

Distinguishing between strategic and stochastic voters: An empirical study of misaligned voting in the 2010 Swedish parliamentary election

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Abstract:

This paper examines the proportion of the Swedish electorate that did not vote for their most preferred party in the parliamentary election of 2010. We propose a way in which we can divide these misaligning voters into subgroups in order to further increase the understanding of what drives this behaviour. A binary probit model is designed to better determine the share of these voters that should be considered truly strategic and those that should not. The data in use is a National Election Study conducted by the SOM-institute at the University of Gothenburg. By distinguishing between the misaligning voters through our dependent variable of political sophistication, we find that political interest increases the probability of a misaligner being truly strategic. The other independent variables tested, level of news consumption and whether a respondent has a second-best party alternative, both point in the same direction, but are statistically insignificant.

Keywords: misaligned voting, strategic voting, stochastic voting, asymmetric information

JEL Classification: C31, D82, H11, P48

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1. Introduction

In representative democracies, elections to parliament are the primary way in which voters get to signal their political preferences. This is the setting in which the public speak their minds and choose in which direction to take their country in the years to come. However, research as of late has shown that this decision-making process may not be as driven by preferences as one might think. In fact, a substantial number of voters vote against their stated preferences (see e.g. Blais et al., 2006; Abramson et al., 2010; Meffert & Gschwend, 2011), a phenomenon that contradicts conventional utility theory in economics (Zafirovski, 2001). For many voters, such aspects as a party's policies and how well they can identify with these are not the most important considerations when choosing who to vote for, but instead voters make what could be seen as purely strategic choices. Explanations for such strategic voting and how it should be studied are research topics that scholars within political science and economics attend to at an ever increasing rate.

The main body of research covering this topic has been focused on plurality systems (see e.g. Alvarez & Nagler, 2000; Evrenk & Sher, 2015), i.e. where a candidate wins a constituency by receiving a plurality of the votes (see Section 3.1). The argument has been that this system makes for a better research setting when looking at strategic voting since it tends to facilitate only two viable alternatives (Duverger, 1954), and thereby lead to a situation where a vote cast for anyone else than the winner is wasted (Downs, 1957). However, the proportional representation system (onwards referred to as the *PR system*), where a political party is allocated seats in parliament in proportion to its share of the total vote, thus fostering purely preference-driven voting, has not been seen by scholars as a potential arena for strategic voting. The lion's share of research on the topic has instead remained in line with the reasoning of Duverger and Downs and overlooked the PR system. Nevertheless, subsequent research has shown that strategic considerations do affect vote choice also in PR systems to the same extent as in plurality systems (Abramson et al., 2010). This thesis will aim to build on the existing body of research and make further contributions within the research area of misaligned voting.

Considering strategic voting in a Swedish context, Fredén (2014) concluded that the high electoral threshold of 4% drives voters to support a party at risk of falling below said threshold in order to secure the win of the most preferred coalition government (further covered by Cox, 1997), even though they may not agree with the policies of the particular party. Sweden, being a

country with a substantial number of political parties in spite of its high electoral threshold, makes for an interesting setting to study further and will be the focus of this paper.

Going into the 2018 election cycle, polls suggest that three established parties in Sweden are at risk of falling below the 4% electoral threshold. This amounts to no less than 750 000 votes, equivalent to almost 10% of the entire electorate, at risk of being wasted in the allocation of seats in parliament (Lönegård, 2017). This opens up for more strategic considerations than ever before, and increases the probability of misaligning voters having a profound impact on the election outcome. Understanding this part of the electorate is thus essential in order for parties to direct their communication, and for voters to be able to coordinate on satisfactory coalition outcomes (see Section 3.3).

Following the framework used by Evrenk & Sher (2015), the behaviour of voting against one's stated party preference will be referred to as *misaligned voting* (see Sections 2.1 & 4.3). Like them, we will approach the topic by making a distinction between truly strategic voters and voters who misalign their vote for other, unspecified reasons. However, we differ from their paper in the sense that we will conduct our study in a PR system and separate between voters by constructing a variable of voter sophistication (see Section 4.3). Furthermore, we test for a set of characteristics to determine the effect they have on a voter's likelihood of being truly strategic (see Section 5.2). Using an extensive survey dataset on Swedish voter characteristics from the 2010 parliamentary election, we will aim to answer the research question:

Does political interest, news consumption and an expressed second-party preference increase a misaligning voter's probability of being truly strategic?

The study will contribute to the existing body of research by making a distinction between the misaligning voters, which will provide for a better understanding of the Swedish electorate and remedy potentially misleading beliefs regarding the impact strategic voters have on election outcomes. It will also help parties differentiate between the voters who can be persuaded by arguments of a strategic nature and those who cannot. Research has found that the assumptions political parties make about voters' level of sophistication have meaningful implications on how to communicate efficiently (Demange & Van der Straeten, forthcoming). This paper alleviates the level of private information that voters hold in relation to political parties regarding their sophistication. We find that political interest has a strong effect on a misaligning voter's probability of being sophisticated, while the other explanatory variables are statistically insignificant.

The thesis is organised as follows: Section 2 offers distinctions regarding stochastically misaligned and truly strategic voting, as well as some background knowledge about the political system in Sweden and the 2010 election. Section 3 will outline the previous research that has been conducted on the topic of misaligned voting, whilst Section 4 describes the data, how it was collected and processed. Section 5 and 6 describe the method chosen to help answer our research question and the results that followed. We will then finish by presenting a discussion about our findings and some concluding remarks in Sections 7 and 8.

2. Background

2.1 Strategic voting

In the literature covering strategic voting, the behaviour is commonly interpreted as a voter deviating from her ideologically most preferred alternative in order to get a desired governmental outcome (see e.g. Abramson et al., 2010). In conventional economic theory, strategic behaviour is generally referred to as the behaviour from which an economic agent expects the highest payoff, given the actions of others (see e.g. Tan & da Costa Werlang, 1988; Heinemann et al., 2004). We build upon these two distinctions when deciding on how to define strategic voting considerations throughout this thesis. When a voter casts her vote with the forming of government, rather than ideology or policies of a particular party, as her main consideration, the voter is deemed to be acting strategically. Naturally, a preferable governmental outcome can only be achieved if voters act on the aggregate, whereby a strategically considerate voter must also assess the expected actions of others.

2.2 Distinctions regarding misaligned voting

In order to ease the reader's comprehension of the remainder of this thesis, a number of distinctions are due. Firstly, we will use a particular terminology throughout the study when referring to the different types of voters and voting behaviours that are present. If we start with *misaligned voting*, this will refer to the broadest meaning of the term, i.e. when a voter votes for any party other than the one of highest stated preference (Evrenk & Sher, 2015). Next, we have *strategic voting*, which will be used frequently when we describe the previous research on this topic. The term refers to the voting behaviour where researchers assume there to be strategic

considerations at play. That is, misaligning is the voting behaviour itself whilst strategic voting is the conscious consideration that is assumed to cause the misaligning.

Lastly, we have the most important denotation for this particular study, namely the *sophisticated misaligner*. This term will be used interchangeably with *truly strategic voter* and refers to the subset of misaligning voters that, according to our definitions in Section 4.3, do it because of actual strategic reasons. Within much of the literature, there is a tendency to use strategic voting synonymously with misaligned voting, even when there are in fact no truly strategic considerations at play. By instead referring to sophisticated misaligners, we hope to make the distinction between the two clear. The remainder of misaligning voters in our data will be assumed to vote against their preference due to non-strategic, stochastic reasons and will be referred to as *non-sophisticated misaligners* throughout the text.

Note that we limit our scope according to the definition of what is considered strategic behaviour in Section 2.1, and consider all misaligned voting where the governmental outcome is the main motive as being truly strategic. We thereby exclude analysis of the different variations of strategic voting that have been covered by scholars such as Cox (1997), and instead focus our study on the differences between sophisticated and non-sophisticated misaligners.

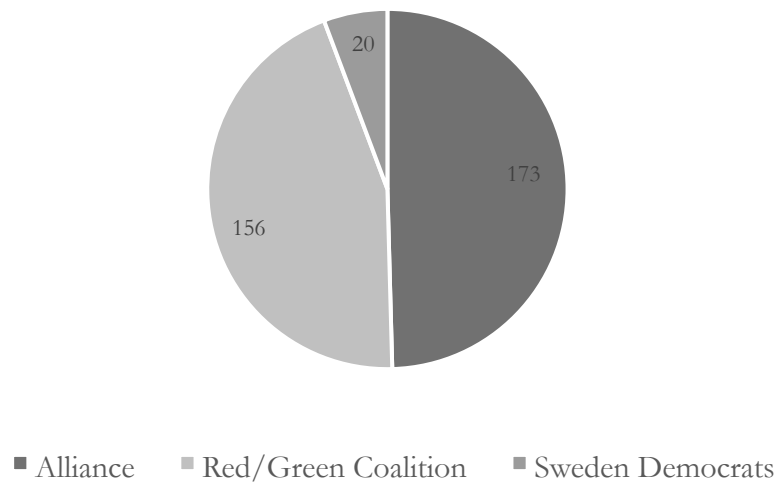
2.3 Sweden's proportional representation system

Sweden has a proportional representation system where a 4% threshold of the popular vote is required for a party to enter into parliament. The parliament consists of 349 seats that are distributed in the same proportion as the election outcome, granted that the particular party has surpassed said threshold. At the time of writing the number of parties represented in parliament amounts to eight. Since the latest election in 2014, the incumbent governing coalition consists of the Social Democrats and the Green Party. The opposition consists of five parties out of which the opposing centre-right coalition called the Alliance includes the Moderate Party, the Centre Party, the Liberals and the Christian Democrats. The two remaining parties, the Sweden Democrats and the Left Party are outside of coalitions. The Sweden Democrats are viewed as an opposition party to the government, while the Left Party tends to vote in line with the incumbents.

2.4 The parliamentary election of 2010

The election of 2010 brought with it many changes to the political landscape, even though the Alliance coalition as an incumbent remained in power. First of all, the government no longer occupied a majority in parliament since the popular vote share of 49.28% yielded 173 of the 349 seats, as shown in Graph 1 and Table 1 (Valmyndigheten, 2010). Also, the three opposition parties in parliament at the time (the Social Democrats, the Green Party and the Left Party) had signalled beforehand that they were to prepare a common platform as a Red/Green coalition and intended to govern together if elected by the Swedish people, which was something they had not done in previous elections. Plescia (2016) shows that pre-election coalition signals have an impact on vote choice, and that a coalition can outperform the individual parties in voter popularity. This knowledge may have been one of the reasons for the left-leaning parties to run as a coalition rather than separately.

Graph 1: Distribution of seats in parliament following the 2010 election.



In her study of misaligned voting in the 2010 Swedish election, Fredén (2014) concludes that 51% of votes cast for the Christian Democrats, the smallest member of the government coalition, were misaligned, and ultimately had a decisive effect on the election outcome. She thereby establishes the existence of strategic voting in Swedish elections and opens up for further studies.

Table 1: The election result and seat distribution in parliament following the 2010 election.

Election result, 2010		
	Percent	Seats in Parliament
Voter Turnout	84.60%	
Share of electorate		
Moderate Party	30.06%	107
Centre Party	6.56%	23
Liberals	7.06%	24
Christian Democrats	5.60%	19
Green Party	7.34%	25
Social Democrats	30.66%	112
Left Party	5.60%	19
Sweden Democrats	5.70%	20
Feminist Party	0.40%	0
Others	1.02%	0
Total	100%	349

3. Previous research

In the first subsection below, we will bring up some theoretical approaches to strategic voting behaviour in plurality as well as PR systems. The study of plurality systems is beyond the scope of this thesis, but is nonetheless considered relevant in order to understand outcomes in PR systems. We will then move on to some of the empirical work that has been conducted within this area of research, in order to set the stage for the remainder of the thesis. The final subsection will take a closer look at which branch of economic theory that is applied to the research topic.

3.1 Theoretical: Strategic voting, historical review

Most of the research conducted on misaligned voting has been focused on plurality systems. In this setting, scholars such as Duverger (1954) and Downs (1957) have argued that a voter will only cast her vote for a party that has a legitimate chance of becoming the largest player in a particular constituency, and thereby winning the election. According to them, voting for anyone

else would lead to the vote being wasted, which is the fundamental reason why voters would consider misaligning.

On the other hand, Duverger argues that the PR system differs in the sense that the incentive to vote strategically for a potential winner is less prevalent. This is due to the fact that all votes count when seats in parliament are allocated, meaning that no votes are wasted and that the rational voter simply will choose her most preferred party (Duverger, 1954). Downs (1957) extends the discussion to also include the forming of coalitions in PR systems and the various governmental outcomes that may arise as a consequence of this process. Before casting the ballot, a voter must consider all of these alternatives and the total outcome of the differing party-level policies. Downs argues that this line of reasoning is too cumbersome for everyday voters, causing them to simply vote for their most preferred party, hoping that it will yield a larger influence in the elected government coalition (Downs, 1954).

3.2 Empirical: Strategic voting in PR systems

Contrary to the expectations of Downs and Duverger, subsequent research has concluded that voters do indeed make strategic considerations when voting in PR systems to much the same extent as in plurality elections (see e.g. Tsebelis, 1986; Blais et al., 2006; Bargsted & Kedar, 2009; Abramson et al., 2010; Fredén, 2014; Herrmann, 2014). However, there are different aspects of strategic voting to consider in this type of setting, mainly the fact that government formation usually involves building coalitions (Hobolt & Karp, 2010).

In a study focused on the Swedish PR system, Fredén (forthcoming) uses a survey experiment to examine the effect on voter intentions by coalition signals as well as opinion polls in the parliamentary election of 2014. A striking conclusion is that the Christian Democrats, which was the smallest party in the Alliance, received the most support when it was at, or slightly below, the threshold in the randomised polling information given to subjects of the experiment. This implies a will from supporters of other parties to keep the Christian Democrats in parliament to secure the rule of the preferred coalition government. On the other hand, the small left-leaning party, the Feminist Initiative, which was not part of any of the major coalition alternatives, received lower support not only from supporters of other parties, but also from their own supporters when they were polling below the threshold. According to the author, this signals a fear among FI-supporters to waste their votes.

There are other studies supporting the proposition that small parties are more likely to be abandoned than larger ones in case they run the risk of not being a decisive factor in building a government (see e.g. Abramson et al., 2010), but also that coalition expectations are significant in voters' decision-making process (Bargsted & Kedar, 2009). In a situation where parties are too small or coalition signals too ambiguous, voters might go for their second-best option in order to have an impact on the actual governmental outcome (Blais et al., 2006; Herrmann, 2014; Fredén, 2014 & forthcoming).

One study that inspired parts of our methodology was conducted by Evrenk & Sher (2015) on the 2005 UK election, in which the authors try to deepen the discussion about misaligned voting. By including a variable in their model of each respondent's expected impact on the election they hope to more precisely estimate what share of the misaligned voting that is truly strategic. In this paper we revise their strategy by constructing and using a variable showing each voter's sophistication level, and thereby distinguish between the truly sophisticated misaligners and those who do it because of seemingly irrational reasons (see Section 4.3).

The distinction made by Evrenk & Sher (2015) is further supported by a paper looking at the 2006 election in Germany, a country employing the PR system (Meffert & Gschwend, 2011). The study is based on an experiment, in which the authors use manipulated polling results to create close as well as clear pre-election contexts, and staged coalition signals to affect the level of ambiguity voters are exposed to. Also, an open-end question where respondents are asked to give a reason for casting their vote one way or the other is used to distinguish strategic votes from irrationally misaligned ones. The study finds that the share of misaligned votes (24%) differs substantially from the mere 5% considered truly strategic by the researchers (Meffert & Gschwend, 2011), showing the importance of understanding the electorate better. Furthermore, the authors find that those voters who cast a misaligned vote for non-strategic reasons are equally likely to defect from their preferred party regardless of whether the election is close or not, while the truly strategic voters only defect in case of a close call. Moreover, they find that increased party preference significantly lowers the likelihood of defection.

3.3 Theoretical: Asymmetric information

3.3.1 From the party perspective

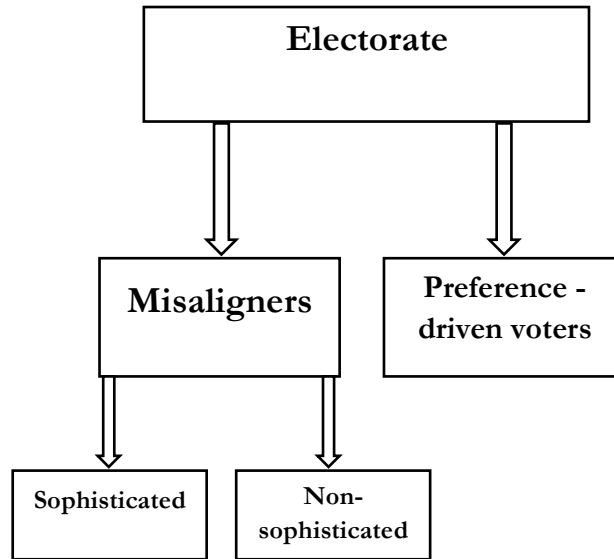
The ultimate proof of a successful campaign for any political party should be considered the number of votes earned in the election. For parties to maximise the probability of success, they must have extensive knowledge of their counterparts, the voters. While a subgroup of the electorate as a whole, the misaligning voters make up a substantial share of the votes possible to attain. Therefore, within the framework of information asymmetry brought forward by scholars such as Akerlof (1970), Spence (1973) and Stiglitz & Rothschild (1976) we have constructed a way that can sensibly distinguish between voters that are truly strategic, and those who are not affected by rational signals.

Firstly, the problem of addressing the correct type of voter for the political parties is a case of asymmetric information. As voters themselves may very well know whether or not they are capable of voting strategically, some of them are in reality likely to be nudged into a decision by arbitrary cues such as campaign posters or gossip. This type of voter thus becomes more likely to engage in a stochastic voting behaviour, and therefore needs to allocate more effort to address her vote choice analytically (Evrenk & Kha, 2011). Regardless, this leaves the parties with no knowledge on how to target these voters, which thus leads to inefficient communication and resources being wasted on trying to reach voters that would have voted stochastically anyway. By distinguishing between the misaligners based on their level of sophistication there is an opportunity to reduce wasteful spending and achieve a more cost-efficient communication.

Secondly, to address this issue we have constructed a sophistication variable, intended to work as a proxy for which voter is to be considered informed enough to consider voting strategically. This is based on the idea that knowledge, or possession of more extensive information, is likely to enhance an agent's conscious decision making and if parties are aware of this they should be able to pinpoint truly strategic voters more accurately.

3.3.2 From the voter perspective

Figure 1: A graphic illustration of the different categories of voters within the electorate.



As stated by Meffert & Gschwend (2011), there are three types of voters within the electorate in a PR system (see Figure 1). First of all, we have the preference-driven voters, i.e. those voting in line with their party preferences no matter the election context, thus never misaligning. Secondly, we have two sets of misaligners, namely the sophisticated and the non-sophisticated ditto. Among these, the sophisticated misaligners are the ones engaging in strategically conscious decision making when casting their ballot. The non-sophisticated misaligners are on the other hand found to vote stochastically, i.e. posing their votes against their stated preferences, but not due to conscious strategic considerations. The purely preference-driven voters thus maximise their utility by voting for their preferred party in order to secure a maximum number of seats in parliament. A sophisticated, utility-maximising voter in the Swedish PR system will however also need to consider the potential governmental outcome effect from her vote choice. Considering that the likely outcome in this system is a coalition government, the voter needs to evaluate her party preference relative to her coalition preference (Hobolt & Karp, 2010).

Consider for ease of understanding a hypothetical example: polls ahead of the Swedish election imply that the Christian Democrats are only attracting 2% of the voters, substantially below the electoral threshold. A sophisticated voter preferring an Alliance government but supporting another party within the coalition thus needs to decide whether or not to misalign her vote in support for the Christian Democrats and thereby help secure her coalition government of choice. Following conventional economic theory, assuming fully rational (i.e. utility-maximising) agents,

all sophisticated Alliance supporters preferring another party should therefore misalign their votes, lifting the party above the threshold and securing a government of choice, assuming all other voters in the same situation do the same thing. In other words, common knowledge concerning the misaligners' vote intention would improve coordination (Chwe, 2011). However, the scope for creating valuable common knowledge is largely dependent on whether or not the other potential misaligners are sophisticated. If a sophisticated voter knows that the other voters signalling that they will vote for the Christian Democrats are in fact sophisticated, then there will be scope for trade (i.e. all agents voting strategically). If the truly strategic voter cannot establish whether or not her counterparts are sophisticated, she bears the risk of believing that her vote in combination with the other agents' will have a desirable effect on the election, where in reality it is more likely to be wasted due to a lack of coordination.

The aforementioned example is meant to illustrate the coordination problem that arises when voters have private information about their level of sophistication. A truly strategic voter may not find it useful to vote in a utility-optimising way (misaligning in support for a preferred coalition) due to the irrational misaligners within the electorate. As Zafirovski (2001) states, political behaviour stems from agents pursuing their self-interests. In a PR system though, her self-interest is dependent upon the actions of others, over which there is a certain degree of uncertainty.

The contribution of this study follows the above line of reasoning, namely by making a distinction between the sophisticated misaligners, who are likely to act based on rational cues and expectations, and those misaligners who are not. If the level of private information within the electorate were to decrease, coordination on an equilibrium in which all agents maximise their utility would become considerably more likely (Chwe, 2011).

4. Data

4.1 Data description

The data was granted by Svensk Nationell Datatjänst at the University of Gothenburg and holds an extensive National Election Study, conducted by the SOM-institute, of the Swedish parliamentary elections of 2006 and 2010. The dataset is a panel containing a representative sample of 1975 respondents who were interviewed in connection to the elections, where half of the respondents were surveyed prior to the election at hand, and the other half after it. However, for the purpose of this study the dataset will be used as a cross section, as only the 2010 election is used in the analysis.¹ To complement the questions asked prior to the election and make a meaningful follow-up, those subjects who were surveyed before the election were also asked a number of control questions after it, for example regarding who they voted for and why. This two-step process gives us as researchers of the data opportunities to look at different nuances and inclinations due to the timing of the interview, but it also raises potential issues (see Section 4.4).

The respondents were interviewed from late August until late November during the election year depending on which stage of the survey they were part of. The interviews were conducted either over the phone or face to face. In addition to the variables regarding political preferences and electoral behaviour, there are a multitude of variables to help us understand the political sophistication as well as media habits within the electorate. Moreover, the survey includes, among others, such socioeconomic factors as income, level of finished education and geographical residence.

4.2 Data processing

As the initial dataset was very extensive and included north of 3500 variables, some screening of the data was required before generating our model. As the main focus of the thesis is to look at the misaligning subset of voters, many of the variables were removed in order to make the dataset more manageable. A vast amount of variables deemed unnecessary were excluded, among

¹ The 2006 election was left out of the analysis due to the fact that the 2010 election more closely resembles the context of today's political landscape. Examples of this include the fact that there was only one official coalition running (the Alliance) and the Sweden Democrats had not yet made it into parliament in 2006. Therefore, our belief is that it is more reasonable to explain today's political landscape with data from 2010.

these were the length of the interview sessions and questions regarding Swedish regional and municipal elections (which fall outside the scope of the study).

In order to alleviate the risk of hindsight bias regarding the respondents' stated party preference, all observations surveyed after the election were dropped. By only using the subset of the data that was generated prior to the election, we argue that there is more explanatory power to the conclusions regarding sophisticated misaligners. The reason for this is that people may adjust their answers when the outcome of the election is known, and could thus, for example, be more prone to claim themselves having voted for the winner.

Observations that failed to live up to certain conditions were excluded and new variables were created if they were deemed necessary in order to approach the research question. Dropped observations included respondents that did not in any way specify which of the political parties was their most preferred one. For those that did voice a preference, we employ a two-step hierarchy of determining which party really is the respondent's most preferred one:

1. How the respondent rated each party on a scale between -5 to 5, where a score of 5 indicated a strong preference for said party and the opposite was true for a score of -5.
2. The answer to the question: "Which party do you like the best?"

If a subject did not respond to the first question, or if the ratings yielded ambiguity (i.e. more than one party received the respondent's highest score) the most preferred party is defined as the answer to question 2 above.

An underlying assumption of this method of determining a respondent's preferred party is that the rating is a better estimate of preference than the direct approach of asking for a favourite party. Our reasoning behind this is that the rating system forces the respondent to evaluate each party in isolation, thereby yielding a less relative assessment. When the question is asked directly, on the other hand, there is a risk that the respondent projects herself in a certain way which may cause her to want to identify with a particular party.

On occasions where there was still ambiguity regarding the preferred party of the respondent, the following issues had to be considered:

1. If two parties were rated equally, and there was no answer to the question of the respondent's favourite party, but there was data on the second-best party choice of the

respondent, then the party which was not mentioned as the second-best party was assumed to be the most preferred one.

2. If there was ambiguity in the ranking and no further information provided for the observation, but the data showed that the final vote was cast in support for any other party than those that were considered equally preferred by the respondent, we kept the observation as there then existed proof of the vote being misaligned. However, if this was the case, the explicit party preference of the respondent remained ambiguous.

Furthermore, to be able to study the misaligners we require data on which party each respondent eventually voted for. This leads to further narrowing of the sample to those who stated a preference as described above *and* a vote choice.

By imposing the above limitations on the original sample, we generate two categories of voters, those who misaligned and those who did not, by cross-referencing the stated vote choice with the assumed party of highest preference. By using a binary variable of misaligning voters taking on the value of 1 for misaligners and 0 for non-misaligners we thereby generate a sub-sample onto which further analysis can be conducted, as can be seen in Table 2.

Table 2: Frequency table of misaligned and non-misaligned votes in the 2010 election.

Misaligned votes		
	Frequency	Percent
Aligned	261	73.94%
Misaligned	92	26.06%
Total	353	100%

Some descriptive statistics for the misaligning voters are presented in Tables 3 to 8. Note that these descriptive statistics are likely to be strongly correlated with the vote choice of the respondents and will always depend on the election context, for example as to which parties are polling close to the threshold, and are included here in order to give the reader a picture of the typical misaligner in this particular election.

Table 3: Vote choice of misaligners in the 2010 election.

Vote choice of misaligners		
	Percent	Frequency
Moderate Party	9.78%	9
Centre Party	13.04%	12
Liberals	11.96%	11
Christian Democrats	17.39%	16
Green Party	5.43%	5
Social Democrats	20.65%	19
Left Party	9.78%	9
Sweden Democrats	10.87%	10
Others	1.09%	1
Total	100%	92

In Table 3 we note that a large share of the misaligners are indeed voting for the parties polling close to the electoral threshold going in to the election. We do however note two outliers in terms of the frequency in which they occur. Firstly, the Christian Democrats receive the second most misaligned votes, which is reasonable given the context in the election cycle of 2010 and in line with Fredén's (2014) findings in Section 2.3. Secondly, the Social Democrats receive a large share of the misaligned votes (for more discussion regarding this, see Section 7.2).

Table 4: Left-Right scale of misaligners in the 2010 election.

Left-Right scale of misaligners		
	Percent	Frequency
Far left	6.98%	6
Leaning left	15.12%	13
Neither left or right	19.77%	17
Leaning right	44.19%	38
Far right	13.95%	12
Total	100%	86

Table 5: Income distribution of misaligners in the 2010 election.

Income distribution of misaligners		
	Percent	Frequency
Very low	8.70%	8
Low	20.65%	19
Neither low or high	27.17%	25
High	26.09%	24
Very high	17.39%	16
Total	100%	92

Table 6: Residence of misaligners in the 2010 election.

Residence of misaligners		
	Percent	Frequency
City	39.13%	36
Countryside	60.87%	56
Total	100%	92

Table 7: Gender of misaligners in the 2010 election.

Gender of misaligners		
	Percent	Frequency
Female	42.39%	39
Male	57.61%	53
Total	100%	92

Table 8: *Age cohorts of misaligners in the 2010 election.*

Age cohort of misaligners		
	Percent	Frequency
18–30	15.22%	14
31–60	50.00%	46
61–84	34.78%	32
Total	100%	92

4.3 Dependent variable

The next step of the analysis is to construct a variable which draws a distinction between the sophisticated and the non-sophisticated misaligners. We do this by defining a sophisticated misaligner as a respondent that either fulfils a combination of at least two of the three criteria described below, or has mentioned a clearly strategic consideration as the most important reason for voting in a particular way. The dependent variable is constructed with the findings of Zaller (1992) in mind, namely that awareness of political information should be a defining characteristic of a sophisticated voter. Furthermore, research has established that more knowledge improves the accuracy of voters’ forecasting abilities, thus making them more likely to be able to make truly strategic considerations (Dolan & Holbrook, 2001). There is also a body of research focusing on the effect from credible coalition signals (Meffert & Gschwend, 2011; Fredén, 2016; Plescia, 2016), and their importance in steering strategic voters in one direction or the other. We have therefore chosen to only include the two coalitions (the Alliance and the Red/Green coalition) that were viable government alternatives when looking at a respondent’s stated coalition preference, thus omitting the observations that stated improbable coalitions. Lastly, we believe it is sensible to assume that a misaligner claiming to have a strong party preference in combination with one of the other traits misaligns her vote for truly strategic reasons.

The three conditions for which at least two need to be fulfilled in order for a misaligner to be considered sophisticated are therefore:

1. The respondent scores 4 or 5 on a 5-point scale of political knowledge (indexed variable constructed on the basis of how well the respondent answers to a number of basic-knowledge questions).

2. The respondent states a preference for one out of the two viable coalitions for government (the Alliance or the Red/Green coalition).
3. The respondent identifies herself as a strong party supporter.

The strategic considerations that are used to further categorise voters are:

1. “I am voting for [party] because they are a large party and is thus more likely to be influential than a small party”.
2. “[Party] is small and at risk of falling below the 4% electoral threshold”.

Both of these are examples of strategic considerations since they imply a voter having misaligned with the government formation in mind.

Thereby, we have created a dichotomous variable for a sophisticated misaligner that takes on the value of 1 if the respondent is deemed sophisticated and 0 if she is not. Throughout the analysis, this will be our dependent variable (see Table 9 for frequencies).

Table 9: Frequency table of sophisticated and non-sophisticated misaligners in the 2010 election.

Sophisticated misaligners		
	Frequency	Percent
Sophisticated	19	20.65%
Non-Sophisticated	73	79.35%
Total	92	100%

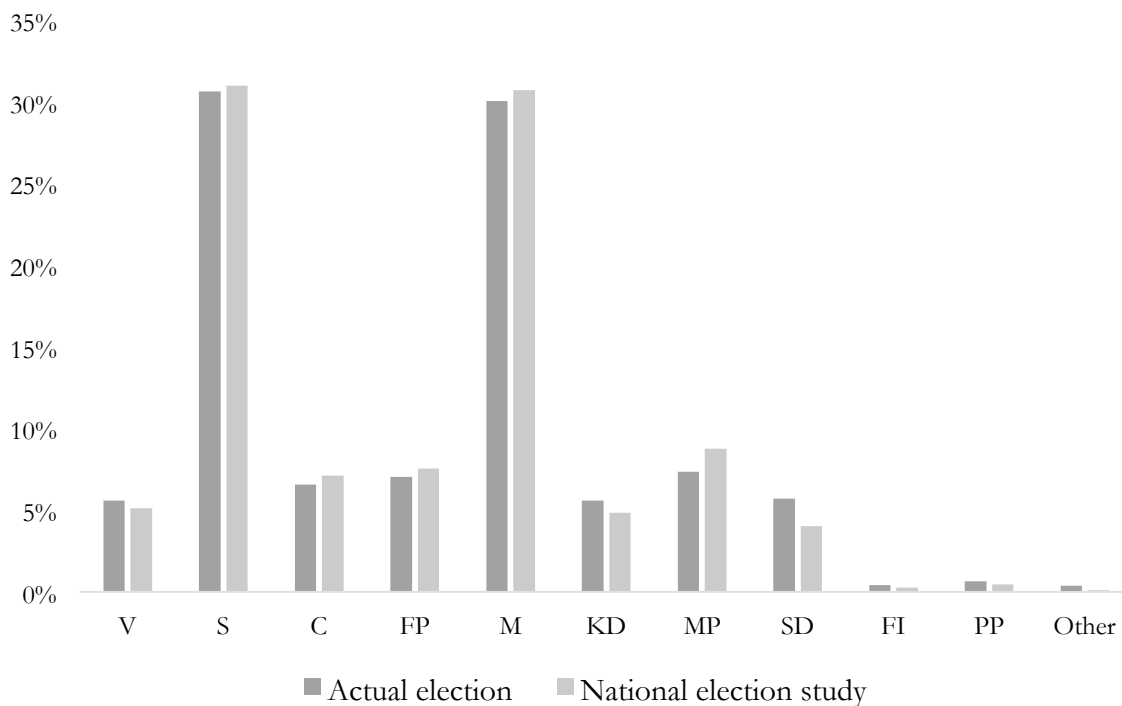
An obvious way in which the construction of our dependent variable could be flawed, would have been if voters that we deemed to be sophisticated misaligners had in fact voted against their stated coalition preference. However, none of our sophisticated misaligners tend to this behaviour.

4.4 Data limitations

Ideally, the study would have been conducted on data from the latest parliamentary election in Sweden which took place in 2014. However, due to the sensitivity of the information it contains, this data is not available to researchers of any kind before the passing of a certain amount of years (in this case 6 years).

Furthermore, validation of the actual vote cast by respondents is not possible to obtain due to the voter secrecy in Sweden. However, the National Election Study that we use has cross-referenced the election outcome on a granular geographical level, thus being able to weigh the observations in the dataset. Moreover, the data collection is done by the highly regarded SOM-institute and the distribution of respondents' stated vote choices have been compared with the actual election result in order to control its accuracy as well as possible (see Graph 2).

Graph 2: Histogram of actual election outcome in the 2010 election as well as stated vote choice among all respondents in the National Election Study.²



Lastly, in order to control for election-specific events, it would have been optimal to conduct the study on several elections and compare them over time. However, due to the scope of this paper and data limitations, we choose not to pursue this particular point any further.

² V = Left Party, S = Social Democrats, C = Centre Party, FP = Liberals, M = Moderate Party, KD = Christian Democrats, MP = Green Party, SD = Sweden Democrats, FI = Feminist Initiative, PP = Pirate Party.

5. Method

Next, we will in detail state our method considerations. The section is outlined as follows: firstly, our model of choice will be described. Secondly, we will discuss the choice of independent variables and lastly we will apply the model to our particular dataset.

5.1 Choice of econometric model

Following the processing of the data, we end up with a dichotomous dependent variable which takes on the value of 1 if a voter is a sophisticated misaligner and 0 if she is a non-sophisticated misaligner. As a consequence, the use of a linear probability model is unsuitable for this analysis since a fitted line for observations of 0:s and 1:s cannot be properly interpreted, and may lead to predictions outside of the relevant range (Wooldridge, 2013). When working with a binary dependent variable, either a probit or a logit model are the ones generally used, where the two differ mainly in the assumptions about the distribution of the error term. Evrenk & Sher (2015) turn to the probit model in their study of misaligning voters, which is the common approach among economists due to the model assuming normally distributed standard errors (Wooldridge, 2013). Like them, we use the probit model, and conduct a sensitivity analysis using the logit model, where the difference in the results is negligible (see Section 6.3.1).

A feature of a binary model like this is that the values of interest are probabilities and the marginal changes in these given changes in an independent variable, *ceteris paribus*. That is, how much more likely a voter is to be a sophisticated misaligner given that some other trait or factor is at play. We therefore look at the response probability

$$P(y = 1|x) = P(y = 1|x_1, x_2, \dots, x_k) \quad (1)$$

where x_i denotes the independent variables that will be used in the analysis.

To be able to apply this framework to probabilities, the probit model takes the form

$$P(y = 1|x) = G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k) \quad (2)$$

where $G(z)$ is the standard normal cumulative distribution function, yielding values strictly between 0 and 1.

The underlying model is derived from an unobserved variable

$$y^* = \beta_0 + \beta_1 x_1 + \dots + \beta_k x_k + \varepsilon \quad (3)$$

causing the observed variable y to take either the value 0 or 1 following

$$y = (0 \text{ if } y^* \leq 0; 1 \text{ if } y^* > 0) \quad (4)$$

The probit model follows the framework of maximum likelihood estimation (MLE), where heteroscedasticity in the variance of the dependent variable is automatically accounted for, since the distribution of y is conditional on the independent variables $x_1, x_2, \dots, x_k$. The probit estimator is the $\hat{\beta}$ that ultimately maximises the log-likelihood for all observations in the data (Wooldridge, 2013).

A word of caution is due when applying and interpreting the results from a probit model, since the coefficients from the regression output are not to be interpreted directly. Instead, what the model provides is the marginal effect on the predicted response probability of the dependent variable from a change in each x_i .

5.2 Choice of independent variables

In this section, we motivate the choice of independent variables of interest as well as the chosen control variables in our model. The arguments will build upon a combination of the conclusions drawn by researchers in previous studies, as well as our own plausibility assessments.

5.2.1 Political interest

Following the conclusions by Meffert & Gschwend (2011) and Fredén (2014), a voter making strategic considerations will need to be able to form rational expectations about the election outcome. In other words, for her to know whether or not her misaligned vote will have a desirable impact on the election outcome she needs to navigate the political landscape accurately. It is therefore sensible to include self-reported, general political interest in the model since we expect it to have a substantial effect on our dependent variable of sophisticated misaligning. Political interest at the level of the voter should cause her to gather more information regarding the more complex issues, such as government formation, and thereby increase the likelihood of sophistication (Meffert & Gschwend, 2011). However, we do not believe it to be reasonable to use this variable when constructing the sophistication variable itself, due to the fact that the

electorate contains a large number of voters that may very well state having an interest but who could still misalign for seemingly irrational reasons. A voter could for example have a general interest, but not enough tangible knowledge to make truly strategic considerations when making her vote choice.

5.2.2 News consumption

Meffert & Gschwend (2011) extend their analysis to also include the rate at which voters process news articles containing polling results and coalition signals. We follow their lead and use the frequency at which a respondent states to consume political news as a way of investigating a similar behaviour. It is reasonable to expect this variable to affect the probability of a misaligner being sophisticated, since a well-informed voter ought to be more likely to make correct assessments of the political landscape, for example by keeping up to date with the latest polls, and thereby be able to make truly strategic considerations. We therefore find it useful to include it as an independent variable in our model.

Both of the aforementioned variables make sense to include in the Swedish PR setting in particular, since the likely governmental outcome is a coalition. A voter therefore has to consider not only the policy value of individual parties, but also the value of a potential coalition (Bargsted & Kedar, 2009), which she is more likely to do in a sophisticated manner with higher degrees of interest and information (Meffert & Gschwend, 2011).

5.2.3 Second-best party

Our last independent variable of interest is whether or not the respondent has stated a second-best party alternative, i.e. if she has an explicit order of preference where the second alternative is less preferred than the first but more so than the other available parties. It is intuitively sensible to assume this variable to affect the probability of a misaligner being sophisticated, since the cognitive distance for a voter to rationally deviate from her favourite party ought to be shorter if she can explicitly state which party she would like to vote for if misaligning. This theme arises throughout the literature, since all strategic voting considerations stem from a deviation from the most preferred party (see e.g. Abramson et al., 2010; Fréden, 2014; Herrmann, 2014; Evrenk & Sher, 2015).

5.2.4 Control variables

In addition to the independent variables above, we will include a number of control variables in order to hold these fixed during the analysis and thus relieve the risk for omitted variable bias. We will however not focus on coefficients or other statistics, but merely include them for robustness and comparability reasons. These variables are socioeconomic measures of yearly income, gender, education level, age and a rural/urban-dummy, as well as a respondent's stated position on an ideological scale from left to right (see Appendix II).

5.3 Application of the model

In light of the binary dependent variable of sophisticated misaligners, our probit model is as follows:

$$\begin{aligned} \text{Prob}(\text{Sophisticated Misaligner} = \text{Yes}) & \quad (5) \\ &= \beta_0 + \beta_1(\text{political interest}) + \beta_2(\text{news consumption}) \\ &+ \beta_3(\text{second} - \text{best party}) + \beta_{4-9}(\text{control variables}) + \varepsilon \end{aligned}$$

A word of caution is once again due when interpreting the coefficients from a probit regression, namely that these cannot be interpreted directly as in a linear probability model. Instead we have to calculate the marginal effects on the dependent variable from changing values in the independent variables. Since all the independent variables of interest have been coded as dummies (see Appendix II), the coefficients in our marginal effects output is the increase or decrease in the probability of a voter being a sophisticated misaligner when changing the value of the independent variable from 0 to 1.

In order to keep the analysis as robust as possible, we will take some measures to ensure the statistical validity of our method. Firstly, we will be testing for multicollinearity among all variables through a Variance Inflation Factor (VIF) as well as a correlation matrix (see Appendix III). Secondly, we will test for joint significance of the explanatory variables using the Wald test. The reason for these tests is to establish the level of explanatory value of the model, while isolating the effect of each independent variable.

6. Empirical results

6.1 Results from the main probit regression

The following section presents the empirical results from applying our model to the data in order to understand what differs a sophisticated misaligner from an unsophisticated ditto. Due to a slightly lower number of observations in one of the independent variables, the number of observations drops from 92 to 86 misaligning voters for our main regression. The section is structured as follows, we start out by presenting the coefficients, Z-values and goodness-of-fit measures from the main regression. This is followed by a Wald-test of our three independent variables of interest and lastly, we present the marginal effects from the model.

Table 10: Regression output from the main probit model with sophisticated misaligners as the dependent variable.

Sophisticated misaligner		
	Coefficient	Z-Value
Political Interest	1.441***	2.72
News Consumption	0.343	0.82
2nd Best Party	0.291	0.75
Right/Left Scale	0.0523	0.36
Gender	0.204	0.57
Residence	-0.242	-0.70
Education	-0.310	-0.83
Income Level	-0.0304	-0.21
Age	0.045	0.15
Constant	-1.282	-1.41
Goodness-of-fit		
No of Observations	86	
LR chi2(8)	13.69	
Prob > chi2	0.1338	
Pseudo R2	0.1507	

Coefficients on significance levels;
 *** p<0.01, ** p<0.05, * p<0.1

Out of the variables of interest, only political interest exhibits a positive effect on the dependent variable that is statistically significant at the 1% level. News consumption and having a second-best party appear to exhibit a positive effect on a voter's probability of being a sophisticated misaligner, though not at a statistically significant level (Z-values of 0.82 and 0.75 respectively). The LR Chi-squared statistic in Table 10 implies that all independent variables (of interest and controls) have a joint effect separated from 0, however at a non-significant level of 13.38%, suggesting that we cannot reject the null hypothesis that all variables have an effect of 0 on our dependent variable. The statistic of interest is however whether or not political interest, news consumption and second-best party are jointly significant, as the rest of the variables are merely used as controls. Therefore, we extend the analysis by also including a Wald test, specifically on the independent variables of interest (see Table 11). Furthermore, McFadden's Pseudo R^2 is 0.1507, implying a relatively good fit of the model since values between 0.2 and 0.4 are generally considered a very good fit (Louviere et al., 2000).

Table 11: Wald test, testing for joint significance of the independent variables of interest in the main probit model.

Wald test	
chi2 (3)	10.11
Prob > chi2	0.0176

The Chi-squared statistic in Table 11 implies a statistically significant effect separated from 0, allowing us to reject the null hypothesis that the independent variables of interest have an effect of 0 on the dependent variable with more than 98% confidence.

Table 12: Output showing the marginal effects from the main probit model, Z-values in parentheses.

Sophisticated misaligner, dy/dx	
Political Interest	0.509 (2.74)**
News Consumption	0.093 (0.84)
2nd Best Party	0.085 (0.71)
No of Observations	86
*p<0.05; **p<0.01	

The next step of the analysis is to look at the marginal effects as presented in Table 12. The coefficients show the estimated change in probability of a voter being a sophisticated misaligner when each independent variable of interest goes from 0 to 1. The effect from being politically interested increases the probability of being a sophisticated misaligner by 0.509 or 50.9%. Since the variable is significant at the 1% level (p-value = 0.006), we can reject the null hypothesis that political interest has an effect of 0 in explaining political sophistication of a misaligner with 99% confidence. Moreover, the effect from being an avid news consumer, while positive at 0.093 (9.3%), was not significant on any conventional level (p-value = 0.399). Nor was the positive marginal effect of 0.085 (8.5%) from having a second-best party statistically significant (p-value = 0.477). Both news consumption [-0.122, 0.308] and having a second-best party [-0.150, 0.320] were however somewhat skewed in their confidence intervals towards having a positive effect.

In short, all the independent variables of interest show a positive marginal effect, however only one of them at a significance level where we can confidently reject the null hypothesis of no effect at all. Also, none of the explanatory variables exhibit a particularly high correlation with each other or with the dependent variable.³ Moreover none of the variables show a VIF-value larger than 1.64,⁴ substantially lower than the threshold of 10, which is why we can confidently conclude that we do not have issues with multicollinearity (Williams, 2015).

³ See Appendix III for exact values of correlation.

⁴ See Appendix III for exact values for VIF.

6.2 Extending the analysis: Using the full dataset

While being able to present a statistically significant effect from increasing the level of political interest on the probability of a respondent being a sophisticated misaligner, we lack any statistically convincing results for the remaining two independent variables of interest. As is described at more length in Section 7.3, our study suffers from a small sample size, making the process of drawing any statistically valid conclusions difficult. However, in order to test the validity of our methodology we run a similar regression as in the main model, namely with sophistication of the voter as a dependent variable and the same independent variables, but with the alteration that we use all observations, not only those who misaligned their vote. The results from this regression can be seen in Table 13.

Table 13: Regression output from the extended analysis, probit model of full sample, sophisticated voters as the dependent variable.

Sophisticated voter, full sample		
	Coefficient	Z-Value
Political Interest	0.541**	2.52
News Consumption	0.252	1.37
2nd Best Party	0.641***	3.87
Right/Left Scale	-0.103	-1.66
Gender	-0.041	-0.23
Residence	-0.023	-0.14
Education	0.052	0.29
Income Level	-0.009	-0.12
Age	0.386***	2.66
Constant	-1.775***	-4.10
Goodness-of-fit		
No of Observations	337	
LR chi2(8)	50.15	
Prob > chi2	0.0000	
Pseudo R2	0.1375	

Coefficients on significance levels;
*** p<0.01, ** p<0.05, * p<0.1

The coefficients for political interest and having a second-best party imply strong, positive effects on voter sophistication at statistically significant levels. News consumption on the other hand remains statistically insignificant, though still skewed towards a positive effect.⁵ Moreover, the total model has a Chi-squared statistic that is high enough for us to be able to reject the null hypothesis of all independent variables having a joint effect of 0 at a higher level of confidence than in the original model.

Table 14: Wald test in the extended analysis. Tests for joint significance of the independent variables of interest, full sample.

Wald test, full sample	
chi2 (3)	24.92
Prob > chi2	0.0000

The Chi-squared statistic in Table 14 implies that the independent variables of interest have a jointly significant effect on the dependent variable that is separated from 0.

Table 15: Output showing the marginal effects from the extended probit model, full sample. Z-values in parentheses.

Sophisticated voters, full sample dy/dx	
Political Interest	0.174 (2.28)*
News Consumption	0.070 (1.39)
2nd Best Party	0.192 (3.72)**
No of Observations	337
*p<0.05; **p<0.01	

The marginal effects (shown in Table 15) from our independent dummy variables of interest on the probability of being a sophisticated voter remain positive in this larger sample (ranging

⁵ Confidence interval [-0.109, 0.613].

between 7% and 19.20%), the difference from our original model being that the results are statistically significant for both political interest and having a second-best party, while news consumption remains insignificant.⁶ Our interpretation of these results is that the model is reasonable given our construction of the dependent variable, as the marginal effects from the independent variables point in the same direction for both regressions. The fact that more variables show a significant effect when using the full sample of voters, leads us to believe that the small sample size may be the reason for the less significant results in the initial model.

It is important to note that this extended analysis does not examine just the sophisticated *misaligners* but sophisticated *voters* of all vote choices, meaning that the effects are not to be interpreted directly within the context of this study. Nonetheless, it implies that further research on this topic could apply the framework that we have constructed, but on a larger scale, and be able to draw conclusions that are statistically valid also for a misaligning subsample.

6.3 Sensitivity analysis

6.3.1 Using the logit model

We continue by complementing our original model with a logit analysis on the same data (logit being the other most commonly used model when working with binary dependent variables). We reach the same conclusions, which further implies the validity of our methodology and that the results are robust regardless of our choice of model. Below we present the results from this extended analysis. Note that the only results that are comparable between the two models are the coefficients in the marginal effects output. For full regression output, see Appendix I.

Table 16: Wald test of the logit model. Tests for joint significance of the independent variables of interest.

Wald test, logit	
chi2 (3)	9.68
Prob > chi2	0.0215

⁶ P-values respectively: political interest = 0.023, second-best party = 0.000 and news consumption = 0.163.

To establish that our independent variables of interest have a joint effect separated from 0, we conduct a Wald test in this framework as well (see Table 16). It is worth mentioning that the results indeed differ slightly, but the magnitude of the difference is negligible. We are again able to conclude that the independent variables of interest (political interest, news consumption and second-best party) have a joint effect different from 0 with more than 97% confidence.

Table 17: Output showing the marginal effects from the logit model, Z-values in parentheses.

Sophisticated misaligner, logit, dy/dx	
Political Interest	0.508 (2.69)**
News Consumption	0.092 (0.84)
2nd Best Party	0.089 (0.75)
No of Observations	86
* $p < 0.05$; ** $p < 0.01$	

Comparing the marginal effects in the two frameworks, we note that the results are similar. The positive effect from having stated a political interest on the probability of being a sophisticated misaligner drops slightly to 50.8%, while the p-value changes to 0.007.⁷ For the other two explanatory variables, the effect is much the same. They both remain statistically insignificant, but while the implied effect of news consumption decreases to 0.092 (p-value = 0.403), the effect from having a second-best party increases to 0.089 (p-value = 0.456).⁸

6.3.2 Changing the assumptions of the dependent variable

In order to further test the robustness of our study, we change some of the underlying assumptions regarding the construction of dependent as well as independent variables. For the dependent variable of whether or not a respondent is considered a sophisticated misaligner, we change the threshold for sophistication from having to fulfil two out of three criteria (see Section 4.3), to having to fulfil all three. The results can be found in Table 18. This alteration has only

⁷ Marginal effect of 0.509 or 50.9% in the probit regression, p-value = 0.006.

⁸ Marginal effect from news consumption in probit: 0.093 or 9.3%, p-value = 0.399. Second best party: 0.085 or 8.5%, p-value = 0.477.

small effects on the results since the marginal effects from our independent variables only differ by 3.6 (political interest) and 0.7 (news consumption) percentage points. It is however worth noting that the estimated direction of the effect from having a second-best party changes from being slightly positive (8.5%) to being slightly negative (-3.3%). In both cases though, the results are insignificant, making it difficult to draw any statistically valid conclusions from these rather small, absolute differences.

Table 18: Regression output from the probit model after having changed the assumptions of the dependent variable, Z-values in parentheses.

Strong assumptions sophistication variable, dy/dx	
Political Interest	0.473 (2.44)*
News Consumption	0.086 (0.88)
2nd Best Party	-0.033 (-0.36)
No of Observations	86
*p<0.05; **p<0.01	

The results imply that the conclusions from the initial model remain much the same also after changed assumptions in the construction of dependent variable.

6.3.3 Changing the assumptions of the independent variables

When it comes to the independent variables, we choose to modify these in two ways (alterations to the variable of having a second-best party were not possible due to it being a dichotomous variable to start with). Firstly, we lower the threshold for news consumption from requiring 6–7 days per week to only require a minimum of 3 days per week. Secondly, we relax which respondents are deemed politically interested to also include those who state that they are “somewhat interested”. These adjustments lead to the model being less significant in total (lower Chi-squared statistic in the probit regression), as well as the news consumption variable being omitted (due to all sophisticated voters fulfilling the criterion for high news consumption). Furthermore, the marginal effect from being politically interested on our dependent variable,

while still remaining positive, decreases to 28.1%. The marginal effect from having a second-best party increases slightly (positive at 12.0%).

Table 19: Regression output from the probit model after having changed the assumptions of the independent variables, Z-values in parentheses.

Changed assumptions independent variables, dy/dx	
Political Interest	0.281 (2.90)**
News Consumption	Omitted
2nd Best Party	0.120 (0.84)
No of Observations	68
* $p < 0.05$; ** $p < 0.01$	

In conclusion, these alterations to our assumptions seem to have only minor effects on the results and, more importantly, show that our conclusions about the direction of the effects in the original model bar the news consumption variable remain robust and point in the same direction as this modified case.

7. Discussion

7.1 Results discussion

The results from our regressions show that the probability of a politically interested misaligner being of higher political sophistication is significantly positive. This, we believe, is a signal that the respondents who claim that they are interested in politics do not suffer from the self-serving bias of simply projecting knowledge, but are in fact more interested in politics, thus affecting the probability of sophistication among these voters. Therefore, we believe they are more likely to engage in conscious decision making when it comes to their vote choice. Furthermore, the results imply that increased news consumption and having stated a second-best party also have a

positive effect on the probability of being a sophisticated misaligner, however non-significant. This makes intuitive sense since both these variables should be more likely to correlate with a voter that has processed higher levels of information regarding the election, and thus increase the likelihood of a strategically conscious choice to misalign.

Moreover, it is worth mentioning the findings from our extended analysis of all sophisticated voters (see Section 6.2) and briefly discuss these here. As mentioned before, out of the two variables that were insignificant in our main regression, having a second-best party now has a clear, positive effect⁹ and is statistically significant at the 1% level, while news consumption remains insignificant. The explanation for this change in significance is, as we see it, a matter of sample size, where the main regression does not have enough observations to relieve the ambiguity regarding the variable's effect. Our extended analysis implies that when increasing the sample, these variables do in fact have a valid effect on the level of sophistication for a voter, which could mean that there is political significance to conclusions drawn from the smaller sample of only sophisticated misaligners as well.

As we have mentioned throughout the thesis, the study suffers from a small sample size (see Section 7.3). This leads to what could be seen as ambiguous results where it is difficult to draw any clear-cut statistical conclusions. We nonetheless argue that there is political significance to our results, since all the independent variables of interest exhibit a marginal effect on the dependent variable combined with having confidence intervals skewed in the direction of the estimated coefficient, namely [0.145, 0.874] for political interest, [-0.122, 0.308] for news consumption and [-0.150, 0.320] for having a second-best party. The fact that one of the variables (political interest) is statistically significant even when considering the small sample size implies it is robust and well worth including in a model like this.

Lastly, note that we do not claim to find any causal relationships between our independent variables of interest and a misaligning voter being sophisticated. Instead, the focus of the study has been to distinguish the truly strategic voter from the ones misaligning stochastically, and the results should be interpreted in light of this purpose. In other words, we cannot with certainty state that increased political interest *creates* a sophisticated misaligner, but rather that it is a characteristic that can be used to *identify* such a voter.

⁹ 21.3% marginal effect.

7.2 General discussion

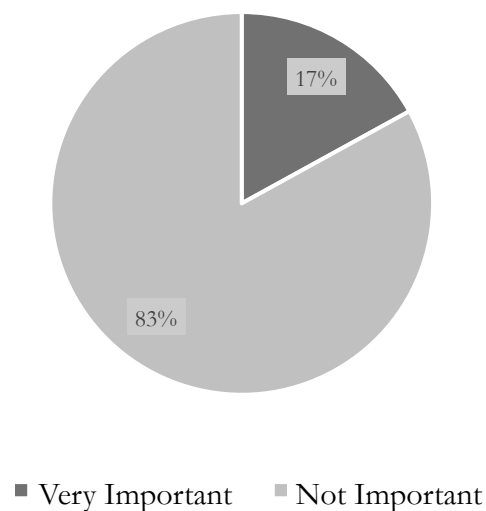
Considering that the theoretical framework of this study aims to alleviate information asymmetry issues, between parties and their potential voters on the one hand, and within the electorate itself on the other, we would like to address these issues in more depth. Firstly, the fact that the most clear-cut conclusion from our results is that politically interested voters are significantly more likely to be sophisticated, implies that political parties can customise their communication based on the context. If, for example, a message is distributed to the broad public, large shares of the recipients are unlikely to be sophisticated and therefore less susceptible to strategic voting arguments. However, if the context facilitates high levels of political interest (e.g. a rally or party meeting) strategic arguments, such as the proposal to vote for a weak coalition member, are more likely to be effective.

Secondly, using the definitions of this paper, we find that 23% of our total sample of voters (80 out of 353 individuals) can be deemed sophisticated, 26% misalign their vote (92 out of 353) while only 5% (19 out of 353) are sophisticated misaligners. These results are well aligned with the findings by Meffert & Gschwend (2011), and imply that any voter contemplating misaligning for strategic reasons runs a risk of doing so without other voters acting in the same fashion. This study thereby insinuates that the coordination problem among strategically considerate voters can be larger than anticipated by earlier research, in which the common interpretation has been that all misaligning voters act the way they do for strategic reasons.

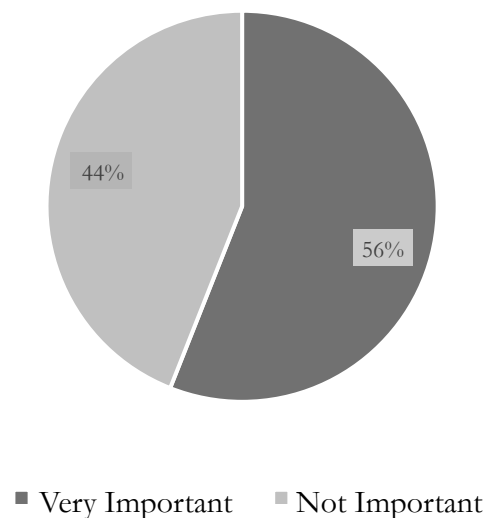
Moreover, while this thesis closely studies sophisticated misaligners, the non-sophisticated ditto have been left without further scrutiny. This was done purposely due to the scope of the analysis, but it does not mean that the issue should be left unaddressed. Previous research has concluded that there are in fact other reasons for misaligned voting, out of which the *underdog effect* (see e.g. McAllister, 1991; Fichnová & Wojciechowski, 2015) and the *bandwagon effect* (see e.g. Schmitt-Beck, 1996; Blais, 2006) are the most studied. These two effects relate to people voting for a party based on their perceived performance going up to the election, effectively going with the party showing either a negative or a positive trend. In a Swedish context, we speculate that habitual voting is common and that many voters are either not explicit enough in their preferences or knowledgeable enough to distinguish between parties and their policies. It could therefore be the case that many among the substantial share of non-sophisticated misaligners act the way they do due to them not having a clear-cut idea of what really is their preferred party of choice. We further believe that this could be the reason why our preference-based sample shows a lower share of Social Democratic voters and a higher share of Moderate Party voters than the

actual election (see Graph 5, Section 7.3), that Social Democratic voters often are more path dependent and bound by tradition, whilst Moderate Party voters are more explicit in their party preference. When looking at the data, there seems to be some support for this hypothesis, since the stated reason “I always vote for this party” is much more prevalent among Social Democratic voters than Moderate Party voters (see Graphs 3 & 4). Note, however, that this is our own reasoning and not something that has been studied particularly for this paper.

Graph 3: Distribution of Moderate voters' assessment of importance of the claim "I always vote for this party" when making their vote choice.



Graph 4: Distribution of Social Democratic voters' assessment of importance of the claim "I always vote for this party" when making their vote choice.



7.3 Limitations of the study

There are several issues with the dataset and the processing of it that must be addressed and considered in light of the implications of this study. The following section of the paper will walk the reader through some potential shortcomings regarding the data as well as issues incurred by assumptions throughout the process.

As the data at hand contained a wide array of explanatory variables, the data processing inevitably led to the exclusion of a large number of variables, where some of them may have contained important information. However, as we used a conservative approach in the data screening, all variables that were considered valuable or possibly valuable were kept. Nevertheless, the assessment of whether variables are relevant or not was left to our common sense with the subjectivity and biases that follow. This necessary shortcoming is sprung out of this, to the best of our knowledge, being the first time a study with our particular methodology is conducted in a proportional representation setting, meaning there is little previous work to draw inspiration from. We have however considered the assumptions and conclusions from previous, similar projects in order to keep our arguments solid.

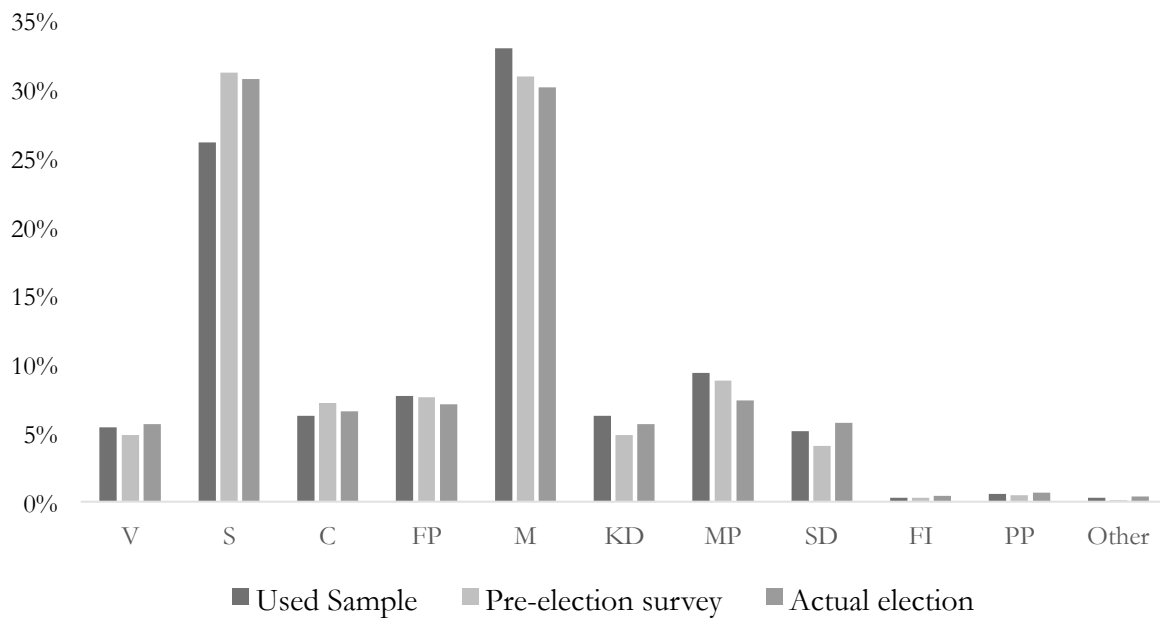
Also, the processing of data meant excluding a large number of observations since we only used the pre-election sample, following the conservative approach of Fredén (2014) (see Section 4.2). While this is a sensible approach when looking at considerations made by the voter ahead of her decision about who to vote for, it has a substantial effect on the sample size.¹⁰ Our argument for imposing this restriction on the data is that the data in use should be relevant to explain conscious considerations by voters before casting their ballot. To include the post-election sample would have led to a risk of systematically misinterpreting the magnitude of strategic considerations, as these would potentially have been tailored to be in line with the election result.

Furthermore, the conclusions from this paper must be considered in light of the National Election Study being a survey, meaning that all preferences and vote choices are as stated by the respondent. As with all surveys, this creates a risk of subjects not answering completely truthfully, as we cannot control for their revealed preference. This is however an issue in all studies of this nature, and when comparing the actual election result with the stated preference of the subjects in our final dataset, the systematic differences are not strong enough to require any further modifications (see Graph 5, below). The most substantial way in which our final dataset differs

¹⁰ The original study was conducted with 1975 individuals, when excluding the post-election respondents sample size decreases to 886 individuals.

from actual voting outcome is that it underestimates the vote share cast for the Social Democrats while overestimating the number of votes for the Moderate Party. While this is a problem, the dataset in use estimates the actual outcome very well for the smaller parties, and since these are the parties most likely to be affected by the votes of sophisticated misaligners (Cox 1997; Abramson et al., 2010) this characteristic of our dataset is the one we find most valuable.

Graph 5: Histograms showing the vote choice as stated in our sample, the pre-election subset of respondents and the actual election outcome.¹¹



Moreover, several assumptions made in the process have reduced sample size further. For example, when constructing our dependent variable, a conservative approach was once again employed in order to determine the party preference of the surveyed with higher confidence. In the trade-off between statistical precision and bias, we decided that a large sample size was of less importance for the implications of the study.

Furthermore, in our contribution to the research, the creation of the variable that defines political sophistication was broadly decided upon subjectively. While we believe that the proposed construction of this variable is reasonable, subjectivity is inevitable as this approach is being brought to light for the first time.

¹¹ V = Left Party, S = Social Democrats, C = Centre Party, FP = Liberals, M = Moderate Party, KD = Christian Democrats, MP = Green Party, SD = Sweden Democrats, FI = Feminist Initiative, PP = Pirate Party.

8. Concluding remarks

The purpose of this paper has been to study the effect that political interest, news consumption and whether a voter has a stated second-best party have on the probability of a voter being truly strategic when misaligning her vote in the 2010 Swedish parliamentary election. We have built upon previous research and contributed with a new way to distinguish between the truly strategic and the stochastic misaligners in a PR setting. Our study suggests that this is a sensible approach, since not all misaligners seem to have the same motives. We have argued that the aforementioned characteristics should have a positive effect on an individual's propensity to vote against one's stated preference for truly strategic reasons. Based on our sample of 86 misaligners, we have found that political interest does indeed increase the likelihood of being a sophisticated misaligner, while the other two variables show a positive effect, but are statistically insignificant. The results are in line with the expected effect based on previous research within the field. The main contribution from this study is the increased understanding regarding which characteristics are of importance when determining a truly strategic voter among the misaligners. By doing so, the study helps out in understanding the share of the Swedish electorate voting against their stated preference and is thus hopefully able to contribute in making political campaigning more efficient by decreasing the information asymmetry.

Our main suggestion for future research is to evaluate the validity of our conclusions with larger sample sizes and in other election contexts. It would also be of interest to further study what causes a misaligner to be sophisticated, i.e. whether any causal relationships can be established between personal characteristics and a voter becoming strategically considerate. All in all, we believe it is important for economists and social scientists working with non-preference-driven voting to stop treating all misaligning voters as strategic, an issue that is evident in the majority of the literature and that would be alleviated by using our proposed methodology.

9. References

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Appendix I – Regression output

Sophisticated misaligners						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	1.441***	0.530	2.72	0.007	0.400	2.480
News Consumption	0.343	0.418	0.82	0.412	-0.476	1.162
2nd Best Party	0.291	0.385	0.75	0.450	-0.465	1.046
Left/Right Scale	0.0523	0.149	0.36	0.722	-0.238	0.344
Gender	0.204	0.360	0.57	0.572	-0.503	0.911
Residence	-0.242	0.348	-0.70	0.487	-0.925	0.440
Education	-0.310	0.373	-0.83	0.405	-1.04	0.421
Income	-0.0304	0.147	-0.21	0.836	-0.318	0.258
Age	0.045	0.297	0.15	0.879	-0.538	0.628
Constant	-1.282	0.908	-1.41	0.158	-3.063	0.498
Goodness-of-fit						
No of Observations	86					
LR chi2(8)	13.69					
Prob > chi2	0.1338					
Pseudo R2	0.1507					

Coefficients on significance levels:

*** p<0.01, ** p<0.05, * p<0.1

Sophisticated misaligners, marginal effects						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.509**	0.186	2.74	0.006	0.145	0.874
News Consumption	0.093	0.110	0.84	0.399	-0.122	0.308
2nd Best Party	0.085	0.120	0.71	0.477	-0.150	0.320
No of Observations	86					

Coefficients on significance levels:

** p<0.01, * p<0.05

Sophisticated voters, full sample						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.541**	0.215	2.52	0.012	0.120	0.963
News Consumption	0.252	0.184	1.37	0.171	-0.109	0.613
2nd Best Party	0.641***	0.166	3.87	0.000	0.316	0.966
Left/Right Scale	-0.103*	0.062	-1.66	0.097	-0.225	0.019
Gender	-0.041	0.179	-0.23	0.818	-0.394	0.311
Residence	-0.023	0.166	-0.14	0.892	-0.348	0.303
Education	0.052	0.178	0.29	0.770	-0.297	0.402
Income	-0.009	0.077	-0.12	0.904	-0.160	0.141
Age	0.386***	0.145	2.66	0.008	0.102	0.669
Constant	-1.775***	0.433	-4.10	0.000	-2.624	-0.927
Goodness-of-fit						
No of Observations	337					
LR chi2(8)	50.15					
Prob > chi2	0.0000					
Pseudo R2	0.1375					

Coefficients on significance levels:

*** p<0.01, ** p<0.05, * p<0.1

Sophisticated voters, marginal effects						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.174*	0.076	2.28	0.023	0.024	0.324
News Consumption	0.070	0.050	1.39	0.163	-0.029	0.168
2nd Best Party	0.192**	0.051	3.72	0.000	0.091	0.293
No of Observations	337					

Coefficients on significance levels:

** p<0.01, * p<0.05

Sophisticated misaligners, logit						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	2.378***	0.892	2.67	0.008	0.630	4.125
News Consumption	0.614	0.758	0.81	0.418	-0.873	2.100
2nd Best Party	0.530	0.658	0.81	0.420	-0.759	1.820
Left/Right Scale	0.070	0.264	0.26	0.791	-0.447	0.586
Gender	0.350	0.635	0.55	0.583	-0.896	1.594
Residence	-0.373	0.620	-0.60	0.548	-1.588	0.843
Education	-0.580	0.685	-0.85	0.397	-1.922	0.763
Income	-0.075	0.265	-0.28	0.777	-0.596	0.445
Age	0.006	0.522	0.01	0.991	-1.019	1.031
Constant	-1.883	1.658	-1.14	0.256	-5.133	1.365
Goodness-of-fit						
No of Observations	86					
LR chi2(8)	13.55					
Prob > chi2	0.1392					
Pseudo R2	0.1492					

Coefficients on significance levels:

*** p<0.01, ** p<0.05, * p<0.1

Sophisticated misaligners, logit, marginal effects						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.508**	0.189	2.69	0.007	0.138	0.878
News Consumption	0.092	0.111	0.84	0.403	-0.124	0.309
2nd Best Party	0.089	0.119	0.75	0.456	-0.144	0.322
No of Observations	86					

Coefficients on significance levels:

** p<0.01, * p<0.05

Strong assumptions sophistication variable						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	1.420***	0.531	2.66	0.008	0.374	2.457
News Consumption	0.374	0.441	0.85	0.396	-0.490	1.239
2nd Best Party	-0.148	0.432	-0.34	0.731	-0.996	0.699
Left/Right Scale	0.265	0.162	1.64	0.102	-0.053	0.583
Gender	-0.048	0.376	-0.13	0.899	-0.785	0.689
Residence	-0.174	0.366	-0.47	0.636	-0.892	0.545
Education	-0.231	0.385	-0.60	0.549	-0.986	0.524
Income	-0.086	0.152	-0.56	0.573	-0.384	0.213
Age	0.209	0.308	0.68	0.496	-0.394	0.812
Constant	-2.213**	0.968	-2.29	0.022	-4.110	-0.317
Goodness-of-fit						
No of Observations	86					
LR chi2(8)	13.80					
Prob > chi2	0.1295					
Pseudo R2	0.1671					

Coefficients on significance levels:

*** p<0.01, ** p<0.05, * p<0.1

Strong assumptions sophistication variable, marginal effects						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.473*	0.194	2.44	0.015	0.094	0.853
News Consumption	0.086	0.097	0.88	0.379	-0.105	0.277
2nd Best Party	-0.033	0.092	-0.36	0.718	-0.213	0.147
No of Observations	86					

Coefficients on significance levels:

** p<0.01, * p<0.05

Changed assumptions in independent variables						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	1.038**	0.453	2.29	0.022	0.149	1.926
News Consumption	0	(omitted)				
2nd Best Party	0.356	0.405	0.88	0.379	-0.437	1.150
Left/Right Scale	-0.077	0.150	-0.51	0.607	-0.372	0.217
Gender	0.190	0.390	0.49	0.627	-0.575	0.954
Residence	-0.007	0.375	-0.02	0.986	-0.741	0.728
Education	-0.313	0.391	-0.80	0.423	-1.080	0.453
Income	-0.110	0.151	-0.73	0.465	-0.406	0.186
Age	-0.135	0.295	-0.46	0.647	-0.714	0.443
Constant	-0.488	1.009	-0.48	0.628	-2.465	1.489
Goodness-of-fit						
No of Observations	68					
LR chi2(8)	8.45					
Prob > chi2	0.3905					
Pseudo R2	0.1049					

Coefficients on significance levels:

*** p<0.01, ** p<0.05, * p<0.1

Changed assumptions in independent variables, marginal effects						
	Coefficient	Standard Error	Z-value	P> z	[95% Confidence Interval]	
Political Interest	0.281**	0.097	2.90	0.004	0.091	0.471
News Consumption	Omitted					
2nd Best Party	0.120	0.144	0.84	0.402	-0.161	0.402
No of Observations	68					

Coefficients on significance levels:

** p<0.01, * p<0.05

Appendix II – Description of variables

Independent variables

Variable	Description and coding
Political interest (dummy) <i>VU10_V10</i>	If observation is “very interested in politics” = 1 If observation is “moderately/not interested in politics” = 0
News consumption (dummy) <i>nyheter</i>	Reads about politics 6–7 times weekly = 1, or; Watches Aktuell or Rapport 6–7 times weekly = 1, or; Listens to Ekot 6–7 times a week = 1, or; Watches TV4-nyheterna 6–7 times a week = 1 Does not fulfil any of above criteria = 0
Second-best party (dummy) <i>dumfav2</i>	If observation has stated a second-best party = 1 If observation has not stated a second-best party = 0

Control variables

Variable	Description and coding
Residence (dummy) <i>VU10_V1148</i>	Resides in a city, larger town or suburb to a city = 1 Resides in a small town or on the countryside = 0
Education (dummy) <i>VU10_V7046</i>	Studied post upper secondary school = 1 Studied at most up to upper secondary school = 0
Income distribution (categorical) <i>VU10_V7045</i>	Very low = 1 (bottom 15%) Low = 2 (20%) Neither low or high = 3 (30%) High = 4 (20%) Very high = 5 (top 15%)
Left/right scale (categorical) <i>VU10_V7037</i>	Far left = 1 Leaning left = 2 Neither left or right = 3 Leaning right = 4 Far right = 5
Gender (dummy) <i>VU10_V7030</i>	Male = 1 Female = 0

Age (categorical)	18–30 years = 1
<i>VU10_V7031</i>	31–60 years = 2
	61–84 years = 3

Other variables of interest

Variable	Description and coding
Misaligning 2010 (dummy) <i>misal10</i>	If observation misaligned her vote = 1 If observation did not misalign her vote = 0
Sophisticated voter (dummy) <i>sof</i>	If voter in full sample is sophisticated = 1 If voter in full sample is non-sophisticated = 0
Sophisticated misaligner (dummy) <i>sof2</i>	If voter is a sophisticated misaligner = 1 If voter is not a sophisticated misaligner = 0

Dependent variable, alterations in 6.3.2

Variable	Description and coding
Sophisticated misaligner (dummy) <i>sof2</i>	Fulfilling all three criteria in Section 4.3 = 1 Not fulfilling all three criteria in Section 4.3 = 0

Independent variables, alterations in 6.3.3

Variable	Description and coding
Political interest (dummy) <i>VU10_V10</i>	If observation is "very interested in politics" = 1 or; If observation is "moderately interested in politics" = 1 If observation is "not very interested in politics" = 0 or; If observation is "not interested in politics" = 0
News consumption (dummy) <i>nyheter</i>	Reads about politics at all = 1 or; Watches Aktuellt or Rapport 3 or more days a week = 1 or; Listens to Ekot more 3 or more days a week = 1 or; Watches TV-4 Nyheterna 3 or more days a week = 1 Does not fulfil any of the above criteria = 0
Second-best party (dummy) <i>dumfav2</i>	If observation has stated a second-best party = 1 If observation has not stated a second-best party = 0

Appendix III – Multicollinearity controls

Variance Inflation Factor for all independent variables:

Variable	VIF	1/VIF
nyheter	1.64	0.609701
VU10_V7031	1.59	0.628046
VU10_V7046	1.26	0.791288
VU10_V7045	1.18	0.844984
VU10_V10	1.17	0.856908
VU10_V1148	1.14	0.874450
VU10_V7030	1.13	0.887707
VU10_V7037	1.10	0.907876
dumfav2	1.04	0.964125
Mean VIF	1.25	

Correlation matrix for variables in the main model:

	sof2	VU10_V10	VU1~7037	nyheter	dumfav2	VU1~7045	VU1~7030	VU1~7046	VU1~1148	VU1~7031
sof2	1.0000									
VU10_V10	0.3673	1.0000								
VU10_V7037	-0.0295	-0.1659	1.0000							
nyheter	0.2036	0.2351	-0.1511	1.0000						
dumfav2	0.1218	0.0926	0.0961	0.0910	1.0000					
VU10_V7045	-0.0069	0.0461	-0.0283	-0.0594	0.0159	1.0000				
VU10_V7030	0.0665	0.0669	0.0404	-0.0368	-0.0467	0.2935	1.0000			
VU10_V7046	-0.0665	0.1633	0.0438	-0.2463	0.0467	-0.0828	-0.0513	1.0000		
VU10_V1148	-0.0409	0.1135	-0.1672	0.0017	0.0168	0.1016	0.0870	0.2510	1.0000	
VU10_V7031	0.1339	0.1243	-0.0355	0.5405	0.0514	0.1852	0.1146	-0.2876	-0.0872	1.0000