

VOTER SOPHISTICATION AND MULTIPARTY BARGAINING

LANNY W. MARTIN[†]

GEORG VANBERG^{††}

ABSTRACT. In most parliamentary democracies, political parties are forced to make policy decisions through a process of bargaining and compromise. This process takes place before an audience of voters, and party leaders are aware that, to retain the support of their constituents, they must take into account how the coalition bargains they agree to might be perceived. But not all voters are equal in terms of their capacity to evaluate the “quality” of bargains struck by party elites. We argue that this fact should have a systematic impact on party behavior: Parties with a less sophisticated voter base should be less sensitive to how constituents view bargaining outcomes than parties with a more sophisticated voter base. To test our argument, we create an original measure of the relative sophistication of voters across parties and bargaining situations (based on 117 election surveys across 16 parliamentary democracies). Then, we examine the first (and arguably, the most important) policy decision parties make following an election: the choice of whether to join a government, and if so, with which parties. In an analysis of 162 coalition bargaining situations, we show that legislative parties with less sophisticated voters are more likely to strike a compromise with other parties in order to enter government, and are more likely to choose partners that diverge from them on electorally salient issues. Our findings have important implications for the quality of democratic representation in multiparty parliamentary systems, suggesting, in particular, that parties with a relatively uninformed electorate are generally less responsive to voter preferences.

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[†] Professor, Department of Social and Political Sciences, Dondena Centre for Research on Social Dynamics and Public Policy, Bocconi University. lanny.martin@unibocconi.it.

^{††} Professor, Department of Political Science, Duke University. georg.vanberg@duke.edu.

1. INTRODUCTION

Many of the world’s parliamentary democracies employ proportional representation electoral systems, and a predictable consequence is that legislative elections typically do not produce a parliamentary majority for any party. Elections thus give rise to an intricate bargaining game among political elites in an effort to construct a government—usually involving more than one party—that has sufficient legislative backing to survive votes of confidence, and to be able to advance a substantive policy agenda. Given how prevalent this situation is, it is not surprising that coalition theory has been a mainstay of comparative politics. These theories have focused on some of the most important and salient characteristics of coalition options that party leaders are likely to focus on as they bargain. For example, coalitions that are minimal winning in the sense of controlling a sufficient number of seats to clear the required support threshold (typically a majority) without carrying additional members should be preferred to coalitions that either fall short of the threshold, or include members that are unnecessary (Riker 1962). Coalitions comprised of parties that are ideologically “close” should be preferred to coalitions that are ideologically divided, and coalitions that contain the median legislative party are more likely to attract support than those that do not (De Swaan 1973; Laver and Schofield 1990).

In this paper, we build on recent work (Martin and Vanberg 2019*b*) to explicitly take into account one aspect of coalition bargaining that has, to date, been left implicit in coalition research. Party elites know that they are not merely bargaining with other leaders in smoke-filled rooms. They also realize that once they strike a bargain, and a new government takes office, their bargain will be evaluated by voters and other supporters. And the ongoing support that party leaders can expect from their target constituencies will—presumably—depend on how these supporters evaluate the bargain their party has agreed to. Do they believe that the party has been an effective advocate for their interests? Or do they believe that party leaders have “sold them out” and agreed to a bargain that is not particularly advantageous (but may offer private benefits for party leaders)?

The ability of voters to evaluate coalition bargains—and thus to hold leaders accountable for their choices—depends critically on the level of their political sophistication. That is, deciding whether their party has joined a coalition that offers them good policy prospects, or promises nothing but bad

options, requires considerable political knowledge, including an understanding of the myriad alternative coalition possibilities (which depends on knowing the distribution of seats) as well as the likely policy implications of these alternatives (which requires knowing the positions of the various parties on different issues, as well as the relative influence each party will have on policy). The key argument we make is that not all parties are created equal in terms of the sophistication of their voters: The support base of some parties is systematically more sophisticated than the support base of other parties. And this has significant consequences for the bargaining behavior of party leaders. The more sophisticated a party's supporters, we claim, the more constrained party leaders will feel to agree to bargains that advance the interests of their supporters. The less sophisticated the support base, the less influential voter interests will be in determining party bargaining behavior.

In the next section, we spell out the theoretical details of this argument. We then turn to a systematic evaluation of the hypotheses that emerge by analyzing coalition bargaining behavior in 162 multiparty bargaining situations. The evidence provides clear support for our argument. We conclude by considering the broader implications of our findings.

2. THEORETICAL EXPECTATIONS

Existing work on accountability in the context of coalition government has focused on voter behavior. The primary issue of interest has been to explore how citizens approach the complex task of assigning policy responsibility to the individual parties that participate in a coalition. In this paper, we focus on the other—equally important—side of the coin: the behavior of party elites. Anticipation of the fact that voters (may) hold parties accountable will shape how party leaders approach coalition governance. To examine this issue, we focus on the first—and most consequential—decision party leaders must make in coalition situations: deciding which coalition the party will join, if any, and which ones it will forego.

A key feature of our argument is that political sophistication shapes the ability of party supporters to hold elites accountable in significant ways, and that this has important consequences for coalition bargaining. Understanding alternative coalition possibilities as well as their likely policy implications requires a certain level of political knowledge. This, in turn, implies that party leaders will feel more constrained by the preferences of their supporters when these supporters are politically more

sophisticated. As we demonstrate, these considerations powerfully affect the willingness of parties to go into government, as well as the types of governments they are willing to join.

2.1. Coalition Bargaining and Voter Sophistication. We organize our argument around a series of premises. The first captures a fundamental feature of coalition government:

Premise 1. *No party can be forced to go into government, i.e., parties must agree to any coalition of which they are a member.*

Each party is a veto player with respect to all coalitions of which it is a part. Participation in any given coalition provides some benefits, but also carries with it certain costs. Because their agreement is necessary, a critical challenge for party leaders—as the effective decision-makers within a party—is therefore to decide whether the advantages of participation outweigh the costs, that is, to decide which coalitions (among those that are available) the party will join, and which it will refuse.

Premise 2. *Coalition bargains are concluded before an audience of voters and other supporters.*¹

The decision to join or stay out of a government is highly salient, and will be observed by a party’s supporters: Coalition negotiations take place before an audience (Martin and Vanberg 2019*b*). Ongoing support for a party is (at least partially) a function of supporters’ evaluations of the party’s coalition participation. This implies that party leaders’ expectations about how supporters will evaluate their decision to join or stay out of a coalition matter to their decision. As Strøm (2000, 284) has observed, party elites not only consider reactions of parliamentary parties to a proposed coalition, but “also those of the voters. They avoid particular actions not only if they fail to satisfy the parliamentary majority, but also if they fail to find favor with most voters.” All else equal, party leaders are more reluctant to join coalitions that may result in a decrease of support, and are more eager to participate in coalitions that are likely to meet with supporter approval.

Premise 3. *Party supporters are primarily concerned with the policy implications of joining a coalition.*

Party leaders value policy implications, but also the office benefits of participation.

¹ In the interests of brevity, we will from now on refer to “voters” and “supporters” interchangeably, though it should be clear that the arguments to applies to all kinds of supporters, including those who provide electoral support (voters) as well as those who provide other resources.

Joining a coalition provides a variety of payoffs to party leaders and supporters. Most obviously, by participating, a party places itself in a stronger position to influence policy decisions, thus providing potential payoffs that both party leaders and supporters (given shared ideological commitments) value. How significant these expected policy benefits are depends, of course, on the extent to which the party expects to have to compromise on its core commitments over the course of the coalition's life as new policy challenges arise and policy decisions are taken. As a general matter, expected policy benefits decline as there is greater conflict between the ideological position of a party and those of its partners, and as these partners become more influential within a coalition. Put differently, parties that are far from the "ideological center of gravity" of a coalition (as shaped by the policy positions of its members, their size, and bargaining power) can expect to obtain less favorable policy outcomes than parties that are located close to it.

But policy is not the only relevant payoff. A second set of payoffs from government participation are the office perks that provide status and material benefits. Importantly, these benefits flow primarily to party elites who will occupy key positions (including as ministers and junior ministers). They are less salient for voters and other supporters (Strøm 1990).² In short, there is overlap in how supporters and party elites evaluate potential coalitions, but party elites secure additional payoffs that are largely irrelevant to supporters. As Laver and Schofield (1990, 24) have emphasized, this introduces the possibility of preference divergence over joining particular cabinets:

The general rule is that the rank-and-file, more concerned with ideology and less in line for the other spoils of office, tend to resent the policy compromises necessary to enter coalition and hence to oppose them. The parliamentary leaders, at least some of whom will become cabinet ministers, are more inclined to see the virtue of policy compromises if these increase the chance of the party going into government.

In other words, the process of coalition formation can be viewed through the lens of principal-agent theory: Given the divergence in preferences among party leaders (as agents) and party supporters (as principals), leaders may "shirk" as they bargain over government formation. Party leaders may be

² Of course, there are connections between policy and office payoffs. Securing favorable policy outcomes may be easier to achieve, for example, if a party occupies key ministries. Nevertheless, there are—independent of the policy implications—significant benefits to holding office that those who hold such positions enjoy, and that are largely irrelevant to the party's supporters.

willing to join some coalitions that their supporters would not join—coalitions that offer only modest expected policy benefits for supporters, but are attractive to party leaders based on other grounds. In addition, party leaders may have a different preference ordering over those coalitions acceptable to leaders and supporters, and be tempted to act accordingly.

Premise 4. *The greater their level of political sophistication, the better party supporters are able to evaluate and monitor the behavior of party leaders in government formation.*

A central result in principal-agent theory is that as principals are better able to monitor agent behavior, and therefore to mete out reward or punishment more accurately, agents will hew more closely to the preferences of principals. In the current context, this implies that how constrained party leaders will feel by the coalition preferences of supporters depends on their expectations about how effectively supporters can monitor their behavior.

Consider a situation in which party elites have different preferences over coalition participation than supporters. Leaders are willing to join some coalitions that supporters prefer to stay out of, and/or party elites and supporters differ with respect to the relative ranking of the coalition options. In such situations, the key question becomes what party leaders believe they can “get away with.” The better able supporters are to understand the policy implications of particular coalitions, as well as the coalition alternatives that are available, the more likely it becomes that leaders will face a penalty for ignoring supporter preferences over coalition formation. Conversely, as voters are less aware, party leaders expect to pay a smaller penalty for acting on their own preferences. The implication is clear: As the “price” of trading off policy for other payoffs that party leaders care about decreases, party leaders are more likely to join coalitions with more modest policy benefits.

A central characteristic that affects the ability of supporters to hold party leaders accountable in this way is their level of political sophistication. To assess whether party leaders’ decisions regarding coalition participation advance the interests of supporters effectively, supporters must be able to reach judgments about the policy implications of particular coalitions, and about the available alternatives. Such judgments, in turn, require considerable political sophistication. Voters must be aware of available coalition possibilities given the seat distribution in parliament. They must have knowledge of the

ideological positions of the various parties, form judgements about the compatibility of different parties' positions, and assess the likely influence that each party would have within a given coalition.

Because political sophistication is central in evaluating coalition bargains, a party's supporters are in a stronger position to monitor the behavior of party elites as they become more sophisticated. As a result, the prospect of an electoral backlash (or other types of decrease in support) must weigh more heavily in the calculations of party leaders as they make decisions about whether to join a coalition, and if so, which of the available coalitions to pursue. In contrast, as a party's voters are less sophisticated, and therefore less able to evaluate the coalition decisions of party leaders in light of their policy consequences, party leaders are less constrained in trading off policy for other attributes (including simply going into government) that they value.

This argument yields two testable implications, which are the focus of the empirical application in the next section. First, the costs of joining coalitions that offer more modest policy prospects increase for party leaders as the party's voter base becomes more sophisticated because voters are more likely to be aware of the policy implications, and may conclude that party leaders have joined in pursuit of private benefits. In the aggregate, this means that because leaders of parties with more sophisticated voters are less likely to join coalitions with modest policy payoffs than leaders of parties with less sophisticated voters, participation in government is *lower* for the former than the latter:

Implication 1. *All else equal, parties are less likely to participate in a coalition government as the sophistication of their voter base increases.*

The second implication is closely related, and concerns the policy implications of those coalitions that parties do join. As the sophistication of a party's voter base decreases, party leaders are less constrained by the need to prioritize the policy implications of alternative coalitions. Put differently, they are freer to trade off the policy implications of a coalition for other aspects they may value. As a consequence, in the aggregate, the policy payoffs from coalition participation will be lower for parties with less sophisticated voters:

Implication 2. *All else equal, the expected policy payoffs that parties reap from coalition participation decrease as the sophistication of their voter base decreases.*

In short, the key implication of our argument is that to the extent that party leaders value a variety of payoffs associated with coalition participation, while party supporters are primarily focused on the policy implications of coalition participation, the behavior of party leaders as they engage in coalition negotiations is shaped in significant ways by the sophistication of their voter base. Party elites confronting more sophisticated supporters are more constrained by the need to satisfy the policy expectations of their voters. As a result, they are more reluctant to join a government unless doing so provides sufficient policy benefits. Moreover, among available coalitions, they are less likely to choose coalitions with lower policy benefits if alternatives with higher policy payoffs are available. In contrast, leaders of parties with less sophisticated voters are not as constrained, and are freer to trade off policy for other benefits—resulting in both a higher likelihood of government participation, as well as lower (average) policy payoffs when they do join government.

3. MEASURING VOTER SOPHISTICATION ACROSS PARTIES

Our central theoretical variable is the *level of political sophistication* of a party’s voters, and our first major empirical task is to develop a measure of this concept that can be meaningfully compared across countries and over time. To date, no such measure exists at the party level, although there does exist a prominent body of research in political behavior that we can draw upon to construct one. Most of this work has been done in the American setting, but there has also been, more recently, significant comparative research highlighting institutional and contextual sources of variation in voter sophistication that will serve as vital components in our party-specific measure.

Political sophistication is a thorny concept, and different scholars have defined and measured it in different ways. In his classic study, Converse (1964) defined it as an individual’s *cognitive capacity* for processing and using complex political information. Analyzing early ANES surveys, he measured sophistication as the “coherence” of a respondent’s ideological belief system—or the *integration* of attitudes across political issues—and his findings suggested that sophistication (at least in the period of his study) was confined primarily to the class of educated elites (as they were the only group that seemed to hold ideologically consistent and stable political attitudes). Luskin (1987) added to this definition, suggesting that a politically sophisticated individual not only has a belief system that is

integrated, but also *differentiated*—in other words, both *large*, in terms of the number of political facts known by the individual, and *wide-ranging*, covering a significant swath of the political realm outside the narrow areas most relevant in the individual’s life. Using this broader concept, Luskin operationally defined a sophisticated individual as one who is able to make use of ideological abstractions (such as “liberal” and “conservative” or “left” and “right”) to accurately evaluate political objects (such as candidates or political parties). In line with this definition, his chief measure of political sophistication was an indicator of whether a survey respondent was able to correctly order (American) political parties along the conventional left-right ideological spectrum.

Subsequent research, while not taking issue with such measures of political sophistication, has pointed out that they do not necessarily reflect the innate capabilities of individuals (or at least, not *only* innate capabilities) but also their deliberate *choices* as to whether to become politically knowledgeable. As Gordon and Segura argued, even individuals who have high cognitive capacity and live in environments where political information is available, “may *choose* to be uninformed if that information is expensive and difficult to accumulate, or if the use of that information is of limited utility” (Gordon and Segura 1997, 129; italics in original). In other words, as Downs (1957) pointed out many years earlier, some citizens might perceive the costs of acquiring political information as significantly exceeding the benefits, leading them to opt instead to live in a state of “rational ignorance.” The central contribution of Gordon and Segura (1997) was their attempt to find the key drivers of those costs, which they believed varied cross-nationally as a function of differences in political institutions and patterns of party competition. Using a 1989 Eurobarometer survey conducted across the 12 EC member states, they measured the sophistication of each respondent as the (absolute) distance between the respondent’s placement of each of the parties in his or her country and the mean placement of those parties by all the other respondents from the country. Focusing on the *aggregate* level of sophistication, they found that cross-national differences in sophistication were systematically related to such factors as the size of the party system, the competitiveness of elections, and the proportionality of the electoral system.

More recently, Fortunato, Stevenson and Vonnahme (2016) conducted a large-scale comparative study of voter sophistication, analyzing 55 election surveys in 16 countries from 1992 to 2004. This

work was innovative in several respects, but we focus on four contributions here. First, they argued that the level of sophistication in a given context—at least as the concept had primarily been measured thus far, i.e., as *partisan left-right knowledge*—“ultimately depends on how useful the left-right metaphor is for organizing, simplifying, or otherwise facilitating voters’ understanding of political processes” (Fortunato, Stevenson and Vonnahme 2016, 1212). Their central claim was that in countries where left-right party positions were important in explaining the selection of coalition partners, elites would be more likely to frame party competition and bargaining in left-right language, and consequently, voters (if only passively) would come to have increased partisan left-right knowledge. Second, they (like Luskin, but unlike Gordon and Segura) focused on the *ordinal* rather than cardinal placement of parties, which served to alleviate problems of measurement error surrounding the “true” positions of parties on an absolute scale, as well as comparability problems arising from the possibility that respondents in different contexts may have different ideas as to what a specific score on an ideological scale means. Third, they measured respondent knowledge of left-right party orderings at the *dyadic* level, i.e., with respect to party pairs. This allowed them to incorporate dyad-specific characteristics (which we discuss in more detail below) that have a direct bearing on how easy or difficult it may be for a respondent to correctly order the parties. Finally, they employed multilevel statistical models to account for possible unobserved factors at the various levels at which their covariates were measured, which allowed them to deal with problems of cross-national and temporal heterogeneity.

We adopt several features of the Fortunato, Stevenson and Vonnahme (2016) approach to develop our *party-specific* measure of voter sophistication. The sample on which our measure is based comprises 117 election surveys, covering 16 parliamentary democracies, dating as far back as 1972 and as recently as 2016.³ In each survey, respondents were asked to place political parties currently competing in the country on the left-right ideological spectrum with a question of the following form:

“In politics, people sometimes talk of left and right. Where would you place [party A] on a scale from 0 to 10, where 0 means the left and 10 means the right?”⁴

³ The countries are Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, and Sweden. The surveys were administered by the Comparative Study of Electoral Systems (CSES), the Eurobarometer (EB), and the European Election Studies (EES) projects. The specific surveys used are listed in Appendix A of the Supplementary Information (SI).

⁴ If an 11-point scale was used, it was converted to a 10-point scale in our data.

Respondents were also asked to indicate their (recent or intended) party vote choice. We use this survey variable to define the party’s contemporaneous set of voters, to whom (presumably) the party is responsive when engaging in coalition bargaining, if indeed the party is responsive to any group of voters at all.

Following Fortunato, Stevenson and Vonnahme (2016), we transform this respondent data into respondent party-dyad data by creating, for each survey respondent, $p(p-1)/2$ rows (where p corresponds to the number of parties for which the placement question was asked). For each respondent, then, each row in the data corresponds to a *party pair* (dyad) and contains information on the respondent’s ideological placement of both parties in that pair; there will be as many rows for the respondent as there are party dyads. We then compare the respondent’s ordering of the parties in the dyad against the “correct” ordering, which we assess using the left-right measure from the Manifestos Project (MAR-POR) data set. If the respondent gets the ordering of a particular dyad correct, then that dyad is coded as “1” for a variable we call *Correct Ordering*. If the respondent’s ordering is incorrect, or if the respondent answers “don’t know,” then this variable is coded as “0.”

Because our goal is to create a measure of a party’s voter sophistication that is comparable across contexts, it is critical that we account for how *difficult* it may be for voters in any given context to order parties correctly. That is, if we want to be at all accurate in making a statement such as, “the voters for party A in one particular country-year are more sophisticated than the voters for party B in another country-year,” then we need to make sure that we are accounting for the possibility that the two sets of voters could be evaluating parties in environments of varying complexity. To draw a classroom analogy, if we wanted to assess the relative aptitude of two students, we would not give one of them an easy exam and the other a difficult one, and then simply compare the number of correct answers. Rather, we would either give them the same exam or design and administer two different exams of equal difficulty. This is not always possible to achieve with real-world political surveys, of course, but what we cannot do by design we may be able to do with a properly specified statistical model.

This is the approach we take here. Specifically, we aim to estimate the difficulty of correctly ordering parties in a dyad, based on relevant characteristics of that dyad, and then assess how well a set of

party voters perform *given* the estimated level of difficulty. To do so, we first construct three dyad-level variables similar to those used in the Fortunato, Stevenson and Vonnahme (2016) study. The first corresponds to the (absolute) left-right *Ideological Distance between Parties in the Dyad* (measured with the MARPOR data). We expect that, the further away the two parties are on the cardinal scale, the more likely it is that the respondent places them in the correct order. The second variable is the *Average Time in Cabinet for Parties in the Dyad*, which we measure as the average number of (non-caretaker) years over the decade preceding the survey the parties spent in the government. We expect that government parties, all else equal, likely receive greater media coverage and have more opportunities to present their respective policy messages, making it easier for respondents to place them correctly. For similar reasons, we take into account the *Average Size of Parties in the Dyad*, expecting respondents to be more familiar with larger parties, regardless of whether they are in government or the opposition.

TABLE 1. *Dyad-Level Predictors of Correct Left-Right Ordering of Party Pairs*

Explanatory Variables	Estimates
Ideological Distance between Parties in the Dyad	0.022 *** (0.000)
Average Size of Parties in the Dyad	1.625 *** (0.017)
Average Time in Cabinet for Parties in the Dyad	0.002 ** (0.001)
Intercept	-1.031 *** (0.094)
σ^2 (Intercept)	1.024 (0.134)

Maximum likelihood coefficient estimates from multilevel logistic model with random intercepts, with standard errors in parentheses. Dependent variable: Correct Ordering. N: 3,700,231 respondent party-dyads (117 surveys). Likelihood-ratio test against logit model with fixed coefficients leads us to reject the null hypothesis of no difference between the models ($p < 0.001$). Significance levels for level-one parameters: * : 10% ** : 5% *** : 1%.

In Table 1, we present the results of a mixed (multilevel) logit model in which we regress our *Correct Ordering* variable on the dyad-level covariates. Across the 117 surveys, the data set consists of information on more than 3.7 million respondent party-dyads. We include random intercepts in the model

to account for the possibility that there are unobserved variables at the country-survey level that might affect the mean left-right knowledge of all survey respondents.⁵ The coefficient estimates support our expectations (as well as the previous findings of Fortunato, Stevenson and Vonnahme). We use these coefficient estimates (and the random intercepts on the country surveys) to predict the probability of a correct answer for each of the party dyads in a given survey, and then, for each respondent in the survey, we sum the predicted probabilities across the dyads. This quantity represents the expected proportion of dyads the “average” respondent across the 117 surveys would get correct given the characteristics of the dyads and the survey-specific intercept. In more “difficult” informational environments, such as where most of the dyads consist of parties that are ideologically close and small and have little government experience, the predicted proportion correct for the average respondent would be lower. We then subtract this quantity from the proportion of dyad orderings the respondent *actually* got correct to produce an individual-level sophistication score. A score less than zero indicates that the respondent is less politically sophisticated than the average respondent, while a score greater than zero indicates that the respondent has an above-average level of sophistication. To create our party-specific measure of *Party Voter Sophistication*, we calculate the *average* score across all respondents in the survey who indicated that they were voters for the party.

In SI Appendix B, we present the *Party Voter Sophistication* measure across the 117 surveys in our study, along with 95% confidence intervals.⁶ The surveys are displayed in descending order of the average level of party voter sophistication (with the Netherlands in 1986 having the most sophisticated voters, on average, and Great Britain in 1994 having the least sophisticated voters). We briefly make three observations about these graphs. One is that there is more variation in sophistication across surveys than there is between parties within a survey, which indicates the influence of unobserved factors at the country-survey level on the left-right knowledge of all respondents; nonetheless, there is

⁵ One can imagine any number of possibilities for survey-level heterogeneity in political knowledge. For example, elections may be fought on policy issues not adequately captured by the conventional left-right dimension, and so voter knowledge of differences between parties on this dimension may become obscured; or parties may compete in a given election largely on non-policy grounds, such as on “valence” issues like government corruption or party scandals. The results clearly show the presence of random intercepts at the country-survey level. We also separately estimated a multilevel model with random coefficients on the dyad covariates, but this led to no improvement in model fit over the random intercepts version.

⁶ The size of the confidence intervals is a function of the variation among a party’s voters in their sophistication level, the total number of party voters, and the number of dyads evaluated by the voter.

usually a noticeable divide within any survey between parties with respect to voter sophistication. A second point is that there are significant differences in sophistication across time within a country (i.e., several countries have periods in which voters display relatively high ideological knowledge and periods in which they display relatively low knowledge). Third, certain parties tend to be on the higher side of sophistication within any survey in which they appear, especially green parties and right-libertarian parties, while others tend to be on the lower side, such as socialist parties and radical-right parties. It is beyond the scope of the current manuscript to attempt an explanation of these differences, but we believe they should be of interest to scholars of political behavior. Our immediate task, of course, is to investigate whether such differences in the level of voter sophistication have a systematic impact on the choices parties make as they are bargaining over government formation.

4. EMPIRICAL DESIGN AND ANALYSIS

To test our hypotheses, we examine government formation in 162 multiparty bargaining situations in 16 parliamentary democracies. The countries and years, and number of bargaining situations, in the sample are as follows: Austria (1996–2016) [8], Belgium (1988–2011) [10], Denmark (1984–2014) [14], Finland (1999–2014) [9], France (1993–2002) [4], Germany (1972–2013) [15], Great Britain (2010) [1], Greece (1989–2015) [4], Iceland (1987–2016) [14], Ireland (1989–2011) [9], Italy (1983–2016) [13], Luxembourg (1984–2013) [8], the Netherlands (1967–2012) [15], Norway (1973–2009) [17], Portugal (1995–2011) [5], and Sweden (1976–2014) [16].⁷ Our measure of *Party Voter Sophistication* for each of these bargaining situations is taken from the survey most proximate to date of government formation.

The first dependent variable we examine, *Government Participation*, is a categorical variable that corresponds to one of three (mutually exclusive and exhaustive) bargaining outcomes for a legislative party: Either the party enters government as a coalition partner, it enters government alone, or it becomes part of the opposition. Our expectation (from Hypothesis 1) is to find a *negative* relationship between voter sophistication and a party’s choice to enter a coalition government, and thus a positive relationship between voter sophistication and the other two outcomes. Whether the strength of that

⁷ The years listed range from the formation year of the first government appearing in the sample to that of the last. The data comprise nearly all the coalitions that formed in these democracies from the first year covered by a country election survey until the last election year covered by the 2017 version of the MARPOR data set. Bargaining situations in which a single party controlled a legislative majority, or where non-partisan or caretaker administrations took office, are excluded from the sample.

positive relationship differs across the two alternatives to coalition government is ultimately an empirical question, which we address in more detail below. Our sample consists of 1,076 observations of legislative parties (the units of analysis). A total of 403 of those parties chose to enter a coalition in 140 of the 162 bargaining situations; in the other 22, a single-party minority government was formed.

Any party that chooses to become a member of a coalition government must simultaneously choose a set of partners. Our argument suggests that a party with a more sophisticated set of voters, given the full “menu” of prospective coalitions to choose from, is more likely than a party with less sophisticated voters to choose a coalition with high expected policy payoffs. Our second dependent variable captures these expected payoffs from coalition participation (for the 403 coalition parties in the sample). As we describe below, these payoffs are a function of the divergence between *party policy preferences* and *expected government policy outcomes*. Naturally, the payoffs a party actually receives over the lifetime of the government may deviate significantly from its initial expectations, sometimes due to circumstances beyond the control of any government member, and sometimes due to changes in the political environment that parties may be able to play to their advantage. However, it is reasonable to assume that, before they commit to a particular set of partners, parties at least attempt to predict eventual policy outcomes based on information available to them at the time. We focus specifically on two pieces of information that are likely to be important contributors to any party’s expectations about government policy, and thus its future policy payoffs: the *policy positions* and *relative size* of each of its prospective coalition partners.

How do these party characteristics map onto (expected) government policy? Scholars have proposed competing answers to this question, but the dominant approach (and the one garnering the most empirical support) has assumed that government policy choices, on all the issues they must deal with, reflect a *compromise* between the positions of parties in the coalition (Martin and Vanberg 2014, 2019*a*). Empirical studies in this tradition have typically measured the policy position of a government as the *seat-weighted average position* of all coalition parties (see, e.g., Grofman 1982; McDonald, Mendes and Budge 2004; Powell 2000, 2006; Martin and Vanberg 2014, 2019*a*). This is the convention we adopt here. More specifically, we generate a measure of expected government policy on *six* different issue dimensions that we believe capture most of the policy decisions taken by governments: (1)

economic regulation and state services, (2) traditional morality, (3) environmental protection, (4) internationalism and European integration, (5) social cohesion and national identity, and (6) conflict and military power.⁸

Using this measure, we define our second dependent variable, *Divergence from Expected Government Policy*, as:

$$\sum_d y_{cd} |i_{cd} - i_{gd}|,$$

where i_{cd} represents the policy position of coalition party c on issue dimension d , i_{gd} represents expected government policy (as defined above) of the *chosen* coalition on that dimension, and y_{cd} represents the relative saliency that party c attaches to the dimension.⁹ Thus, this measure corresponds to the *aggregate saliency-weighted distance* between a coalition party and expected government policy. Our expectation (from Hypothesis 2) is to find a *negative* relationship between the divergence of a party from government policy and the party’s level of voter sophistication.

Before turning to our models, we should reiterate that our primary interest is in the effect of sophistication on party behavior *after* elections have taken place and the stage for legislative bargaining has been set. Of course, it is possible that characteristics of a party’s voters (including their level of sophistication) influence several important *pre-bargaining* decisions and outcomes, such as the party’s choice as to which issues to stress during the election campaign, where it decides to position itself ideologically vis-à-vis its competitors, and ultimately, the share of seats it wins in the legislature. And such decisions and outcomes, in turn, may influence a party’s incentives and ability to enter a coalition before negotiations even begin. Put differently, a party’s voter sophistication may have an *indirect* impact on government formation through its effect on key features of the bargaining environment.

⁸ Martin and Vanberg (2019b) construct these dimensions from several of the coding categories in the MARPOR data set. They calculate issue saliency scores and policy positions for parties on these dimensions using the scaling approach developed by Lowe et al. (2011). In SI Appendix C, we discuss in more detail the Lowe et al. scaling, and we list the MARPOR categories used by Martin and Vanberg (2019b) to define each dimension. In their study, they perform confirmatory factor analyses to ensure that the MARPOR categories load on the six policy dimensions as expected, and they evaluate the face validity of the saliency and position estimates across MARPOR-defined party families (see their Appendix D).

⁹ The Lowe et al. (2011) scaling procedure produces issue saliency scores for a party that are on a logarithmic scale. For each party, we exponentiate this measure on each of the six dimensions and then create a *relative saliency* score for a dimension by dividing the dimension’s exponentiated measure by the average exponentiated measure across dimensions. Thus, if a policy dimension is of above-average importance to a party, it receives a relative policy saliency score greater than 1.0, while a dimension of below-average importance to the party receives a score less than 1.0.

Because we want to evaluate the impact of sophistication on coalition participation *given* the bargaining environment, it is important that we take such features explicitly into account.

Accordingly, we incorporate two bargaining environment control variables into our analysis. The first of these concerns the party’s bargaining power in the legislature. Although scholars have measured this concept in several ways (such as with the Shapley-Shubik index, the Banzhaf index, minimum integer weights, etc.), all of these measures share the feature that they are a function only of the relative *size* of legislative parties, taking no account of their *policy preferences*. But to the extent that power reflects the ability of a party to be part of multiple coalitions, we believe that focusing purely on size is problematic. Indeed, over the past two decades, empirical studies of coalition politics have demonstrated the importance of several factors other than size on the probability a party will be included in a government (see, e.g., Martin and Stevenson 2001, 2010; Kayser, Orłowski and Rehmert N.d.). We therefore rely on this work to construct our measure of legislative bargaining power.

The prevailing approach in this literature has been to model government formation as a discrete choice problem in which legislative parties choose one government from the set of all possible alternatives. Each of these alternatives (or “potential governments”) has attached to it a set of observable characteristics (e.g., minority/majority status in the legislature, ideological heterogeneity, etc.) that enter the analysis as covariates to predict the probability of government selection. We use this modeling strategy to create our measure in two stages. First, using a specification similar to that of Kayser, Orłowski and Rehmert (N.d.)—hereafter, KOR—who build on previous work by Martin and Stevenson (2001, 2010), we estimate a conditional logit model of government formation, in which the probability of formation is assumed to be a function of 9 size-related, policy-related, and contextual factors, and then we generate predicted formation probabilities from that model for all potential governments.¹⁰

¹⁰ We use an updated version of the Martin and Stevenson (2010) data set in our estimation, which consists of 498 bargaining situations and 170,139 potential governments. The size variables used by KOR measure whether the largest party is in the potential coalition, whether the potential coalition controls a minority of legislative seats, whether it is minimal winning, and the number of parties it contains. Their policy variables measure the ideological range of the potential coalition, whether it contains the median legislator, and the presence of anti-establishment sentiment. Finally, their contextual variables measure whether the potential coalition is the incumbent and the extent to which parties in the potential coalition have a shared history of working together. While we use their suggested set of variables, we continue to use the Martin and Stevenson measures for several of them. Specifically, we use the Martin and Stevenson (2010) measures for the three ideological variables (which they construct using MARPOR data), as these are more established (and more fine-grained) than those used by KOR. And we use the Martin and Stevenson (2010) measure of cabinet history (or “familiarity”), which we see as more substantively grounded than the KOR measure. We present the results of our analysis in SI Appendix D.

Second, for each party in each bargaining situation in our sample, we sum the predicted probabilities across all potential governments in the bargaining situation in which the party is a participant. Thus, our measure of bargaining power represents the “baseline” probability that a party enters a coalition (i.e., the predicted probability of participation *before* the sophistication of party voters is taken into account). Accordingly, in the analysis below, we refer to this variable as a party’s *Baseline Bargaining Power*. Of course, given the predictive strength of extant models of government formation, we expect to find that parties with a higher predicted baseline probability of participation are indeed more likely to get into government, either alone or in coalition. We also expect to find that coalition parties with higher bargaining power are better able than parties with lower bargaining power to parlay that advantage into favorable policy payoffs since they have other viable alternatives available to them.

Our second control variable measures the “policy attractiveness” of the bargaining environment, which naturally depends on the attractiveness of the set of legislative parties from which a (potential) coalition party must choose its partners. At one extreme, a party may exist in a legislative setting in which all other parties are roughly in agreement with the party in all the policy areas it cares about. Such an environment increases the payoffs a coalition party would receive from being in government (since its divergence from expected government policy would be small no matter which set of partners it chooses), and consequently, it also increases the likelihood that a legislative party will join a coalition in the first place. At the other extreme, a party may exist in a legislative setting in which its views on policy differ dramatically from those of its potential partners, especially on issues it cares most about. In such an environment, the party should be less likely to join a coalition, but if it does, it should expect to receive low policy payoffs (i.e., high divergence from expected government policy) since all of its options for partner selection are bad ones. We refer to our measure of the policy attractiveness of the bargaining environment as *Distance from Legislative Center of Gravity*, which we measure as:

$$\sum_d y_{cd} |i_{cd} - i_{ld}|,$$

where (as before) i_{cd} and y_{cd} represent, respectively, the policy position of coalition party c on issue dimension d and the relative importance it places on that dimension, and i_{ld} represents the legislative “center of gravity.” Analogous to our earlier measure of expected government policy, we calculate the

legislative center of gravity as the seat-weighted average position of all parties in the legislature. A party will be closer to the center of gravity, and will therefore have more attractive options for partners in terms of expected policy payoffs, as it becomes more centrist on issues it values most highly and as it becomes relatively larger vis-à-vis its prospective allies.

We now turn to our empirical analysis. In Table 2, we present results from a multinomial logit model testing the government participation hypothesis. For presentational purposes, we define the baseline outcome as the decision by a party to enter a government coalition, and so the coefficients indicate how a change in the corresponding explanatory variable alters the probability that a party goes into opposition rather than into coalition (column 2) and how it alters the probability that a party forms a single-party minority government rather than forms a government with other parties (column 3). Because party decisions within the same bargaining situation are probably not independent (even after accounting for the covariates), we provide cluster-robust standard errors in parentheses.¹¹

TABLE 2. *Effect of Party Voter Sophistication on Government Participation*

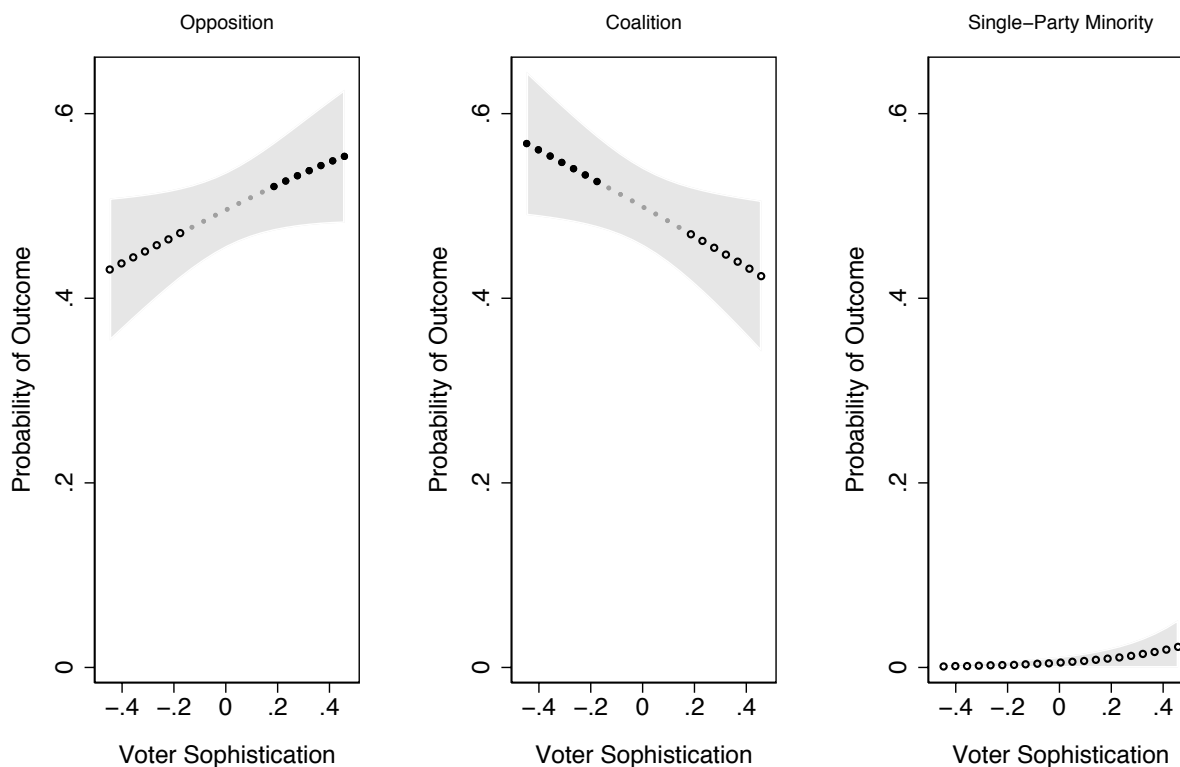
Explanatory Variables	<i>Opposition Party vs. Coalition Party</i>	<i>Single-Party Minority vs. Coalition Party</i>
Party Voter Sophistication	0.599 ** (0.303)	3.518 ** (1.396)
Baseline Bargaining Power	-4.190 *** (0.513)	4.909 *** (1.296)
Distance from Legislative Center of Gravity	0.126 *** (0.022)	-0.123 (0.088)
Intercept	1.185 *** (0.294)	-6.134 *** (1.047)

Estimates are maximum likelihood coefficients from a multinomial logit model, with cluster-robust standard errors in parentheses. Dependent variable: Government Participation. The baseline category is entry into coalition government. N: 1,076 legislative parties (162 bargaining situations). Significance levels: * : 10% ** : 5% *** : 1%.

Our findings show that, consistent with Hypothesis 1, a party with a more sophisticated set of voters is less likely to join a coalition than a party with a less sophisticated set of voters, opting instead either to form a government on its own or to remain on the opposition benches. The findings also show

¹¹ We also separately estimate a random-effects (multilevel) multinomial logit model; a Wald test, however, reveals no significant improvement over the model shown in Table 2.

significant differences in the effects of the covariates on the relative probabilities of the alternative outcomes. First, with respect to the two control variables, we see (not surprisingly) that an increase in a party's baseline bargaining power decreases the chances that it will become part of the opposition rather than join a coalition; however, it increases the chances that it will form a government on its own rather than govern with partners. We also see that a party will be more likely to be in opposition the further it is from the legislative center of gravity (that is, a small, relatively extreme party on multiple issue dimensions is unlikely to get into a coalition government), but we see that this factor has no discernible impact on whether a party enters government alone rather than with partners. With respect to the theoretical variable of interest, the results indicate that voter sophistication appears to have a bigger impact on the relative odds of a party forming a single-party government than on its relative odds of going into opposition.



The shaded areas are 95% confidence bounds. Solid black circles indicate that the outcome is statistically more likely than either alternative. Hollow circles indicate that the outcome is statistically less likely than at least one alternative. Solid gray circles indicate that the outcome is statistically no more or less likely than at least one alternative. *Baseline Bargaining Power* is set at 0.5, and *Distance from Legislative Center of Gravity* is set at its sample mean.

FIGURE 1. *Change in Probability of Government Participation Across Levels of Party Voter Sophistication*

Of course, coefficients in a discrete choice model can only (directly) tell us how an increase in a covariate changes the *relative risk* of event occurrence. To get a fuller picture of how the actual *probability* of an outcome responds, we have to compute marginal effects. We do so in Figure 1, in which we graph how the probability of each of the three outcomes changes across the full range of voter sophistication in our sample. We set party distance from the legislative center of gravity to the sample mean, and we set the party’s baseline bargaining power to 0.5—that is, the hypothetical party in this figure is assumed to be just as likely, *before* the sophistication of its voters is taken into account, to be in opposition as to be in government (based on the aforementioned size, policy, and contextual features of all the potential governments to which it belongs). The shaded areas in the figure correspond to 95% confidence intervals. The solid black circles indicate that the corresponding outcome is statistically more likely to be chosen than either of the two alternatives; a hollow circle indicates that the outcome is statistically less likely to be chosen than at least one of the alternatives; and a small gray circle indicates that the outcome is statistically no more or less likely to be chosen than at least one alternative.

One result that is immediately obvious is that it is very unlikely that our hypothetical party would be able to form a single-party government in this scenario. If the sophistication of its voters is set to 0 (close to the sample average), then its probability of forming such a government would be approximately 0.5%. As the results in Table 2 show, an increase in voter sophistication does lead to a dramatic increase in a party’s *relative* odds of ruling alone—in this case, if our party’s voter sophistication were instead at the sample maximum of 0.46, its probability of forming a single-party government would increase more than fourfold, to 2.2%. But in terms of actual probability, this change is clearly quite small.

The more interesting findings relate to how a change in a party’s level of voter sophistication influences its choice as to whether to enter a coalition. As the figure shows, in the range of voter sophistication from approximately -0.13 to +0.14, which covers approximately one-third of the sample, our hypothetical party is no more or less likely to enter coalition than to enter opposition. However, as its voter sophistication increases above +0.14, the party is statistically more likely to stay out of government. Conversely, as its level of voter sophistication decreases below -0.13, its probability of entering into a coalition government, rather than going into opposition, steadily climbs. Across the

full sample range, our hypothetical party’s probability of entering a coalition when its voters are at the minimum level of sophistication is roughly 33% (or 15 percentage points) higher than when its voters are the maximum level of sophistication.

TABLE 3. *Effect of Party Voter Sophistication on Divergence from Expected Government Policy*

Explanatory Variables	Estimates
Party Voter Sophistication	-1.405 *** (0.438)
Baseline Bargaining Power	-2.657 *** (0.430)
Distance from Legislative Center of Gravity	0.568 *** (0.056)
Intercept	2.820 *** (0.394)
σ^2 (Divergence from Legislative Center of Gravity)	0.025 (0.006)
σ^2 (Residual)	3.019 (0.375)

Maximum likelihood coefficient estimates from a multilevel linear model with random coefficients, with cluster-robust standard errors in parentheses. Dependent variable: Divergence from Expected Government Policy. N: 403 government parties (140 bargaining situations). Wald test against linear model with fixed coefficients leads us to reject the null hypothesis of no difference between the models ($p < 0.001$). Significance levels for level-one parameters: * : 10% ** : 5% *** : 1%.

We have argued that as the sophistication of a party’s voters decreases, it is not only more likely to enter a coalition, it is more likely to choose a set of partners that will deliver lower policy payoffs. We examine this claim in Table 3, where we present the results of a random coefficients (multilevel) linear model in which we regress a coalition party’s *Divergence from Expected Government Policy* on voter sophistication and the bargaining environment controls.¹² The findings provide clear support for our second hypothesis. Parties with a less sophisticated voter base tend to choose coalitions with lower policy payoffs (i.e., coalitions in which expected government policy is more distant from the party’s preferred outcome in important issue areas) than parties with a more sophisticated voter base.

¹² We estimated alternative multilevel models assuming random coefficients for all covariates, but only one, *Divergence from Legislative Center of Gravity*, led to a significant improvement in model fit ($p < 0.001$). The estimate of the random intercept was 0, and so we constrained it to that value in the final model (which no consequences for model fit).

Importantly, this is the case controlling both for the bargaining power of the party as well as for its distance from the legislative center of gravity, which increases as the party is smaller and more extreme.

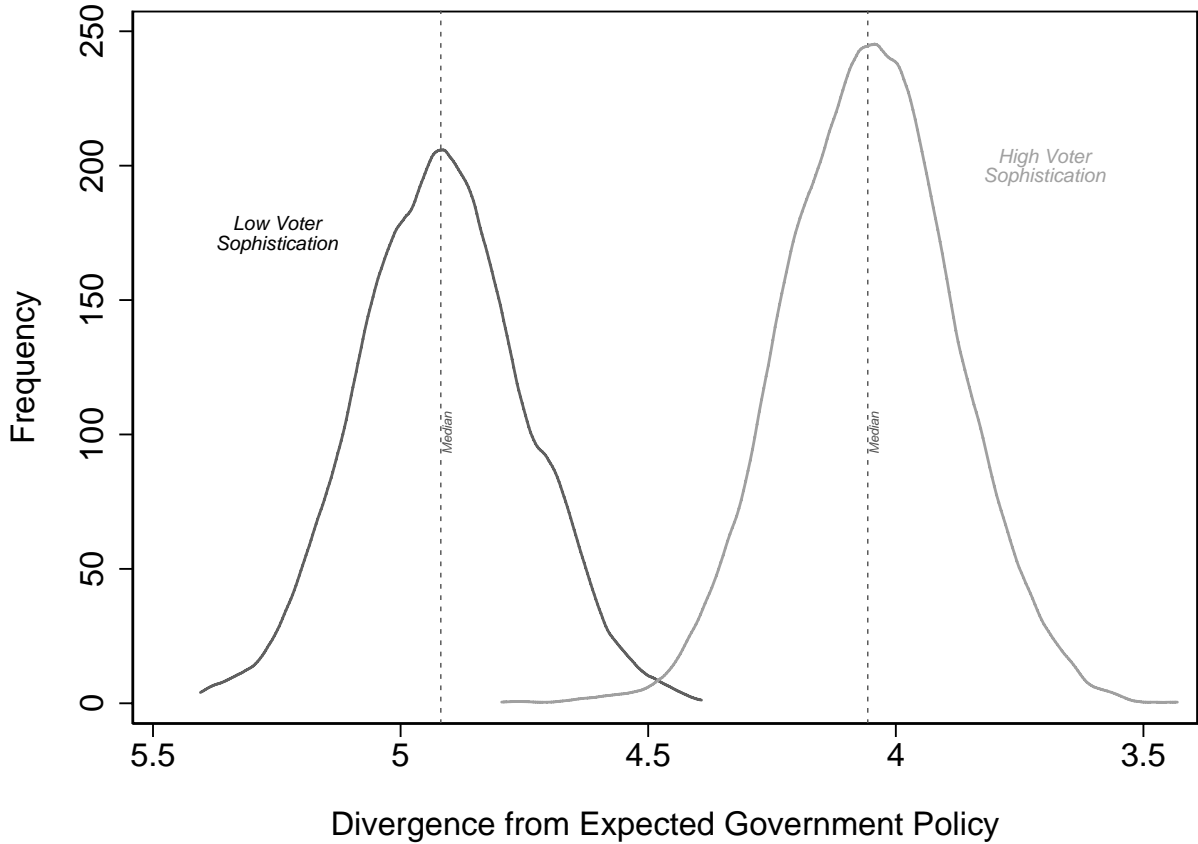


FIGURE 2. *Effect of Party Voter Sophistication on Coalition Party Payoffs*

We examine the substantive impact of this finding in Figure 2, where we plot the predicted divergence between a party and expected government policy for two types of coalition parties in two different bargaining situations. In one, the party is assumed to have relatively sophisticated voters, at the 90th percentile score from the sample; in the other, the party is assumed to have relatively unsophisticated voters, at the 10th percentile score. For each type of party, we generated 1,000 predictions of expected policy payoffs using the point estimates and standard errors from Table 3. The distributions of these simulated predictions, along with the median of the distributions, are shown in the graph.

The result reveals a stark difference in predicted payoffs. For the party with unsophisticated voters, the median predicted payoff is over 20% lower (i.e., more divergent) than for the party with sophisticated voters. In other words, in line with our argument, the figure shows that as the sophistication of a party’s voter base decreases, party leaders are less constrained by the need to prioritize the policy implications of alternative coalitions, i.e., they are significantly less “choosy” about their government partners than parties with a more discerning set of constituents.

5. CONCLUSION

As a consequence of proportional electoral rules, elections in most of the world’s parliamentary democracies do not typically result in a majority of legislative seats for a single political party. At the same time, governments in these systems must enjoy (at least implicit) support by a legislative majority. This requires cross-party agreements, usually resulting in the formation of a multiparty government.

The prevalence of coalition government in these systems, in turn, has implications for the ability of citizens to use “elections as instruments of democracy” (Powell 2000). Two issues, in particular, are central:

- (1) When no party secures a majority of seats, election outcomes are not decisive for choosing governments, and so negotiations among the leadership of parliamentary parties constitute an intervening step between electoral outcomes and the formation of a cabinet;
- (2) Coalition governance requires compromise among the positions of parties with divergent policy preferences.

These features suggest that it is more difficult for citizens in these political systems to hold governments accountable at the ballot box: Voters’ electoral verdict is only one input into the process that determines who governs. Moreover, given the need for compromise and joint decision-making, as they decide how to cast their vote, voters have a harder time assigning responsibility for policy decisions, and discerning how effectively “their” party has represented their interests. Following seminal work by Powell and Whitten (1993) on “clarity of responsibility,” this latter point has received considerable scholarly attention, particularly in the literature on economic voting. Two results dominate this

research. First, there is considerable evidence that coalition government, as compared to single-party government, does in fact reduce the ability of voters to hold governments accountable (e.g. Powell and Whitten 1993; Royed, Leyden and Borelli 2000; Duch and Stevenson 2005, 2008). For example, Hobolt, Tilley and Banducci (2013) show that citizen evaluations of the economy and of public service provision matter less for vote intentions under coalition government than under single-party government, suggesting that voters feel less confident about assigning blame to incumbent parties (see also Fisher and Hobolt 2010). Second, scholars have demonstrated that voters respond to the complexity of coalition governance by resorting to heuristics to assign policy responsibility: They typically single out the party of the prime minister as well as the largest party (which are often the same) (Duch and Stevenson 2005, 2008; Duch, Przepiorka and Stevenson 2015; Hobolt, Tilley and Banducci 2013; Royed, Leyden and Borelli 2000). In addition, there is some evidence that voters may also be aware of “agenda-setting” powers within coalitions, assigning a larger share of responsibility to ministerial parties with jurisdiction over a policy area (Angelova, König and Proksch 2016; Duch and Stevenson 2008, 2013).

Our goal in the current paper has been to extend this literature in a number of significant ways. First, rather than examine how voters engage in retrospective evaluation of particular policy outcomes, we focus on the initial formation of coalition governments. Second, we shift the focus from voters to party elites, and examine how the anticipation of being held to account affects the bargaining behavior of party leaders. Finally, we highlight the importance of political sophistication, and the consequences of the fact that parties differ systematically with respect to the sophistication of their support base.

Our empirical results provide clear support for our theoretical argument. Parties whose support base is less sophisticated act in ways that suggest they feel less constrained by the preferences of their supporters. These parties are more eager to join coalitions, even though they realize such governments may require significant policy compromise, and the coalitions they join do indeed provide, on average, lower policy benefits. In contrast, as supporters become more sophisticated, leaders appear to act in ways that suggest greater accountability. They are more discerning in deciding whether to join a coalition, and when they do join, the policy benefits that flow from their participation tend to be greater. Our findings have important implications for the quality of democratic representation in

multiparty parliamentary systems, suggesting, in particular, that parties with a relatively uninformed electorate are generally less responsive to voter preferences.

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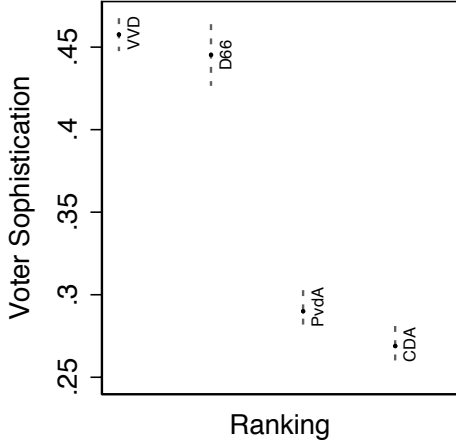
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ONLINE APPENDIX

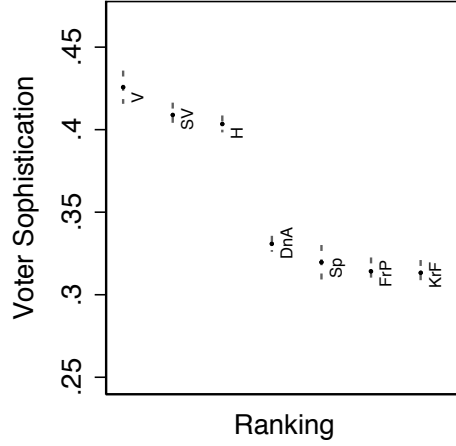
APPENDIX B: PARTY VOTER SOPHISTICATION IN 117 SURVEYS

The 117 graphs of party voter sophistication below are arranged in descending order of average sophistication across the parties in the survey.

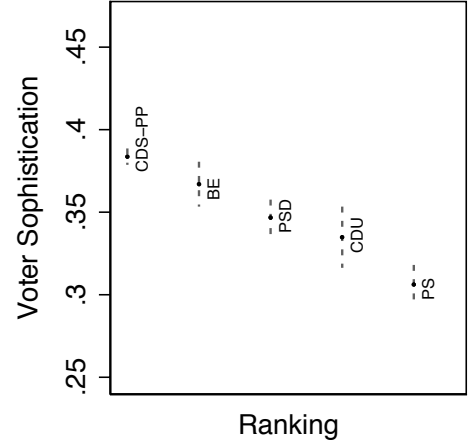
Netherlands 1986



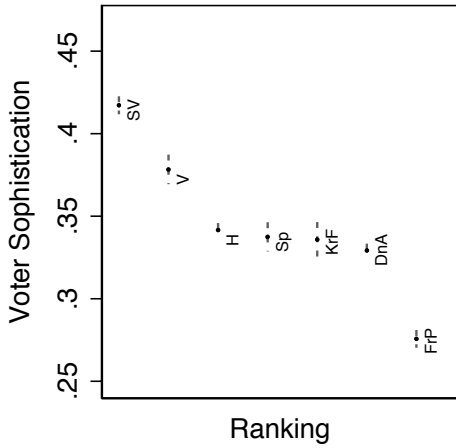
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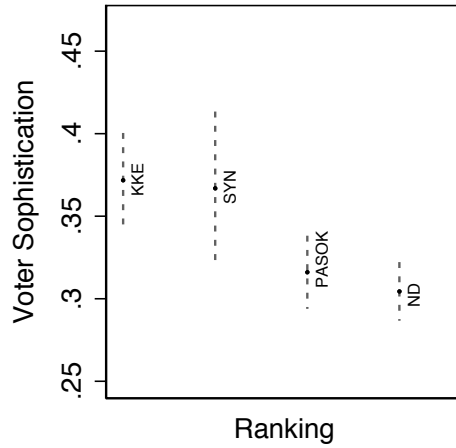
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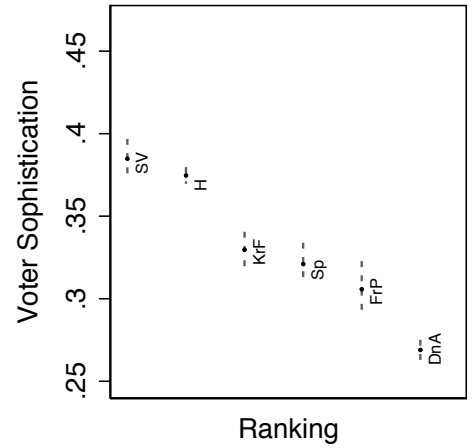
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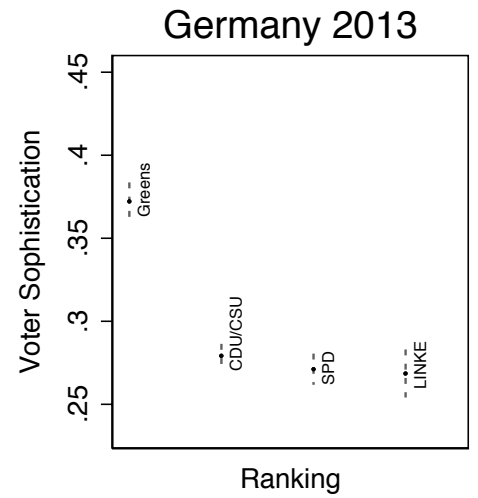
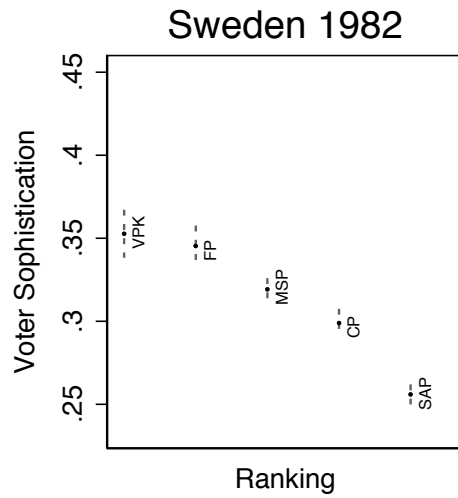
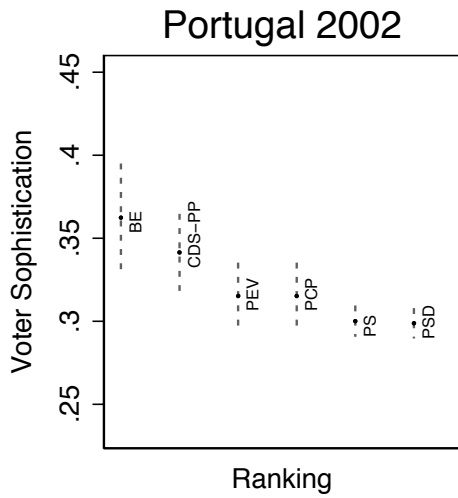
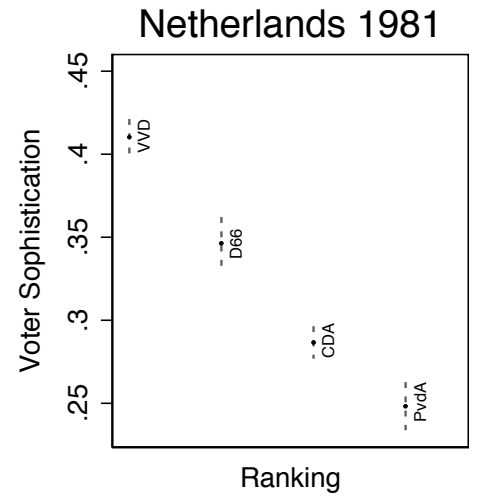
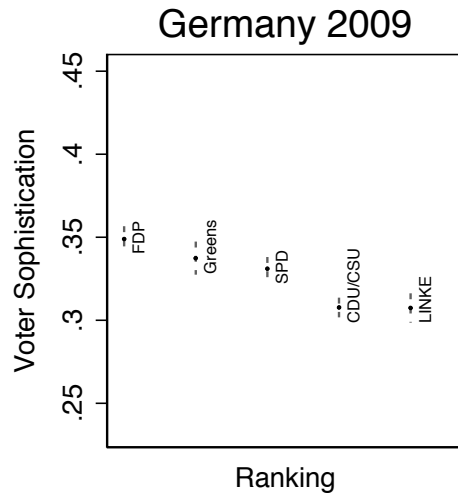
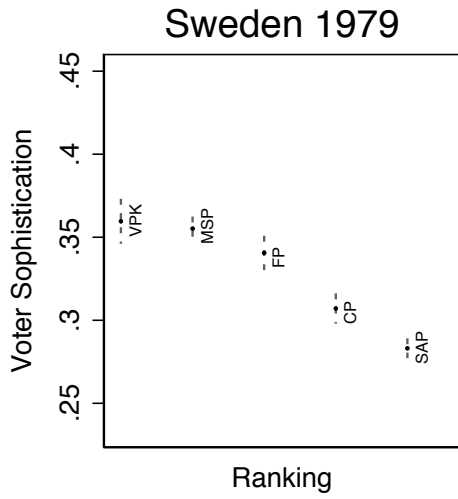


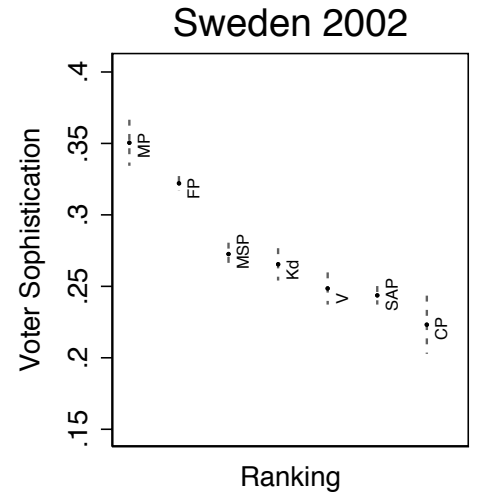
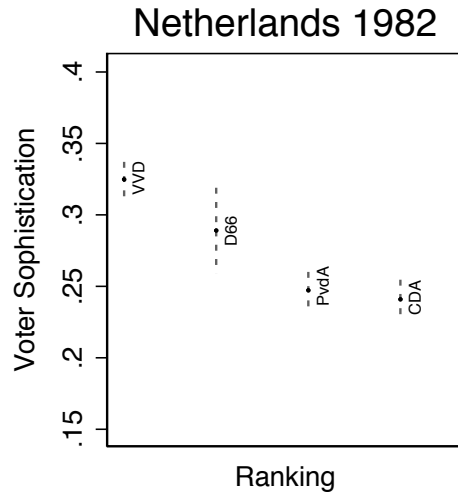
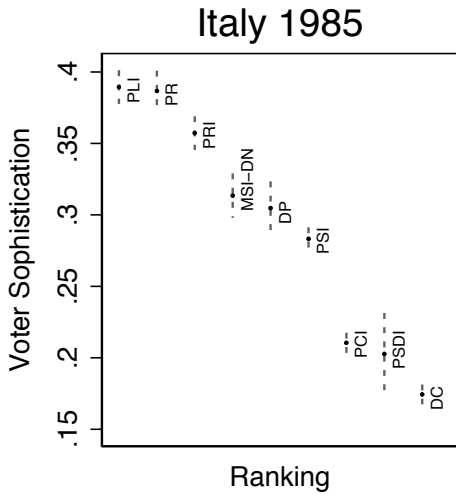
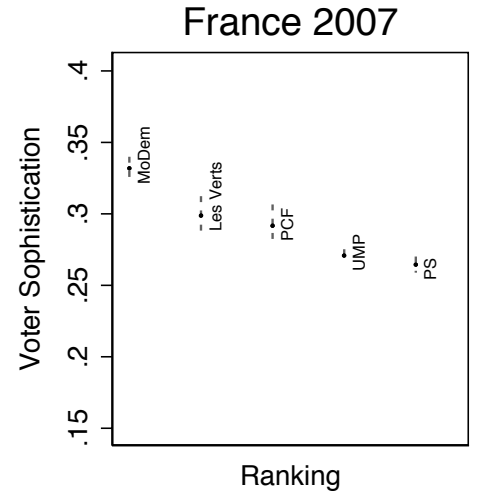
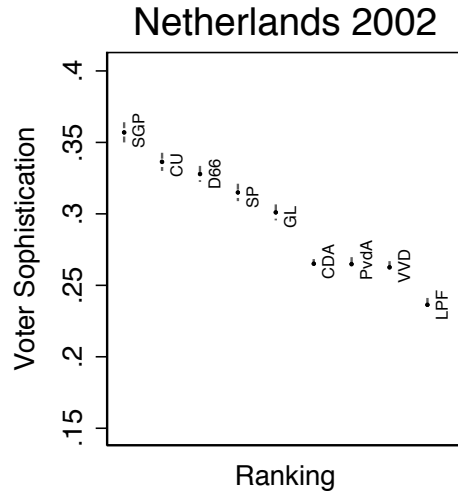
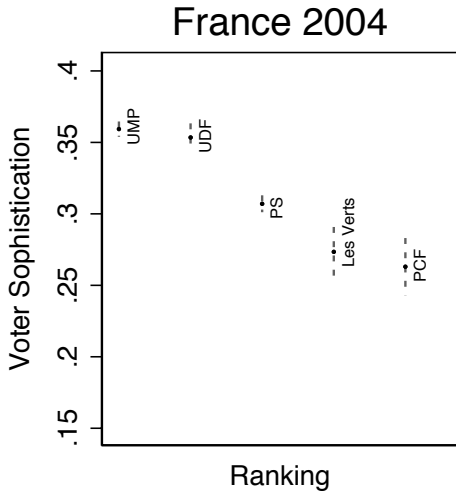
Greece 1999

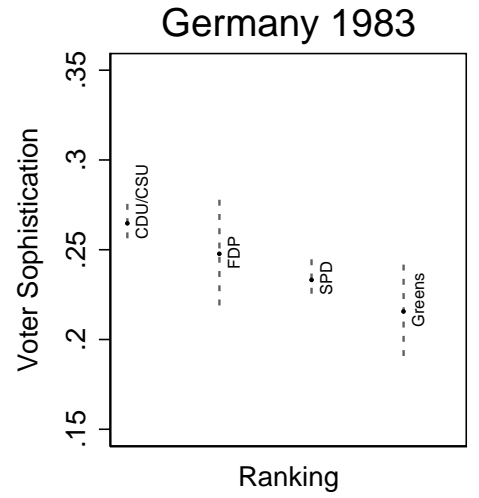
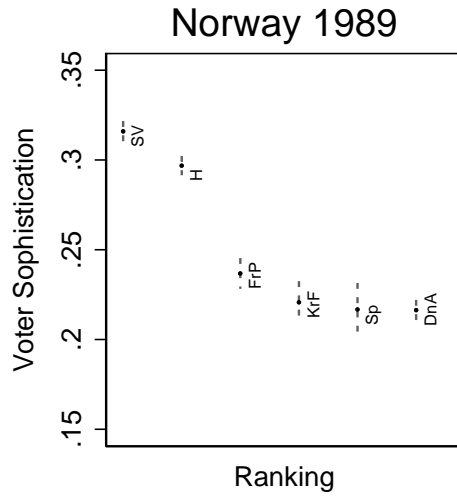
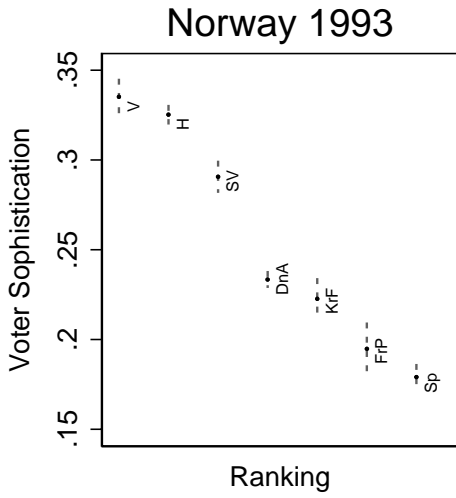
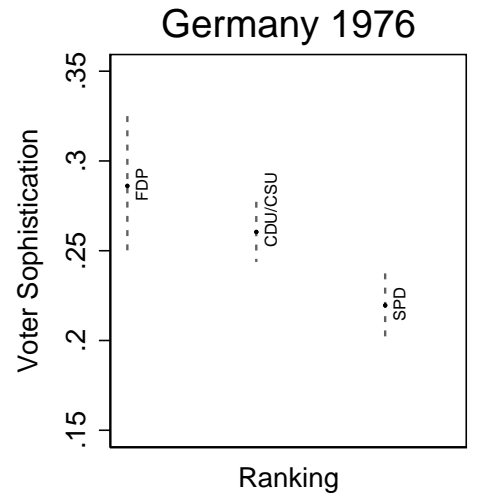
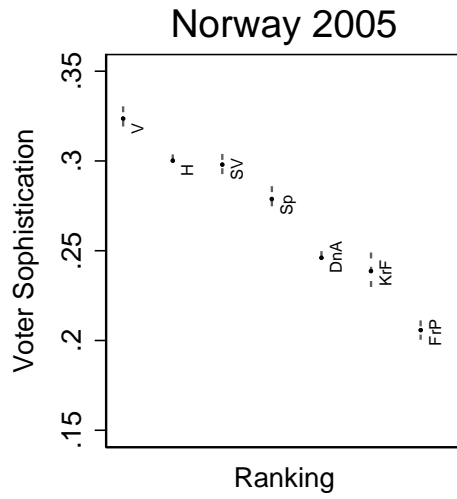
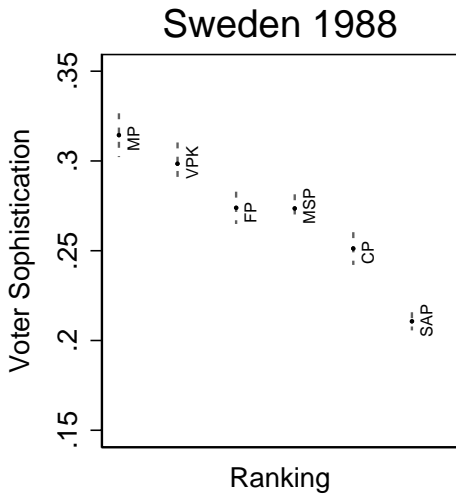


Norway 1985

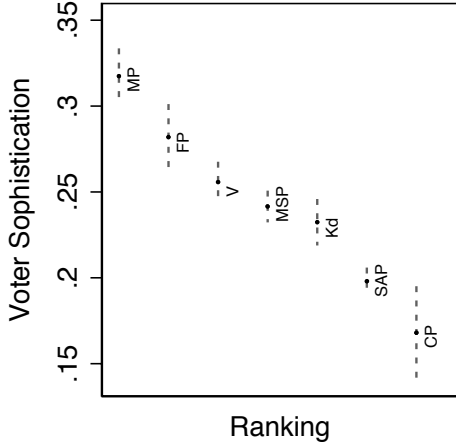




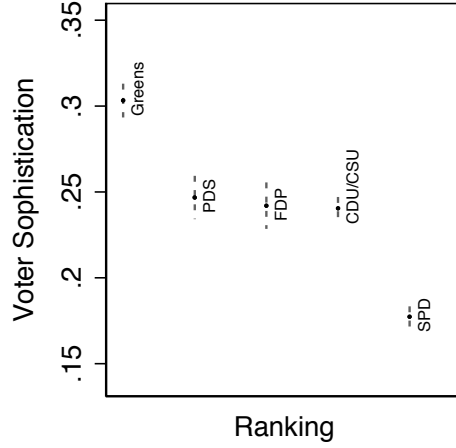




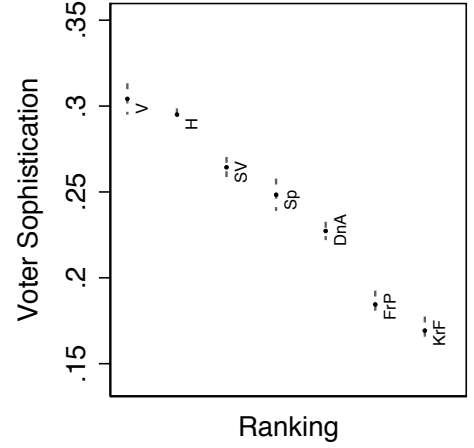
Sweden 1998



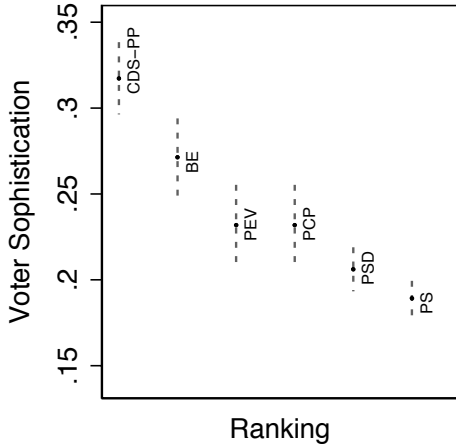
Germany 2002



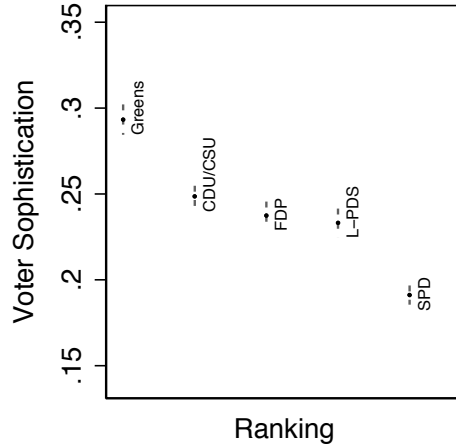
Norway 2001



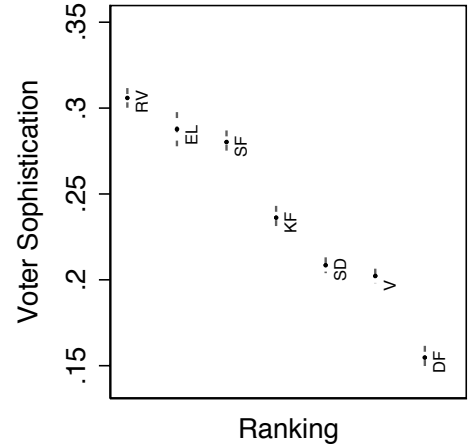
Portugal 2005



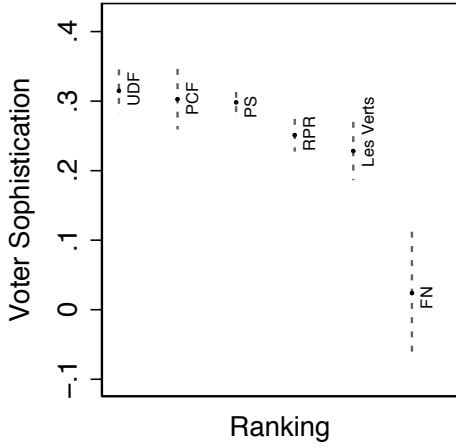
Germany 2005



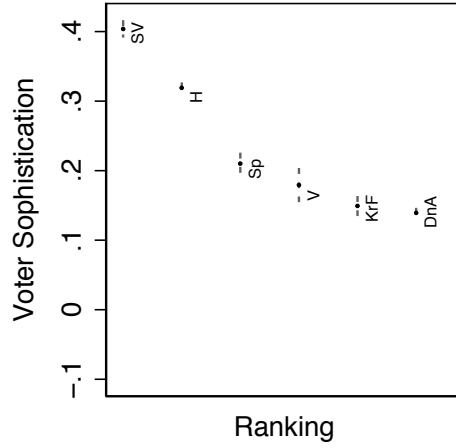
Denmark 2005



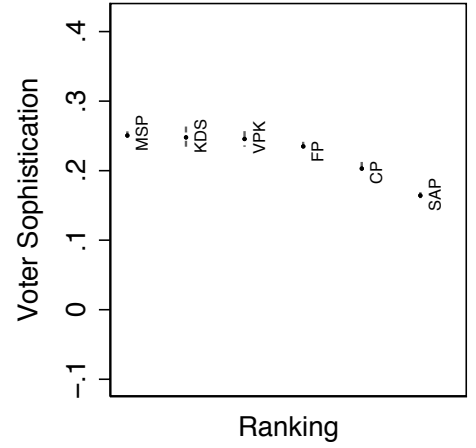
France 1999



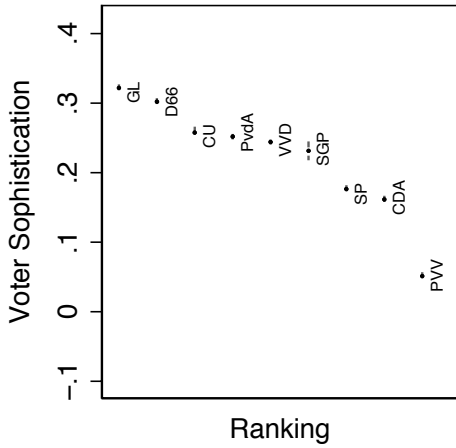
Norway 1977



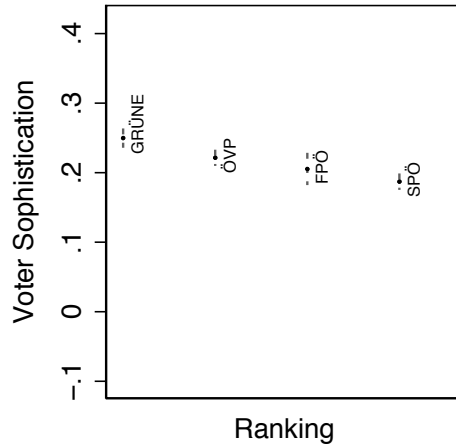
Sweden 1985



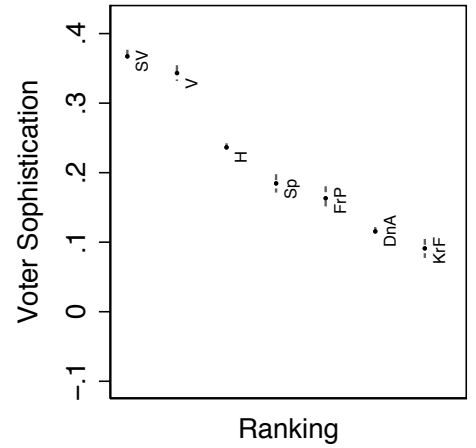
Netherlands 2010



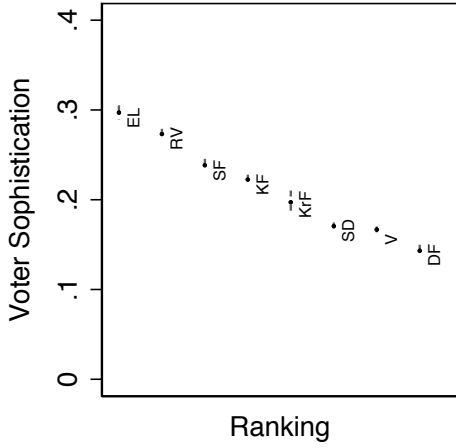
Austria 2004



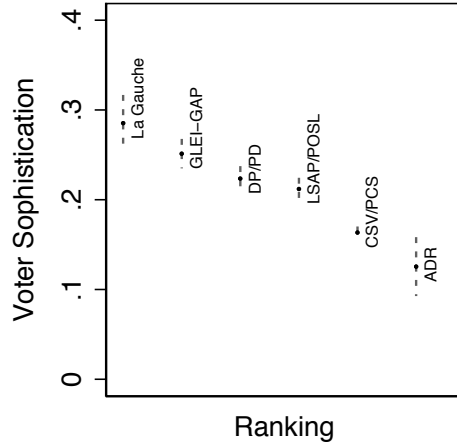
Norway 1981



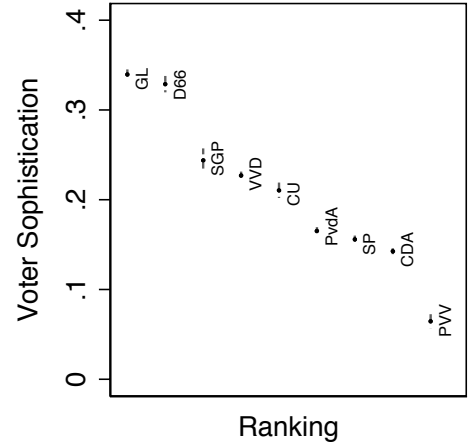
Denmark 2001



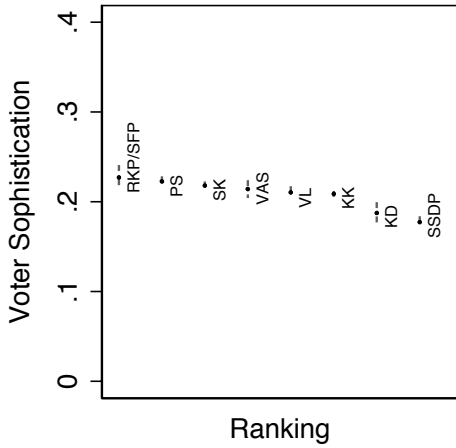
Luxembourg 2009



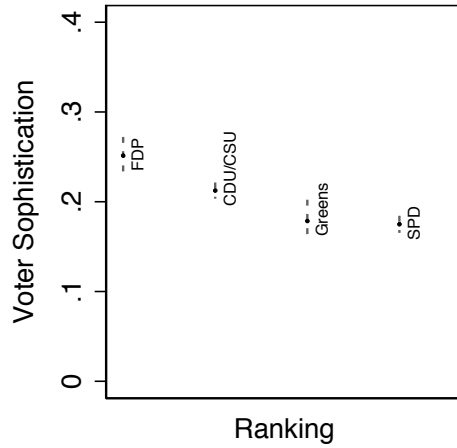
Netherlands 2006



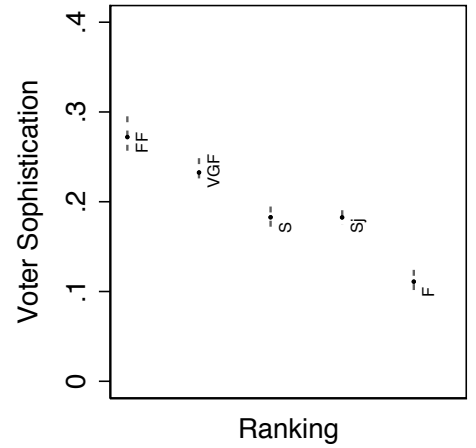
Finland 2009



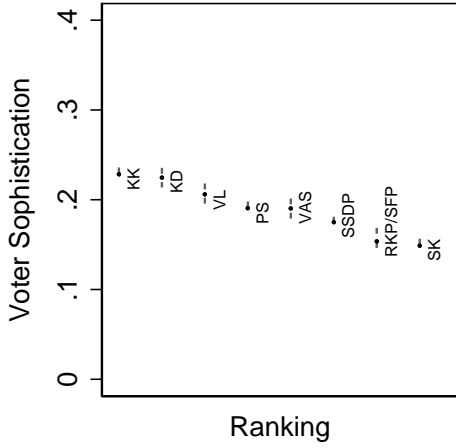
Germany 1987



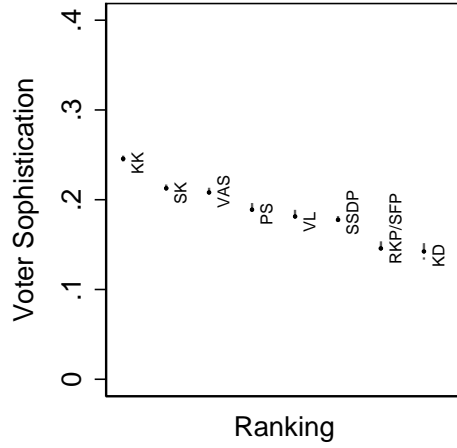
Iceland 1999



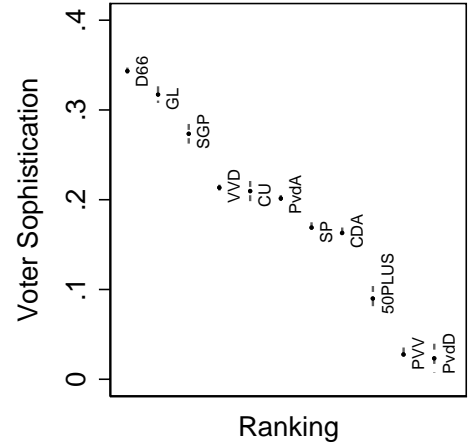
Finland 2003



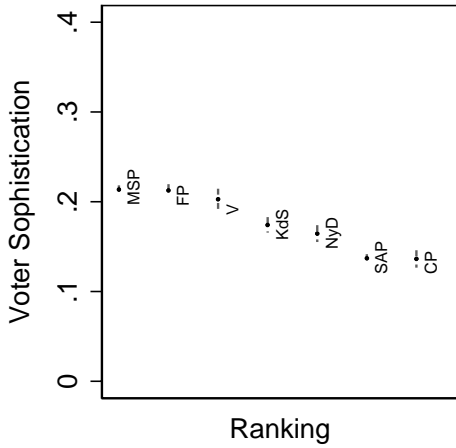
Finland 2007



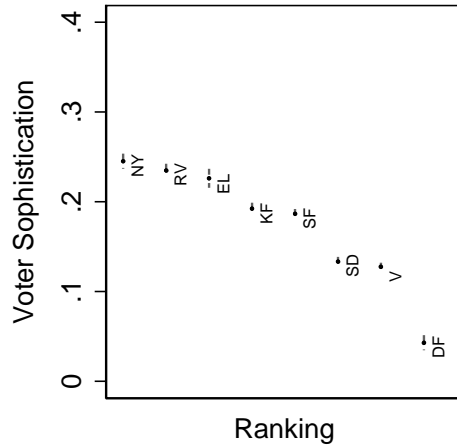
Netherlands 2012



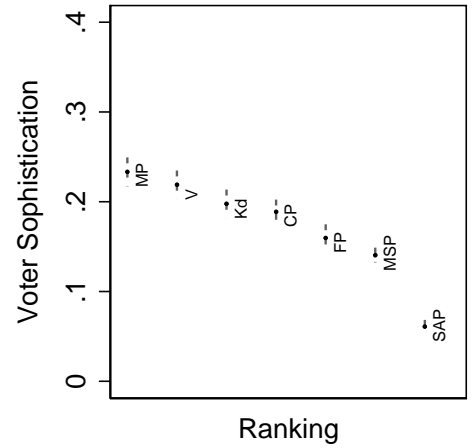
Sweden 1991

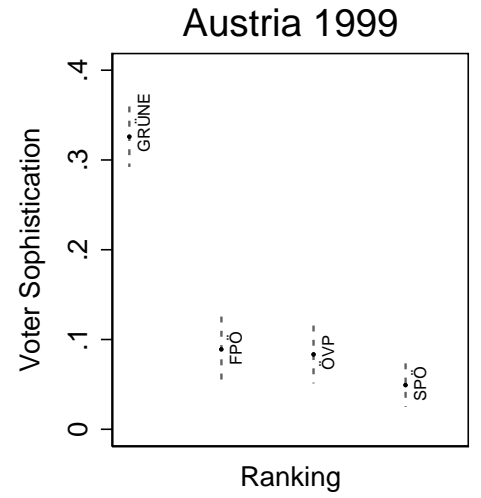
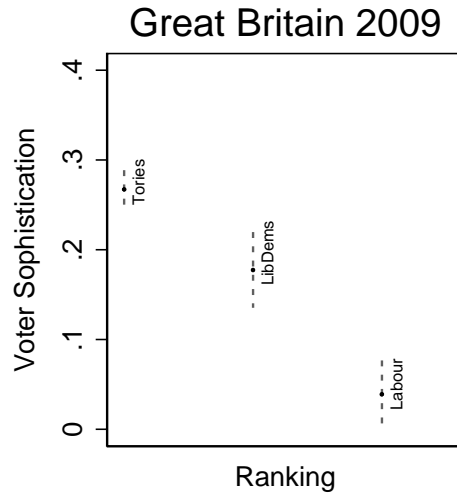
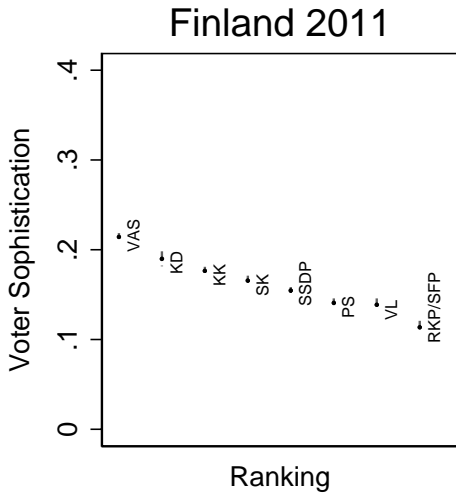
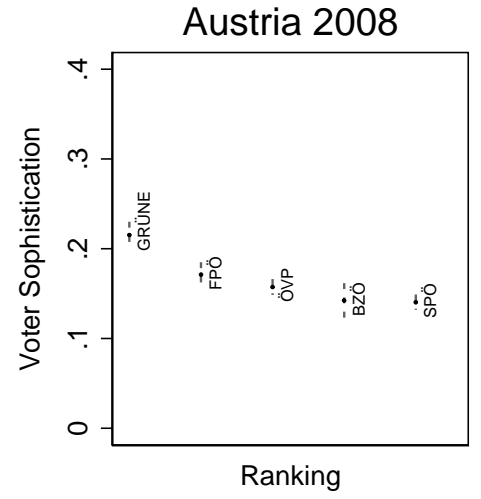
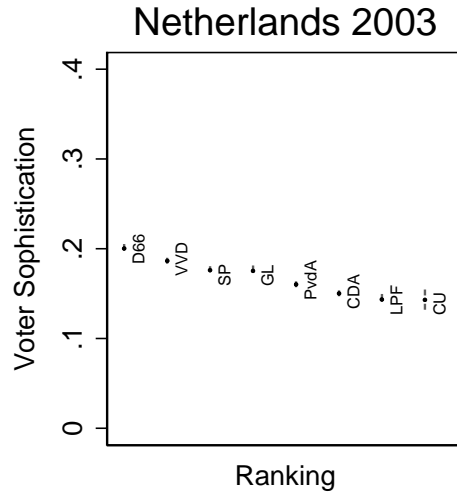
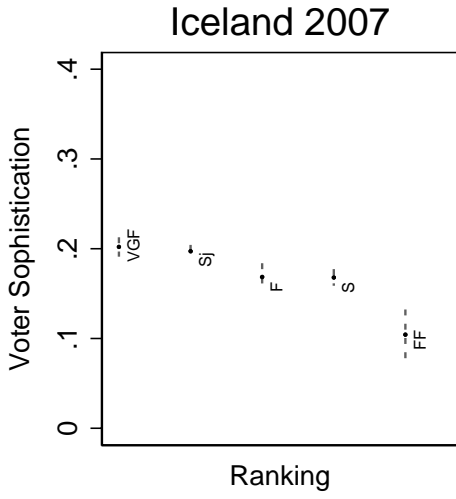


Denmark 2007

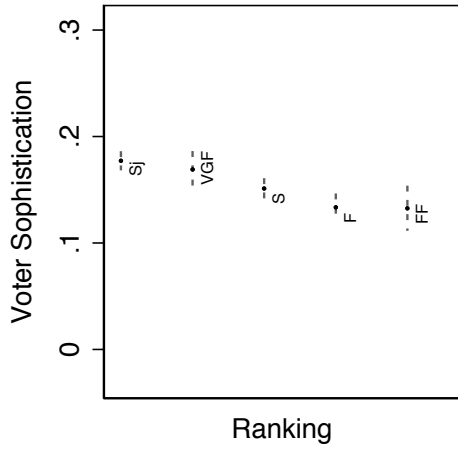


Sweden 2006

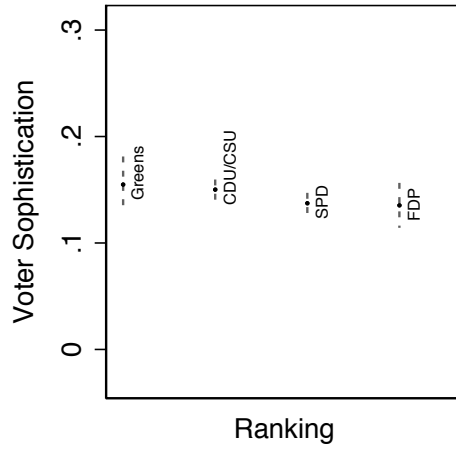




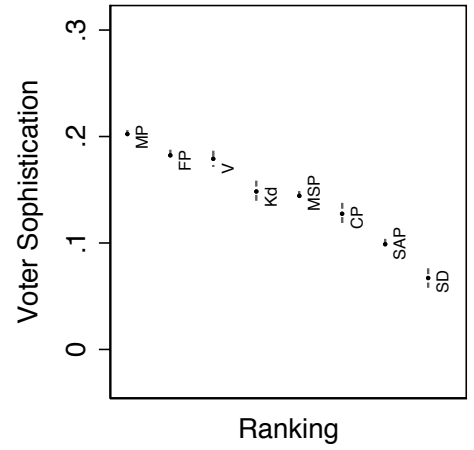
Iceland 2003



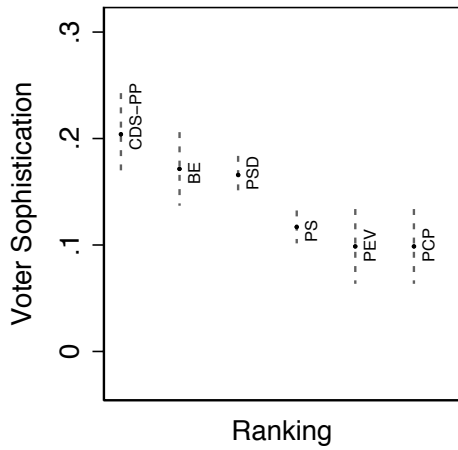
Germany 1990



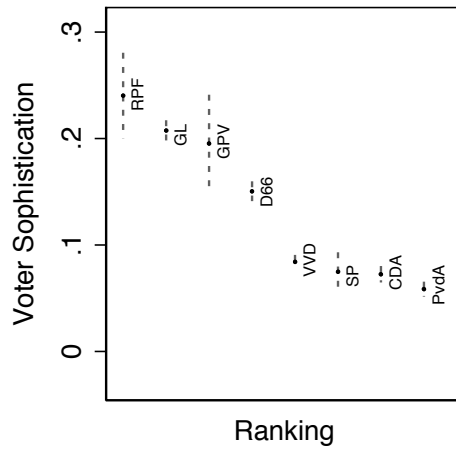
Sweden 2014



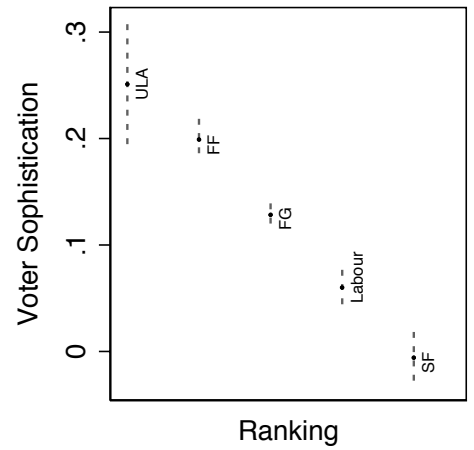
Portugal 2009



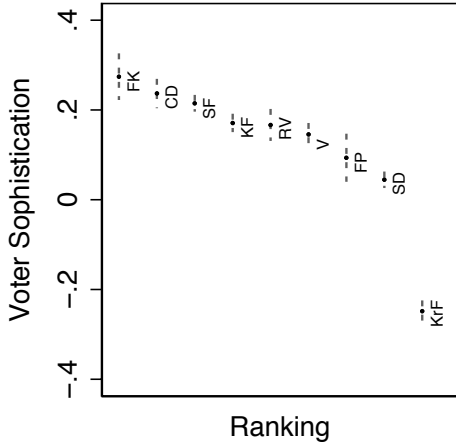
Netherlands 1999



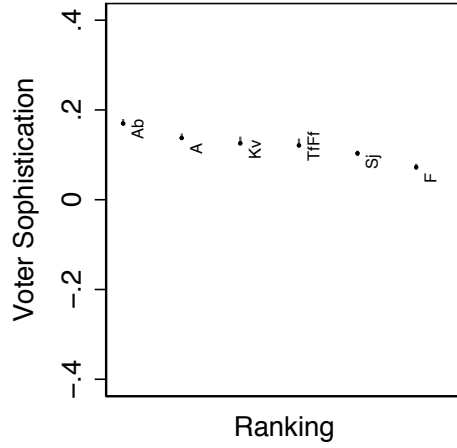
Ireland 2011



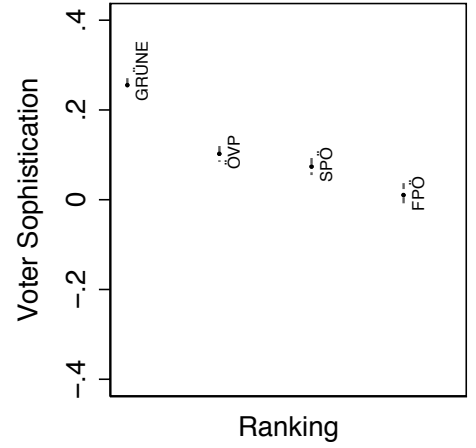
Denmark 1987



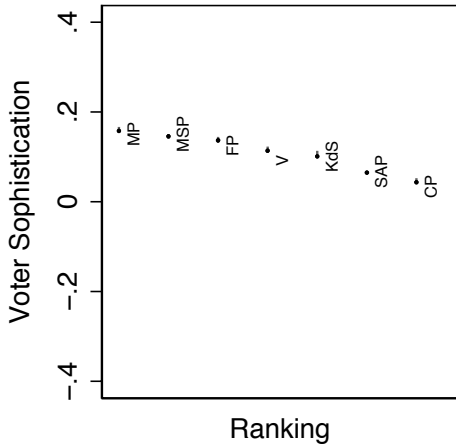
Iceland 1995



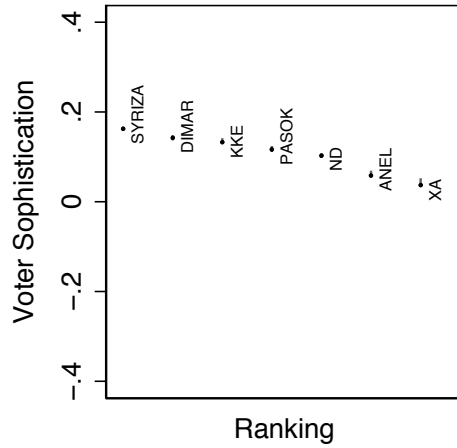
Austria 2013



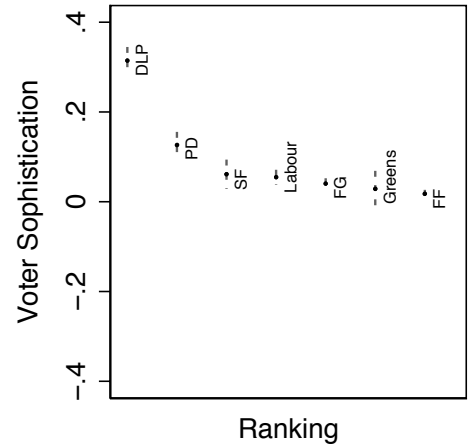
Sweden 1994



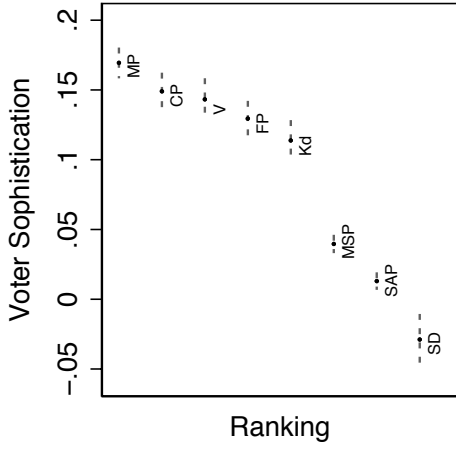
Greece 2012



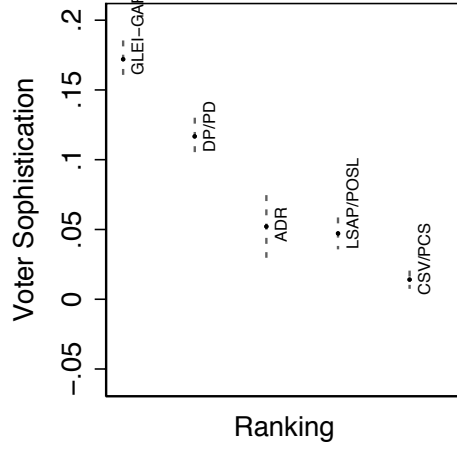
Ireland 1999



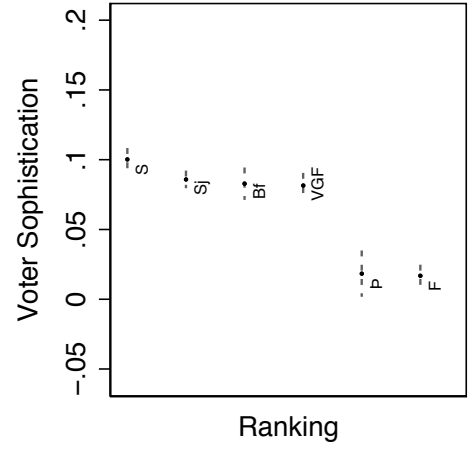
Sweden 2010



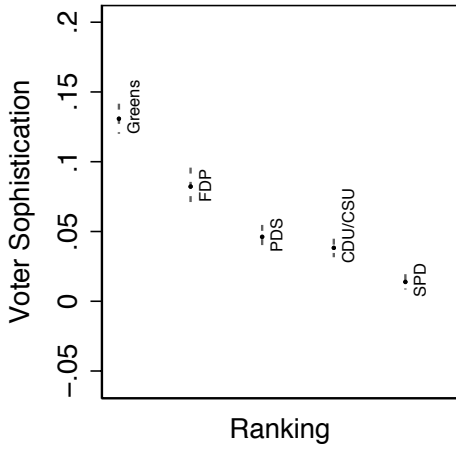
Luxembourg 2004



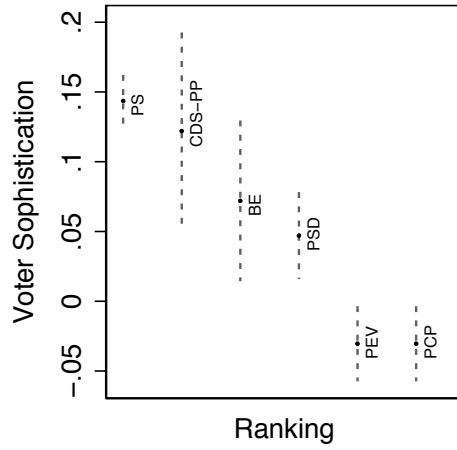
Iceland 2013



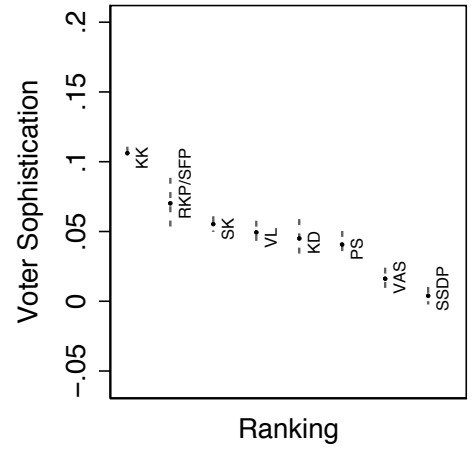
Germany 1998

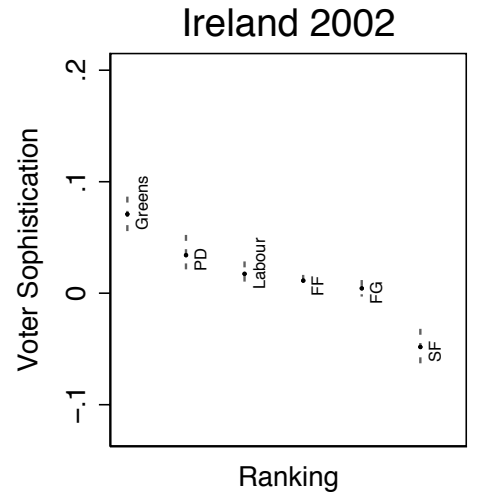
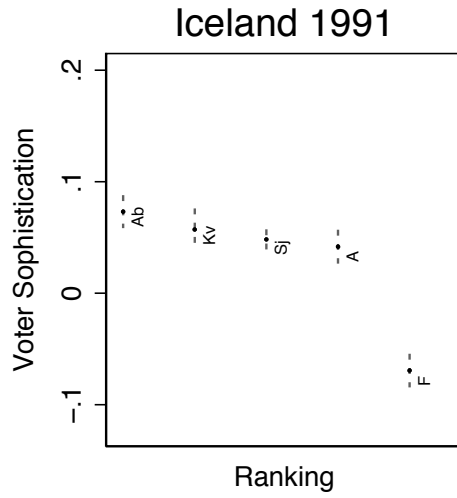
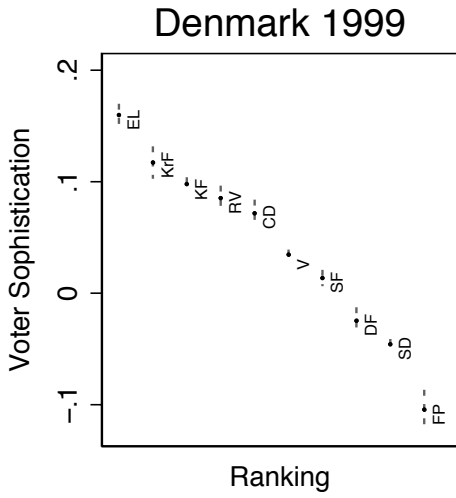
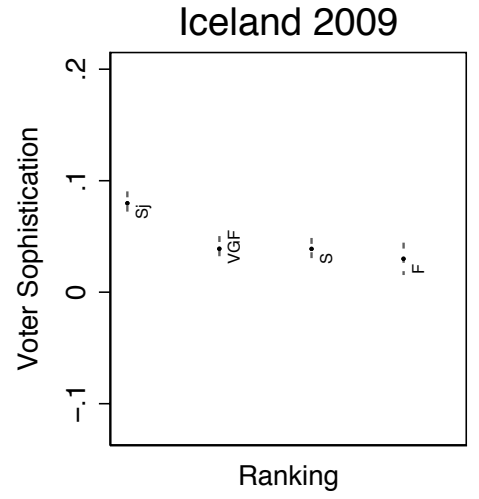
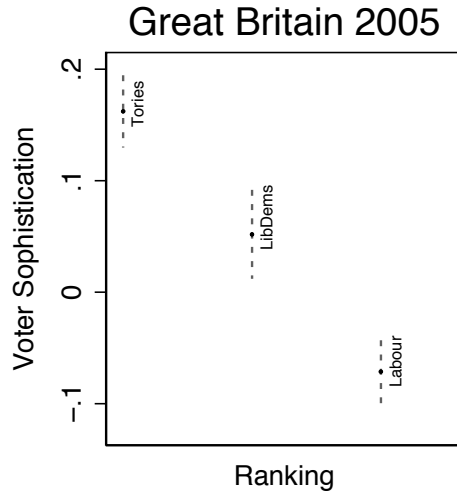
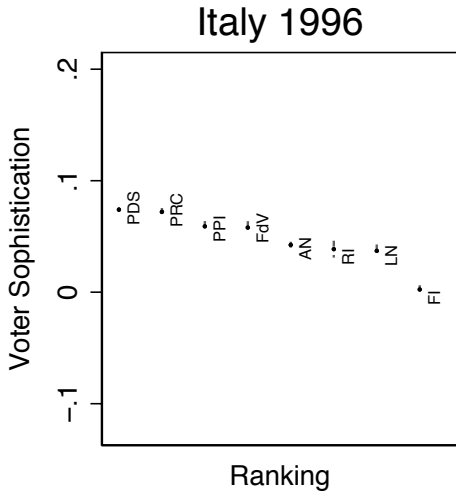


Portugal 2014

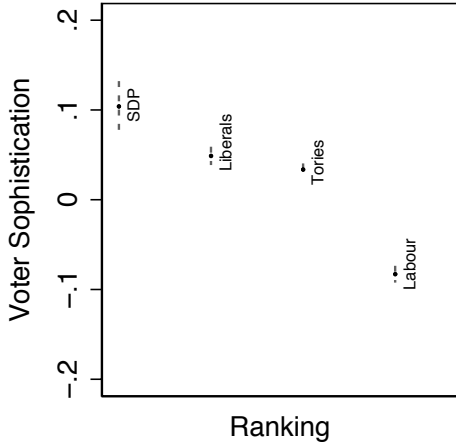


Finland 2014

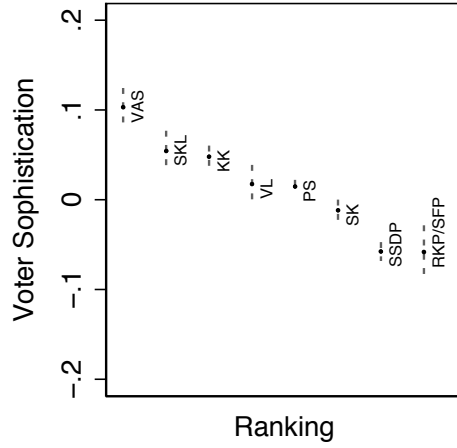




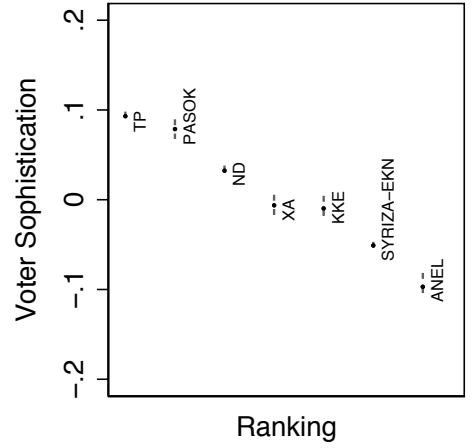
Great Britain 1983



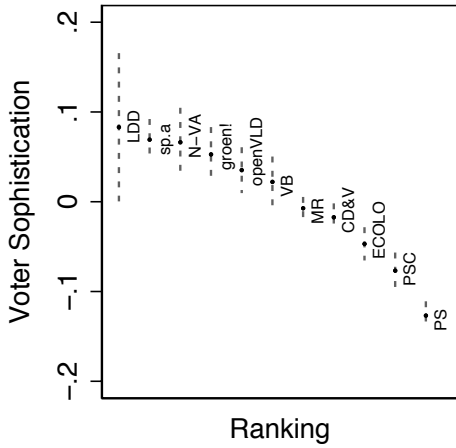
Finland 1999



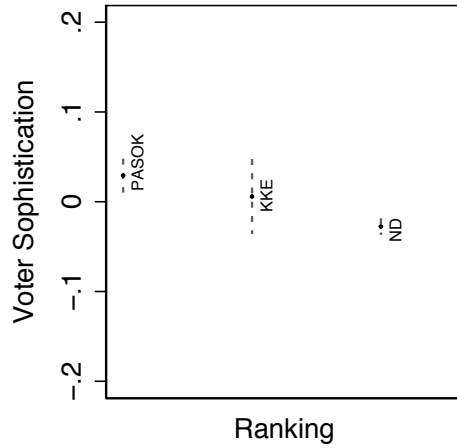
Greece 2015



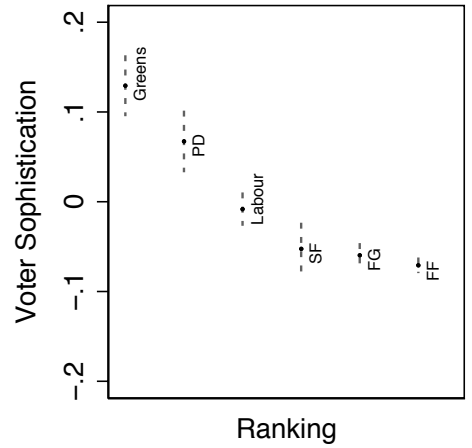
Belgium 2009

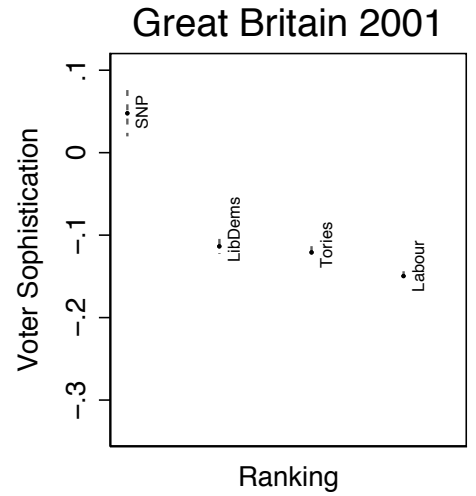
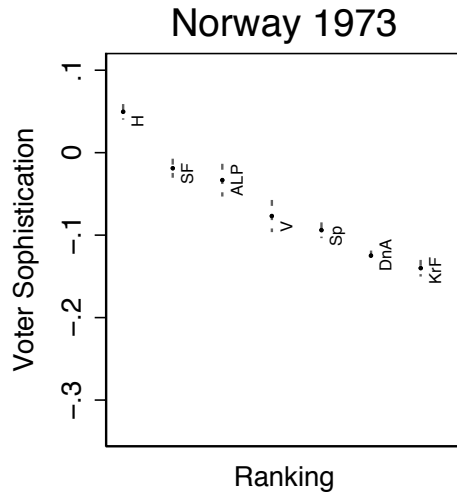
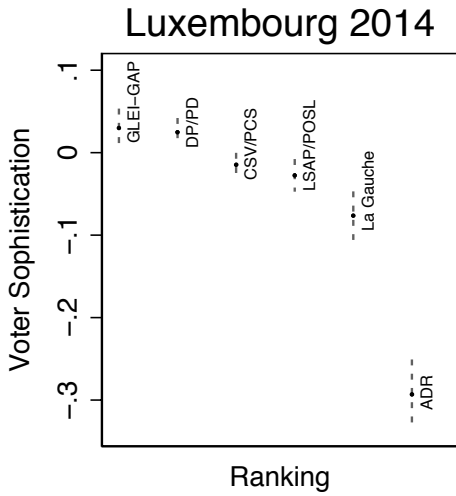
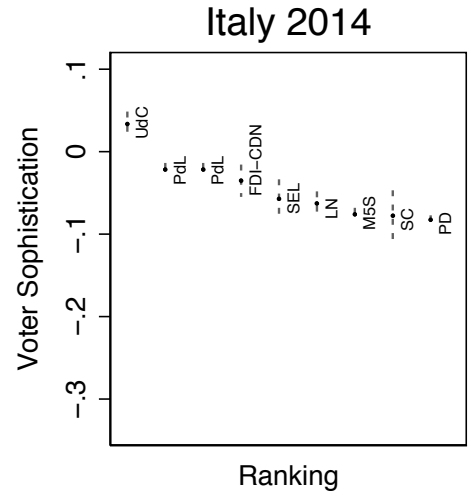
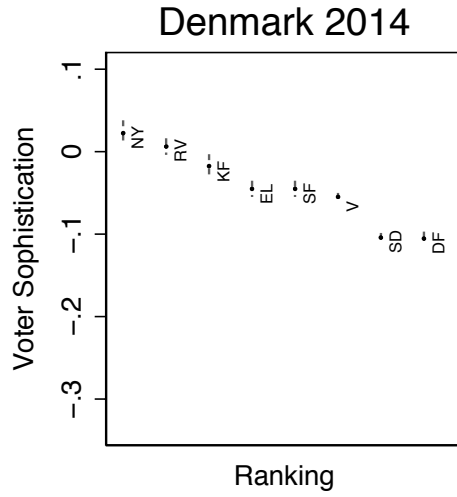
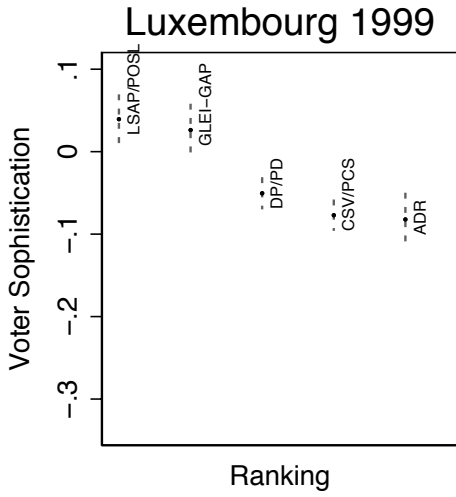


Greece 2004

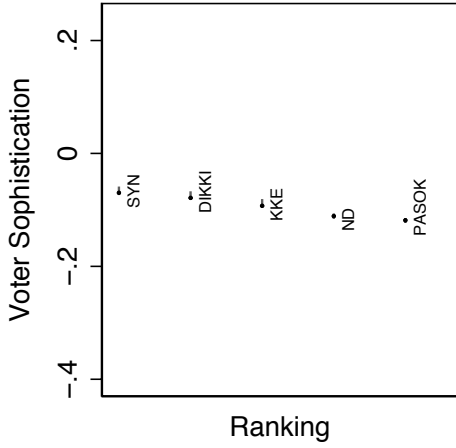


Ireland 2007

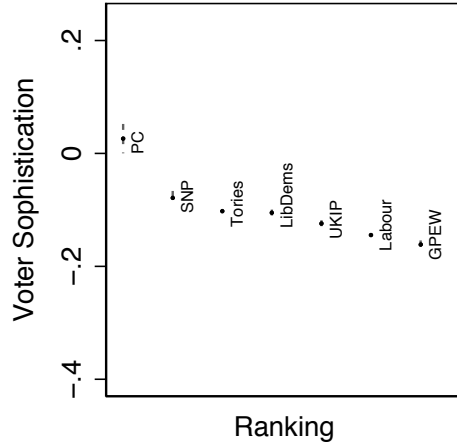




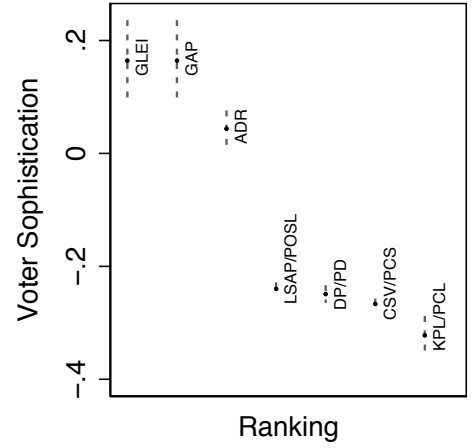
Greece 1996



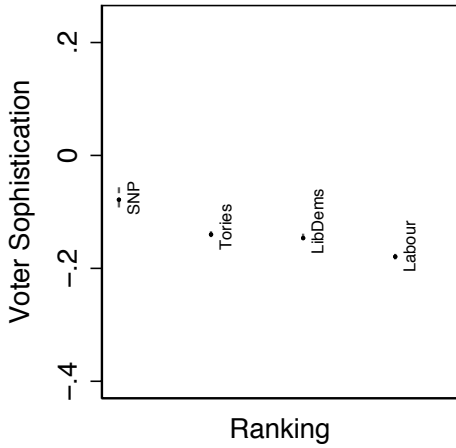
Great Britain 2015



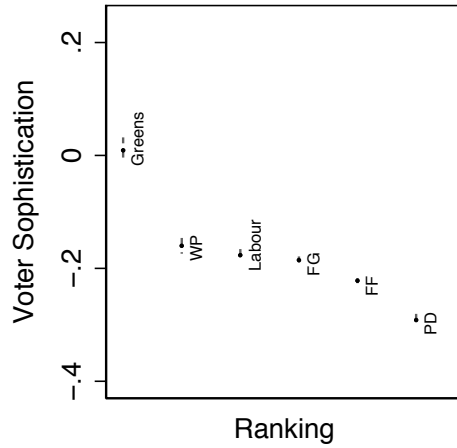
Luxembourg 1989



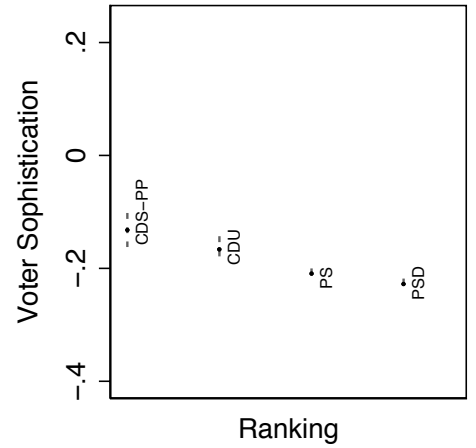
Great Britain 1997



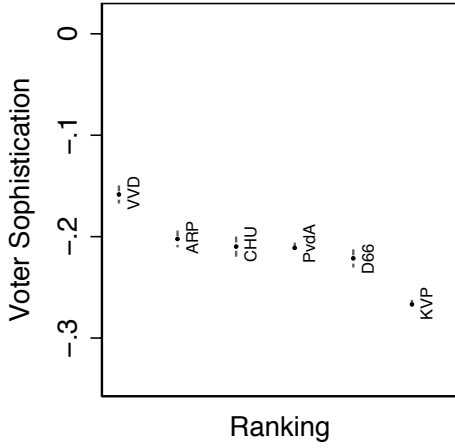
Ireland 1989



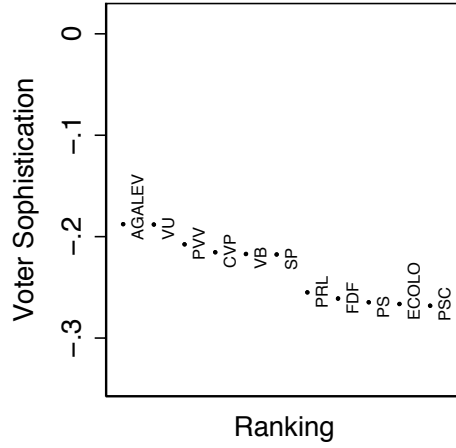
Portugal 1994



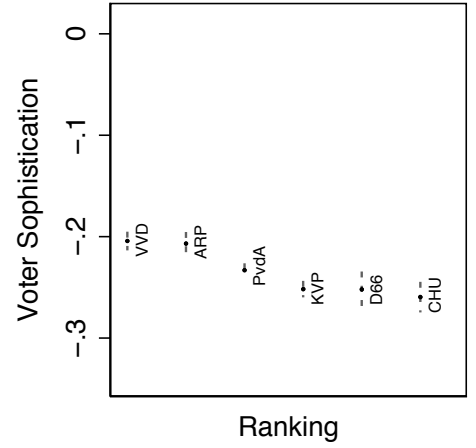
Netherlands 1971



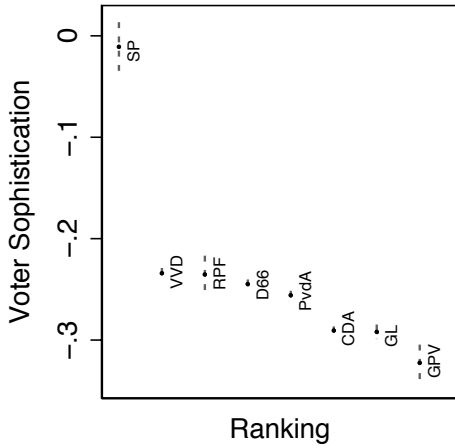
Belgium 1991



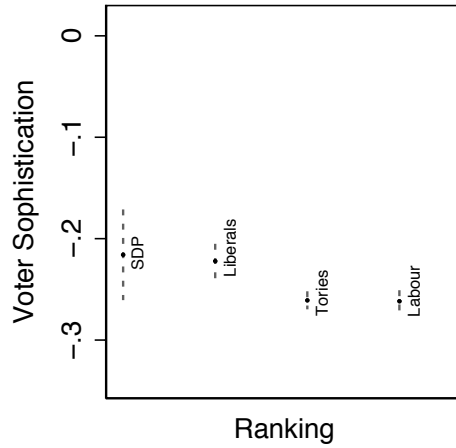
Netherlands 1972



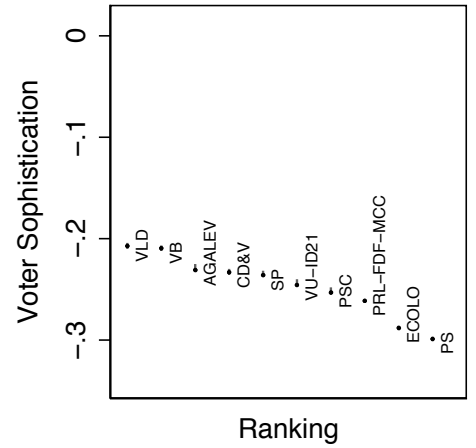
Netherlands 1994



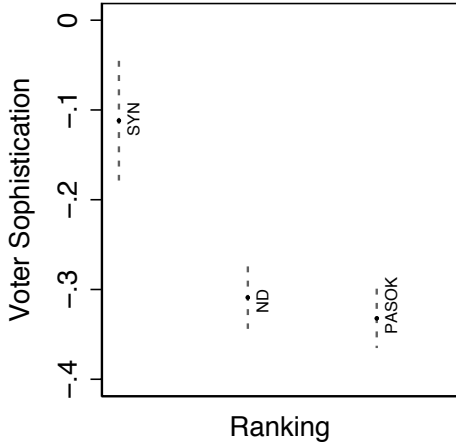
Great Britain 1989



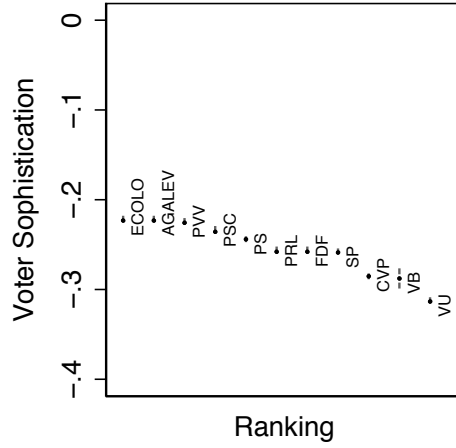
Belgium 1999



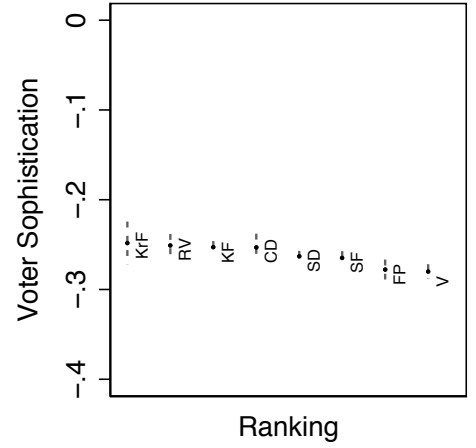
Greece 1989



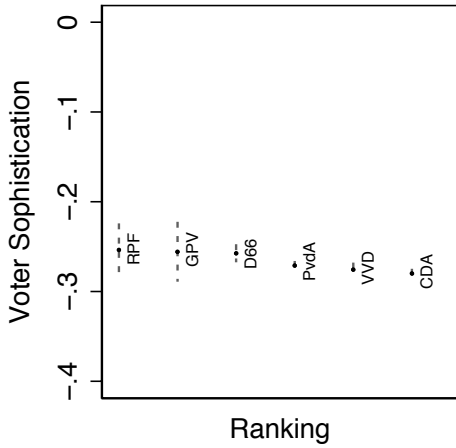
Belgium 1989



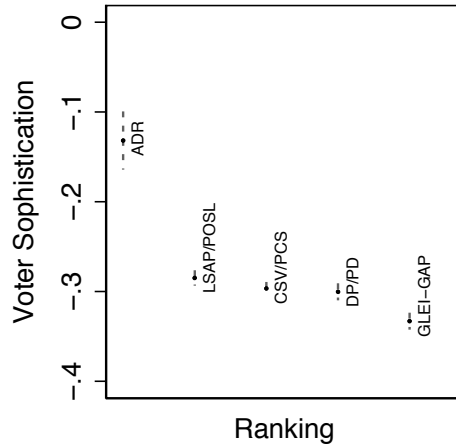
Denmark 1989



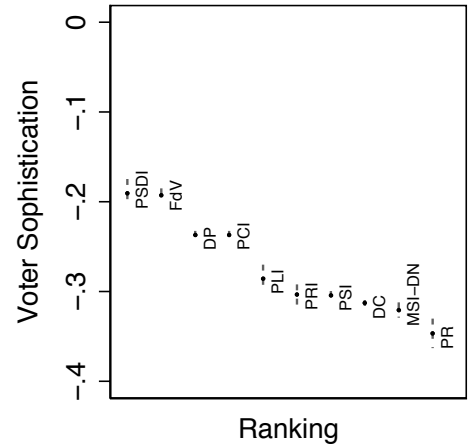
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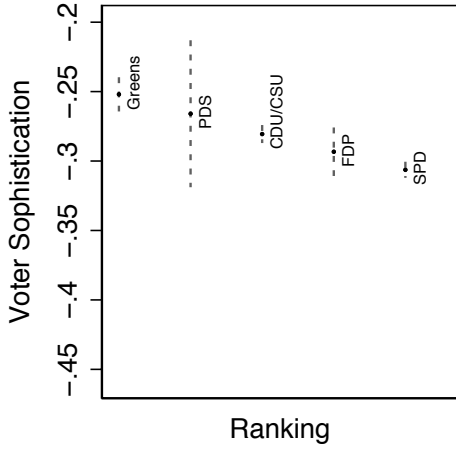
Luxembourg 1994



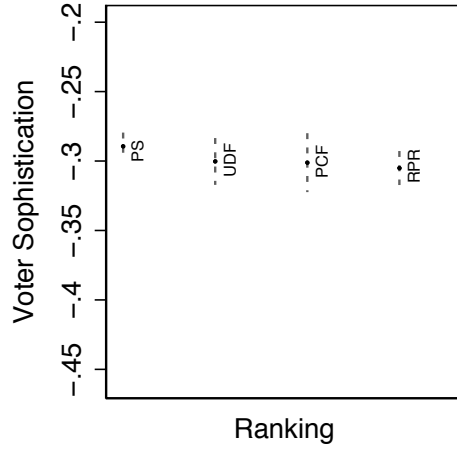
Italy 1989



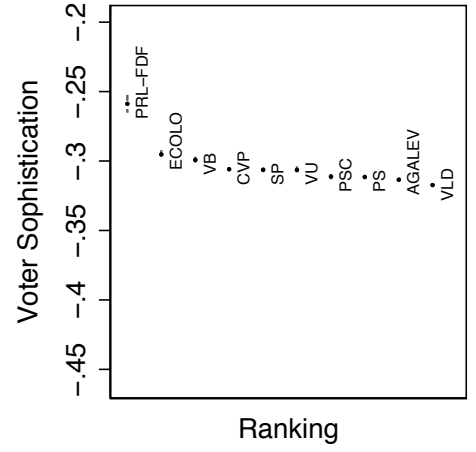
Germany 1994



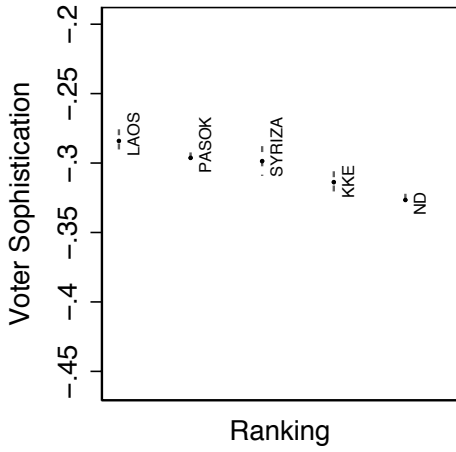
France 1994



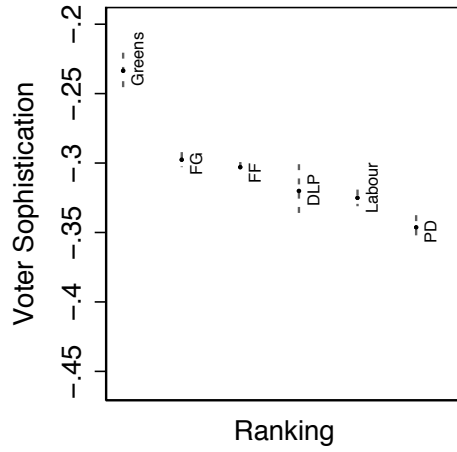
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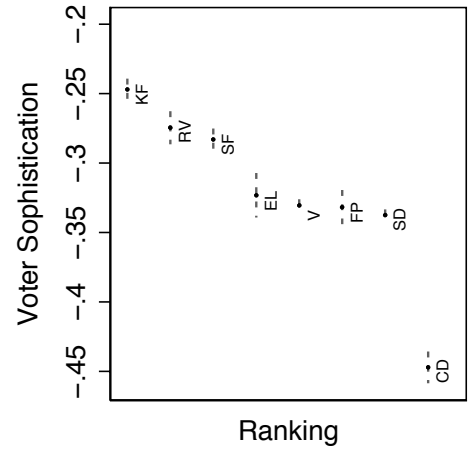
Greece 2009



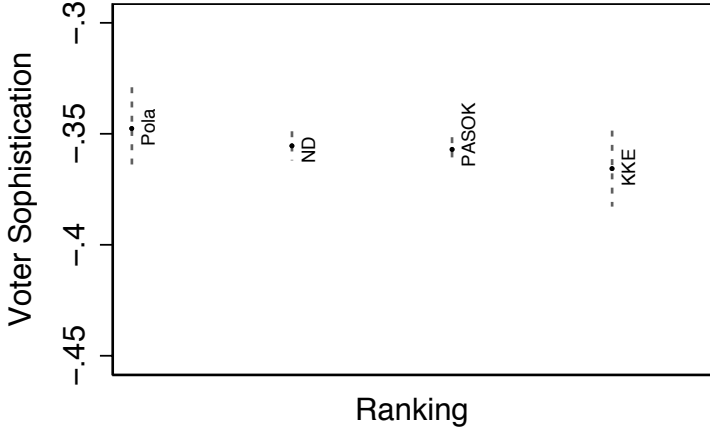
Ireland 1994



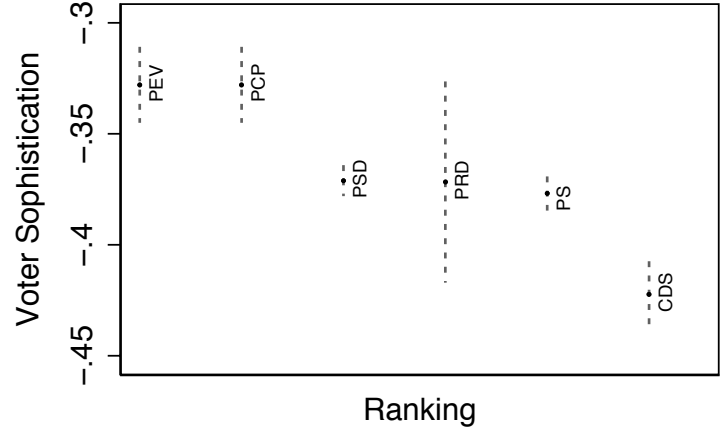
Denmark 1994



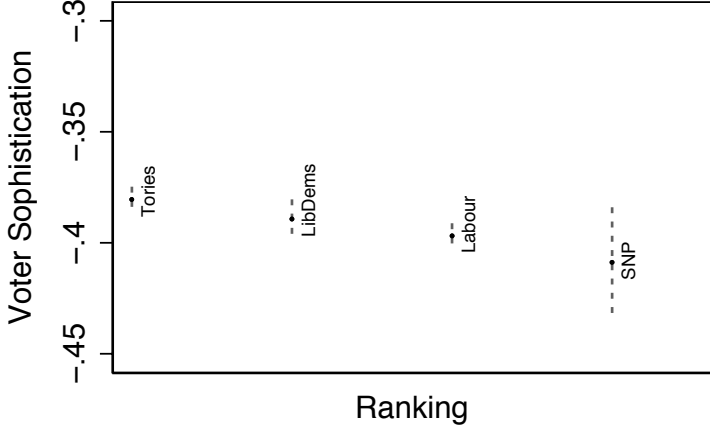
Greece 1994



Portugal 1989



Great Britain 1994



APPENDIX C: MEASURING ISSUE SALIENCY AND POSITIONS ON 6 DIMENSIONS

Using data on party election programs from the Manifestos Project (MARPOR), and the scaling approach developed by Lowe et al. (2011), we calculated issue saliency scores and policy positions for parties on six policy dimensions:

- (1) Economic Regulation and State Services
- (2) Traditional Morality
- (3) Environmental Protection
- (4) Internationalism and European Integration
- (5) Social Cohesion and National Identity
- (6) Conflict and Military Power.

The MARPOR coding scheme classifies each “quasi-sentence” in a party’s electoral program into one of 56 mutually exclusive policy categories. Typically, some subset of the resulting category counts from a coded electoral program are aggregated and scaled to construct a more general—and presumably, substantively meaningful—index, such as the commonly used left-right socioeconomic scale. Lowe et al. (2011) proposed a new scaling method (based on log-odds ratios), which improved on previous scales in several ways, to produce both saliency and position estimates on multiple dimensions. Specifically, their measure of the *position* of a party on a given dimension is defined as,

$$\ln\left(\frac{R + 0.5}{L + 0.5}\right),$$

and their measure of the *saliency* of the dimension for a party is defined as,

$$\ln\left(\frac{R + L + 1}{N}\right),$$

where N is the total number of quasi-sentences in the manifesto, and R and L represent, respectively, the number of quasi-sentences in the party program assigned to the “right” and “left” sides of the policy dimension. (For instance, for the traditional morality dimension defined by Lowe et al., R was the number of quasi-sentences in a party program assigned

to the MARPOR category “Traditional Morality: Positive,” while L was the number of quasi-sentences in the program assigned to the category “Traditional Morality: Negative.”)

Lowe et al. (2011) constructed several policy dimensions (which they defined *a priori*) from the MARPOR data set, using categories for each dimension that (a) deal with the same general issue (such as state-provided services) and (b) are inherently positional and confrontational (such as the categories “Welfare State Expansion: Positive” and “Welfare State Limitation: Positive”). We followed the same logic in constructing our *a priori* policy dimensions, some of which are similar (if not identical) to those from the Lowe et al. study. Specifically, the policy dimensions in our study are constructed from the MARPOR categories as follows.¹

(1) Economic Regulation and State Services

Left

Right

403 Market Regulation +	401 Free Enterprise +
404 Economic Planning +	402 Incentives +
406 Protectionism +	407 Protectionism –
409 Keynesianism +	414 Economic Orthodoxy +
412 Controlled Economy +	505 Welfare State Limitation +
413 Nationalisation +	507 Education Limitation +
503 Social Justice +	702 Labour Groups –
504 Welfare State Expansion +	
506 Education Expansion +	
701 Labour Groups +	

(2) Traditional Morality

Left

Right

604 Traditional Morality –	603 Traditional Morality +
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(3) Environmental Protection

Left

Right

416 Anti-Growth Economy +	410 Economic Growth +
501 Environmental Protection +	

¹ The three-digit numbers in the tables refer to the MARPOR policy category codes. The “traditional morality” and “environmental protection” dimensions are identical to those constructed by Lowe et al. (2011), while the “economic regulation and state services” dimension is very similar to their “state involvement in economy” dimension.

(4) Internationalism and European Integration

*Left**Right*

107 Internationalism +
108 European Integration +

109 Internationalism –
110 European Integration –

(5) Social Cohesion and National Identity

*Left**Right*

301 Decentralisation +
602 National Way of Life –
607 Multiculturalism +

302 Centralisation +
601 National Way of Life +
605 Law and Order +
606 Social Harmony +
608 Multiculturalism –

(6) Conflict and Military Power

*Left**Right*

103 Anti-Imperialism +
105 Military –
106 Peace +

104 Military +

To assess the construct validity of these dimensions, we performed a confirmatory factor analysis to ensure that the MARPOR categories load on the predefined policy dimensions in plausible ways—of particular importance is that the categories grouped *within* each “side” of the dimension (i.e., “left” or “right”) are correlated with the underlying dimension in the same direction and that the signs of the correlations *across* sides are in the opposite direction.² The results are as follows.

² The factor analysis was performed using the full set of parties and elections (1,955 election-party observations) for all Western European parliamentary democracies covered by the 2017 version of the MARPOR dataset.

(1) Economic Regulation and State Services

	403 Market Regulation +	0.22
	404 Economic Planning +	0.14
	406 Protectionism +	0.05
	409 Keynesianism +	0.06
<i>Left</i>	412 Controlled Economy +	0.30
	413 Nationalisation +	0.37
	503 Social Justice +	0.35
	504 Welfare State Expansion +	0.23
	506 Education Expansion +	0.09
	701 Labour Groups +	0.35
	401 Free Enterprise +	-0.53
	402 Incentives +	-0.28
<i>Right</i>	407 Protectionism -	-0.17
	414 Economic Orthodoxy +	-0.48
	505 Welfare State Limitation +	-0.38
	507 Education Limitation +	-0.14
	702 Labour Groups -	-0.13

(2) Traditional Morality

<i>Left</i>	604 Traditional Morality -	0.24
<i>Right</i>	603 Traditional Morality +	-0.24

(3) Environmental Protection

<i>Left</i>	416 Anti-Growth Economy +	0.43
	501 Environmental Protection +	0.45
<i>Right</i>	410 Economic Growth +	-0.26

(4) Internationalism and European Integration

<i>Left</i>	107 Internationalism +	0.25
	108 European Integration +	0.31
<i>Right</i>	109 Internationalism -	-0.22
	110 European Integration -	-0.21

(5) Social Cohesion and National Identity

<i>Left</i>	301 Decentralisation +	-0.25
	602 National Way of Life –	-0.16
	607 Multiculturalism +	-0.12
<i>Right</i>	302 Centralisation +	0.11
	601 National Way of Life +	0.33
	605 Law and Order +	0.42
	606 Social Harmony +	0.02
	608 Multiculturalism –	0.47

(6) Conflict and Military Power

<i>Left</i>	103 Anti-Imperialism +	0.09
	105 Military –	0.46
	106 Peace +	0.45
<i>Right</i>	104 Military +	-0.14

Clearly, the degree to which the MARPOR categories are correlated with the predefined underlying policy dimensions varies quite a bit, but the loadings are all consistent with expectations, both within and between the “left” and “right” poles of each dimension.

Just as important a task is to demonstrate that the position and saliency estimates for political parties on these six dimensions have face validity. To assess this (in a somewhat summary fashion), we used the Lowe et al. (2011) measures discussed above to generate position and saliency estimates for all the parties and elections examined in the factor analysis, and then aggregated those estimates across parties and elections according to the MARPOR-defined *party families* to which the parties belong. The nine major MARPOR-defined party families are Ecologist (ECO), Communist (COM), Socialist (SOC), Liberal (LIB), Christian Democratic (CHR), Conservative (CON), Nationalist (NAT), Agrarian (AGR), and Ethnic/Regionalist (REG). In the figures below, we simultaneously display the mean saliency and position estimates for party families over the postwar period, along with Hotelling T^2 confidence regions.³

³ Analogous to a univariate confidence interval, a confidence region is centered at the sample mean vector of the observed variables. The length of each axis of a region is longer the higher the variability in observed values of the corresponding variable and the smaller the sample size. The tilt of a region reflects the direction of the covariance between the plotted variables.

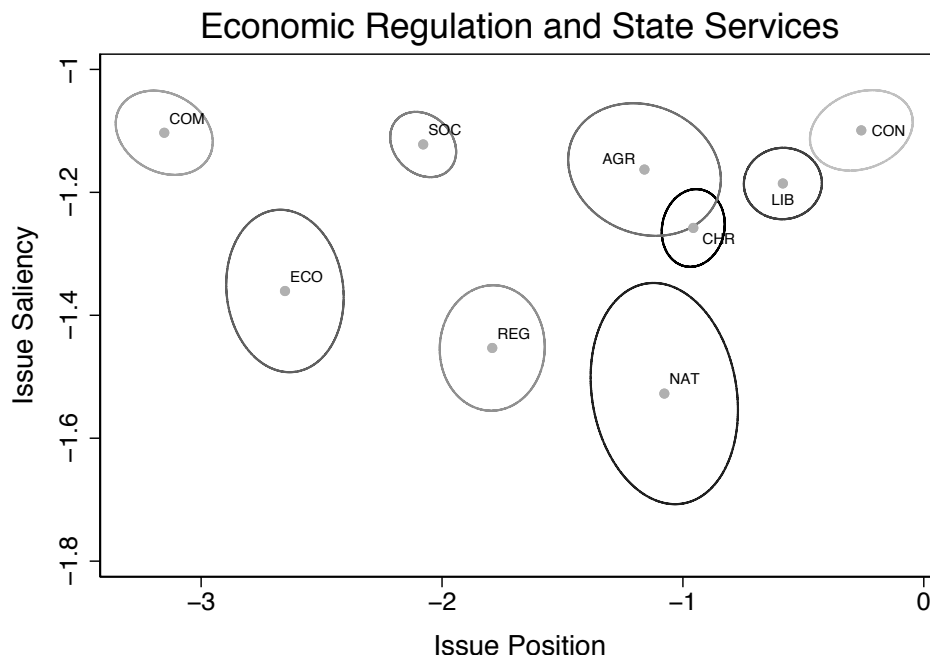


Figure A1. *Economic Regulation and State Services, by Party Family*

Beginning with the *Economic Regulation and State Services* dimension, we see that most party families in postwar Western Europe have placed approximately the same amount of emphasis on economic issues. The most notable exceptions are Green parties, Regionalist parties, and Nationalists, all of which (as will be shown below) place almost equal stress on some other issue. In terms of position estimates, we see essentially the same pattern as revealed by most expert surveys of party economic stances, with the Communists, then Greens, then Socialists on the left of the spectrum, Agrarian and Christian Democratic parties on the center-right, and Liberal and Conservative parties farthest to the right.

Estimates on the *Traditional Morality* dimension also appear consistent with typical assessments of party issue emphases and positions. No party family stresses this dimension as much as the economic dimension (note that the issue saliency estimates can be directly compared across figures). But there is significant differentiation between parties in terms of the importance of this dimension, which correlates positively with their positions. For example, Greens, Socialists, Communists, and Regionalists put relatively little stress on “morality”

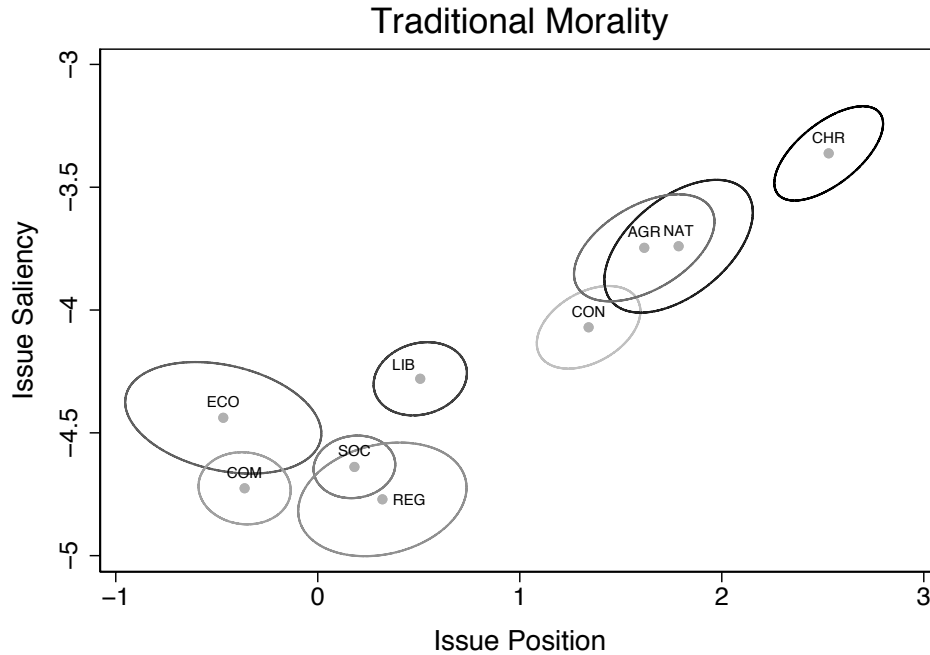


Figure A2. *Traditional Morality, by Party Family*

issues and are also on the relatively “permissive” side of the scale. They are joined by Liberal parties, which are known to be progressive on such issues as gay rights, abortion, gender equality, etc. On the other side of the dimension are party families that tend to stress this issue more, such as Agrarians, Conservatives, and Nationalists, all of whom tend to court rural and/or religious voters with more traditional social views. Christian Democratic parties, with their obvious religious roots, are farthest to the right on this issue.

The estimates on the *Environmental Protection* dimension show clear differences between Green parties and every other party family. Not surprisingly, Greens stress this issue more than any other type of party (stressing it as much as economic issues), and they tend to be extreme on the environmental protection side of the dimension. There is also differentiation between the other parties (though this perhaps gets somewhat lost in the figure because of the skew caused by the Green party family estimates). For example, Communists are more pro-environment than Socialists, which are more pro-environment than Conservatives.

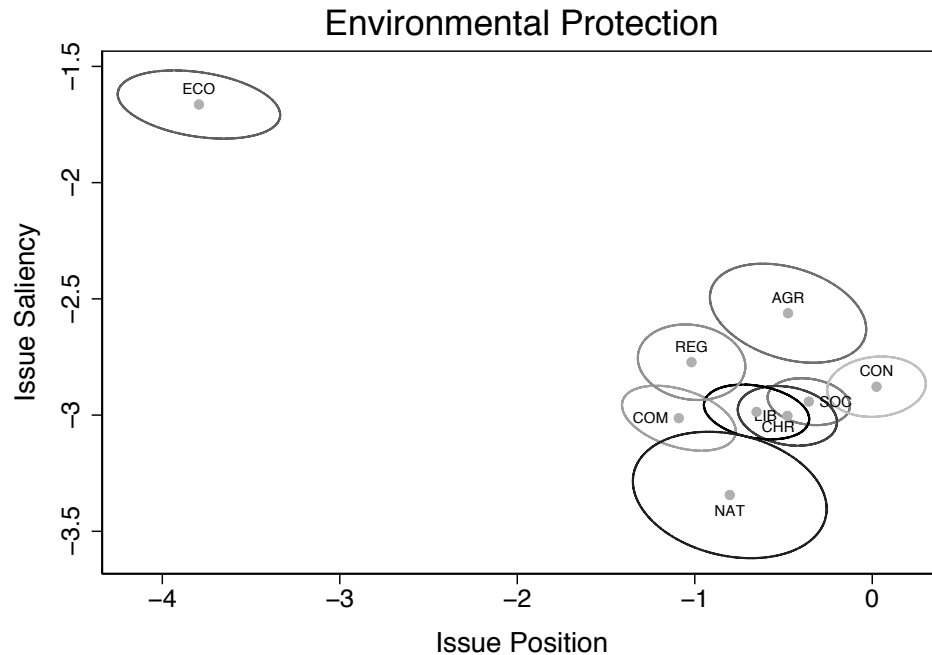


Figure A3. *Environmental Protection, by Party Family*

Estimates for the *Internationalism and European Integration* dimension are also not that surprising. Most mainstream parties cluster together on the pro-internationalism and pro-integration side of this dimension. These parties are separated from three party families that either tend to talk frequently about national sovereignty, such as Nationalists, or have hostile attitudes towards the European Union. Agrarian parties (which are most prevalent in Scandinavia) have often taken positions against further EU integration, as have the Communists, which typically portray the EU as a vehicle for harsh free-market capitalism. Notably, this is the only issue on which Nationalists and Communists share common ground.

On the *Social Cohesion and National Identity* dimension, the clearest differences are between Ethnic/Regionalist parties and Nationalists. Both party families emphasize these issues nearly as much as economic issues. Nationalists tend to make positive statements about national identity, as well as negative statements about cultural diversity, and they tend to take a zero-tolerance approach to law and order issues (which is intimately connected to

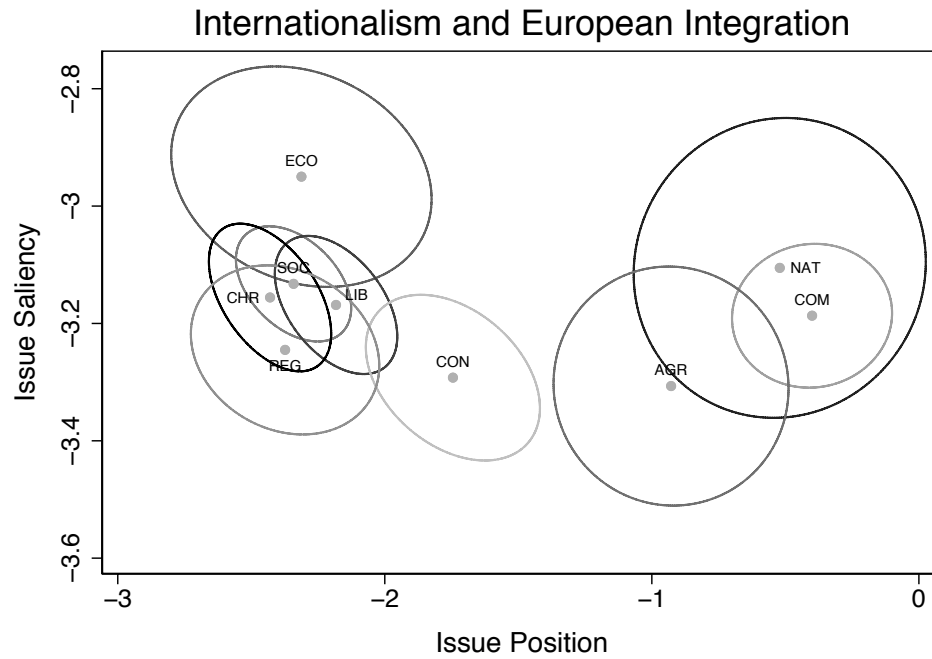


Figure A4. *Internationalism and European Integration, by Party Family*

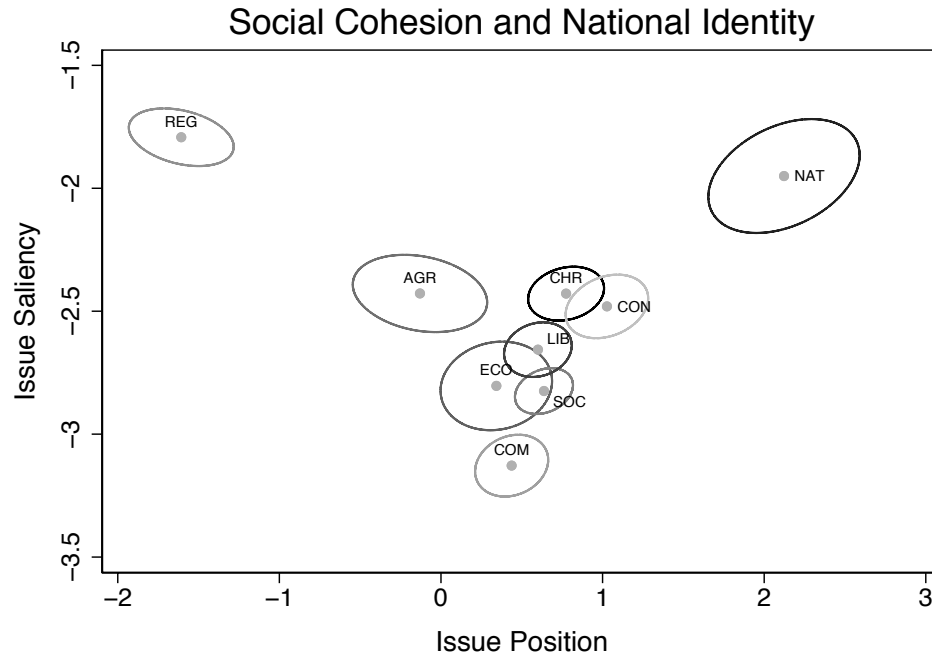


Figure A5. *Social Cohesion and National Identity, by Party Family*

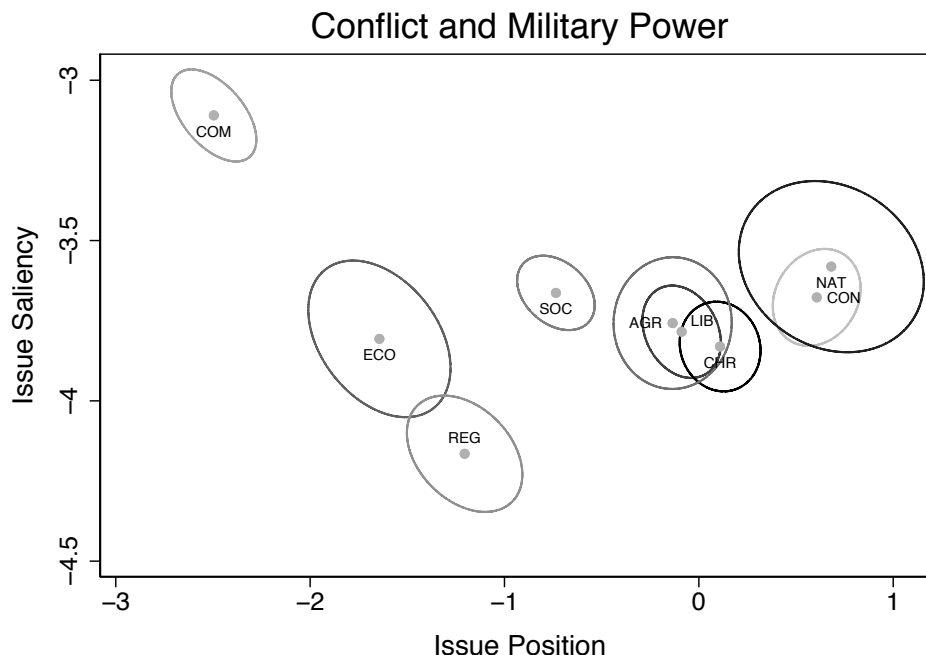


Figure A6. *Conflict and Military Power, by Party Family*

their hostile views towards immigrant communities and ethnic minorities). In contrast, regionalist parties highlight the virtues of multiculturalism and advocate for greater autonomy for minority groups, especially where they are geographically concentrated.

Finally, estimates on the *Conflict and Military Power* dimension differentiate party families that extol the virtues of a strong military from those that advocate peaceful solutions to international problems, such as Green parties or (to a lesser extent) Socialists, or parties that tend to associate large militaries with (capitalist) imperialism, such as Communist parties (which stress this issue more than any other party family). Agrarians, Liberals, and Christian Democratic parties are relatively centrist on this dimension, whereas Conservative and Nationalist party families take very similar stances on the right (both advocating greater military strength).

In sum, at least with respect to broadly-defined party families, the saliency and position estimates on the six predefined policy dimensions do appear to have significant face validity. A more extensive investigation is warranted, nonetheless, to assess whether the estimates

accurately describe the positions of individual parties and track changes in issue priorities and policy positions over time.

APPENDIX D: MODEL OF GOVERNMENT FORMATION

Table 1. *Determinants of Government Formation*

Explanatory Variables	Estimates
Largest Party in Coalition	1.183*** (0.165)
Minority Government	-1.509*** (0.233)
Minimal Winning Coalition	0.634*** (0.162)
Median Party in Coalition	0.424*** (0.144)
Ideological Divisions in Coalition	-0.026*** (0.004)
Number of Parties in Coalition	-0.630*** (0.084)
Status Quo	2.522*** (0.138)
Familiarity	1.560*** (0.399)
Anti-System Presence in Coalition	-0.040* (0.021)

Maximum likelihood coefficient estimates from conditional logit model, with standard errors in parentheses. Dependent variable: Binary indicator for whether potential government was chosen. N: 498 bargaining situations (170,139 potential governments). Significance levels : * : 10% ** : 5% *** : 1%.

REFERENCES

- Lowe, Will, Kenneth Benoit, Slava Mikhaylov and Michael Laver. 2011. "Scaling Policy Preferences from Coded Political Texts." *Legislative Studies Quarterly* 36(1):123-55.