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Ticket-Splitting and Strategic Voting in Mixed Electoral Systems

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Editorial Note:

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Abstract

This work attempts to refocus the discussion about strategic voting from its narrow focus on single-member district systems. It provides several contributions to the literature on strategic voting, ticket-splitting and on electoral systems. My first contribution is to allow the electoral institutions to vary, thereby opening up the possibility to provide different incentives to operate at the same time for the same voter. I offer a theory that particular institutions not only determine the degree of strategic voting, but also the *kind* of strategies voters employ. In mixed electoral systems strategic voting has two facets. Strategic voters employ either a *wasted-vote strategy* or a *coalition insurance strategy*. My second contribution is to provide evidence that people vary in their *proclivity* to vote strategically, as determined by various motivational factors as well as their capability to comprehend the strategic implications that are offered by particular electoral rules. Evidence supporting these contributions is stemming from an appropriate choice-model using individual-level data from the 1998 German National Election Study.

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1 Introduction

This work attempts to refocus the discussion about strategic voting from its narrow focus on single-member district systems. The literature on strategic voting agrees that institutional incentives are the driving force that spurs strategic voting. That said, it is somewhat surprising that this literature has not looked more closely at variations in the main independent variable and studied the impact of a variety of the institutional settings on the extent and nature of the strategic voting phenomenon. Similar to a natural experiment, focussing on mixed electoral systems offers the opportunity to study influences of electoral rules by holding individual factors constant: The same voter, after all, cast two separate votes, a *candidate vote* and a *list vote*, under different rules. In mixed electoral systems there is the single-member district tier, where only the candidate wins, namely the one who garners a plurality of the candidate votes. And there is also the PR tier that gives even small party lists a chance to attract *list votes* and gain representation in parliament. List votes are usually aggregated on the national level (or some larger sub-territory thereof) and determines the number of seats in parliament.¹

In the following paper I will show that different electoral institutions matter differently for strategic voting. They provide incentives for certain types of strategies and determine the degree to which voters follow them. Moreover, I conceptually introduce variation in the degree to which people anticipate the impact of these institutions. Although electoral institutions provide incentives to vote strategically, these incentives vary in their impact on voters' decision-making process. I propose that a voter's *proclivity* to vote strategically determines the degree to which the incentives provided by various electoral institutions are systematically anticipated in her decision calculus. Since this *proclivity* theoretically varies across voters, their impact on voter's decisions is hypothesized to vary as well. This work provides strong empirical evidence supporting this contribution using individual-level data from the 1998 German National Election Study (German NES).

The paper is organized as follows: In the next section I will present my general theory about strategic voting in mixed electoral systems and derive four hypotheses. Then I will lay down how I operationalize strategic voting and these hypotheses before I devote some time on the interpretation of the multinomial logit results.

2 A Theory of Ticket-Splitting and Strategic Voting in Mixed Electoral Systems

As for studying the influence of electoral institutions on voting behavior the focus on mixed electoral systems is especially interesting. Voters are inclined to employ multiple strategies because of the combination of plurality and proportional representation (PR) voting rules. A two-ballot system, a *candidate vote* and a *list vote*, provides ample opportunity for such voters to split their ticket in an election for the same level of governance. Voter are said to cast a *straight ticket* if they cast their candidate vote for the local candidate of the same party they cast their list vote for. Thus, the party of the candidate and party list they vote for are one and the same. Otherwise, they cast a *split ticket*.

¹The particular way how votes are translated into seats under plurality and PR rule varies from system to system. For an excellent overview see Massicotte and Blais (1999).

2.1 Two Facets of Strategic Voting

Strategic voting has at least two facets in mixed electoral systems. These facets are different from single-member district systems because mixed electoral systems employ a two-ballot system, whereby candidate votes are counted differently than list votes. The fundamental question strategic voters in mixed electoral systems have to deal with is, who will have a chance to gain a majority of the seats to build a government?

Ordinarily, systems with a PR tier have more than just two parties in parliament, and leading up to an election it is not fully obvious to voters whether one party will get enough votes to form a single-party majority (Austen-Smith and Banks 1988; Laver and Schofield 1990; Pappi and Eckstein 1998). In order to be most effective, therefore, strategic voters in mixed electoral systems consider several viable coalitions of parties and split their ticket in a certain way to support their most preferred coalition if the party they otherwise like most has no chance of gaining a majority of seats in parliament. This rational is quite different from the typical arguments in the literature about strategic voting in single-member plurality systems where the focus is merely on the success of the most preferred party.

In order to behave strategically in mixed electoral systems voters have to anticipate the government formation process and form expectations about the success of parties and coalitions. Expectations about the viability of certain candidates, parties or coalitions come into play when voters make a decision whether to desert their most preferred choice and for whom to vote instead. Thus, voters are no mere servants of their preferences, as traditional models of voting behavior would have us believe. Quite to the contrary, as in Goldoni's famous play, voters are "servants of two masters": their *preferences* and their *expectations*.

There are two main processes by which voters derive expectations. First, attentive voters follow the discussions about coalition options, along with pre-election polls during the campaign.² It seems clear, however, that this process can only have an impact on the decision calculus of attentive, and therefore political aware and informed, voters. Since voters do not face a *tabula rasa* situation in the voting booth, there is surely a second process at play, through which even voters who do not follow the campaign closely can be seen to form expectations. They adopt what I call the *electoral history heuristic*. As "cognitive misers" (Fiske and Taylor 1991), individuals frequently employ heuristics to simplify their decision-making processes. Voters look back to previous elections. Even if they cannot recall the correct result of these elections, they can easily form beliefs at least about the rough coordinates of the competitive electoral landscape. Inferences based on these beliefs need not to be particularly accurate. It is sufficient that voters have an idea about who the strong contenders are or which coalitions are typically formed. Both of these processes help voters to cope with the uncertainty of an election and generate their expectations about the success of parties and coalitions. Voters create new expectations or simply update their prior beliefs about the outcome of an election in Bayesian fashion.³

Strategic votes have a predictable direction. Strategic voters split their ticket in a particular way to enhance the likelihood of getting their most preferred coalition. Although some voters might prefer a three-party coalition, there is no way that, with only two votes, voters could systematically enhance the likelihood of such a coalition. Thus, given that coalitions are (almost) unavoidable, only two-party coalitions can be relevant for

²For recent experimental evidence of the impact of polls on vote-choice in the context of the 2000 Presidential election in Mexico see Vergara (2001).

³Formal theorists employ a similar argument to make plausible the assumption that voters form "rational expectations" (Cox 1997; Cox and Shugart 1996; Fey 1997). There is also experimental evidence that the *electoral history heuristic* facilitates generating consistent expectations (Forsythe *et al.* 1993).

the decision-making process of strategic voters. Moreover, a coalition of two small parties is not relevant if these parties together are not able to gain a majority of seats in parliament. Furthermore, a coalition between two major parties is always an theoretical option. It is up to the respective party elites whether these coalition is formed. They rather try to form “minimum winning coalitions” (Riker 1962) instead. The important point is, however, that for supporters of a coalition between two major parties neither a straight ticket for either of the parties nor splitting the ticket between these parties, will make supporters of such a coalition better off in order to achieve their favored coalition outcome. There is no strategy that makes supporters of such coalitions better off. Finally, therefore, in mixed electoral systems with a two-ballot system only two-party coalitions between a major and a small party can be viable and motivate voters to split their ticket strategically. What strategies do voters employ?

In the single-member plurality tier, the mechanism behind strategic voting is the well-known Duvergerian logic to avoid wasting a vote on an uncompetitive candidate (Cox 1997; Duverger 1954; Fisher 1973; Shively 1970). Strategic voters employ the *wasted-vote strategy* and cast what I call following Cox (1997) an *ordinary strategic vote*. Figure 1 summarizes this strategic ticket splitting pattern as a result of an ordinary strategic vote. Ordinary strategic voters are supporters of a small party who realize that because of the plurality rule the local party representative of a small party has no chance of winning the district race.⁴ Thus, these voters strategically split their ticket the following way: They cast an ordinary strategic candidate vote for the most viable party representative of their preferred coalition and a sincere list vote for “their” party.

[Figure 1 about here]

Despite this logic, it is long known in the literature about plurality systems that it is necessary to distinguish situations in which more or less strategic voting is expected (Spafford 1972). Particularly in close races, small-party supporters should be more inclined to avoid wasting their candidate vote because they are more likely to make a difference than in a non-competitive district race. Hence, the incentive for small-party supporters to actually cast a ordinary strategic vote depends on the closeness of the district race. I expect to find more ordinary strategic voters if the district race is close than if the district race is essentially a foregone conclusion. Thus my first hypothesis is as follows.

Hypothesis 1 (Wasted Vote) *The closer the district race, the more likely voters are to follow the wasted-vote strategy and cast an ordinary strategic vote.*

The PR tier of a mixed-electoral system, however, offers another rationale for voting strategically. Conversely to the plurality tier, strategic voters in the PR tier are supporters of major parties. If their most preferred coalition has a junior partner who is in danger of falling below the national threshold, they are motivated to employ a *coalition insurance strategy* and cast a strategic list vote, what I call a *coalition vote*, for the junior coalition partner to ensure that the smaller party will overcome this threshold. Figure 2 shows that such a coalition vote is in fact strategic because it does not support the voter’s most preferred party. These voters strategically split their ticket the following way: They cast a sincere candidate vote for the party representative of their preferred party and (strategic) coalition vote for the junior coalition partner of their most preferred viable coalition.

⁴Conversely, all non-small parties are considered major parties.

[Figure 2 about here]

What are the mechanics behind strategic voting in a PR system and, therefore, in the PR tier of a mixed-electoral system? List-vote shares are aggregated on the national level. The competitiveness of the district race should therefore have no impact on voters employing the coalition insurance strategy on the list vote.

According to my theory, coalition voters are major-party supporters. They decide whether it is more effective to cast a coalition vote for the smaller coalition partner of their most preferred coalition or to simply cast a straight ticket for their most preferred party. It is presumably more effective to cast a coalition vote if major-party supporters are unsure whether the small coalition partner can overcome the national threshold. However, if major-party supporters expect that the smaller coalition partner will not overcome this threshold they would rather cast a sincere straight ticket. Likewise, if major-party supporters are absolutely certain that the smaller coalition partner will overcome the national threshold the incentive to cast a coalition vote should also rapidly disappear. These voters would cast a straight ticket as well. Thus, in general, the likelihood to cast a coalition vote should be curvilinear and highest if voters expect to be pivotal, that is if they expect that their vote is essential for the small coalition partner to garner just enough list votes to make it above the threshold. The incentives to follow the *coalition insurance strategy* are lowest for the two conditions described above, either if voters are certain that the party will make it or, on the contrary, if voters are certain that the party will not make it above the national threshold. Hence, my second hypothesis is as follows:

Hypothesis 2 (Coalition Insurance) *The more uncertain voters' expectations are whether or not the smaller coalition partner can overcome the national threshold, the more likely they are to follow the coalition insurance strategy and cast a coalition vote.*

The first two hypotheses deal with the impact of electoral rules on how voters behave at the polls. According to my theory, strategic voters split their ticket in the directions hypothesized above. Non-strategic voters cast either a straight ticket or split their ticket in a non-strategic way. The literature typically lumps together all ticket-splitters into one group (Burden and Kimball 1998; Fiorina 1992; Mebane 2000). Often scholars focus solely on the attitudinal and demographic differences between ticket-splitters and straight-ticket voters (Beck *et al.* 1992; Campbell and Miller 1957; DeVries and Tarrance 1972). This is certainly an oversimplification of the ticket-splitting phenomenon. There might be a variety of reasons why voters split their tickets. I do not expect the group of ticket splitters to be homogeneous. Instead, I will disentangle this category into its constituent groups: strategic ticket-splitters employing one of two strategies, and non-strategic ticket-splitters.

2.2 The Proclivity of Strategic Voting

Surprisingly, all studies about strategic behavior are build on a rather unrealistic understanding of the strategic *homo politicus*. The underlying assumption in the literature about strategic voting is that given certain institutional constraints all actors seem to have the same *proclivity* to act strategically. This premise might hold true within the confines of the Rochester School, but not in the real world. Voting behavior, as every type of behavior, is not only situational but also dispositional determined. The prerequisites for strategic voting are that a voter understands the strategic rationales and that she is able and motivated to employ them. Given these constraints, it seems utterly certain that voters vary widely in their *proclivity* to vote strategically. In general I

expect that the higher a voters' *proclivity* to vote strategically, the more she is inclined to cast a strategic vote. Thus, this *proclivity* depends on at least two factors: the *motivation* to cast a strategic vote and the *capability* to understand the strategic implications of the electoral rules as well as the nature of the party system in order to do it.

Given the above described institutional constraints in mixed electoral systems, voters with preference for certain parties or coalitions should possess a higher intrinsic motivation to engage in an effortful cognitive activity than other voters. Since strategically splitting a ticket requires presumably more cognitive effort than to simply casting a straight ticket (Gschwend 2001), I expect such voters to be motivated to cast a strategic vote in a particular fashion. I wish to extrapolate three parts of the *Motivation Hypothesis* based on this reasoning.

According to my theory of strategic voting in mixed electoral systems, a certain party preference order motivates voters in a particular fashion to cast a strategic vote. The first part of the *Motivation Hypothesis* is that small-party supporters are more motivated to employ the *wasted-vote strategy* and cast an ordinary strategic vote than other party supporters. They essentially know that their local party representative will not win the district race. Furthermore, major-party supporters are more motivated than others to employ the *coalition vote strategy* because they also know, that their party will not gain a majority of the seats in parliament without the help of a smaller coalition partner. Hence the second part of the *Motivation Hypothesis* is that they are more likely to cast a coalition vote than to split their ticket in some other, non-strategic way.

The third part of this hypothesis deals with the strength of a voter's partisanship as another motivational factor. From the literature on strategic voting and ticket-splitting in political behavior, we know more about motivational differences that might explain whether voters cast a straight ticket, split their ticket or cast a strategic vote. The standard finding is that voters who split their ticket have weaker partisan attachments than straight-ticket voters (Beck *et al.* 1992; Campbell and Miller 1957; DeVries and Tarrance 1972; Nie *et al.* 1976). In concordance with this literature, the third part of the *Motivation Hypothesis* is that the stronger someone's partisanship is, the more likely she is to cast a straight-ticket vote. In brief, the implications of the motivational factors leading to a strategic vote, such as partisanship and its extremity, can be summed up as follows.

Hypothesis 3 (Motivation)

- a) *Small party supporters are more likely to cast an ordinary strategic vote than to split their ticket non-strategically.*
- b) *Major party supporters are more likely to cast a coalition vote than to split their ticket non-strategically.*
- c) *The stronger a voter's partisanship, the more inclined she is to cast a straight ticket.*

The remaining factor that determines a voter's *proclivity* to vote strategically is her capability to understand the implications of her choices. Besides motivation, the *proclivity* to vote strategically depends on the voter's capability to engage in a task so cognitive in nature. Even if voters are non-partisans, such that they do not feel motivated to vote strategically to the same degree as partisans, they might "rationally" calculate the most efficient ways to cast their votes in order to support their most preferred coalition. Voters have to be politically aware (Zaller 1992; Zaller and Feldman 1992) and sophisticated (Luskin 1987) enough to comprehend (Tourangeau and Rasinski 1988) various options that the electoral rules offer them. Thus, my fourth hypothesis is as follows.

Hypothesis 4 (Capability) *The higher a voter's level of political awareness, the more likely she will be to cast a strategic vote.*

Recent adoptions of mixed electoral systems around the world have stimulated interest in these kind of electoral institutions.⁵ The fact that people in mixed electoral systems may cast two votes for the same level of governance at the same time is especially interesting for the study of strategic voting. Voters are inclined to employ multiple strategies because of the combination of plurality and proportional representation voting rules. In order to test these hypotheses I will use survey data of one particular country that originated this system: Germany. Germany's version of a mixed electoral system render it a very good choice, because the country has an almost 50-year tradition of applying these rules in federal elections. In this time period the German electorate has mounted sufficient experience with this rather complicated electoral system. Thus, one would expect that whatever strategies voters can use in such systems, they are likely to be crystallized - and observable - within the voting patterns of recent German elections.

In order to test my theory about strategic voting in mixed electoral systems, I have to define, what is an ordinary strategic vote and a coalition vote within the German context. The current party system in Germany consists of two large parties, the Social Democratic Party of Germany (SPD) and the Christian Democratic Union (CDU)/Christian Social Union (CSU)⁶, each getting about 40% of the list votes, and three small parties - the Free Democratic Party (FDP), the Party of Democratic Socialism (PDS) and the Greens - each garnering just over 5% of the list votes. CDU and FDP were the "incumbent coalition" before the last federal election in 1998 for sixteen years. The parliamentary opposition that tried to challenge the CDU/FDP coalition was comprised of the SPD and the Greens. These coalitions of a major party - CDU and SPD, respectively - and a small party - FDP and the Greens, respectively - were considered viable before the election.⁷ Thus, FDP or Green supporter acting strategically are expected to cast an ordinary strategic vote, while CDU and SPD supporter acting strategically are expected to cast a coalition vote.

3 Data, Analysis and Results

In a mixed electoral system like Germany's, voters have the opportunity to cast two votes: a candidate vote for the local party representative on the first ballot, and a list vote for a particular party on the second ballot. There are many conceivable possibilities of how voters could split their tickets. The 1998 German NES study on which this analysis is based was conducted right after the election, and has two vote-recall items for the candidate and list vote.⁸ Since I am interested in explaining why some voters cast a strategic vote as opposed to a straight ticket, or whether they split their tickets in a non-strategic fashion, any dependent variable employed must be polytomous. Some of my hypotheses try to disentangle both types of strategic

⁵For a recent survey of various mixed electoral systems, see Massicotte and Blais (1999).

⁶I consider the CDU/CSU party alliance as inseparable. In fact, they do not compete in the same districts. The CSU runs candidates only in Bavaria and the CDU everywhere else. For simplicity, I use the CDU notation as a shorthand for this party alliance.

⁷The Party of Democratic Socialism (PDS), the ruling party in the former GDR, is practically non-existent in West Germany but very strong in East Germany. The East German party system is still in flux. Only three federal elections have been held since the fall of the Berlin Wall. There are no established coalition patterns involving the PDS as of yet.

⁸The 1998 German NES (ZA-No. 3073) can be obtained from the Central Archive for Empirical Social Research, University Cologne, Germany.

behavior - that is, an *ordinary strategic vote* from a *coalition vote*. My dependent variable has, therefore, four categories: (a) respondents casting a straight ticket, (b) those who split their ticket in a non-strategic way, (c) respondents who cast an ordinary strategic vote, and (d) respondents who cast a coalition vote. By comparing respondents' feeling thermometer scores measured toward various political parties on an 11-point scale, I distinguish both types of strategic voting according to my theory. If a strategic ticket splitter likes⁹ the smaller party more, then she is considered an *ordinary strategic voter*, and if she likes the major party better, then she is classified as a *coalition voter*.¹⁰

Since the categories of both dependent variables are unordered I will estimate a choice model in order to test all remaining hypotheses simultaneously. Since all independent variables are "individual-specific" - that is, they vary across respondents - estimating a multinomial logit model (MNL) is appropriate. Nevertheless, MNL models yield only consistent estimates if the *independence of irrelevant alternatives* (IIA) assumption holds in the data. Since the probability of casting a straight ticket should theoretically be unchanged if one of the other categories is removed, the IIA assumption should not be violated. Several Hausman tests support this conjecture.

The MNL model, as many choice-models, is based on the idea of respondents as expected utility maximizers. In them, i th respondent's utility to cast either a straight ticket, a non-strategic split-ticket or a strategic vote is unknown and treated as a random variable. According to my theory, however, a respondent's utility is a function of X_i , a vector of nine independent variables x_k , $k \in \{1, \dots, 9\}$. A voter is predicted to choose one of the four choice alternatives (straight ticket, non-strategic split-ticket, ordinary strategic or coalition vote) that has the highest utility to her. Thus, for respondent $i \in \{1, \dots, N\}$ and choice alternative $j \in J = \{0, 1, 2, 3\}$ one gets the probability of the i th individual choosing the j th alternative from a set of J alternatives is given by

$$P_i(Y = j) = \frac{e^{X_i\beta_j}}{1 + \sum_{\substack{j=0 \\ j \neq 1}}^3 X_i\beta_j}$$

whereby $X_i\beta_j = \sum_{k=1}^K \beta_{jik}x_{ik}$ and x_k denotes the k th independent variable. In order to identify the model, the coefficients of one category have to be set to zero as a baseline against which the coefficients of the other response categories are compared. Note that I set the coefficient vector β_1 for non-strategic ticket-splitters to zero such that all other β 's are estimated relative to this baseline. This is entirely appropriate because my theory addresses conditions under which voters choose to cast a straight ticket or a strategic vote, as opposed to splitting their ticket non-strategically.

The *Wasted Vote Hypothesis* addresses the strategy at play for the candidate vote. The competitiveness of the district race is usually measured by the (candidate) vote margin between the top two contenders (Black 1978, 1980; Cain 1978). Since not every district is highly competitive, it is reasonable to assume a nonlinear relationship between the district margin and the likelihood to vote strategically. I measure the competitiveness of the district race, x_1 , by the square root of the candidate vote margin between the top two contenders of the district race. This measure accounts for the fact that a hypothetical additional increase of an already large margin should have a smaller impact on providing incentives to avoid wasting the candidate vote than in

⁹The German codebook actually refers to *liking* and not to *feeling close* to these parties, in contrast to the American National Election Study questions.

¹⁰In 18 cases I had to use party identification as a tie-breaker because two parties were tied and ranked first. Moreover, I had to delete 380 observations because these respondents had not reported their candidate and list vote or reported that they had not voted.

highly competitive races with small margins.¹¹ My expectation is that the more competitive the district race is - that is, the smaller the squared root of the district margin - the higher the incentive will be for voters to avoid wasting their candidate vote on an uncompetitive candidate. Thus, the coefficient of x_1 should be negative for the choice between casting an ordinary strategic vote as opposed to a non-strategic split ticket.

In order to test the *Coalition Insurance Hypothesis* and to find evidence for the strategy on the list vote, one has to assess the impact of voters' expectations about the success of the two possible small coalition partners, the FDP and the Greens. The 1998 German NES, unfortunately, includes no question about expectations. There is another pre-election survey, however, where respondents are asked for their subjective expectations about whether the FDP and the Greens would get 5% of the list votes.¹² The answer categories run from "absolutely certain that the party will exceed" the national threshold of 5% to "absolutely certain that the party will not". Two middle categories are for respondents who are unsure.

My strategy to construct an expectation measure for the 1998 German NES is to combine all relevant variables of both data sets and "impute" (i.e., predict) the missing values of the expectation measure (King *et al.* 2001). I, then, restrict my analysis to my original data set, which has now two further variables - an expectation scale for the FDP and the Greens - instead of mere missing values. These imputed answers can be interpreted as values of *what* respondents would have reported *if* they had been asked the expectation questions.¹³

In order to account for the uncertainty involved in using predicted values from the imputation model, in lieu of actual observations, I generate six different sets of imputed values for the expectations and will report the multiple imputation estimates based on these six data sets. While the observed values are the same across all data sets, the imputed values differ and thereby reflecting the uncertainty inherent in predicted values. These variables are continuous because the imputed values can theoretically take on every value, not only values between 1 and 4. Since the likelihood of a coalition vote should be highest if voters are unsure whether the small coalition partner can overcome the national threshold, the likelihood to cast a coalition vote should be curvilinear and highest if voters are at the theoretical middle position between both extremes. I therefore fold the imputed expectation scales midway between 1 and 4 after I recoded all imputed values smaller than 1 to 1 and greater than 4 to 4. Hence the folded scale ranges from 0 to 1.5. Small values indicate that respondents are predicted to be unsure about either outcome. High values indicate that respondents are certain that these parties either make it above the threshold or not and, thus, are less likely to cast a coalition vote. I therefore expect the coefficients for x_2 and x_3 in the comparison of the probability of a coalition vote versus the baseline, to be negative.

I also developed a *Motivation Hypothesis*. If voters are motivated in one way or the other to cast a strategic vote, they have a higher proclivity to think, and therefore to vote, strategically. I operationalize the concept of

¹¹Moreover, taking the square root of the actual margin also stabilizes the variances and makes the distribution of these values approximately symmetrical. Some scholars prefer clearly exogenous measures for voter expectations and employ district results of the previous election. Presumably, this is readily available for voters. Other scholars prefer to employ results of the current election. The disadvantage is obvious: How could a voter know the outcome before the election? In response, supporters of using current-election data retort that using results from the very same election better approximates pre-election polls in that district than results from the previous election, which usually do not exist in mixed electoral systems. Data from earlier elections might not represent the current situation at all. The closeness of the race or the personality of the candidates might be different today than in prior elections. Using current results has the added advantage that it does not assume that people stayed in the same district since the previous election.

¹²This data set is used in Pappi and Thurner (2002).

¹³Moreover, in the imputation stage I combined both groups of strategic voters of my dependent variable since I could not disentangle them within the pre-election survey. For multiple imputation I used Amelia (Honaker *et al.* 1999), a Windows-program. This software can be downloaded from <http://gking.harvard.edu/stats.shtml>.

a “party supporter” to be a voter who identifies with that particular party using the standard party identification item. In order to test the first part of my fourth hypothesis, the *Motivation Hypothesis*, about the impact of partisanship, I include a dummy variable for small party supporters, x_4 , coding as a 1 those who identify either with the FDP or the Greens and as a 0 otherwise. To test the second part of the *Motivation Hypothesis*, I constructed another dummy, x_5 , coding as a 1 those respondents who reported a party identification for either the CDU or the SPD and as a 0 otherwise. By implication, the excluded category is comprised of voters who identify with other parties or do not identify with any party at all. My expectations are that voters who identify themselves with the FDP or the Greens should be more likely to cast an ordinary strategic vote and voters who identify themselves with either CDU or FDP should be more likely to cast a coalition vote than to split their ticket non-strategically. Hence, I expect a positive coefficient for both x_4 and x_5 .

Another motivational factor is strength of partisanship. The impact of extremity of partisanship is addressed in the third part of my *Motivation Hypothesis*. As in American NES surveys, respondents of the German NES have to rate their strength of partisan attachment as weak (= 1), moderate (= 2) or strong (= 3). Respondents without any partisan identification or people who refuse to report it are recoded as a 0. Finally, I divide every score by 3, such that the strength of partisanship scale, x_6 , ranges from 0 to 1 in order to facilitate comparison of the estimated coefficients. My expectation is that the stronger a voter’s partisanship - that is, the higher the value of x_6 - the more motivated she will be to cast a sincere straight ticket for her most preferred party.

Finally, the *proclivity* to vote strategically depends also on a voter’s capability to comprehend various options that the electoral rules offer her. I expect that the level of a respondent’s political awareness should reflect a voter’s capability to use these rules most effectively. The literature on public opinion is replete with more or less creative attempts to measure some facet of political awareness, ranging from political participation (such as participating at rallies, contributing campaign money and engaging in political discussions) to political interest, political sophistication, educational attainment or media usage (Luskin 1987; Zaller 1992). The theoretical justification to prefer one measure over the other is not always spelled out. Moreover, some concepts are especially prone to response set biases. Who, after all, wants to appear uninformed in an interview situation? Thus, on theoretical as well as on methodological grounds, I prefer factual knowledge questions about politics in constructing a political awareness scale (x_7). Like Zaller (1992), to measure political awareness I rely on the ability to place the main political parties “correctly” on a left-right scale.¹⁴ In order to get a score of 1 for a “correct” answer, respondents must place parties on this left-right scale in a meaningful way. Placements are only assessed relative to one another, for instance, whether one party is located to the right of another party.¹⁵ All nine scores are summed, then divided by the total number of items such that the scale ranges from 0 to 1. Respondents who either get a location test item wrong, as well as those who have missing values because they did not place a particular party, score a 0 on this item. My expectation is that political knowledge should facilitate strategic considerations, and hence strategic voting. The coefficients of x_7 for the probability of casting an ordinary strategic vote versus the baseline and of casting a coalition vote versus the baseline, should both be positive.

¹⁴The German NES has three political knowledge questions that, somewhat curiously, do not scale together on the same scale.

¹⁵The “correct” answers of the 9 “location tests” are as follows: CDU to the right of the Greens, DVU to the right of SPD, Republicans to the right of the middle position, PDS to the left of DVU, FDP not at the extremes (placed neither 1, 2, 3 nor 9, 10, 11), CDU to the right of SPD, SPD to the right of PDS, FDP to the left of Republicans, and CDU to the left of Republicans. The answers conform to a standard spatial representation of political parties in Germany. These nine comparative placement items have an *average inter-item correlation* of .46 and the additive awareness scale has an *alpha reliability* of .88.

In addition to the independent variables stemming from operationalizations of the hypotheses, I also include two control variables in the model. An alternative explanation to strategic voting for certain types of ticket-splitting is the one of a “personal vote” (Bawn 1999; Cain *et al.* 1987; Lancaster 1998). The understanding in the literature is that personal factors, beyond mere partisanship, influence voters to cast a vote for a particular candidate. While there are no appropriate measures to operationalize this idea directly, it is reasonable to assume that voters who cast a personal vote as opposed to an ordinary strategic vote have to know at least the name of the candidate they vote for. This criterion does not clearly disentangle personal voters from ordinary strategic voters, however. Strategic voters might know the name of the candidate they vote for as well, especially since ordinary strategic voters are more likely to be political aware. This is not a necessary condition, however, since the strategic reasoning “kicks in”. Even if they do not know the name of the candidate they might vote for, small party supporter who cast an ordinary strategic vote can simply rely on the fact that the candidate of the coalition partner is more competitive than the candidate of their most preferred party. Erring on the conservative side, and to avoid falsely attenuating the other model coefficients, I control for whether respondents are able to correctly report the name of the candidate for whom they voted. I construct a name recognition dummy, x_8 , coded as a 1 if they did the name correctly and a 0 otherwise.

Finally, I include a “West” dummy, x_9 , to account for the fact that the logic of strategic voting operates on different levels in the two regions of the country, since the nature of the party system and the experience with it is different in East and West Germany. Generally, I expect the coefficient of x_9 to be positive throughout all sets of coefficients, since the logic of casting a sincere straight-ticket or splitting the ticket strategically should describe the situation in the West better than in the East.

Before I present and interpret the results of this four-choice model, I would like to draw the reader’s attention to the distribution of the dependent variable. An inspection of the distribution of several independent and the dependent variables reveals that having a partisan attachment for either of the major parties, CDU or SPD, or for their smaller coalition partners, FDP or the Greens, does not vary across *all* categories of the dependent variables. In fact, the respective cell size is zero (or essentially zero) in exactly the categories of the dependent variables where these motivational factors should not operate at all. In order to identify this model I have to constrain these two coefficients to zero in the particular set of coefficients where they do not operate. This strategy is followed for the model estimation based on each of the six data sets with non-strategic ticket-splitting as baseline. The resulting multiple imputation estimates, which account for uncertainty of the imputed variables, are shown in table 1.

[Table 1 about here]

Overall, the model fit averaged across six estimations is pretty good. This model classifies about three-fourth of all respondents correctly.¹⁶ Moreover it follows that this four-choice model is appropriate to disentangle factors that determine which strategy voters might employ. At least if all independent variables are held at their sample mean, the square root of the district margin as a measure of district competitiveness is a credible incentive for voters to cast an ordinary strategic vote as opposed to split the ticket non-strategically. As predicted by the *Wasted Vote Hypothesis* the coefficient for competitiveness coefficient is statistically significant in the second set of coefficients in support of this hypothesis. As should be the case, this variable

¹⁶All three sets of estimates are accompanied with robust White-Huber standard errors that are also clustered for respondents from the same electoral district to account for the fact that respondents in the same electoral district react not independently to the incentives provided by the electoral rules.

only has a significant impact for the comparison between ordinary strategic voters and non-strategic ticket-splitters, indicating that in competitive districts, voters behave more predictably - that is, they split their ticket in a strategic fashion. To ease the interpretation of this coefficient, consider the following figure 3.

[Figure 3 about here]

For this figure I simulated the predicted probabilities, along with their 95% confidence intervals, of casting an ordinary strategic vote conditional on the competitiveness of the district race, that is the candidate vote margin of the top two contenders in each district, in the Western part of the country, whereby all other variables are set to their mean. Clearly the impact of the wasted vote strategy is non-linear and strongest in a close race. This supports the *Wasted Vote Hypothesis*. Apparently the most precise predictions are obtained if the top two contenders in the district are around 10 percentage points from one another. The point predictions increase strongly if a district margin is below five percent. Note the length of the confidence intervals increase, too, because the respondents in this data set lived in districts that were often not closely contested.

Going back to the MNL estimation results in table 1, the *Coalition Insurance Hypothesis* for viable coalition structures in Germany predicts that the expectation coefficients should be negative in the third set of estimates. Although election campaigns provide anecdotal evidence for it (Roberts 1988) and the coefficients have the expected sign, at least with this data set the hypothesis has to be rejected. Two reasons might be responsible for that. First, it is likely that multiple imputation procedure does only produce very noisy predictions. It might be asking too much of the data to get strong results if there is not a lot information in the data to begin with. Second, the mechanism behind the *coalition insurance strategy* might be only partly described by voter's expectation that the small coalition partner is in danger of falling below the national threshold.

Moreover, I formulated several parts of the *Motivation Hypothesis*. If small party supporters split their ticket, they should be more likely to cast an ordinary strategic vote. The respective coefficient in the second set of estimates is indeed significant and positive supporting the first part of the *Motivation Hypothesis* about the impact of party identification for small party supporters. The fact that I had to constrain the respective coefficient to zero in the third set of estimates, since there is *no* small party supporter in the data set casting a coalition vote, is also another indication that small party supporters behave in a predictable manner consistent with my theory. Major party supporters, according to the second part of the *Motivation Hypothesis*, should be motivated to cast a coalition vote instead of splitting their ticket non-strategically. This is exactly what the significantly positive estimate in the third set of estimates indicates. As before, and consistent with my reasoning, I had to constraint the respective coefficient for voters who identify with one of the two major parties to zero because there is no respondent in the data set who identifies with a major party casting an ordinary strategic vote. This supports the hypothesized mechanism behind the *coalition insurance strategy*.

Not only whether voters identify with a party but also how strong this attachment is should motivate voters to cast their votes in predictable ways. The the third part of the *Motivation Hypothesis* states that strong partisans should be more motivated to cast a straight-ticket than to split their ticket non-strategically. In support of this hypothesis the respective coefficient in the first set of estimates is positive and highly significant.

Finally, my fifth hypothesis, the *Capability Hypothesis*, is partly supported by the data. It is interesting to note that political awareness does only play a role in determining an ordinary strategic vote but not a coalition vote. Apparently it is more difficult to grasp the incentive behind an ordinary strategic vote than a coalition vote. This is not inconsistent with my theory because people have generally not a hard time to figure out

viable coalition formations. Beyond information about possible coalitions during electoral campaigns, people rely on the *electoral history heuristic*. In the case of Germany, both viable coalitions have developed a history of working together across state legislatures and across time in the German parliament. Thus, it is relatively easy for voters to realize the incentives behind the *coalition insurance strategy*. On the contrary, it is harder for them to assess the competitiveness of the district race and to realize the incentives behind the *wasted vote strategy*, which are often below the radar screen of many voters. Moreover, voting behavior in the Western part of Germany is more predictable. They are more likely to cast either a straight ticket or split their ticket strategically, than to split their ticket in a non-strategic fashion. This, of course, supports again the notion of an *electoral history heuristic* because people in East Germany have less experience with the party system and the electoral rules.

Coefficient estimates, however, are not all that helpful in assessing the substantive impact of a particular independent variable on one of the four possible outcomes: straight-ticket, ticket-splitting (non-strategically), ordinary strategic vote or coalition vote. One way to provide an overview about the substantive impact of the estimated coefficients is to inspect marginal effects of a change in independent variables on the dependent variable. Table 2 presents the marginal effects of each independent variable on theoretically interesting outcomes, namely the probability to vote a straight-ticket or cast either an ordinary strategic vote or a coalition vote. The estimated marginal effects are, again, multiple imputation estimates based on six data sets to account for the uncertainty of the imputed expectation scales.

[Table 2 about here]

The interpretation of these marginal effects is relatively straightforward. Take for instance the effects for political awareness. Holding all other variables at their sample mean, a one-unit increase on the awareness scale increases the probability of an ordinary strategic vote by 3%-points. Interestingly, consistent with the notion that casting a straight ticket requires presumably less cognitive effort than casting a strategic vote (Gschwend 2001), political sophisticates are less likely to simply cast a straight ticket. Moreover, the hypothesized motivational factors apparently work for straight tickets and increase the *proclivity* to cast an ordinary strategic vote. Unfortunately, the marginal values show no statistically significant impact on the probability to cast a coalition vote, although the coefficient for the FDP expectation scale has the correct sign. Another interesting information marginal effects are able to provide is a comparison of the importance of certain predictors in terms of facilitating certain types of voting behavior. Overall, the hypothesized effects of the motivational factors which show the strongest impact on the way voters cast their votes.

For a substantive more fruitful interpretation it is necessary to define theoretically interesting scenarios and predict possible outcomes. One way to assess the impact of a particular independent variable is to compute the predicted change in probability - so-called "first differences" - to cast either a straight ticket, an ordinary strategic vote or a coalition vote if this independent variable changes from one value to the next. What would happen if one changes a particular independent variable from its minimum to its maximum in the sample? The difference in predicted probabilities, the size of the "first-differences" for certain types of voting behavior, is another way to assess the substantive impact of various factors on casting a strategic vote or casting a straight-ticket or splitting the ticket non-strategically. The following table 3 summarizes predictions of various theoretically relevant scenarios based, again, on multiple imputation estimates across six data sets.

[Table 3 about here]

The values in table 3 represent the change in predicted probability for three different outcomes if one particular independent variable is changed from its minimum to its maximum for respondents in the Western part of the country, while all other variables are set to their mean value. The respective values for a hypothetical voter in East Germany are similar.¹⁷

First, I will discuss the substantive impact of factors facilitating to cast a straight-ticket. Recall that, for the likelihood to vote a straight ticket, there was only one hypothesis formulated, namely the third part of the *Motivation Hypothesis* about the motivation as an extreme partisan to cast a straight-ticket. An average voter in West Germany - i.e. she has a mean value on all remaining individual level characteristics - is 7% more likely to vote a straight ticket if she is a strong partisan than if she is a non-partisan. Apparently, extremity of partisanship has a strong impact on casting a straight ticket. This finding is hardly surprising because it helps to establish the idea that, all else equal, voters rely on partisanship and the extremity thereof to cast a straight ticket. It seems that this is a reasonable baseline against which systematic deviations can be judged in order to identify strategies in voters' decision-making process.

Second, several hypotheses address factors instrumental for casting a strategic candidate vote. Identifying with either the FDP or the Greens alone makes a hypothetical voter in the West 29.1% more likely to cast an ordinary strategic vote, supporting the first part of the *Motivation Hypothesis* about the motivation as a partisan of a small party. Moreover, there is evidence for the *Capability Hypothesis* as well. An otherwise average voter is almost 3.4% points more likely to cast an ordinary strategic vote if she is very political aware as opposed to a politically total unaware voter. It takes some effort to realize the implication of this strategy and, presumably, the impact of the competitiveness of the district race. The name recognition dummy to get at the idea of a "personal vote" has also significant impact employing this strategy. Note this measure not only measures personal voters but also all voters who know at least the name of the district candidate they vote for.

Third, there are factors facilitating a coalition vote. In some ways, the relevant scenarios replicate the null findings from table 1. Nevertheless, table 1 shows that identifying with a major-party does facilitate a coalition vote as opposed to split the ticket non-strategically.

In this statistical model the impact of various factors cannot be assessed independently from the level of other independent variables. Typically voters have expectations about the success of parties' *as well as* some motivation *and* are somewhat sophisticated. Thus, it is also substantively interesting how well all the hypothesized factors operate conjointly. This dynamic will be simulated below. In order to assess the combined effect, which is represented for each category in the last row of the table, I simulate the change in probability of an otherwise average voter in the Western part of the country if all hypothesized motivational factors as well as political awareness change from their minimum to their maximum value and the expectation scales, conversely, from their maximum to their minimum value simultaneously. This simulates how much more likely it is that a strong, knowledgeable major-party supporter, who is certain whether both small parties to get over the threshold, will cast a coalition vote, as compared to an unaware voter without partisan identification and unsure about the success of both small parties. The combined effect of all five hypothesized effects, unfortunately, does not show any impact.

The combined effect of a simultaneous change in four characteristics on the probability to cast an ordinary strategic vote is very large. A knowledgeable, strong small-party supporter in a close contested district race, even if she does not know the name of the local candidate, is almost 50% points more likely to cast an ordinary

¹⁷I computed the simulated predicted probabilities using CLARIFY 2.0 (King *et al.* 2000; Tomz *et al.* 2001).

strategic vote than an unaware voter in an uncompetitive district without partisan identification, but who at least knows the name of the candidate she is voting for. Finally, for casting a straight ticket, I hypothesized only the strength of partisanship such that a combined effect is the same as the single effect for this coefficient.

In summary, with the exception of the *Coalition Insurance Hypothesis*, all hypotheses are supported by the model results. The simulations of substantive interesting scenarios in table 3 further draw a similar picture. Although not all the factors I hypothesized make a significant difference on their own in terms of voter decision-making, the analysis of theoretically relevant combined effects support my theory. Moreover, the fact that no small party supporter in the sample casts a coalition vote - I therefore had to fix the respective coefficient - is at least some indication that the idea behind the *coalition insurance strategy* is not off-base. The evidence presented here shows that electoral institutions provide certain incentives, particularly for the *wasted-vote strategy*. But voters do respond quite differently to these incentives. As the combined effects above make plain, if voters are appropriately motivated to understand the implication of electoral rules, and cognitively capable of doing so - in short, if they have a high *proclivity* to vote strategically - they are in fact much more likely to cast a strategic vote.

The idea that voters respond differently to institutional incentives is contrary to the “common wisdom” in the strategic voting literature but, nevertheless, well supported by the data. The notion in the ticket-splitting literature that “all ticket-splitters are created equal” is clearly not valid. Instead these findings lend support to the idea that strategically motivated ticket-splitters behave differently from non-strategic ticket-splitters. Thus, these results provide evidence to refine a longstanding claim in the ticket-splitting literature that shared considerations are responsible for why people split their ticket. My theory of strategic voting, if read within the context of this literature, adds the notion that *not* every ticket-splitter is motivated equally. This is a new argument and well supported by the data. It explains in part why some people split their ticket in predictable ways in the voting booth.

4 Conclusion

Where does this analysis leave us? This paper provides several contribution to the literature on strategic voting, ticket-splitting and on electoral systems. My first contribution is to allow the electoral institutions to vary, thereby opening up the possibility to provide different incentives to operate at the same time for the same voter. I offer a theory that particular institutions not only determine the *degree* of strategic voting, but also the *kind* of strategies voters systematically employ to make their decision. Strategic voting has two facets in mixed electoral systems. In the single-member plurality tier, strategic voters employ the *wasted-vote strategy* and cast an *ordinary strategic vote* for a major party. The PR tier, however, offers another rationale for voting strategically. Strategic voters employ a *coalition insurance strategy* and cast what I call a strategic *coalition vote* for the junior partner of their most preferred coalition. Following these strategies one expects to observe particular split-ticket patterns. Thus according to my theory strategic votes have a predictable direction. Through this analysis, it became manifestly clear that mixed electoral systems are indeed an ideal choice to demonstrate the impact of electoral institutions on voting behavior.

My second contribution is to provide evidence that people vary in their *proclivity* to vote strategically, as determined by various motivational factors as well as their capability to comprehend the strategic implications that are offered by particular electoral rules. In contrast to the conventional wisdom of the ticket-splitting

literature, this analysis reveals that ticket-splitters differ on several characteristics and should, therefore, not simply be collapsed into a single residual category as is typically done in this literature. Adding my theory to this literature makes it possible - and indeed, preferable - to disentangle this residual category of voters in order to extract more information from it.

An obvious direction for future research is to provide empirical evidence for the distinction of non-strategic ticket splitters and strategic ticket splitters across several institutional settings. Ticket splitters are not necessarily strategic, but some of them are. The *proclivity* to vote strategically theoretically does not depend on particular electoral rules. If various strategies are identifiable, tests of the *Motivation* as well as the *Capability Hypothesis* can be easily obtained for voters in other electoral settings as well.

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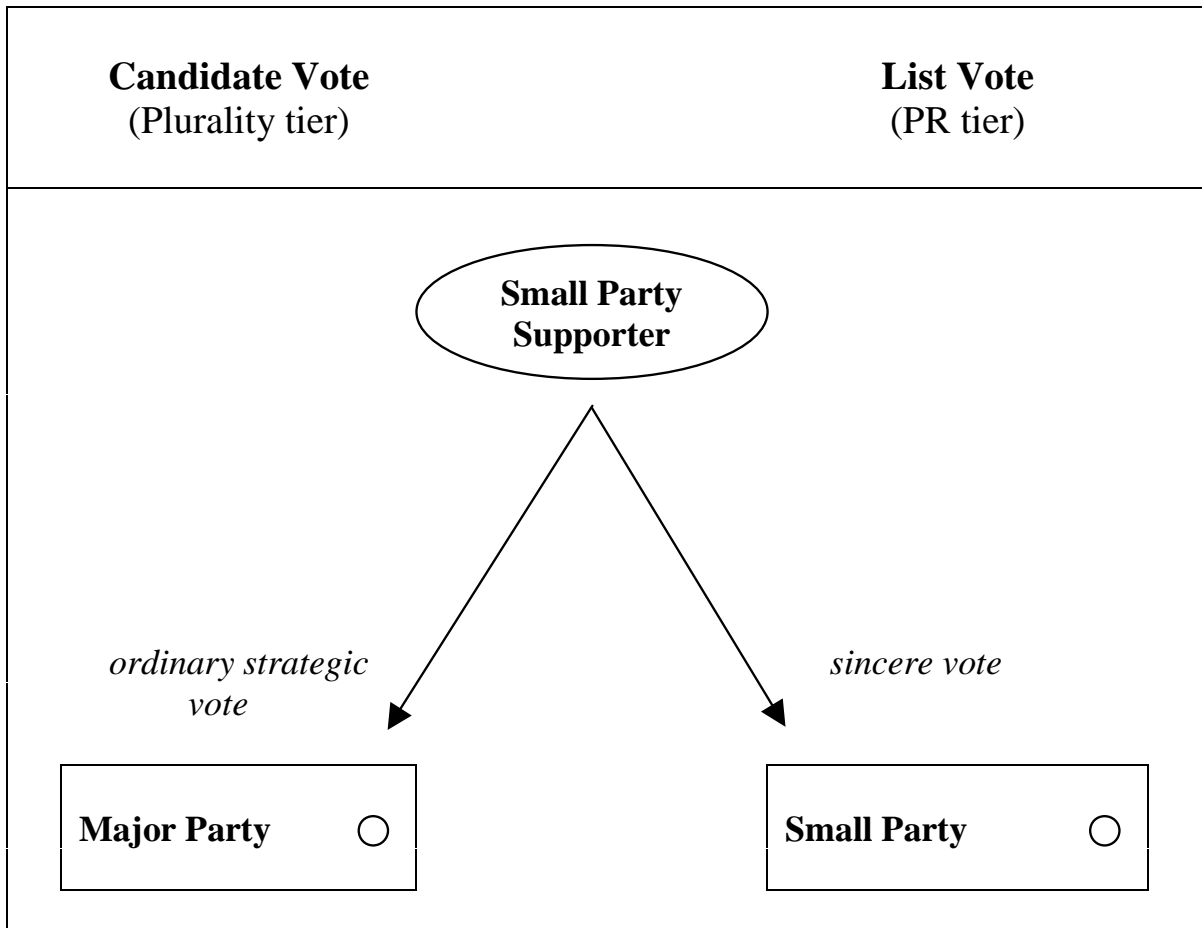


Figure 1: Strategic Ticket-Splitting Behavior of a Small Party Supporter.

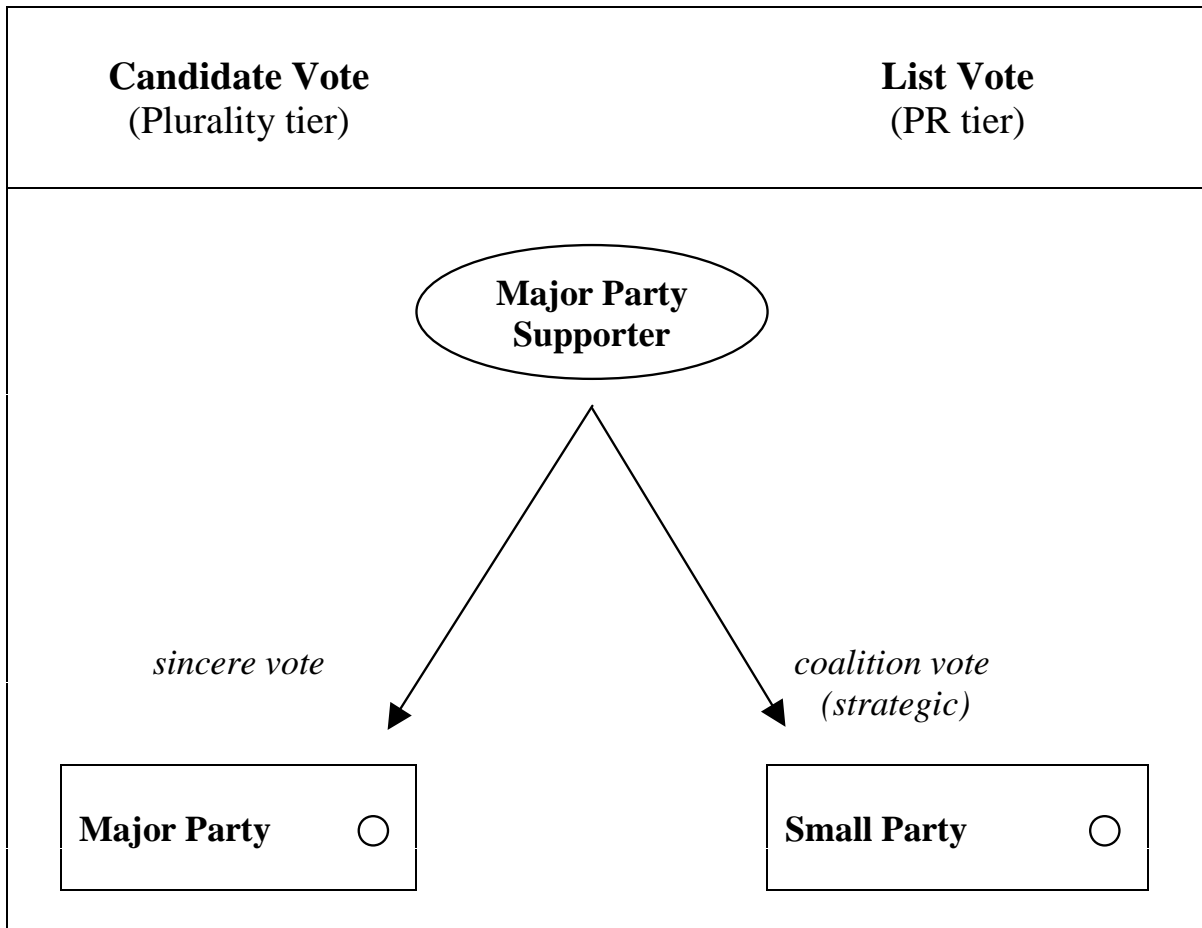


Figure 2: Strategic Ticket-Splitting Behavior of a Major Party Supporter.

Independent Variables	Straight Ticket vs. Ticket Splitting			Ordinary Strategic vs. Ticket Splitting			Coalition Vote vs. Ticket Splitting		
	Coeff.	Std.Err.	<i>p</i>	Coeff.	Std.Err.	<i>p</i>	Coeff.	Std.Err.	<i>p</i>
Competitiveness (x_1)	-0.046	0.049	0.353	-0.275	0.129	0.033	-0.144	0.116	0.214
Expectation FDP (x_2)	-0.248	0.250	0.322	-0.404	0.708	0.569	-0.454	0.614	0.459
Expectation Greens (x_3)	-0.242	0.209	0.247	-0.119	0.517	0.818	-0.081	0.682	0.906
PID small parties (x_4)	-0.167	0.359	0.641	2.722	0.441	0.000	0	fixed	
PID major parties (x_5)	1.070	0.211	0.000	0	fixed		1.326	0.463	0.004
Strength of PID (x_6)	0.461	0.223	0.038	0.077	0.486	0.875	-0.119	0.620	0.848
Political Awareness (x_7)	-0.343	0.231	0.138	1.243	0.653	0.057	0.247	0.536	0.644
Name Recall (x_8)	0.392	0.201	0.051	0.779	0.360	0.030	0.159	0.391	0.684
West (x_9)	0.579	0.148	0.000	1.220	0.331	0.000	1.050	0.328	0.001
Constant	1.412	0.369	0.000	-2.708	0.852	0.001	-2.012	0.881	0.022
N	1625								
Correctly Classified (average)	75.1%								

Note. *p*-values are for two-tailed tests. Coefficients are averaged across six estimations. Standard errors of multiple imputation estimates account for the variance across all six estimations.

Table 1: *Disentangling Straight-Ticket and both Types of Strategic Ticket-Splitting from Non-Strategic Ticket-Splitting.*

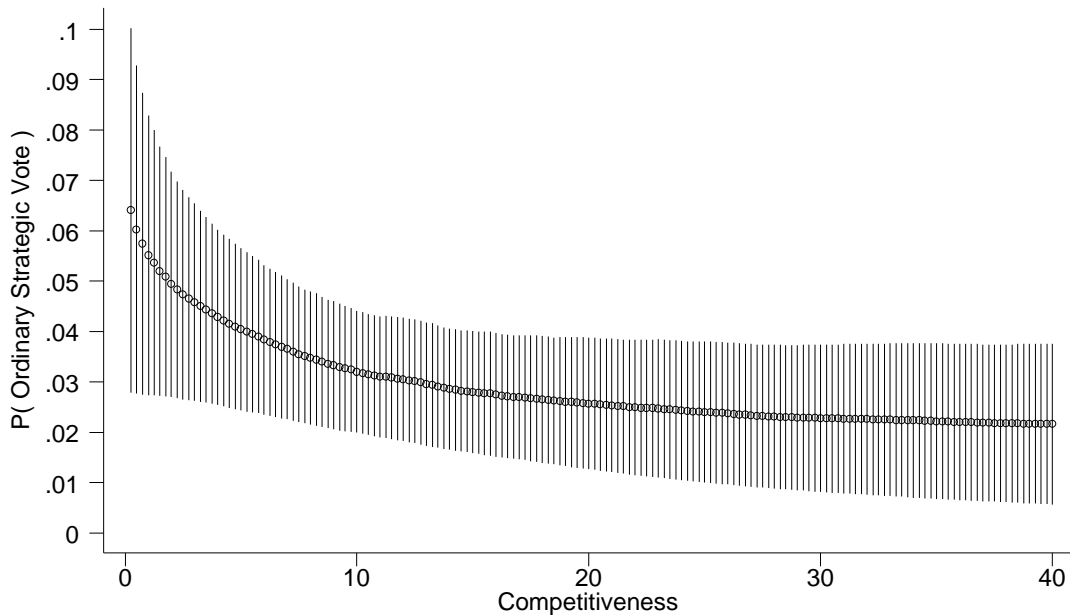


Figure 3: *Simulated Impact of District Competitiveness on the Probability to cast an Ordinary Strategic Vote.* The horizontal axis indicates the competitiveness of the district race. The vertical lines represent the 95% confidence intervals around the simulated predicted probabilities.

Independent Variables	Straight Ticket			Ordinary Strategic			Coalition Vote		
	dy/dx	Std. Err.	<i>p</i>	dy/dx	Std. Err.	<i>p</i>	dy/dx	Std. Err.	<i>p</i>
Competitiveness (x_1)	0.000	0.007	0.988	-0.005	0.002	0.054	-0.003	0.003	0.326
Expectation FDP (x_2)	-0.024	0.034	0.472	-0.003	0.011	0.760	-0.007	0.017	0.681
Expectation Greens (x_3)	-0.036	0.040	0.366	0.001	0.011	0.898	0.003	0.020	0.866
PID small parties (x_4)	-0.202	0.069	0.003	0.224	0.061	0.000	-0.003	0.007	0.644
PID major parties (x_5)	0.128	0.025	0.000	-0.016	0.004	0.000	0.013	0.014	0.341
Strength of PID (x_6)	0.078	0.035	0.027	-0.006	0.009	0.542	-0.014	0.016	0.393
Political Awareness (x_7)	-0.083	0.036	0.022	0.030	0.013	0.018	0.014	0.014	0.316
Name Recall (x_8)	0.044	0.025	0.073	0.010	0.008	0.209	-0.005	0.009	0.573
West (x_9)	0.052	0.023	0.022	0.015	0.007	0.029	0.016	0.009	0.070

Note. *p*-values are for two-tailed tests based on multiple imputation standard errors.

Marginal effects are computed if all other independent variables are set to their sample mean.

Table 2: *Marginal Effects on the Probability of casting a Straight-Ticket and both Types of Strategic Ticket-Splitting.*

Simulated Change in Predicted Probability: if Independent Variable changes from Minimum its Maximum						
Independent Variables	Straight Ticket		Ordinary Strategic		Coalition Vote	
	Mean	Std. Err.	Mean	Std. Err.	Mean	Std. Err.
Expectation FDP (x_2)	0.025	0.043	0.006	0.022	0.012	0.030
Expectation Greens (x_3)	0.050	0.058	-0.004	0.022	-0.008	0.037
PID small parties (x_4)	-0.264*	0.068	0.291*	0.066	-0.006	0.010
PID major parties (x_5)	0.105*	0.028	-0.024*	0.007	0.017	0.019
Strength of PID (x_6)	0.070*	0.034	-0.008*	0.013	-0.017	0.022
Political Awareness (x_7)	-0.078*	0.033	0.034*	0.016	0.016	0.016
Name Recall (x_8)	0.030	0.023	0.015	0.012	-0.006	0.012
Hypothesized Combined Effect	0.070*	0.034	0.497*	0.112	0.013	0.061

Note. First-differences are based on multiple imputation estimates. * $p < .05$

Table 3: *Simulated First-Differences of Relevant Scenarios.*