

# Strategies for Studying Voters' Perceptions of Party Brands\*

David Fortunato

Texas A&M University

[fortunato@tamu.edu](mailto:fortunato@tamu.edu)

Thiago Silva

Texas A&M University

[nsthiago@tamu.edu](mailto:nsthiago@tamu.edu)

Laron K. Williams

University of Missouri

[williamslaro@missouri.edu](mailto:williamslaro@missouri.edu)

March 30, 2018

## Abstract

We present a theoretical framework for studying voter perceptions of parties' policy stands and predict that voters' perceptions of smaller parties will be more variable than of larger parties; that perceptions will be more responsive to changes in policy pronouncements made by opposition parties relative to government parties; and that voters will perceive coalition partners as converging upon one another, but also perceive opposition parties as pulling away from the cabinet. To test these hypotheses we aggregate comprehensive survey data, introduce a new measure of voters' party perceptions, and derive an error-correction model from our theoretical framework. Our empirical results support our hypotheses and also add nuance to previous findings. We close the manuscript by advocating the theoretical and empirical approaches used here in order to help usher this literature toward consensus.

---

\*Paper prepared to be presented at the 76th Annual Conference of the Midwest Political Science Association, Chicago, IL, USA.

Party competition is at the heart of representative democracy and, as such, theoretical and empirical research of the variety of options voters have before them is thriving in political science. In general, this research breaks down into three overlapping groups. The first is concerned with the foundations of party systems and the strategic origins of party positioning, which includes the deep and well-known formal theoretic literature on the institutional determinants of party policy stands. The second is the responsiveness literature, seeking to uncover whether and how parties recondition their policy positions in response to changing voter preferences (broadly defined). The third portion is concerned with the electorate, in particular its responses to changes in the competitive environment, including alterations to party programs, the formation of coalition cabinets, and other party behavior inside and outside of the policymaking process.

Unlike the first two literatures, which have come to a relative consensus on basic conclusions to which we are continually adding nuance and refinement—e.g., permissive electoral institutions create a diffuse set of parties advocating a wide range of policies, and, these parties are generally responsive to changes in the electorate’s policy preferences—the third could be fairly described as a series of competing, or even contradictory conclusions on its most basic questions. Do voters reward parties for changing their platforms? The extant literature provides only weak or conditional evidence for the predicted relationships (Adams and Somer-Topcu 2009; Bawn and Somer-Topcu 2012). Are voters attentive and receptive to changes in parties’ policy stands? Answers range from an emphatic ‘yes,’ to ‘yes, but the effects are small or quite delayed,’ to an emphatic ‘no’ (Ansolabehere and Jones 2010; Fernandez-Vazquez 2014; Erikson, MacKuen and Stimson 2002; Adams, Ezrow and Somer-Topcu 2011, respectively). In this manuscript, by focusing on voter perceptions of parties, we identify three principal reasons for the discord in the extant literature and offer a set of suggestions for remedying these issues that we hope will begin to guide the literature toward consensus.

The first and most important issue is theoretical. The literature has not yet developed a common theoretical framework for approaching the question of how voters form their perceptions of party policy stands and why and how these perceptions may change. To this point, we describe a theoretical foundation based on the canonical model of opinion formation (Zaller 1992) which has clear implications for empirical modeling. The second issue regards data. A review of the extant literature reveals a degree of variability in the samples analyzed that would surprise many researchers, particularly scholars of legislative organization, American behavior, international conflict, or other

subfields that have coordinated on a handful of comprehensive data sources. To this point, we present a comprehensive collection of data on voter perceptions of parties' policy positions that includes over 1,100 party-survey observations—roughly fourteen times the number of observations typically analyzed—which we will make publicly available with instructions for adapting the raw data to different questions and expanding the data as new surveys are administered. Third, we identify a set of choices made in many empirical analyses that may contribute to the discord in the extant research. We recommend a set of “best practices” for analysis, some of which are built into our data contribution.

The result is an analysis of the durability of voters' perceptions of the policy stands of parties in their country. We find that these perceptions are remarkably stable, but do, in fact, change in response to government formation and alterations to policy programs and also that the variance in perceptions is negatively correlated with party size. Before moving on, we wish to note that, although portions of this manuscript are necessarily critical of some of the extant literature, we are by no means immune to this criticism and have collectively made each and every choice discussed below. Our goal is not to belittle the subfield, but to push it forward.

## **Three sources of discord**

### **Theoretical foundations**

The empirical research on the connection between party policy signaling and aggregate electoral support or voter perceptions of parties' policy stands seems to suffer from a lack of institutional memory. What we mean by this is that the kind of aggregation of accumulated knowledge that is reflected in the empirical models of other durable questions in political economic research seems to be absent in this literature. For example, it is simply unfathomable that an empirical model of American Congressional elections omitting covariates on incumbent status or challenger quality, or an empirical model of the onset of interstate conflict omitting covariates on contiguity or relative capabilities, would survive peer review in a top political science journal. Yet, looking from one study of the implications of party-policy shifts to another, a reader would observe a surprising level of variation in the included covariates. We believe that nascent literatures (such as this one) face obstacles to establishing overarching theories or common theoretical frameworks which in

turn inform common empirical model constructions, and we hope that this project provides some direction.

Nearly every empirical model in this literature has the following form: on the left-hand side of the equation there is a measure of electoral success or voter perceptions of party ideology and on the right-hand side, there is some measure of party policy position or position change. The similarities tend to end there. Some studies include a lagged dependent variable, while others do not, despite evidence that a lagged dependent variable is important (Fernandez-Vazquez 2014). Some studies differentiate between “niche” and “mainstream” parties, but most pool these observations, despite evidence that these parties face differing electoral incentives (Adams et al. 2006). Some studies incorporate information on the governing status of parties, but most do not, despite evidence that this is critical (Bawn and Somer-Topcu 2012).

We argue that a principal reason for this variability is the lack of a common theoretical framework for studying voter perceptions (or responses more generally) that can inform empirical strategies. Without common theoretical ground, it is simply too easy for researchers to overlook salient covariates while constructing their empirical models. Of course, this can induce omitted variable bias, make inter-study comparison more difficult, and may also contribute to the poor levels of explanatory power provided by many empirical models in this literature. Below, we offer a simple theoretical model, based on familiar and broadly-accepted concepts that we hope will lay the foundation for such a common framework that can lead to continuity for empirical studies to follow, similar to how the bargaining theory of war imposed order on the empirical study of interstate conflict (Fearon 1995).

## **Sample variability**

There is a striking degree of variability in the sample of country-years and parties used to analyze the relationship between party actions and voter perceptions. We illustrate this variability qualitatively by comparing several select articles we feel are most representative of the literature. In each of these articles the dependent variable is the mean voter-perceived position of a particular party derived from a particular electoral survey. Falco-Gimeno and Fernandez-Vazquez (2014) analyze the effect of coalition participation on voter perceptions with a sample consisting of surveys administered in an average of 7.6 different years in Denmark, Germany, the Netherlands, Norway, and

Sweden. [Fernandez-Vazquez \(2014\)](#) adds the United Kingdom to this sample in his examination of the durability of party perceptions in the face of changing programs, and the average number of survey-years stays roughly equivalent. [Fernandez-Vazquez and Somer-Topcu \(2018\)](#) add Spain to that updated sample in their investigation of the impact of changes in party leadership to voter perceptions, and again the average number of survey-years stays roughly equivalent. To analyze the application of coalition participation heuristics on voter perceptions of parties' positions on EU integration, [Adams, Ezrow and Wlezien \(2016\)](#) use a sample of three survey-years for eight countries: Austria, Denmark, Finland, Germany, Ireland, Italy, the Netherlands, and Portugal, only three of which overlap the countries in [Fernandez-Vazquez and Somer-Topcu \(2018\)](#). [Ezrow, Homola and Tavits \(2014\)](#), in turn, present a sample of 32 countries, with an average of about two survey-years each, to examine the variability of voter perceptions of partisan policy positions.<sup>1</sup> Further, this sample variability is likely *underestimated* because it ignores the differences in the *parties* included within country and across studies.

We can put this variability on more concrete footing by answering the following: if we build a list of all country-years appearing in these analyses and draw one at random, what is the probability that that country-year appears in two randomly drawn articles? The greater this probability, the greater the overlap in data, or, *sample stability*. If the value is near 1, this would indicate that nearly all contributions are drawn from the same sample, which, in turn, would almost certainly lead to high stability in empirical conclusions, like we observe in the literature on congressional elections or interstate conflict. If the value is near 0, however, this would indicate that nearly all contributions are drawn from entirely different samples, which, in turn, may lead to a high level of instability in empirical conclusions. Examining all comparative politics articles published since 2011 in the *American Journal of Political Science*, the *Journal of Politics*, and *Comparative Political Studies* that examine voter perceptions of party policy stands, we estimate that this sample stability figure is 0.05.<sup>2</sup> It is little surprise, then, that there is a large degree of inconsistency in empirical results across studies. We want to make it clear, however, that we do not blame researchers in this field for low sample stability. After all, we presently lack the kind of common, comprehensive data source for studying these relationships that our colleagues interested in interstate conflict

---

<sup>1</sup>The sample variability across studies can be seen in [Appendix A](#).

<sup>2</sup>See the calculation in [Appendix A](#).

and congressional elections (two subfields with well-earned reputations for consistent incremental progress in the accumulation of knowledge) have enjoyed for decades.

## Modeling choices

As discussed above, we believe that the variability in specifications, that is, which predictors are included on the right-hand side of the equation when modeling voter perceptions, is a function of diffuse nature of the theoretical approaches to the question. There are certain estimation habits, however, that we believe may be contributing to the instability in empirical results, and we discuss two in particular here.<sup>3</sup> The first is the use of raw survey means of voters' ideological placements of parties as the dependent variable and the second is the lack of consideration of measurement error in both dependent and independent variables.

Survey means are the industry standard dependent variable in this literature. Survey respondents are asked to place parties on an ideological continuum, typically from 0-10, or something quite similar, where small values correspond to left-leaning preferences (high taxation and public goods provision) and high values correspond to right-leaning preferences (low taxation and public goods provision). Analysts then average all respondent placements of the parties being analyzed and use this as the general measure of how voters perceive those parties' ideological positions. This is intuitive for both the analyst and the reader, efficient, and easily reproducible, three highly valued criteria in scientific research. However, we see this approach as having (at least) three salient drawbacks.

The first drawback is that there is a high degree of variability in *who* places the parties. That is, survey respondents will often choose not to offer an estimate of a party's ideological position for any number of reasons, but we suspect that the primary reason is a lack of familiarity with the party. Indeed, [Ezrow, Homola and Tavits \(2014\)](#) find a very strong correlation between the proportion of respondents that place a party and its size. This correlation may mean that we get systematically "better" or "more accurate" placements of *smaller* parties, because only respondents with high levels

---

<sup>3</sup>There is a third issue. Given that the extant literature, as well as the theoretical model that we present below, suggest it is critical to model the data dynamically, there is a strong possibility that the irregularity of time intervals between observations (driven by irregularities in electoral timing), could have strong effects on our results. Fortunately, however, even though there are theoretical reasons to think through these irregularities, the data suggest that we can ignore them for the time being. We discuss this in the appendix.

of political interest are offering placements for them. That ideologically extreme parties tend to be smaller suggests systematic correspondence between mean placements and parties' policy programs — i.e., the most common independent variable in this literature. This is just one possibility, of course, one could imagine myriad biases potentially being injected into our models as a result of this selection problem.

The second issue is closely related. If we take the mean of all placements, then we are aggregating the placements of very different kinds of respondents in a uniform manner. For example, we are aggregating the placements of the young, who may have only recently began paying attention to politics and formulating their perceptions of these parties' positions, with the old, who may have formed their perceptions decades ago and not updated them since. We are also aggregating the perceptions of party members, or supporters, who presumably have a much better idea of what that party stands for, with non-supporters, who should have comparably less reliable information and this is particularly salient because the mix of supporters and non-supporters varies systematically across parties and countries.

The third issue with survey means is the strong assumptions required for comparability. If we compare the mean placement of the United Kingdom's Labour Party in 2010 to its mean placement in 2015, we assume that the sample of respondents in 2010 is, if not identical, sufficiently representative of the sample of respondents in 2015 to ignore the possibility of differences in placements as a function of the sample demographics. At first blush, this is not an unreasonable assumption. After all, electoral surveys are specifically designed to be representative of the voting population and survey administrators take great pains to calculate and include a set of respondent weights to achieve this representativeness. But these weights are nearly always ignored.<sup>4</sup> Further, when we consider the variability in sample sizes, these assumptions begin to feel less tenable. For example, the European Election Studies, an invaluable resource to this literature, surveyed about 1,100 residents of each EU member state in 2014. Given that the weights tend to be ignored, we will have a much better sample of Estonia, a country of about 1 million, than France, a country of about 66 million, for 2014, and there is also likely to be systematic variation across these countries in the extent to which the sampling assumptions that comparing averages requires hold *within* countries *across* survey iterations.

---

<sup>4</sup>Even if they are not ignored, they are never mentioned in the text of these articles.

Our second critique of the typical approach to empirical modeling is a reiteration of Benoit, Laver, and Mikhaylov's (2009): extant studies nearly always ignore measurement error in both the dependent and independent variables. We believe that this is almost certainly a function of the long lag between this research's beginnings and the estimation of errors for the focal variables, e.g., party policy placements derived from campaign manifestos, expert evaluations, electoral surveys, etc. Nonetheless, the literature has now slain those dragons and strategies for estimating variance in manifesto-derived positions (Benoit, Laver and Mikhaylov 2009; Lowe et al. 2011) or expert surveys (Lindstädt, Proksch and Slapin 2016) are now available. In short, particularly in light of what we learned through Benoit, Laver, and Mikhaylov's (2009) replication (with a proper error accounting) of Adams et al. (2006), we cannot continue to ignore the reality that the key covariates in this literature are estimated with associated error.

In the remainder of the manuscript, we offer solutions to these three general issues by discussing a theoretical framework for the formulation and updating of perceptions of party positions, presenting a comprehensive collection of data to study these perceptions from which we estimate typical voter perceptions with a new strategy, and use these data to estimate a model of the durability of voter perceptions to party policy changes and government participation in which we model the associated error in estimates of both voter perceptions and party policy pronouncements.

## Theory

We believe that the best place to begin our theoretical framework of perceptions of partisan ideologies is with the canonical political science model of opinion formation. Zaller's (1992) receive-accept-sample model of opinion is particularly well-suited to our purposes here not only because of the deep well of theoretical and empirical support for it, but also because its framework will allow us to derive empirical expectations for the mean and variance of voter perceptions at any given time, as well as expectations for how those should change over time.

To refresh, the receive-accept-sample (RAS) model of opinion, developed by Zaller (1992) and Zaller and Feldman (1992), posits that we should understand political opinions, such as perceptions of party positions, as distributions rather than points. In the original text, Zaller (1992) argued that the probability of observing a liberal response to some question of political preference or



opinion is  $L/(L + C)$ , the number of liberal political considerations over the number of liberal and conservative considerations. By thinking of opinion revelation as a draw from a distribution, rather than a deterministic reporting of a concrete position (or some version of the “truth”), then previously unexplained phenomena, such as the temporal variability of individual and aggregate opinion, begin to make sense. For our purposes, we think of *perception*  $\sim N(\mu, \sigma^2)$ , where the perception of each party’s ideology is drawn from the distribution of messages on hand regarding its policy positions.

Once we accept opinions as probabilistic draws from a distribution, we turn our attention to considering what messages get assimilated into that distribution and which factors may reshape that distribution — i.e., what makes  $\mu$  more “left” or more “right” and what makes  $\sigma^2$  larger or smaller? When considering the assimilation of new information into these distributions, Zaller’s (1992) focus was on the characteristics of individuals and more specifically the propensity of more politically interested citizens to be exposed to more information (*receive*) and the propensity of high interest ideologues to reject information that was inconsistent with their priors and accept information reinforcing these priors (*accept*). Though individual factors are not our concern here, we can certainly think of how these factors may play out in reference to party perceptions, and we discuss some of these implications below, but at present we wish to discuss party-level (or contextual) factors that may make certain pieces of information more likely to break into voters’ distributions of party messages, or, what contextual factors may change the relative weights of messages in this distribution. In Zaller’s terms, this is to move some considerations to be “top of mind,” but others not to be (*sample*).

In general, we can think of the information reshaping this distribution on two dimensions: credibility and salience. Voters will accept ideological signals that are credible and place additional weight on signals that are salient. Of course, these perspectives are not new to this literature (e.g. Fortunato and Stevenson 2013; Fernandez-Vazquez and Somer-Topcu 2018), but formalizing this within the RAS framework is instructive and helps us contextualize differences in empirical consistency within the literature. For example, every article that has investigated the effect of government participation has found that entering into coalition government has a robust influence on the manner in which parties are perceived, with voters perceiving them as more ideologically similar to their partners than otherwise (e.g. Adams, Ezrow and Wlezien 2016; Fortunato and Stevenson 2013; Lupu 2013). Given that parties entering coalition governments are credibly committing to enduring

policy compromise, government formation is perhaps the single most salient political action.

Conversely, it may be the case that changes to parties' policy programs are not as credible or salient. They may be viewed as incredible due to the various incentives that parties may have to misrepresent themselves (e.g., [Fernandez-Vazquez 2018](#)). Alternatively, it may be that the programmatic changes that we actually observe are simply too small to be noticed by (or important to) voters (to say nothing of the possibility that these changes *are* incorporated into voters' perception distributions, but we have been unable to recognize the effects of these incorporations due to measurement and modeling issues). Although, we note that there is research suggesting just the opposite, that such changes should be considered credible because, by and large, parties do, in fact, follow up on their policy promises (e.g., [Erikson, MacKuen and Stimson 2002](#)).

The researchers' task, then, is thinking through the different types of policy-related information that voters could be exposed to, the probability of their exposure, and the likelihood that they view this information as credible and salient. For example, larger parties should receive more media coverage than smaller parties, *ceteris paribus*. Larger parties have more supporters, more legislative influence, and more floor time in parliamentary debate.<sup>5</sup> This increased level of coverage should help these parties communicate their preferences to the electorate and therefore decrease voter uncertainty regarding their policy stands.

Government formation, as we have noted, is likely to be among the most available, credible, and salient pieces of information. This event receives a large amount of media coverage, increasing the probability that voters are exposed to the information, and the salience and credibility of the related information is likely second-to-none. In general, squabbles over individual policies should be unlikely to affect voters' perception distributions as voters are generally believed to be inattentive to the day-to-day grind of the legislative process (although there are most certainly highly visible exceptions — the disagreement over the move away from nuclear energy during Merkel's second cabinet, or the fight over university fees during Cameron's first cabinet, for example). However, in the aggregate, sustained messages of discord between cabinet and opposition (or perhaps even *within* the cabinet) should be absorbed into voters' perceptions as the supply of such messages should make exposure unavoidable in the long run.

---

<sup>5</sup>In most parliamentary democracies committee seats and plenary speaking time are allocated proportionally by rule.

Changes to parties' policy programs are likely to be fairly accessible pieces of information as these are rather integral parts of election campaigns, which are themselves very important and visible events. But the effect should not necessarily be consistent across parties. As noted above, there is certainly variability in the depth of such changes, but the relative weight put on such changes across parties should vary as well. Most importantly, we see these relative weights being conditioned by government participation. That is, while parties in government spend the legislative term assembling a record of observable policy outcomes, parties in opposition do not. Hence, in the lead up to the election, the policy *statements* of opposition parties should be among the most relevant considerations when voters update their perceptions of the positions of these parties, while government parties may see their statements "crowded out" by their record of governance.

Below, after presenting our data and measurement strategies, we construct statistical models to test the following empirical implications of this theoretical framework: 1) voters' perceptions of smaller parties display higher variance than larger parties; 2) voters perceive coalition parties as moving closer to their partners in government, but perceive opposition parties as moving away from the government; 3) changes in policy programs are weighted more heavily for opposition parties than government parties.

More generally, we suspect that the nature of opinion formation will make it difficult to observe significant, sustained levels of change to perceptions, or  $\mu$ . There are several reasons for this. First, the nature of the opinion model suggests that if the information that is incorporated into voters' perceptual distributions is at all durable (i.e., the information does not evaporate or get replaced shortly after acceptance), then these perceptions should be stable over time as it would take a great deal of new information implying a different party position to move  $\mu$  in a significant manner. Second, there is a short supply of credible actions parties could take to send those differentiating signals. If a party is not in government, it will generally be excluded from the policy-making process, so it may not be able to wrangle sufficient media coverage to make its evolving positions known and the avenues for open, inclusive debate about what parties prefer and the relative merits of their visions for the future are typically limited to elections, which are infrequent events. Third, parties have strong incentives to craft and maintain stable brands, even if that brand is not preferred by a plurality of voters (Laver 2005). Indeed, there is a fair amount of theoretical and empirical evidence that parties are reticent to drastically change their positions, precisely because they believe

consistency breeds credibility, which not only clarifies signals to voters regarding what a party wants, but may also increase their “valence” in the eyes of the electorate (e.g., [Budge 1994](#); [Aldrich 1995](#)).

Scholars in marketing have learned quite a bit about the importance of brand stability in competitive marketplaces and have generally concluded that stability reduces perceived risk on the part of the consumer and helps to build brand loyalty which combine to present a higher (perceived) relative value to consumers ([Leischnig and Enke 2011](#)). These findings have clear analogues to political parties. Parties with stable, consistent policy offerings reduce uncertainty over what they may do in government while also building loyalty in the electorate through reliable messaging and, hopefully, delivering on their policy promises when in cabinet. Indeed, the most influential model of legislative organization is entirely motivated by party members’ collective acceptance that their brand is a valuable electoral common good that must be protected and burnished ([Cox and McCubbins 2005](#)).

Our theoretical model of perceptions and perception change and our general expectation for stability over time bear a clear implication for modeling strategy: the error-correction model. This structure enables us to capture the short- *and* long-term dynamics of party perceptions; that is, the temporary and enduring effects of various policy signals on how voters perceive parties. As such, this strategy will allow us to estimate the persistence, or durability, of voters’ perceptions to differing stimuli. Relating back to the theory, this approach will allow us to empirically differentiate between events or signals that lead to enduring changes in voters’ perceptual distributions (i.e., shift  $\mu$  in a substantive manner) and events or signals that temporarily change the shape of voters’ distributions by reweighting their components, or, as Zaller wrote, move certain pieces of information to the “top of mind.”

## Data and measurement

To work toward building a large, inclusive, common pool of data to work with, we aggregate all electoral surveys contained in 3 cooperative cross-national surveying projects. This includes the European Voter Project (EVP),<sup>6</sup> the European Election Studies (EES),<sup>7</sup> and the Comparative Study of Electoral Systems (CSES).<sup>8</sup> The aggregation of these data comprises voter perceptions of

---

<sup>6</sup>Details [here](#).

<sup>7</sup>Details [here](#).

<sup>8</sup>Details [here](#).

328 parties, across 34 countries and 41 years (1965-2016), yielding 174 country-surveys and 1167 survey-party observations. Of course, several parties only appear in a single survey, but there are also several that appear a dozen or more times.

After the surveys are compiled, we harmonize the coding of several demographic variables: gender, age, education, income, and party identification, as well as the respondents' left-right self-placement and their left-right placements of the parties in their system. We discuss this harmonization in the appendix, but for note here that we employ [Duch and Stevenson's \(2008\)](#) strategy. Once the variables have been put in a common coding scheme, we impute the surveys for missingness ([King et al. 2001](#); [Honaker et al. 2011](#)). This imputation, which models uncertainty based on the degree and predictability of missingness, attacks an important issue identified above — the wide degree of variability in respondents' propensity to offer placements for particular parties. It also tends to another issue undiscussed above for models analyzing individual level perceptions, rather than surveys means: listwise deletion of respondents declining to offer one or more pieces of demographic information. For example, across all of our EES modules, over 8% of the observations on income are missing. Across our demographic and party placement variables, total missingness is around 13%, with party placements, self-placements, and income being the primary drivers. This means that individual-level studies have been dropping *at least* 13% of their observations.

After aggregation and imputation, we estimate perceived positions for all survey-parties with uncertainty. We do this by estimating ordered probit models for the placements of all voters for a survey-party on a vector of respondent covariates: gender, age, education, income, left-right self-placement, and an indicator for whether or not that respondent identifies with the party. We then use the parameter estimates and information matrix to specify a distribution of 1,000 estimates for each of the parameters and use these to predict 1,000 placements for that party for a typical respondent ([Tomz, Wittenberg and King 2001](#)).<sup>9</sup> The typical respondent we have chosen is the global mode for the full sample — the package of values that collectively occur most frequently in our data. This is a 35 year old woman, with a secondary education and middle-class income,<sup>10</sup> who does not identify with the party she is evaluating. For simplicity, we call these estimates “Sophia placements” or “Sophia,” currently the most common name for European women.

---

<sup>9</sup>In practice, we sample 100 parameter draws from 10 different imputed data frames.

<sup>10</sup>These are both values of 2 on 3-point response scales. More information on the distribution of the raw data is available in the appendix.

There is a lot to recommend this approach. First, by estimating the quantity of interest for a particular individual, we no longer have to make the kind of unrealistic assumptions about the survey samples or constellation of respondents that are placing each party that we discussed above. Second, even though we are fixing this individual across survey-parties, we are still able capture population dynamics to an extent. That is a 35 year-old in 1999 will likely have different perceptions of a party than a 35 year-old in 2010, because those women were socialized into the party system at different times, and the party pronouncements and behaviors they have been exposed to will vary in kind. Of course, the same can be said about people of a particular income or education level. Third, by fixing these demographic levels, we are able to approximate fixing other potentially important values that covary with the demographics, but are not explicitly measured in the data. For example, political interest is a very important covariate in explaining a wide array of political behavior, but it is included very infrequently in cross-national electoral surveys, particularly the less recent iterations. We know, however, that education functions quite similarly to political interest (Fortunato and Stevenson 2013) and by holding education (as well as income) constant, we are approximating a constant level of political interest.

Some readers may see a potential drawback to this approach, however, in that population dynamics are only manifest in the changing effects of our demographic variables. That is, we are not capturing aggregate changes in how parties are perceived as a function of changes in the distribution of observable characteristics of the population, like for example, an aging population, or a population that has become much better educated over recent years. We see this as a feature, rather than a bug, however, as our theoretical focus is on how observable behaviors of parties change voters' perceptions, not on how changes in the observable characteristics of the aggregate electorate effect aggregate party perceptions. Another benefit to Sophia, rather using sample means for each covariate (which would incorporate aggregate changes to electorate), is that the mean approach is likely derived from a voter archetype that is extrapolated and does not actually appear in the data. The result is that the inferences derived from the mean estimate are likely to be highly model-dependent, particularly in non-linear model families (King and Zeng 2006). Sophia does not suffer from this problem and this better enables us draw contextual inferences from the data. For example, we compared standard deviations for Sophia placements from European and national election surveys and found the variance to be much higher for European election surveys (0.152 compared to 0.115, a

difference significant at  $p < 0.001$ ). From this, one may conclude that the *information environment* for the two contests is different and a relative lack of interest in European elections is depressing attentiveness to the parties relative to national election contests, which is increasing Sophia’s uncertainty. We would not be able to draw this inferences from the mean approach, however, as we would be uncertain whether the difference was a function of the environment *or* differences in the composition of European and national electorates. Further, even if researchers wish to make individual-level comparisons, the Sophia approach is may still preferable. For example, if one wants to compare how partisans and non-partisans react to government formation, then one need only estimate Sophia perceptions for partisans and non-partisans to draw the comparison. Otherwise, we invite our colleagues to simply download the imputed data and estimate individual-level models.

Casting aside for a moment the theoretical benefits of Sophia, a reasonable question to ask here is, are the estimates significantly different from survey means? In sum, they are systematically different in a very intuitive way. The survey means are more diffuse than Sophia, exaggerating the extremity of the party placements away from the median. The two values are plotted against one another in Figure 1, where, in the left panel, we plot points where the survey mean falls within Sophia’s 95% confidence interval in shaded gray circles and points where the survey mean falls outside of Sophia’s confidence interval in empty red circles. All told, over 72% of the averages fall outside of the Sophia confidence bounds, and this figure is similar in magnitude for a wide array of “typical respondent” estimates and not limited to Sophia. Examining the hollow points, it is clear that they cluster above the 45 degree line on the left and below the line on the right. This is the diffusion pattern we noted; survey averages give significantly more extreme placements than Sophia.

We can get a better sense of the diffusion by examining a small portion of the data. The right panel of Figure 1 compares the estimates for Germany alone, ranked according to Sophia. Here, the averages are hollow red circles, and Sophia points are gray circles accompanied by confidence intervals. With just one exception, all averages that fall outside of Sophia’s confidence interval do so away from the sample median. Averages are off the interval to the left for left parties and to the right for right parties. These extreme misses are consistent with our concerns regarding survey means — when we do not account for non-response, we are likely to have substantively different populations placing greater and lesser known parties, with less knowledgeable respondents being less likely to place more obscure parties. If extremity is correlated with familiarity or party size, then

Figure 1

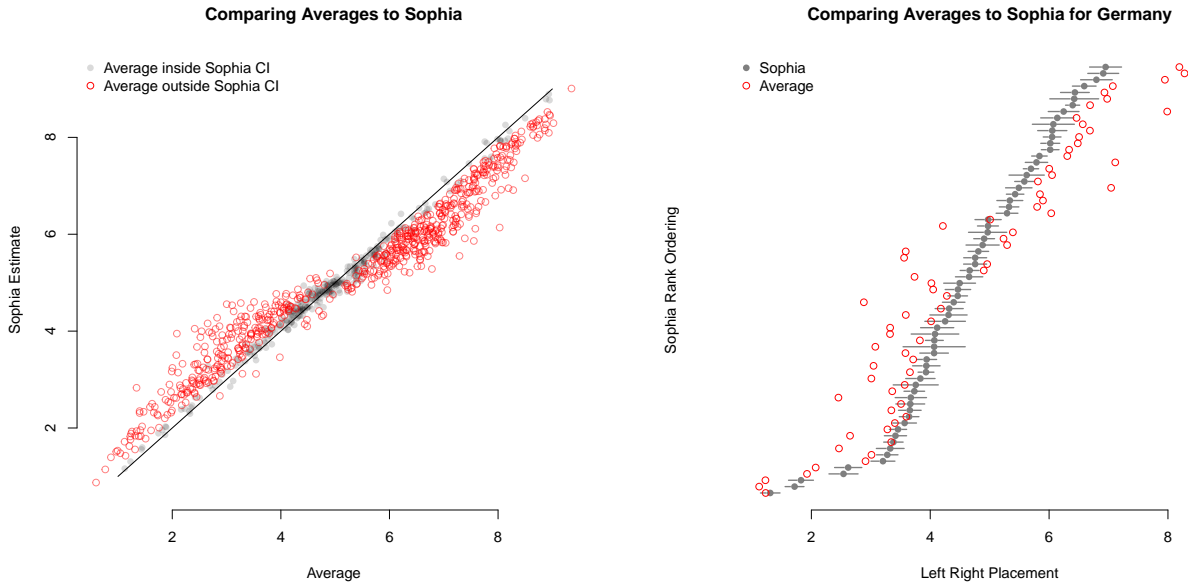


Figure 1 depicts what we expected: averages giving more extreme placements than Sophia, because averages omit the placements of less knowledgeable respondents, which are disproportionately likely to err in the direction of moderacy.<sup>11</sup>

To formalize this intuition, we can compare how the uncertainty of the two measures correlate to a party’s extremity (its absolute distance from the median party), its current seat share in the lower house of parliament, and an indicator for the general attentiveness of the electorate — a dummy for surveys administered for European elections. Our theoretical expectation is that party size should be a primary driver of uncertainty. As discussed above, larger parties receive more media coverage, have more policy influence, and are more likely to serve in government, and voters should therefore be more familiar with their policy preferences. However, if our suspicions are correct and raw survey averages produce more extreme estimates due to selection bias (less informed respondents placing smaller parties less often), then this should manifest by producing a stronger negative relationship between uncertainty and extremity (relative to Sophia estimates) while suppressing the correlation

<sup>11</sup>Thinking of the data generation process, the more extreme right a party, the greater the tendency to “err” to the left of the “truth” because there is less room on response scale to “err” to the right.



between uncertainty and size and extremity. We also expect that European elections should be associated with greater degrees of uncertainty because they are generally perceived as less salient events as evidenced by the low rates of participation.

Table 1: Comparing correlates of raw survey standard deviations and Sophia standard deviations.

	<i>sd</i> (Average)	<i>sd</i> (Sophia)
Seat Share	0.068 (0.061)	-0.008* (0.004)
Extremity	-0.085*** (0.012)	-0.003*** (0.001)
European Election	-0.103** (0.041)	0.036*** (0.006)
Constant	2.257*** (0.036)	0.128*** (0.004)
<i>var</i> (Party)	0.100	0.000
<i>var</i> (Survey)	0.052	0.001
<i>N</i>	1,151	1,151
<i>ln</i> (likelihood)	-86.421	2,753.430
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

The uncertainty measure for the survey mean estimates is the standard deviation of raw placements and the Sophia estimate is the standard deviation of the 1,000 draws. We estimate linear models, allowing for random intercepts at the party and survey level and display the results in Table 1. Both averages and Sophia display lower level of uncertainty for more extreme parties, which we should expect — extreme signals tend to be clear signals (Ezrow, Homola and Tavits 2014). However, taking into account the different scales of the DVs, the magnitude of the effect for the averages is 330% the magnitude of the effect for Sophia. More importantly, there is evidence that the selection bias in placement probabilities in the averages measure is muting the predicted effect of party size on uncertainty — a logical relationship that any reasonable model of information acquisition would predict. While the Sophia estimates recover a statistically and substantively

significant effect of party size on placement uncertainty, as we hypothesized, the averages model does not recover it. Further, the averages model is producing the *opposite* of the predicted effect for European Elections. This, again, is evidence of the selection bias in party placements. When less interested voters place a party less often, our certainty estimate of that party’s position becomes artificially reduced — the exact opposite of what we want from our estimates.

Note also the dramatic difference in variance in random effects between the measures. The typical Sophia standard deviation is roughly 1/20 the size of the typical averages standard deviation. Still, the level of variability induced by idiosyncrasies at the party and survey level in the averages model is substantially higher than in the Sophia model. Of course, this is, at least in part, a product of raw averages and standard deviations packaging all of the idiosyncratic variability in sample demographics, non-response propensity, and other factors *into* the estimates. The Sophia estimates largely avoid this.

With our measure of voter perceptions (*Sophia*) of party positions in hand, we move on to exploring the predictors of voter perceptions. Like nearly all other studies in this literature, we use left-right positions derived from party manifestos as one of the primary predictors of voter perceptions. The data are from [Volkens et al. \(2017\)](#) and we estimate the standard left-right (“RILE”) positions and their standard errors following [Lowe et al. \(2011\)](#). We use these data (*CMP positions*) to estimate the direct, long- and short-term effect of party pronouncements on voter perceptions. We also estimate the effect of the government’s preferences on the manner in which parties are perceived by computing the mean, seat-weighted perceived position of each cabinet party, less the focal party, i.e., the party whose voter-perceived position appears on the left-hand side of the model (*cabinet ideology*). This means that for opposition parties, the cabinet position will be derived from *all* government parties, and, for coalition members, the cabinet position will be derived from all *other* government parties. Cabinet membership information is taken from [Döring \(2016\)](#) and we interact a binary variable indicating focal party cabinet membership (*cabinet*) with our measures of *party position* and *cabinet ideology*, allowing voters to assimilate information on program changes and party orientation vis-à-vis the cabinet differently for government and opposition parties. With these variables, we can test our second and third hypotheses: voters perceive coalition parties as moving closer to their partners in government, but perceive opposition parties as moving away from the government; and, changes in policy programs are weighted more heavily for opposition parties

than government parties.

## Research Design

We have assembled the most extensive data on voters' perceptions of parties over time. Not only do these data provide substantial statistical power, but they also open doors to methodological approaches previously unavailable in this literature. Specifically, techniques that can properly model the short- and long-term dynamics of party perceptions and allow us to analyze the “stickiness” of party brands, which we estimate with stationarity tests. Stationarity tests are “concerned with the degree of persistence or memory, which refers to the rate at which a process moves toward an equilibrium level after being perturbed by a shock” (Box-Steffensmeier et al. 2014, 126). The speed at which the series returns to its equilibrium following a shock—if it does at all—provides guidance as to the stickiness of the equilibrium and persistence of the shock. If the series moves quickly back to equilibrium, then shocks have low persistence. Applied to our study, this would mean that party perceptions can be nudged in the short-term, but are essentially unchangeable in the long-term. If the series moves slowly back to equilibrium, then shocks have high persistence. This would mean that long-term changes are possible. If the series does not equilibrate at all, then shocks persist forever. In this case, we would say that the series is “integrated,” or “non-stationary” — that it has no natural equilibrium to which it will eventually return.

It is important to note that different types of shocks may have different levels of persistence and that these differences are estimable. If our theory about voters' perceptions is accurate, then we would expect to see that one of the latter two scenarios characterizes perceptions — i.e., that voter perceptions *are* changeable in the long-term. However, our theory also suggests that the magnitude of any given change is likely to be small.<sup>12</sup>

Fortunately, our data contain perception estimates over long enough lengths of time to allow us to assess these dynamics with stationarity tests — an improvement over previous studies that have been forced to make assumptions (nearly always implicitly) about temporal dynamics that they are unable to assess due to data constraints. For those countries with long enough time series

---

<sup>12</sup>There are cases when our theoretical framework would be predict large changes, however. Imagine a new party entering the system. The density of messages regarding that party's preferences would be quite sparse, therefore new information would result in much larger shifts in perceptions relative to more established parties.

(ten data points or more), we estimate party-specific Dickey-Fuller tests. These tests indicate that a majority of the series are integrated, 13 out of 21 fail to reject the null of a unit root at the 90% confidence level or above. This is very important and it is meaningful that previous studies have been forced to skip this step. The consequences of non-stationarity in multivariate settings are well-documented and quite serious. In their classic article, [Granger and Newbold \(1974\)](#) provide evidence that spurious relationships can easily manifest when non-stationarity is ignored. Box-Steffensmeier et al. go so far as to write that such model results may be nonsensical, and that “the results have no meaning because the estimates are not consistent” ([2014](#), 126).

We believe that this non-stationarity is normatively preferable, as it means that voters are receptive to new information about the policy positions of parties. Further, our theory, as well as nearly every study in this literature, predicts a strong positive relationship between parties’ declared policy positions and voters’ perceptions of them — that the two will move in tandem over the long run.<sup>13</sup> While certain shocks may perturb this relationship in the short term, the literature’s consensus theoretical expectation is that there should be a strong tendency toward convergence.<sup>14</sup> In time series analysis, this is called *cointegration*, and the appropriate model for cointegrated relationships is the *error-correction model* or ECM (though we note that [De Boef and Keele 2008](#) provide evidence that ECMs may also be used to analyze non-stationary time series).<sup>15</sup> Consider the following formula, where  $Y$  represents voter perceptions and  $X$  represents CMP positions.

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \beta_0 \Delta X_t + \beta_1 X_{t-1} + \epsilon_t \tag{1}$$

With minimal rearrangement, this model specification allows us extract all values of interest that we would like in order to understand the durability of perceptions and the short- and long-term effects of different shocks — in this case changes in parties’ advertised policy preferences and government formation. For example, the speed at which perceptions return to their equilibrium, or

---

<sup>13</sup>Indeed, this relationship is necessary condition of representative democracy in parliamentary systems.

<sup>14</sup>Substantively, this means that, given enough information about what a party prefers and enough time to absorb it, voters’ perceptions will eventually converge upon declared (or “true”) position.

<sup>15</sup>Dickey-Fuller tests suggest that 13 out of 21 party-specific time series of *CMP positions* are non-stationary. Furthermore, tests also indicate a cointegrated relationship since regressing *perceptions* on *CMP positions* returns a stationary error term. Following [Grant and Lebo \(2016\)](#), these results suggest that these data are among the few for which ECM is appropriate.

error-correction rate is  $1 + \alpha_1$ , the short-run effect of  $X_t$  is captured by  $\beta_0$ , the short-run effect of  $X_{t-1}$  is  $\beta_1 - \beta_0$ , and the long-run multiplier of  $X$  is  $\frac{\beta_1}{-(\alpha_1)}$ . As we will show below, we can modify the ECM to allow these values to vary across parties according to their government status. Moreover, the ECM is general enough that we can test restrictions that previous studies have implicitly imposed on their data. Take, for example, a simple model specification used in a variety of studies, which [De Boef and Keele \(2008\)](#) call a “static model:”

$$Y_t = \alpha_0 + \beta_0 X_t + \epsilon_t \tag{2}$$

In addition to possibly producing a spurious relationship on account of the cointegration (Granger and Newbold 1974), Equation 2 assumes that Equation 1 parameters  $\alpha_1 = \beta_1 = 0$ . Methodologically, imposing these restrictions (which, given the diagnostics discussed above, we know to be untrue) will produce biased estimates. Theoretically, the problems are even more dire. The assumption that  $\alpha_1 = \beta_1 = 0$  means that a change in advertised positions is felt immediately and completely at time  $t$ , that voters have no memory of previous positions, and therefore shocks have no long-term effects. Taken together, this model specification presumes that party brands are completely fluid, meaningless, or even nonexistent. Given the durability of the rank-ordering of political parties in the competition space, the consistency in their pronouncements in campaigns and pursuits in government, and the loyalty of their supporters, we know that these presumptions simply cannot be true.

## Findings

Table 2 shows the results from the error-correction model predicting voters’ perceptions of parties conditioned on the policy statements of parties as well as the ideological position of the cabinet, where these effects are allowed to vary between government and opposition parties. To model error in both our dependent and independent variables, we bootstrap the model, estimating it 1,000 times, at each iteration taking a new draw from our distributions of Sophia estimates for focal parties and cabinets, as well from distributions of CMP estimates with means and standard deviations estimated according to [Lowe et al. \(2011\)](#). The standard errors therefore reflect our uncertainty in the relationships we are estimating as well as the measurements that underlie them.

Table 2: Error-correction model of the cointegrated relationship between *CMP positions*, *cabinet ideology*, and *perceptions*, conditioned by government status

	$\beta$	95% CI
Sophia <sub>t-1</sub>	-.15*	[-.16, -.14]
$\Delta$ Cabinet	-.67*	[-.85, -.45]
Cabinet <sub>t-1</sub>	-.64*	[-.80, -.46]
$\Delta$ Cabinet Ideology	-.07*	[-.08, -.05]
Cabinet Ideology <sub>t-1</sub>	-.08*	[-.09, -.07]
Cabinet $\times$ $\Delta$ Cabinet Ideology	.10*	[.09, .12]
Cabinet $\times$ Cabinet Ideology <sub>t-1</sub>	.09*	[.07, .10]
$\Delta$ Party Positions	.06*	[.04, .08]
Party Positions <sub>t-1</sub>	.21*	[.19, .22]
Cabinet $\times$ $\Delta$ Party Positions	.02	[-.02, .07]
Cabinet $\times$ Party Positions <sub>t-1</sub>	-.04*	[-.07, -.01]
Constant	.55*	[.41, .68]
N		783
Adjusted R <sup>2</sup>	.08	[.07, .09]
RMSE	.62	[.61, .63]

Notes: Dependent variable:  $\Delta$ Sophia.

\*p<0.05; bootstrapped 95% confidence intervals.

The results suggest that party perceptions are long-memory processes that are persistent and relatively resilient to shocks. This is expected given our theoretical arguments that the distribution of messages regarding a party's policy positions should be durable and reflect robust, consistent brands. The error correction rate ( $1 + \text{Sophia}_{t-1}$ ) means that 85% of the previous perceptions carry over into current perceptions. Even though this suggests that positions are remarkably durable, small changes in a party's brand can still be quite meaningful, particularly in a competitive marketplace. It is therefore important to determine which stimuli can alter these perceptions and whether those alterations are short-lived or long-lasting. Fortunately, the estimates allow us to draw such infer-

ences about the relative size of lagged and concurrent effects on perceptions that previous studies have been limited from making as a function of model construction.

Table 3: Short- and long-term effects of *CMP positions* and *cabinet ideology* on *voter perceptions*: Error-correction model

	All	Opposition	Government
Error-Correction Rate	0.85*		
<i>Cabinet Ideology</i>			
STE $X_t$	-0.07*	< (100%)	.03*
	[-.08, -.05]		[.02, .04]
STE $X_{t-1}$	-.02*	< (1.3%)	-.03*
	[-.03, -.001]		[-.04, -.02]
LTE $X$	-.56*	< (100%)	.02
	[-.64, -.48]		[-.02, .07]
<i>CMP Positions</i>			
STE $X_t$	.06*	> (10%)	.09*
	[.04, .08]		[.05, .12]
STE $X_{t-1}$	.15*	> (100%)	.08*
	[.13, .17]		[.05, .12]
LTE $X$	1.42*	> (99.7%)	1.16*
	[1.36, 1.48]		[1.00, 1.32]

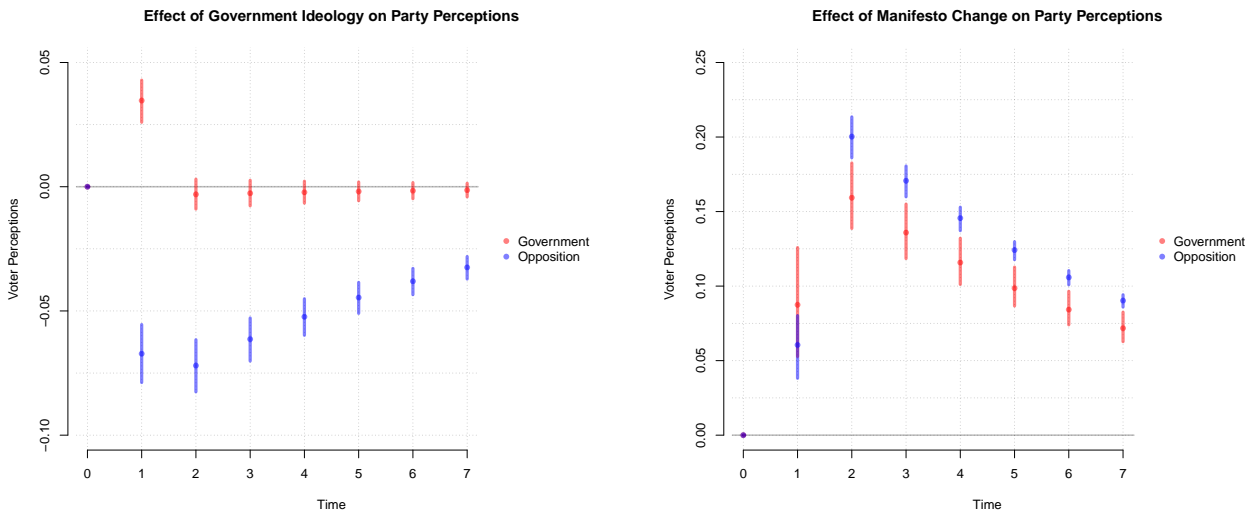
Note: \* $p < 0.05$ ; bootstrapped 95% confidence intervals. Percentage of simulations where condition is met.

To make drawing these inferences easier, we rearrange the raw estimates from Table 2 into their more substantively intuitive interpretations as short- and long-term effects in Table 3. This rearrangement allows us to more easily test hypotheses 2 and 3. We calculate the short-term effect (STE) of *CMP positions* and *cabinet ideology* at time  $t - 1$  and  $t$ , as well as their long-term effects (LTE). Because we have modeled the error in our dependent and independent variables via bootstrapping, we can use the results from this exercise to communicate our certainty about the relative effect sizes between government and opposition parties — these values are given between the columns of parameter estimates where the inequality signs show the direction of our theoretical expectations. Before explaining the specific hypothesis tests, it should be noted that the estimate on  $Sophia_{t-1}$  is statistically significant based on the 5% MacKinnon critical value, which means

that there is evidence of cointegration between *voter perceptions* and *CMP positions* (Grant and Lebo 2016). This, along with the diagnostics discussed above, supports our decision to use the ECM and also suggests that scholars should be cautious in exploring research employing estimation procedures that do not adequately address the non-stationarity in perceptions.

Recall that Hypothesis 2 predicts that voters will perceive opposition parties as moving away from cabinet, but perceive governments parties as moving toward their partners in coalition. The model yields very strong evidence that voters perceive opposition parties as dissimilar from the cabinet — there are robust short term effects of both lagged and concurrent values of government ideology and a large, durable long term effect. There is also robust evidence that voters perceive coalition partners as becoming more similar to one another, but this change is not durable and erodes almost immediately. In more substantive terms, given that our time periods are roughly equivalent to interelection periods, the data are telling us that, should a government form in Germany between the Social Democrats (SPD) and Christian Democrats (CDU/CSU), that voters would perceive the two parties as more similar for roughly the duration of their government, but that perceptions would return to normal after the cabinet dissolves. However, the perceived rift that opens between cabinet and the opposition parties, in this case, say, the Greens (G/90) and Liberals (FDP), would be larger and more durable.

Figure 2





This effect is shown in the left pane of Figure 2 following Williams and Whitten (2012), where the change is a one-unit increase (move to the right) of cabinet ideology. Government effects are given in red and opposition effects in blue. The figure shows that voters will “push” a government party toward its partners in cabinet, but correct that change almost immediately after dissolution. The figure also shows, however, that voters “pull” (move to the left) opposition parties away from the government and that this change is larger and much longer lasting.

Hypothesis 3 predicted that voters’ perceptions should be responsive to parties’ stated preferences and move in tandem with CMP positions, but that the degree of convergence should be higher for opposition parties than government parties, because government parties are anchored by their policy record in office. The concurrent effect (STE at time  $t$ ) is slightly larger (though this difference fails to reach typical levels of statistical significance) for government parties than opposition parties. The lagged effect and LTE, on the other hand, clearly support Hypothesis 3. Perceptions of both government and opposition parties converge to their advertised positions, but the degree of convergence is stronger for opposition parties. Interestingly, the greater rate of convergence by opposition parties largely arises in a delayed response. While perceptions of government parties respond similarly at time  $t - 1$  as  $t$ , the size of the delayed effect for opposition parties is almost three times greater than the concurrent effect. Voters appear to be much quicker to update their perceptions of government parties based on changes to party platforms, though these signals are less meaningful in the long-term.

We plot these relationships graphically in the right panel of Figure 2, where the change in CMP position is a one-unit increase at time  $t = 1$ . As the figure shows, voters perhaps respond more immediately to the shift for government parties, but by the next period that change is assimilated much more readily into perceptions of opposition parties and remains larger for the duration of the effect. One may speculate that this relationship reflects not only the constraining effect of building policy records but also the greater degree of media coverage we would expect government parties to receive. That is, government parties perhaps possess a louder bullhorn to broadcast their intentions, however, the realities of governance tend to drown out these signals over time, at least relative to opposition parties.

Taken together, these findings imply that, even though voters are less responsive to the policy pronouncements of government parties over the long-term than they are to opposition parties,

government parties are still more able to shape their policy image as they like. This is because opposition parties are defined by their opposition status to a greater extent than government parties are defined by their government status. That is, when a government forms, voters temporarily reconfigure the competition space, moving governing parties together and pulling opposition parties away from the cabinet. After the cabinet dissolves, voters “correct” their perceptions of the government parties, but the change for opposition parties lives on. Why may this be? One plausible explanation is that the act of opposition (or perhaps the assumption of opposition on behalf of voters) can send powerful signals about what a party wants. Parties enter government and begin crafting policies they prefer, however, opposition parties in the countries we are studying overwhelmingly vote en bloc against *every* proposal the cabinet sends to floor. They oppose as a matter of course; it is simply their role in the policymaking process. We believe that it is possible that consistent media messaging driving home the point that non-government parties oppose the government’s proposals may significantly alter voters’ distributions of party perceptions because these messages are pervasive, credible, and potentially novel as opposition parties are likely to eventually be forced to oppose a policy that they advocate (or something close to it) as a matter of principle. As a result, opposition parties cede a portion of their ability to control their policy image to the cabinet.

## Discussion

Our goals in this paper are ambitious. We began by discussing three surmountable hurdles to building scientific consensus in the study of voter reactions to party behaviors, in particular, how voters perceive the ideological positions of parties: 1) the lack of common theoretical framework (which has hindered reaching consensus on empirical model structure); 2) high sample variability; and 3) measurement and estimation issues — in particular the use of raw survey means as dependent variable and the non-modeling of error in both the dependent and independent variables. In response to the first, we argued for a theoretical framework based on Zaller’s (1992) model of opinion formation, and derived from our model three testable hypotheses. To the second, we aggregated the most comprehensive collection of data on voter perceptions to date (which will be made publicly available with instructions for augmenting the quantities of interest and adding new data). And to the third, we introduced a new summary measure of voter perceptions of partisan ideologies called

Sophia and advocated that applied researchers use the error estimates for Sophia as well as the error estimates in manifesto and expert survey derived party positions.

The first analysis was a comparison of Sophia estimates and raw survey means — the industry standard estimate of voter perceptions. This comparison revealed that raw survey means yield substantially more extreme estimates of partisan ideology than Sophia. Further, Sophia reveals that voters' perceptions of smaller parties are more variable than their perceptions of larger parties and that perceptions in general are more variable in the run-up to European elections as compared to national elections. Comparing Sophia's variability and raw survey placement standard deviations showed that survey standard deviations are quite likely biased by non-response tendencies. Because low political interest is associated not only with low party placement accuracy, but also low tendency to offer placements at all, the raw standard errors are positively correlated with high information environments — uncertainty is greater for national election surveys as compared European election surveys and for larger parties as compared to smaller parties — precisely the opposite of what one would expect and precisely the opposite of the relationships revealed between the information environment and Sophia variability. Further, this selection bias raw placements artificially inflates the relationship between party extremity and voter perception accuracy. From this analysis, we conclude that there is reason to be suspect of previous findings that have used raw uncertainty, agreement, or accuracy estimates that do not account for the selection bias inherent in placements.

We then moved on to estimate an error correction model of voter perception change, arguing that this type of model is both an excellent match to our theoretical framework and presenting diagnostic results indicating that it is appropriate for our data as well. The model regresses Sophia perceptions on CMP positions and cabinet ideology, differentiating effects for cabinet and opposition parties and modeling the error in the dependent and independent variables via bootstrap. The results of the model suggested that voter perceptions are quite durable on average, but that they do respond to changes in manifesto position and the formation of coalition cabinets. These findings confirm previous research by [Fernandez-Vazquez \(2014\)](#) and [Fortunato and Stevenson \(2013\)](#), respectively. Drilling down, the novelty of our findings is that we also discovered that changes in manifesto positions have larger long-term effects on voter perceptions of opposition parties than government parties and that the effect of cabinet ideology on voter perceptions is short-lived for government parties, but long-lasting for their opposition counterparts. These findings imply that opposition

parties are less capable of controlling their policy image than are government parties, even though voters are more responsive to the manifesto changes of opposition parties.

Moving forward, our hope is that our colleagues will embrace the theoretical framework we have adapted from the Zaller (1992) model of opinion formation and, carrying its implications into their empirical modeling choices, choose to employ an error correction specification when it is appropriate to their data. This means thinking through the probability that voters will receive messages regarding particular partisan behaviors, as well as contemplating the probability that these messages will be credible and salient. Ideally, this process may start by revisiting previous research and reevaluating the arguments in the context of this theoretical framework and bringing to bear the data we have gathered and the model we have presented on the empirical implications of those arguments. But, of course, there are many new questions to pursue as well. We have only recently begun to evaluate the impact of leaders and leadership on voters' perceptions of the policy space (e.g., Fernandez-Vazquez and Somer-Topcu 2018) and there is still much to learn about these factors. Further, the institutional context in which these parties are operating has, to our reading, not been considered at all in this literature. The permissiveness of the party system, its age, the legal campaigning constraints placed upon parties, the role of federalism, which creates vertical and horizontal variability in party preferences, and myriad other institutional factors have not yet been considered.

## References

- Adams, James, Lawrence Ezrow and Christopher Wlezien. 2016. "The company you keep: how voters infer party positions on European integration from governing coalition arrangements." *American Journal of Political Science* 60(4):811–823.
- Adams, James, Lawrence Ezrow and Zeynep Somer-Topcu. 2011. "Is anybody listening? Evidence that voters do not respond to European parties' policy statements during elections." *American Journal of Political Science* 55(2):370–382.
- Adams, James, Michael Clark, Lawrence Ezrow and Garrett Glasgow. 2006. "Are niche parties fundamentally different from mainstream parties? The causes and the electoral consequences of Western European parties' policy shifts, 1976–1998." *American Journal of Political Science* 50(3):513–529.
- Adams, James and Zeynep Somer-Topcu. 2009. "Moderate now, win votes later: The electoral consequences of parties' policy shifts in 25 postwar democracies." *The Journal of Politics* 71(2):678–692.
- Aldrich, John H. 1995. *Why parties?: The origin and transformation of political parties in America*. University of Chicago Press.

- Ansolabehere, Stephen and Philip Edward Jones. 2010. "Constituents' Responses to Congressional Roll-Call Voting." *American Journal of Political Science* 54(3):583–597.
- Bawn, Kathleen and Zeynep Somer-Topcu. 2012. "Government versus opposition at the polls: how governing status affects the impact of policy positions." *American Journal of Political Science* 56(2):433–446.
- Benoit, Kenneth, Michael Laver and Slava Mikhaylov. 2009. "Treating words as data with error: Uncertainty in text statements of policy positions." *American Journal of Political Science* 53(2):495–513.
- Box-Steffensmeier, Janet M, John R Freeman, Matthew P Hitt and Jon CW Pevehouse. 2014. *Time series analysis for the social sciences*. Cambridge University Press.
- Budge, Ian. 1994. "A new spatial theory of party competition: Uncertainty, ideology and policy equilibria viewed comparatively and temporally." *British journal of political science* 24(4):443–467.
- Cox, Gary W and Mathew D McCubbins. 2005. *Setting the agenda: Responsible party government in the US House of Representatives*. Cambridge University Press.
- De Boef, Suzanna and Luke Keele. 2008. "Taking time seriously." *American Journal of Political Science* 52(1):184–200.
- Döring, Holger. 2016. "Mapping established democracies: Integrated data on parties, elections and cabinets." *Electoral Studies* 44:535–543.
- Duch, Raymond M. and Randolph T. Stevenson. 2008. *The Economic Vote: How Political and Economic Institutions Condition Election Results*. Cambridge: Cambridge University Press.
- Erikson, Robert S, Michael B MacKuen and James A Stimson. 2002. *The macro polity*. Cambridge University Press.
- Ezrow, Lawrence, Jonathan Homola and Margit Tavits. 2014. "When extremism pays: Policy positions, voter certainty, and party support in postcommunist Europe." *The Journal of Politics* 76(2):535–547.
- Falco-Gimeno, Albert and Pablo Fernandez-Vazquez. 2014. "Choices that Matter: Coalition Formation and Parties' Ideological Reputation." *Annual Meeting of the European Political Science Association* Edinburgh.
- Fearon, James D. 1995. "Rationalist explanations for war." *International organization* 49(3):379–414.
- Fernandez-Vazquez, Pablo. 2014. "And yet it moves: The effect of election platforms on party policy images." *Comparative Political Studies* 47(14):1919–1944.
- Fernandez-Vazquez, Pablo. 2018. "The Credibility of Party Policy Rhetoric." *Journal of Politics* p. In press.
- Fernandez-Vazquez, Pablo and Zeynep Somer-Topcu. 2018. "The informational role of party leader changes on voter perceptions of party positions." *British Journal of Political Science* pp. 1–20.
- Fortunato, David and Randolph T Stevenson. 2013. "Perceptions of partisan ideologies: The effect of coalition participation." *American Journal of Political Science* 57(2):459–477.

- Granger, Clive WJ and Paul Newbold. 1974. "Spurious regressions in econometrics." *Journal of econometrics* 2(2):111–120.
- Grant, Taylor and Matthew J Lebo. 2016. "Error correction methods with political time series." *Political Analysis* 24(1):3–30.
- Honaker, James, Gary King, Matthew Blackwell et al. 2011. "Amelia II: A program for missing data." *Journal of statistical software* 45(7):1–47.
- King, Gary, James Honaker, Anne Joseph and Kenneth Scheve. 2001. "Analyzing incomplete political science data: An alternative algorithm for multiple imputation." *American Political Science Review* 95(1):49–70.
- King, Gary and Langche Zeng. 2006. "The dangers of extreme counterfactuals." *Political Analysis* 14(2):131–159.
- Laver, Michael. 2005. "Policy and the dynamics of political competition." *American Political Science Review* 99(02):263–281.
- Leischnig, Alexander and Margit Enke. 2011. "Brand stability as a signaling phenomenon—An empirical investigation in industrial markets." *Industrial Marketing Management* 40(7):1116–1122.
- Lindstädt, Rene, Sven-Oliver Proksch and Jonathan B Slapin. 2016. "When experts disagree: Response aggregation and its consequences in expert surveys." *Manuscript, University of Essex, Essex* .
- Lowe, Will, Kenneth Benoit, Slava Mikhaylov and Michael Laver. 2011. "Scaling policy preferences from coded political texts." *Legislative studies quarterly* 36(1):123–155.
- Lupu, Noam. 2013. "Party brands and partisanship: Theory with evidence from a survey experiment in Argentina." *American Journal of Political Science* 57(1):49–64.
- Tomz, M., J. Wittenberg and G. King. 2001. "CLARIFY: Software for interpreting and presenting statistical results, Version 2.0." <http://gking.harvard.edu>.
- Volkens, Andrea, Pola Lehmann, Theres Matthieß, Nicolas Merz, Sven Regel and Bernhard Weßels. 2017. "The Manifesto Data Collection. Manifesto Project (MRG/CMP/MARPOR). Version 2017b."  
**URL:** <https://doi.org/10.25522/manifesto.mpbs.2017b>
- Williams, Laron K and Guy D Whitten. 2012. "But wait, there's more! Maximizing substantive inferences from TSCS models." *The Journal of Politics* 74(3):685–693.
- Zaller, John. 1992. *The nature and origins of mass opinion*. Cambridge university press.
- Zaller, John and Stanley Feldman. 1992. "A simple theory of the survey response: Answering questions versus revealing preferences." *American journal of political science* pp. 579–616.

## Appendix

### A Survey of Studies

In order to calculate the probability of two studies sharing the same case, from the same survey, in the same year, we built a dataset identifying cases, surveys, and years covered by 11 studies from 3 main political science journals: American Journal of Political Science (AJPS), Journal of Politics (JOP), and Comparative Political Studies (CPS). The list of articles included in our sample can be seen in Table A.1.

Table A.1: Authors, Article’s Title, Journal, and Year of Publication

Authors	Title	Journal	Year
Adams, James, Lawrence Ezrow, and Zeynep Somer-Topcu	“Is Anybody Listening? Evidence That Voters Do Not Respond to European Parties’ Policy Statements During Elections”	AJPS	2011
Adams, James, Lawrence Ezrow, and Zeynep Somer-Topcu	“Do Voters Respond to Party Manifestos or to a Wider Information Environment? An Analysis of Mass-Elite Linkages on European Integration”	AJPS	2014
Adams, James, Lawrence Ezrow, and Christopher Wlezien	“The Company You Keep: How Voters Infer Party Positions on European Integration from Governing Coalition Arrangements”	AJPS	2015
Bawn, Kathleen, and Zeynep Somer-Topcu	“Government versus Opposition at the Polls: How Governing Status Affects the Impact of Policy Positions”	AJPS	2012
Dalton, Russell, and Ian McAllister	“Random Walk or Planned Excursion? Continuity and Change in the Left–Right Positions of Political Parties”	CPS	2015
Ezrow, Lawrence Margit Tavits, and Jonathan Homola	“Voter Polarization, Strength of Partisanship, and Support for Extremist Parties”	CPS	2014
Ezrow, Lawrence, Jonathan Homola, and Margit Tavits	“When Extremism Pays: Policy Positions, Voter Certainty, and Party Support in Post-communist Europe”	JOP	2014
Fernandez-Vazquez, Pablo	“And Yet It Moves: The Effect of Election Platforms on Party Policy Images”	CPS	2014
Fortunato, David, and Randolph T. Stevenson	“Perceptions of Partisan Ideologies: The Effect of Coalition Participation”	AJPS	2013
Schumacher, Gijs, Catherine De Vries, and Barbara Vis	“Why Do Parties Change Position? Party Organization and Environmental Incentives”	JOP	2013
Somer-Topcu, Zeynep	“Everything to Everyone: The Electoral Consequences of the Broad-Appeal Strategy in Europe”	AJPS	2014

Table A.2 presents the surveys, years, and cases covered by the studies included in our sample.

Table A.2: List of Studies, Survey, Years Covered, and Cases Covered

ID	Study	Survey	Years	Cases
1	Adams, Ezrow, and Somer-Topcu 1 (2011) <sup>a</sup>	CSES	1969-2002	Germany, Netherlands, Sweden, Norway, and United Kingdom
2	Adams, Ezrow, and Somer-Topcu 2 (2011)	Eurobarometer	1973-2002	Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, United Kingdom
3	Adams, Ezrow, and Somer-Topcu (2014)	EES	1999-2009	Austria, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, United Kingdom
4	Adams, Ezrow, and Wlezien (2015)	EES	1999-2009	Austria, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Portugal
5	Bawn, and Somer-Topcu (2012)	CSES	1971-2005	Germany, Netherlands, Norway, Sweden, and United Kingdom
6	Dalton, and McAllister (2015)	CSES	1992-2010	Australia, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Japan, (South) Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, Taiwan, United Kingdom, United States
7	Ezrow, Homola, and Tavits (2014)	CSES	1996-2009	Albania, Australia, Austria, Belgium, Canada, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States
8	Ezrow, Tavits, and Homola (2014)	CSES	1996-2009	Albania, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Iceland, Ireland, Israel, Italy, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States
9	Fernandez-Vazquez (2014)	CSES	1971-2010	Denmark, Germany, Netherlands, Norway, Spain, Sweden, United Kingdom
10	Fortunato, and Stevenson (2013)	CSES and EES	1994-2004	Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden
11	Schumacher, De Vries, and Vis (2013)	Eurobarometer	1977-2003	Austria, Belgium, Denmark, France, Finland, Germany, Ireland, Netherlands, Sweden, United Kingdom
12	Somer-Topcu (2014)	CSES	1981-2011	Denmark, Finland, Germany, Iceland, Netherlands, Norway, Portugal, Spain, Sweden

<sup>a</sup>: Adams, Ezrow, and Somer-Topcu (2011) conduct two separate analyses: 1. From 5 European countries using national election surveys (CSES) over the period 1969–2002, and; 2. From 12 European countries using Eurobarometer data over the period 1973–2002. For this reason, we classified this study as two different studies.



Our sample has  $n$  rows,  $n = 12$ , and  $c$  columns, with  $c = 527$ . Each row is a study (e.g., Fortunato and Stevenson 2013), and each column is a *case\_survey\_year* (e.g., germany\_cses\_1990, netherlands\_cses\_1998, finland\_ees\_2004).<sup>16</sup> For each *country\_survey\_year* (column) there are 66 combinations (i.e.,  $\frac{12 \times 11}{2}$ ; we divide by 2 in order to avoid double counting). We check for each column if two studies use the same *country\_survey\_year*. If the studies share the same *country\_survey\_year*, that row in our count matrix gets a value of one, otherwise it gets a value of zero. For instance, the first row, first column of the count matrix refers to whether study<sub>1</sub> and study<sub>2</sub> share the *country\_survey\_year*. We repeat the process for all columns, giving us a total of 34782 total comparisons ( $66 \times 527$ ). The first step in calculating the probability of two studies sharing the same *case\_survey\_year* is to calculate the sum over all combinations for all columns. The resulting number tells us how many times studies shared a *country\_survey\_year*, which happens 891 times. The probability is then calculated by dividing 891 by the total number of combinations (34782). Therefore, based on our sample the probability of two studies sharing the same *case\_survey\_year* is equal to 2.6 percent (i.e.,  $\frac{891}{66 \times 527}$ ). The most common *case\_survey\_year*'s overlaps among the studies included in our sample can be seen in Table A.3.

We also conduct the same estimate without the columns for Eurobarometer. There are only 2 studies using the Eurobarometer survey, therefore including these cases and studies would decrease the likelihood of an overlap. By dropping the studies (and columns) using Eurobarometer, we have a sample with 10 rows (studies), and 176 columns (i.e., *case\_survey\_year*). For each *country\_survey\_year* there are now 45 combinations, and 709 studies sharing the same *country\_survey\_year*. Based on our new sample, the probability of two studies sharing the same *case\_survey\_year* is equal to 8.9 percent (i.e.,  $\frac{709}{55 \times 176}$ ).

---

<sup>16</sup>In order to avoid bias due to the fact that most recent studies could include more recent surveys (not available for older studies), we dropped the following columns from our sample: canada\_cses\_2011; finland\_cses\_2011; france\_cses\_2012; and us\_cses\_2012.

Table A.3: Most Common Overlaps Among Studies

ID	Germany CSES 1998	Germany CSES 2002	Netherlands CSES 1998	Norway CSES 1997	Sweden CSES 1998	Sweden CSES 2002	Netherlands CSES 2002	Norway CSES 2001	Denmark CSES 1998	Denmark CSES 2001	Spain CSES 1996	UK CSES 1997
1	✓	✓	✓	✓	✓	✓						✓
2												
3												
4												
5	✓	✓	✓	✓	✓	✓	✓	✓				✓
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
11												
12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
<b>Total:</b>	8	8	8	8	8	8	7	7	6	6	6	6