 be the number of such lists

Voters seek to increase the gap between the percentage of votes obtained by the type 1 lists and that obtained by the type 3 lists, taking as given the approvals granted by other voters. Let A be the overall number of approvals granted by other voters. Among these, A_1 go to type 1 lists, and A_3 to type 3 lists:

- if this voter only approves the type 1 lists, the gap of the proportion of votes between type 1 lists and type 3 lists is

$$\frac{A_1 + n_1}{A + n_1} - \frac{A_3}{A + n_1}$$

- if this voter approves all the lists he likes (type 1 and type 2), the gap of the proportion of votes between type 1 lists and type 3 lists is

$$\frac{A_1 + n_1}{A + n_1 + n_2} - \frac{A_3}{A + n_1 + n_2}$$

The first difference is larger than the second even if the effect is small, of the order of magnitude of the inverse of A_2 . The voter thus should not support the small lists she appreciates (the type 2 lists).

$$\frac{A_1 + n_1}{A + n_1} - \frac{A_3}{A + n_1} > \frac{A_1 + n_1}{A + n_1 + n_2} - \frac{A_3}{A + n_1 + n_2}$$

NOTES

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1. No candidate from the extreme left's main list was elected in the West Region. Although this list passed the 5% threshold, only nine MEPs from the area were elected.

2. We use the list-approval rule for this experiment even if such a rule might be quite silly in practice because list-approval offers obvious incentives for a (main) party to present several lists simultaneously in the same district.

3. As is usually the case in experimental economics, we made no effort to have representative samples of participants. Most of our participants are students, and their social status and political opinions are what they are. We are not interested in predicting electoral results; rather, we wish to compare the participants' behavior under the three rules with their evaluation of the parties.

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