Left-right Categorization and Perceptions of Party Ideologies[1]

Forthcoming on *Political Behavior*

DOI: 10.1007/s11109-018-9451-y

by:

Federico Vegetti
(vegetti.fede@gmail.com)

Daniela Širinić
(dsirinic@gmail.com)

Abstract

Political similarities and differences are often described in terms of left and right. However, while scholars have long focused on their substantive policy content, ideological labels also serve largely as symbolic identifiers of political groups. We investigate how the contextual variation in what left and right mean relates to the way that citizens perceive party ideological positions in European countries. We discuss the impact of categorization, a basic cognitive process where people organize reality by classifying objects into groups based on some relevant characteristics. We argue that when left and right strongly reflect symbolic group attachments, citizens tend to accentuate their perceived similarity to parties in their own ideological camp, and difference from parties in the opposite ideological camp. Using data from the European Election Study 2009, we provide empirical evidence of the latter process. We conclude that taking into account the categorical function of left-right provides important insights to understand political perceptions and polarization.

[1] Earlier versions of this paper were presented at the MPSA conference 2014, and at the Political Behavior Research Group (PolBeRG) seminar at the Central European University in Budapest. We thank the present and past members of PolBeRG for all the stimulating discussions over the years, in particular Levi Littvay, Zoltán Fazekas, and Martin Mölder. We also thank the Central European University for providing us and many others a great environment where to exchange ideas. Replication materials are available at https://doi.org/10.7910/DVN/MT7XU0.

Introduction

In democratic systems, political parties and candidates "*define the alternatives* of public policy in such a way that the public can participate in the decision-making process" (Schattschneider 1960, 138, emphasis added). In Western democracies, such alternatives are often expressed in terms of "left" and "right" (Benoit and Laver 2006). However, in countries with different political histories, left and right have evolved to mean different things. Scholars have been studying for long the different sets of substantive values and policy issues that are associated with left-right across countries and time periods (Inglehart and Klingemann 1976; Piurko, Schwartz and Davidov 2011). Recent research emphasizes another layer of meaning, where left and right also reflect political group identities to which citizens may feel affectively attached (Claassen, Tucker and Smith 2015; Devine 2015; Ellis and Stimson 2012; Popp and Rudolph 2011). The multiple sources of variation in content and meaning of left and right imply that the nature of the alternatives that political parties define by relying on such labels is qualitatively different from one place to another.

In this study, we ask how citizens' perceptions of party ideologies relate to this variation. We draw on research on *categorization*, a basic cognitive process where people organize reality by classifying objects into groups based on some relevant characteristics (McGarty 1999; Murphy 2002). When individuals categorize, they tend to overlook nuances between objects belonging to the same category, and magnify the differences between objects belonging to different categories (Goldstone and Hendrickson 2010). We argue that in contexts where ideological labels more strongly reflect political group identities, citizens' perceptions of party positions are more likely to be affected by this process. As such, people will tend to perceive *in-group* parties (i.e. parties belonging to the same ideological camp as themselves) to be *closer*, and *out-group* parties (i.e. parties belonging to the opposite ideological camp) to be *further* from themselves than they really are. In other words, we hypothesize that the contextual

variation in the meaning of left and right will result in different patterns of political perceptions: the more ideological labels are used as symbolic identifiers of political groups, the more ideological similarities and differences will be biased towards within-group uniformity and between-group difference. As a consequence, people's perceptions of party ideological polarization will be *accentuated*, whereas party policy positions may be not that different in reality.

We investigate our expectations on a cross-country dataset of European multi-party systems. Our results show that, when left and right reflect political group affiliations more than policy views, citizens are better able to classify parties correctly in their ideological group, and tend to perceive parties in the opposite group to be further from themselves than they actually are. While our findings provide strong support for the expected accentuation of between-group difference, we only find weak evidence of increasing within-group similarity. This suggests that insofar as left and right bear a group meaning, citizens use them mostly to "tell friends from foes", rather than learning about the policy alternatives that different ideological labels imply.

Our contribution is twofold. First, we bring a comparative perspective to the literature on political group polarization, which so far has focused exclusively on the US (e.g. Ahler and Sood forthcoming; Iyengar et al. 2012; Iyengar and Westwood 2015; Mason 2015). However, while in the US party and ideological labels are difficult to disentangle, in European multiparty systems these two types of political identity are normally kept separate. We introduce here one mechanism governing the interaction between them, by showing that ideological categories can work as a superordinate organizing factor affecting the perception of party similarity and polarization. Second, we discuss under which circumstances we expect this phenomenon to be more pronounced, extending the existing literature on political categorization (Bølstad and Dinas 2017; Heit and Nicholson 2010) with a specific emphasis on its contextual variation.

Sources of bias in political perceptions

When citizens form mental representations of party ideologies, as for other opinions and judgments, they are led by two things: the amount of *information* that they have, and the *motivation* to be accurate – as opposed to forming representations that satisfy particular needs. When these two factors are maximized, citizens' perceptions should correspond rather closely to the parties' true ideological profiles. However this is rarely the case, and scholars have been devoting considerable attention to the mechanisms behind the occurrence of systematic biases.[2]

Most research on this topic has focused on *partisan rationalization* (Brody and Page 1972). Partisanship is commonly viewed as a politically-salient group identity (Green, Palmquist and Schickler 2002; Huddy, Mason and Aarøe 2015). According to social identity theory, people are motivated to rationalize their preferences and make judgments that fit their need for positive self-evaluation (Tajfel 1981; Turner et. al. 1987). Moreover, individuals strive to achieve and maintain internal consistency between their attitudes and partisan affiliations (Leeper and Slothuus 2014). As a result, citizens may perceive parties and candidates that they favor as more similar to themselves than they really are, and push parties and candidates that they dislike further away from their own position (see e.g. Granberg and Holmberg 1988; Visser 1994). It has been shown that this process interacts with the quality of informational cues that parties send to the public (Merrill, Grofman and Adams 2001). Indeed, in contexts where party-related information is more easily available or ideological in nature, people's perceptions of party positions are more accurate (Dahlberg 2013; Drummond 2010; Gordon and Segura 1997).

[2] When we talk about "bias" we refer here to *cognitive* bias, a "[s]ystematic error in judgment and decision-making common to all human beings which can be due to cognitive limitations, motivational factors, and/or adaptations to natural environments" (Wilke and Mata 2012, 531). We exclude from our discussion misperceptions attributable to random error, and we assume no explicit intention by the respondents to misplace the parties. We use terms like "distortion", "misperception" and "misplacement" in a similar fashion.

Misperceptions of party positions may also be due to cognitive processes, such as the use of informational shortcuts or *heuristics* (Kahnemann, Slovic and Tversky, 1982). People are "cognitive misers", as they typically devote limited resources to evaluating new information (Fiske and Taylor 1991). To handle the complexity of political environments, citizens tend to rely on simple strategies that allow them to make the best decisions out of limited information. Scholars have discussed a number of political heuristics that allow citizens to reach mostly "correct" voting decisions with limited information (Lau and Redlawsk 1997, 2006). However, some shortcuts can lead to systematic misperceptions. For instance, Fortunato and Stevenson (2013) argue that people use information about coalition participation to infer ideological affinity between parties. While this strategy saves citizens the effort to collect greater information about parties' legislative behavior, it also leads to perceive partners in coalition governments as more ideologically similar to one another than identical parties not serving in the same cabinet.

Another cognitive device that helps individuals cut informational costs is *categorization*, the process by which people classify objects into groups, deciding which objects should go together and which should be separate. While heuristics are often described as *ad hoc* solutions to complex cognitive problems, categorization is a basic cognitive process essential to learning (Schneider 2004). By organizing things into categories, individuals are able to deal intuitively with new stimuli without examining them in every detail (Murphy 2002). Moreover, categorization helps people make inferences about individual objects based on the category that they belong to (McGarty 1999). In social contexts, categories serve as a basis for judgment. People classify other people as in-group or out-group, and this affects both their perception and evaluation of them (Allport 1954; Brewer 2007; Tajfel 1981).

It has been argued that self-categorizations are driven by motivational factors, such as people's need to differentiate themselves positively from others (Tajfel 1981), as well as

cognitive factors. In the latter case, what determines the emergence of a specific categorization, and therefore the likelihood that individuals will use it to classify themselves and others, is its *salience* in a given context (Turner et. al. 1987). This is in turn determined by the *accessibility* of a given categorization, and its *fit* to the observed similarities and differences between objects (McGarty 1999).[3] This point becomes particularly important when we apply categorization theory to the realm of politics. Categories that are more genuinely political, like those defined on the basis of ideology or partisanship, differ from more basic social categories (like race or ethnicity) in that their boundaries are more vague (Huddy 2001). However, as we shall discuss below, the permeability of boundaries to political identities may be defined by the context. The more frequently some political categories occur, and the better they describe how parties relate to each other, the more likely they will be used by citizens to categorize political objects. Moreover, different classifications may also coexist. In some political contexts, like the U.S. two-party system, parties are arguably the most basic categories that are invoked to classify politicians and partisan supporters, prompt group considerations that affect opinion polarization (Nicholson 2012), and inform the typicality of the political profiles of politicians and public figures (Heit and Nicholson 2010). In other contexts, left and right may act as superordinate categories that encompass parties (Bølstad and Dinas 2017). When activated, they can effectively structure citizens' perceptions of the political space, providing *a priori* expectations about party policies and potential alliances, and determining which parties are in-group and

[3] These two aspects of categorization mirror the *availability* and *representative* heuristics described by Kahneman and Tversky (see Kahnemann, Slovic and Tversky, 1982). Their function for political cognition is also arguably the same: citizens are more likely to make sense of politics based on left and right categories if they are more easily retrieved from memory (availability heuristic) and if those categories are prominent and exist as useful prototypes formed in their minds (representativeness heuristic).

which are out-group.

But how does this affect perception? Once a categorization is in place, people tend to overlook the nuances between objects belonging to the same category, and emphasize the differences between objects belonging to different categories (Goldstone and Hendrickson 2010). As a consequence, perceived between-group differences and within-group similarities are accentuated. This effect results from two cognitive goals of categorization: *discrimination*, which helps people treat two objects differently when they belong in different categories, and *generalization*, which allows them to infer information about individual objects based on their category labels (Wedell, Hicklin and Smarandescu 2007). These two functions are not always equally important, and can produce different results. When the relevant task is to differentiate between objects that should not be mistaken as equivalent, discrimination is more important, and people will emphasize between-group differences. When the task is to draw information about individual objects from their group membership, then generalization is the relevant goal, and people will emphasize within-group similarities.

In a famous experiment, Tajfel and Wilkes (1963) asked subjects to evaluate the length of a set of lines. For one group, all the shorter lines were given an arbitrary label (the letter A) and all the longer lines were given a different label (the letter B). For a second group the lines were still labeled, but the letters A and B were assigned to the lines randomly, without any systematic association to their length. Finally, for a third group, the lines were shown unlabeled. As a result, subjects in the first group perceived the difference between the lines with the A label and the lines with the B label as much larger than the subjects in the two other groups. Simply put, this effect does not stand on the absolute meaning of the categories, but it requires a minimal correlation between them and the set of objects to be evaluated: the classification needs to provide a useful principle to organize the stimuli (Tajfel and Wilkes 1963).

The accentuation effect is a well-known explanatory mechanism for the perception of

exaggerated intergroup differences and the creation of social stereotypes (Eiser and Stroebe 1972; Tajfel 1981). When people are categorized as members of a social group, they tend to accentuate the perceived difference between themselves and out-group members, and their perceived similarity with in-group members (McGarty and Penny 1988; McGarty and Turner 1992).[4] This applies even when individuals are grouped based on some minimal, arbitrary criteria (Tajfel and Turner 1979). Hence, this may also apply to citizens' perceptions of parties' ideological positions (see Figure 1). However, this depends on whether left and right provide a salient criterion for categorizing political actors into groups or not.

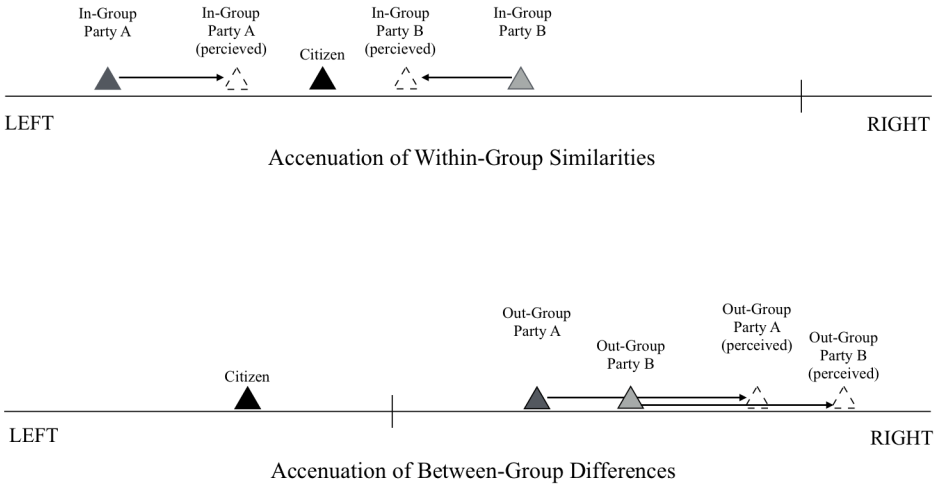

Figure 1: Accentuation effect

The categorizing function of left and right

In politics, categories are paramount. Labels such as left and right, or liberal and conservative,

[4] Many empirical studies in social psychology find only *one* instance of accentuation (either within-group similarity or between-group difference), while very few find both because the importance of discrimination and generalization varies between different tasks. Moreover, people tend to systematically perceive more variability within their own group than in the out-group (Haslam et al. 1996; Nicholson 2012), so the assimilation of in-group stimuli is generally weaker.

are heard continuously in political discussions: they help citizens understand policies, and guide their expectations of political alliances that are likely to emerge (Fortunato, Stevenson and Vonnahme 2016). In the American two-party system, ideological and party labels are difficult to disentangle, even more so in times of severe ideological polarization between Democrats and Republicans (Levendusky 2009), and the party-based categorization prevails in structuring political perceptions and decision (Heit and Nicholson 2010; Lau and Redlawsk 2006). In European multi-party systems, however, the same ideological identities may be shared between multiple parties. As a consequence, people's ideological self-identifications do not necessarily convey information about their party affiliation, and party images may not be uniquely defined by their ideological profile. This makes the connection between parties and ideologies less univocal, leaving more room for contextual variation. While in some cases ideological labels may be very tightly related to parties, and work as superordinate categories organizing party groupings, in others they may have a greater policy content, and define citizens' and parties' positions in more substantive terms. We argue that this variation, which mirrors the distinction made in the literature between *symbolic* and *operational* ideology, relates to the degree to which left and right are perceived as distinct categories, as opposed to poles of a continuous space.

"Operational" ideology refers to the view of left-right as a "super-issue" – an abstract continuum summarizing policy preferences, rooted in normative beliefs about the good society, and flexible enough to capture different issues at different times (e.g. Downs 1957; Inglehart and Klingemann 1976). "Symbolic" ideology, on the other hand, refers to people's affective attachments towards political groups symbolized by the ideological labels (Claassen, Tucker and Smith 2015; Conover and Feldman 1981; Devine 2015; Ellis and Stimson 2012; Jost, Federico and Napier 2009; Popp and Rudolph 2011). In fact, this distinction resembles and complements the one between the *instrumental* and *expressive* nature of partisanship (Green, Palmquist and Schickler 2002; Huddy, Mason and Aarøe 2015). In both cases, when citizens

determine their own partisan or ideological identity, substantive and symbolic considerations are likely to coexist. What is critical to the distinction is the type of reasoning that produces these self-identifications: based on the congruence of one's own policy *preferences* with the preferences of the group in the operational/instrumental case; based on the congruence of one's own political *identity* with the identity of the group in the symbolic/expressive case (Popp and Rudolph 2011).

While scholars have long been focused on the contextual variation of the substantive content of left-right (see Inglehart and Klingemann 1976; Huber 1989; Knutsen 1997; Piurko, Schwartz and Davidov 2011), the variation in *what* left and right reflect – policy preferences or symbolic group identities – has rarely been discussed. However, the importance of the symbolic component of ideology may be context-dependent as well. In general terms, left and right are just *cues*, usually given by parties with respect to other parties, and citizens learn their meaning based on what parties use them for (Arian and Shamir 1983). In a given context, they may be frequently linked to different substantive policies, and citizens will learn to use them to organize policy concepts. Alternatively, they may be used in a more relational way, to define the borders of political groups, and qualify oneself and others as part of a given group or not (Harré and Van Langenhove 1999). In this case, people will get used to referring to left and right as political groups, and will regard left-right positions as group memberships.

How does this matter for political perceptions? First, when ideological labels are used as political group identifiers, citizens will regard political actors on their own ideological side as in-groups, and actors on the opposite side as out-groups. For instance, an in-group party for a right-wing French citizen would be the conservative Union for a Popular Movement (UMP) or the far-right National Front, while an out-group party would be the Socialist Party (PS). The assumption is that citizens evaluate parties differently depending on whether they belong to the same ideological category as themselves or to the opposite one, accentuating their perception

of similarity with in-group parties and difference with out-group parties. Second, while the relative importance of the substantive and group meaning of ideology varies across contexts, this effect should be more likely to occur in contexts where left and right labels reflect political group loyalties. This is stated more formally in our "*accentuation hypothesis*":

In a given context, the more left-right identifications reflect political group affiliations, the closer to themselves will citizens perceive in-group parties, and the further from themselves they will perceive out-group parties.[5]

Research Design

To provide empirical evidence for our hypotheses, we proceed in two steps. At first, we discuss our main country-level predictor capturing the extent to which left and right reflect symbolic group attachments more than substantive considerations. The goal of this exercise is to provide a valid estimate of the importance of the symbolic component of ideology in a given political context, to be used in subsequent analyses to test whether it corresponds to a greater use of categorization. In the second step, we assess how individual political perceptions change across countries, and how much of this change is due to the country differences in the importance of substantive and symbolic components of ideological labels. We look at three separate phenomena. First, we observe whether citizens are able to place the parties in the correct left-right category, to see how good they are at *discriminating* between parties belonging to different

[5] Note that this process is agnostic to whether ideological self-categorizations are driven by cognitive or motivational factors. In the first case, the two groups may be perceived as more different than they are because between-group differences are accentuated. In the second case, people may perceive parties on the opposite side to be more extreme than they actually are to maximize their self-perception as part of a reasonable, moderate political group. Either way, the relevant identity discussed here is based on ideological labels, rather than on partisan labels, hence this process differs from partisan rationalization in that it focuses on groups of parties rather than on individual parties.

ideological groups. Second, we observe whether citizens tend to place different parties belonging to the same category on the same position, to see whether they tend to make *generalizations* about individual party positions based on group memberships. Finally, we test whether citizens perceive parties as *closer* to or *further* from themselves than they actually are, depending on whether the parties are in-group or out-group. We expect all three phenomena to occur more sharply in contexts where left and right have a stronger symbolic component.

To observe citizens, we rely on data from the European Parliament Election Study 2009 (henceforward EES, see van Egmond et al. 2013). EES data contain information about the citizens' perceptions of the relevant parties of their country, as well as their own self-placement, on an 11-point left-right scale. Moreover, as a benchmark for the correct party positions necessary for the measurement of the dependent variables, we supplement the ESS with the information from the Chapel Hill Expert Survey of 2010 (henceforward CHES, Bakker et. al. 2015), where left-right party positions are measured on the same 11-point scale. We exclude four countries from our initial sample of 27 EU member states, namely Malta, Cyprus, Luxembourg and Latvia, the first three because they are not present in the CHES study, and the fourth because most of the party denominations changed since the EES survey was conducted. However, we split Belgium into two political systems, Flanders and Walloon, as the relevant parties competing in the two regions are different. Our final number of contextual units is therefore 24 political systems.

The meaning of left and right across countries: variable relative importance

How can we assess empirically what left and right mean in a given context – that is, to what extent the categories reflect substantive ideological views or symbolic group affiliations? Because the left-right semantics is normally shared among political actors and citizens, one could theoretically look at both elite discourse and citizens' views. We choose the second path,

in order to maintain the observation as close as possible to the public perceptions, which is the main topic of our investigation. Following a well-established routine, we extract contextual information about the meaning of left-right across different countries by looking at the predictive power of different sets of variables on citizens' left-right self-placement. The key assumption is that the better a variable (or group of variables) predicts left-right positions, the greater the contribution of that factor is to citizens' understanding of what left and right mean. This approach is by far the most common in quantitative applications, and it has been used by researchers interested in the content of left-right for decades (e.g. Huber 1989; Inglehart and Klingemann 1976; Knutsen 1997; Medina 2015; Piurko, Schwartz and Davidov 2011; Zechmeister 2006; Zechmeister and Corral 2013).

The first set of variables that we consider captures the symbolic component of ideology. It includes indicators of political group attachment that inform one's left-right self-identification. The more important this component is, the more ideological self-identifications are "a statement of group consciousness – a declaration of group loyalty" (Conover and Feldman 1981, 623). We measure the importance of this component by using the *strength* and *direction* of respondents' partisan attachment. We believe that the correlation between party affiliation and left-right self-placement captures the importance of the symbolic component of ideology in a given context for three reasons. First, as the function of this component is to differentiate among political actors, one's revealed contiguity with a political party can be regarded as an indicator of perceived joint group membership. Second, among all symbols that can be at the core of people's ideological self-identifications, political parties are the most obvious one (Cobb and Elder 1973). Hence, the correlation between citizens' self-placement and their attachment to a party (or the lack thereof) should capture the extent to which left and right are symbolic in nature. Third, as Huddy, Mason and Aarøe (2015) argue, strong partisans resemble more closely *expressive* partisans, as they react emotionally to electoral victories and losses, and are prone

to mobilize to defend their own group when it is put under threat at election times. Hence, by taking into account the strength of partisan attachment, we maximize the chance that such attachment is driven by group identification and not by policy congruence.[6]

We measure party attachment using a set of party-specific variables indicating, for each party in a country, (1) whether a respondent feels close to it, and if so, (2) the strength of the attachment. The variables are constructed combining three indicators. The first is a nominal variable indicating which party, if any, a respondent feels close to. The second is a follow-up question for those who gave a negative answer (or "Don't know"), trying to grasp whether they at least lean towards a specific party or they really are independent. These two indicators provide information about the direction of partisan attachment. The third variable measures the strength of attachment, ranging from 0 (if the respondent is not close to the specific party) to 1 (if the respondent feels very close to the party).[7] This way, if a respondent feels very close to one party, s/he will have value 1 in the variable measuring the attachment to that party, and 0 in all the others. If a respondent does not feel close to any party, s/he will have value 0 in all

[6] Huddy, Mason and Aarøe (2015) also show that the strength of partisan attachment as commonly measured in surveys correlates substantially with the "partisan identity scale" that they propose as the gold standard to measure the expressive component of partisanship.

[7] It can be argued that our means to observe party attachment is not comparable to the one used in U.S. surveys, nor the concept itself is equivalent to the Michigan definition of "partisanship" popular in American politics research. EES survey asks respondents whether they "consider themselves to be close" to a particular party. This wording sets the nature of the connection between the respondents and the parties as a self-definition, rather than a behavior (such as voting), so it requires respondents to consider the connection to a party as part of their own political identity. The emphasis on *closeness* aims to maximize the cross-context comparability of the item, its only drawback being the excessive ease to elicit a positive response (Johnston 2006). However, we further distinguish weak partisans from strong partisans by weighting the variables for the strength of attachment. While this instrument is surely imprecise, it does enough to focus on party attachment as a self-definition, and to use a term that can be understood in a similar way across different contexts.

indicators.

The second set of variables includes the substantive predictors of left-right self-placement, which inform the operational component of ideology. The evaluative process associated with this component implies assessing the policy substance of a given object, and its congruence with one's own interest and values (Popp and Rudolph 2011). To capture this component we include measures of social structural background and issue preferences. The former group includes self-assessed social class membership, respondents' perceived standard of living, their religiosity, and frequency of church attendance. These sociodemographic characteristics serve as typical proxies for the social structure anchoring of ideology, because of their continuing importance in understanding the cleavage systems in European countries (see Freire 2006). The second group of indicators includes a set of policy issues such as opinions on economic policies, immigration, law and order, and traditional morality.[8] This set of measures captures the policy preferences that are associated with citizens' ideological self-identifications, following a view of ideology as a super-issue that is common in spatial models (Downs 1957).

To determine which set of variables matters more in a given context, we rely on a statistical technique called *Variable Relative Importance* (henceforth VRI; see Achen 1982; Grömping 2007; Johnson and LeBreton 2004). This technique is based on the same assumptions and methodology (i.e. regression) as the analyses performed by previous quantitative studies investigating the meaning of left-right across countries (for the most recent example see Medina 2015). However, VRI techniques allow to quantify the relative importance of different sets of predictors in a regression model, extract such quantities, and use them for subsequent analyses. We use here the method proposed by Silber, Rosenbaum and Ross (1995), which allows to confront the influence of two sets of predictors against one another, and returns a *ratio* measure that can be compared across different samples. The method is intuitive: given a model with two

[8] For question wording, see Appendix D in the supplemental material.

predictors, the predictor explaining more of the variance of the dependent variable is the one contributing more to the variance of the fitted values. Hence, the ratio of the variances of the fitted values produced by each predictor (when the other is held constant) will tell how much more (or less) one predictor explains with respect to the other. This can be generalized such that the relative importance of a *group of predictors* with respect to another is given by the ratio of the variances of their two sets of fitted values. Based on this intuition, a measure of importance ratio of two groups of predictors (ω), is given by

$$\omega = log_2\left(\frac{\beta^T X^T \beta X}{\gamma^T H^T \gamma H}\right)$$

where X is the matrix of predictors belonging to the first group (here partisan group attachment), H is the matrix of predictors belonging to the second group (the substantive predictors of left-right), and β and γ are vectors of standardized coefficients for the variables in X and H respectively, from a model where all predictors are included simultaneously. Note that the logic of this method is purely correlational: multiple regression is not used here to model which factors *cause* ideological self-placements, but rather as a means to see how strongly different factors are associated with left-right positions while controlling for each other. In virtue of the log transformation, when the two groups of predictors contribute equally to the variance of the fitted values, ω takes value 0. When the predictors in X contribute more than those in H, ω takes a positive value, and in the opposite case ω takes a negative value. The scores obtained can be easily interpreted as *the extent to which party group affiliations are more important than policy preferences in explaining people's ideological self-identifications in a given country*.[9]

[9] As both Grömping (2007) and Johnson and LeBreton (2004) note, most common measures of VRI tend to produce similar estimations. However, Silber et al. (1995) technique presented here is more appropriate for our comparative purpose, as the country-level estimates that it produces are on the same scale – that is, in relation to the importance of substantive considerations for ideology. We have also replicated the analysis in this section

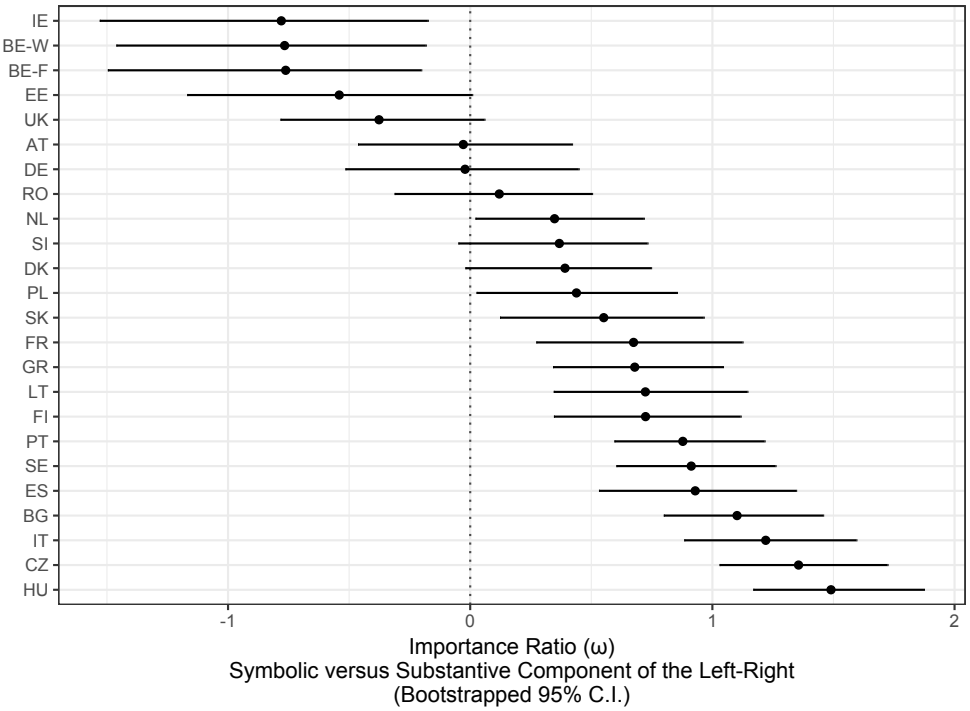

Figure 2: Importance Ratio: Symbolic versus Substantive Component of Left-Right

Figure 2 shows the values of ω in the countries of our sample[10]. In places where ω is lower than 0, like Belgium, Ireland, Estonia and UK, substantive considerations have a greater influence on individual left-right self-identifications than group affiliations. This does not mean that in those countries partisanship is not important, but rather that it is less strongly associated to left-right identities compared to factors capturing substantive ideology. In other countries, like Hungary, Czech Republic and Italy, knowing whether a person categorizes herself as left

using Grömping method based on R-Square decomposition, obtaining nearly identical results. The two methods are compared in Appendix E in the Supplemental Material. An important advantage of Grömping method is that it allows to look at the relative importance of all components separately (socio-structural variables, issues, partisanship). This makes it clear that the importance ratio ω is not simply a measure of the salience of the left-right cleavage, but it does capture the relative importance of partisanship versus substantive variables. See the appendix for this discussion.

[10] Measures of uncertainty are obtained using parametric bootstrap.

or right will tell much more about her partisan allegiance than her policy preferences. Looking at the examples of Hungary and Italy, these values reflect what has been pointed out in country case studies. In Hungary, party affiliation explains more than twice as much of citizens' left-right placements as substantive policy considerations (given the log_2 transformation), a result that supports the predominantly group-symbolic nature of left and right (Palonen 2009). In Italy, citizens have been found to associate their ideological self-identifications to negative affections towards parties, leaders and coalitions (Catellani and Corbetta 2006). Overall, party affiliation tends to be on average more strongly correlated to citizens' left-right positions than issue preferences and socio-structural characteristics. This result is consistent with previous findings (see Inglehart and Klingemann 1976, and more recently, Medina 2015).

Two goals of categorization: discrimination and generalization

As we discussed previously, categorization is a cognitive device used to organize external stimuli. *Organize* here implies two things: telling which stimuli should go together and which should be separate, and inferring information about individual stimuli from their group label. These two goals of categorization are called respectively "discrimination" and "generalization". The urge to reach them produces an accentuation effect: a distortion in the perception that makes stimuli in different categories appear more different from one another, and stimuli in the same category appear more similar to one another. While the main focus of this study is on the latter effect, in this section we aim to provide some preliminary evidence suggesting that, when the symbolic-group component of ideology is more important, citizens are better able to put parties in the right category, and more likely to generalize across parties in the same category. We do so by conducting a number of preliminary analyses at the country level.

Discrimination is salient when it is important *not* to put together objects that belong in different categories. If our intuition is correct, and ω captures the extent to which left and right

reflect opposite political groups, then in those countries where ω is larger respondents will have a sharper perception of which parties belong to which groups. To provide evidence for this case, we take for each respondent the proportion of parties positioned in the correct left-right category to capture this process.[11] We observe whether individual respondents in the EES data place a party on the "left" or on the "right" using the 11-point scale: parties placed between 0 and 4 are categorized as "left"; parties placed between 6 and 10 are categorized as "right". Then, we get the objective categorization from CHES data using the same logic: all parties whose position is smaller than 5 are categorized as "left", and all parties whose position is bigger than 5 are categorized as "right". Finally, we count the number of parties each respondent classifies correctly, and divide it by the total number of parties in the political system. We give one point when a respondent puts a party in the right category, zero points when s/he puts a party in the wrong category, half a point when s/he puts a party in the center (unless the party is positioned on the very center, in which case we classify the placement as correct), and half a point for each "Don't know" answer.[12]

[11] In some cases, the presence of catch-all parties defined as "moderate" or "centrist" might suggest that this binary categorization is too rigid. However, in the political contexts where left-right is at least minimally relevant, even centrist parties tend to hold positions that are either "moderate-left" or "moderate-right" (Benoit and Laver 2006). Some centrist parties could be competing on a dimension that is completely orthogonal to left-right (as it is understood in their own context), and in this case the left-right classification would simply fail as a criterion to discriminate between them and other parties. However, in practice, large parties of this kind have been rare. In the CHES data, only three parties are positioned in the exact center: the Liberal Democrats in the UK, the Democrats 66 in the Netherlands, and the People's Party in Slovakia (ĽS-HZDS). In all these three countries the value of ω is rather low, with the lowest being the UK, where Liberal Democrats were particularly important in the period when the survey was conducted. In other words, in all these countries left-right does not appear to have a strong group meaning, hence its categorical function should be limited.

[12] We obtain very similar results if we code the parties positioned in the center and "don't knows" as wrong, see

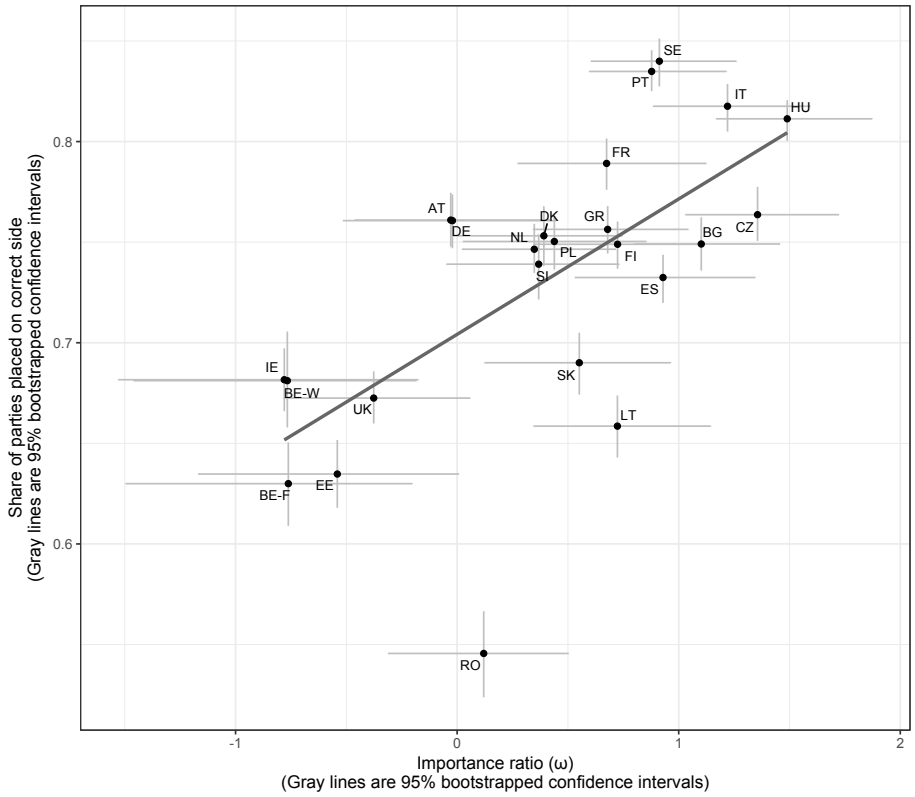

Figure 3: Discrimination and importance ratio

Figure 3 shows a bivariate plot of the percentage of parties placed correctly in every country and importance ratio. The figure clearly shows that in countries where the symbolic component of ideology is dominant, respondents' are also better able to correctly categorize parties within their ideological group. For instance, Italian citizens, where group affiliations inform left-right positions twice as much as substantive considerations, are able to position a party correctly in more than 80% of the cases. On the other hand, Flemish or Estonian citizens are able to place parties in the right group only in 60% of the cases. This is a rather large effect, and corresponds, on average, to one party being more likely to be systematically misplaced in countries where left-right is less effective in classifying groups of parties.[13]

Appendix E in the Supplemental Material.

[13] The correlation shown in the picture is statistically significant ($r = 0.64$, $p < 0.001$). We also ran alternative

Generalization, the tendency to infer characteristics of individual objects based on their category membership, is somewhat more complicated to operationalize. One of the implications of generalization is perceived homogeneity – that is, all the parties belonging to the same category should be perceived as holding the same position. However, research has shown that people tend to perceive more homogeneity when they evaluate out-group stimuli, while they regard their own group as more heterogeneous (Haslam et al. 1996; Nicholson 2012). This is primarily a matter of information as individuals typically encounter and interact more often with in-group members than with out-group members. Their lack of knowledge about out-groups can prompt them to use categorical information as a compensatory cue. When left-right self-categorization intertwines with group loyalty, voters are unlikely to ever consider supporting a party belonging to the out-group ideological block. They ignore most of the information coming from the opposite block, or at least process it with less accuracy. At the same time, citizens should be better informed about in-group parties, as they are more likely to pay attention to their messages. We, therefore, expect generalization to affect perceptions of out-group parties more than in-group parties.

We observe generalization by calculating, for each respondent, the *entropy* of the perceived positions of in-group and out-group parties. Entropy is a measure of uncertainty used in information theory, which captures the amount of information that we get by observing a certain event (Cover and Thomas 1991). When an event is less likely to occur, for instance observing a party positioned on 8 on the left-right scale, the amount of information conveyed by its occurrence will be larger. In fact, entropy can be regarded as a measure of uncertainty for categorical variables: the more the mass of probability is concentrated on one or few categories,

models based on a dichotomous right/wrong group indicator, where we control for individual factors and contextual factors such as polarization and the number of parties: the effect of ω remains strong. Results are available in Appendix E in the Supplemental Material.

the lower it will be the amount of information contained by the variable, and the lower will be its entropy. Conversely, when the mass of probability is equally distributed across categories, then the variable will contain more information, and its entropy will be larger. Applying this logic to our case, if respondents place all parties belonging to the same category on the same position, then the entropy will be zero and if they place each party on a different position, entropy will be maximal. By taking the entropy of the perceived positions of in-group and out-group parties, we have a perfect, although inverse, measure of respondents' tendency to generalize.[14]

We determine which parties are in-group and which are out-group to our respondents by using self-placement information and CHES party positions. Respondents placing themselves between 0 and 4 are categorized as "left", respondents placing themselves between 6 and 10 are categorized as "right". All respondents who refused to position themselves on the left-right scale, and those on the exact center of the scale, are excluded from the analysis, as we are unable to determine their ideological group membership. We obtain the in-group and out-group categories by matching this categorization with the one of the parties based on CHES data. Then, we calculate the entropy of respondents' perceptions for both categories. Figure 4 reports for each country the average perceived entropy of in-group and out-group parties, plotted against the importance ratio. The figure shows no correlation between ω and the entropy measure, both for in-group and out-group parties (the correlations are, respectively, r = 0.1, n.s.; and r = -0.21, n.s.). The only noteworthy thing emerging from the picture is a greater tendency to place all out-group parties on the same position in Hungary and Italy, two of the countries in

[14] Because the left and right camps in different countries contain different numbers of parties, and because some respondents did not provide an assessment of party placement for all parties, we normalized our measure by dividing the observed entropy by the theoretically maximal entropy given the number of parties a respondent evaluates in a given category.

our sample where left-right correlates most with partisanship. However, this is not enough to validate our expectation that citizens are more likely to generalize based on left-right categories in countries where such categories have a strong symbolic component.[15]

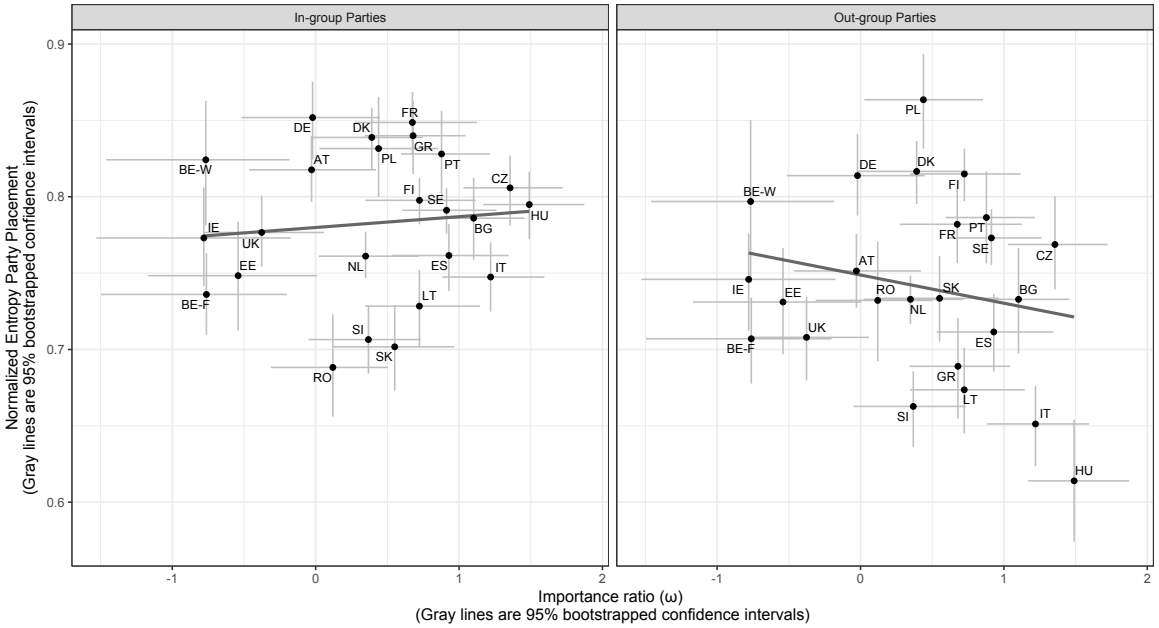

Figure 4: Generalization and importance ratio

Together, figures 3 and 4 show that the relative importance of the symbolic ideology in a given political environment correlates with the ability to discriminate between parties belonging to different categories, while it does not seem to come with a greater tendency to perceive out-group parties as more uniform. This allows us to draw a substantive conclusion about the goals of the left-right categorization, when it is used to classify political actors according to their group membership – that is, the salient task in those circumstances is to "get the groups right", rather than using ideological labels as shortcuts to infer new information about party positions.

[15] As an alternative proxy for generalization, we measured the range of the perceived party positions in each category for each respondent. Results are similar, as reported in Appendix E in the Supplemental Material.

Ideological groups and accentuation effect in political perceptions

We use experts' assessments from CHES as a benchmark for the correct party positions, and match such information with EES respondents' party placements. Our dependent variable is calculated in three steps. First, we calculate the absolute distance between respondents' left-right self-placement and their placement of all the parties in the EES data. Second, we calculate the absolute distance between respondents' own positions and the correct party placements taken from CHES. Third, we calculate the difference between the two. The resulting variable, that we call "perceptual bias", measures the difference between respondents' perceptions and the correct party positions. When the difference is zero there is no bias, and respondents perceive a party to be as distant from themselves as it actually is. A negative value indicates that respondents perceive a party to be closer to their own positions than it actually is and a positive value means that the respondents perceive a party to be further away from themselves than it actually is.

Because our level of measurement is the respondent-party dyad, we reshape the data to "long" format. In a country with *N* individuals and *G* parties, the total number of observations will be *NxG*. This complex hierarchical structure requires modeling the data with a three-level model, where individual-party dyads are nested within individuals and within countries. By doing so, we account for the correlation of the random error at the individual and the country level. While our main predictor, the importance ratio ω, is observed at the country level, we add control variables at each level of measurement to clear our effect from possible unobserved disturbance. At the individual-party dyad level (level 1) we include two dichotomous predictors capturing party affiliation, one indicating if a respondent is a partisan of the specific party observed in the dyad, and one indicating if a respondent is a partisan of a party other than the one observed in the dyad.[16] This way, we control for assimilation and contrast effects produced

[16] For instance, a German partisan of the Christian-democrat CDU will have value 1 for the dyadic observation

by partisan attachment, rather than by categorization. More importantly, we include a dummy variable that takes value one if the party observed belongs to the opposite ideological category than the one of the respondent, and zero otherwise. We call this dummy "Out-Group Party". Its main coefficient represents the average perceptual bias occurring as citizens evaluate parties belonging to the opposite ideological group, namely right-wing parties for left-wing citizens, and left-wing parties for right-wing citizens. As we expect the magnitude of such misperception to vary across countries (people should tend to contrast out-group parties' positions more in countries where the symbolic component of left-right is stronger) we set the slope of this variable to vary randomly at the country level. By including it, we make sure that the coefficient of the intercept represents now the average perceptual bias occurring when citizens evaluate in-group parties.

At the respondent level (level 2) we include several established individual indicators as controls: level of education, political interest and general political knowledge. Additionally, we include a continuous predictor that records respondents' distance from the ideological center as a measure of left-right extremity. We do not have specific hypotheses regarding the effect of these predictors, and we do not have reasons to expect that their impact should differ as respondents evaluate parties in their own ideological group or the opposite one. We only include these variables to control for their possible impact on citizens' perceptions. At the country level (level 3) we include our main predictor ω, both as main effect and in interaction with the "Out-Group Party" dummy. This variable and the interaction represent the main test of the "accentuation hypothesis". In countries where the symbolic component of left-right is stronger,

---

referring to CDU in the "Partisan (Own Party)" variable, and value 0 for the same observation in the "Partisan (Other Party)" variable. In the dyadic observations referring to the other parties, the respondent will have value 0 in the "Partisan (Own Party)" variable, and value 1 in the "Partisan (Other Party)" variable. Respondents who do not feel close to any party have value zero for both variables, acting as baseline category.

the magnitude of the accentuation effect should be larger, hence the main effect of ω should be negative (as it refers to in-group evaluations), while the interaction effect of ω and the "Out-Group Party" dummy should be positive (as it refers to out-group evaluations). Moreover, at this level we add two additional control variables. One is the number of parties, to control for the systematic difference across countries of the number of evaluations that each voter has to perform. We do not have a straightforward expectation regarding the effect of this variable. Both Gordon and Segura (1997) and Drummond (2010) suggest that in systems with more parties, party-related information is more easily accessible, hence perceptions should be more accurate. On the other hand, previous literature does not take into account how evaluations may differ between in-group and out-group parties. The second control is party polarization, measured using the experts' positions, to account for the "ceiling" effect of the overall party dispersion. We expect that the more polarized parties are, the less room there will be for respondents to misplace parties further away than they actually are, as their positions are already quite extreme. Hence, we expect a negative effect of this variable on perceptual bias. The relevant results are presented in Table 1[17].

Two findings are worth our attention. First, in both the baseline and full model, the intercept has a positive sign, while the "Out-Group Party" dummy has a negative sign. This means that, on average, citizens in our sample tend to perceive parties belonging to their own ideological group as further away from themselves, and parties belonging to the opposite ideological group as closer than they actually are. While these results may seem surprising, we believe that they

[17] To take into account the fact that ω is an estimate, and so it comes with error, we re-estimated the full model 500 times imputing at each round a different value of ω sampled randomly from the distributions we had previously obtained via bootstrapping (see Figure 2). We then combined the coefficients and standard errors using the "Rubin's rules", very common in practices like multiple imputation (see Rubin 2004). For the full model results, see Table 2 in the supplemental material.

are due to a *mechanical* effect prompted by the nature of the data: respondents have more room on the 11-point scale to misperceive in-group parties as more distant than as more proximate, while the opposite is true for out-group parties. For instance, to place a party on 5 would already imply having a positive perceptual bias if the party is in-group, and a negative sign if the party is out-group. While it is not possible to avoid this problem using this type of measurement, it is the *variation* across countries of these two coefficients that we seek to explain.

Table 1: Model results - accentuation effect

	Baseline Model		Full Model	
	Coef	S.E.	Coef	S.E.
Intercept	0.654 ***	(0.059)	0.766 ***	(0.069)
Out-Group Party	-0.715 ***	(0.163)	-1.288 ***	(0.133)
ω			-0.180 *	(0.084)
ω*Out-Group Party			0.809 ***	(0.167)
N Observations	82272		82272	
N Respondents	12936		12936	
N Countries	24		24	
AIC	366138		362733	
BIC	366203		362901	
Log-Likelihood	-183062		-181349	

*** p < 0.001; ** p < 0.01; * p < 0.05

This leads to our main finding. In countries where party support is more important in explaining left-right identifications than issues and social structure, respondents show a weak (albeit significant) assimilation bias in the perception of in-group parties (main effect of ω) and a strong contrast bias in the perception of out-group parties (the interaction between ω and the "Out-Group Party" dummy). While the coefficients confirm our "accentuation hypothesis", we estimate some quantities of interest to assess the magnitude of the effect. Figure 5 plots along the values of ω the predicted perceptual bias for in-group and out-group parties derived from the model coefficients, together with the country-level averages obtained from the random

effects of the empty model. While the regression lines represent our model estimates, the country values are included to offer some substantive insight[18].

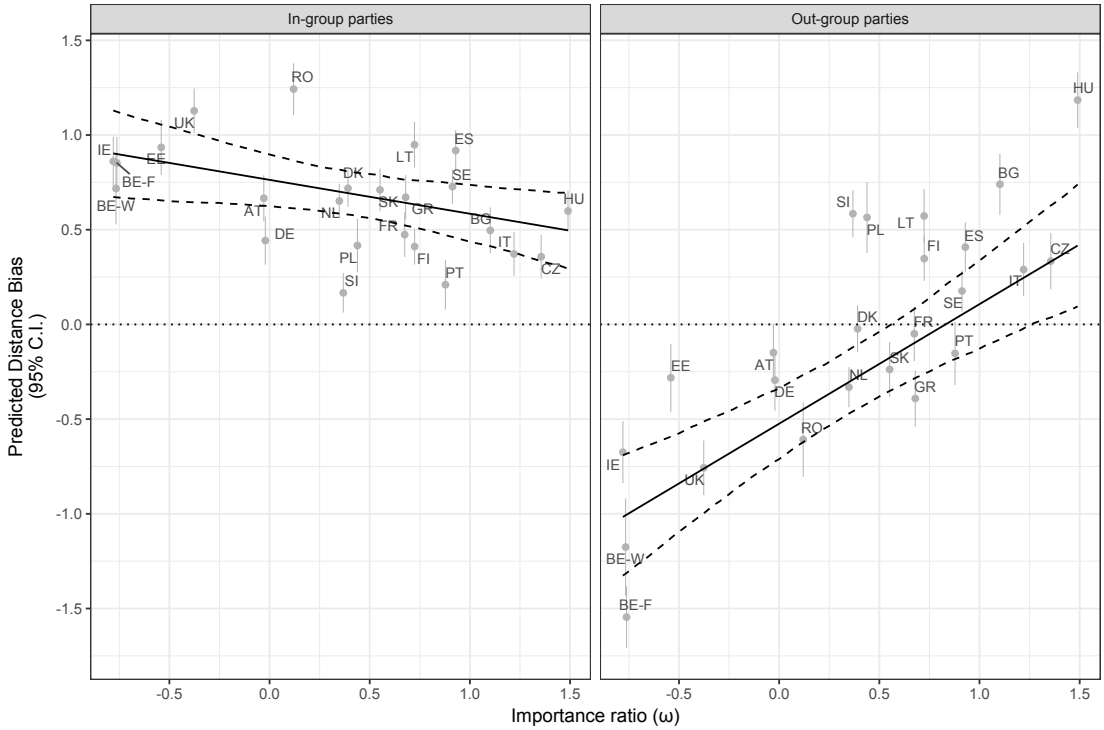

Figure 5: Predicted perceptual bias for in-group and out-group parties. Gray lines around the data points are 95% confidence intervals

As the figure shows, in some countries where the party component is very strong, such as Hungary or Bulgaria, citizens tend to place out-group parties roughly one point further from themselves (on a 0-10 scale). For in-group parties the effect is indeed weaker, and in general the in-group assimilation effect never really occurs. However, our findings suggest that in contexts where left and right have a strong partisan component citizens' perceptions are even

[18] The values for "In-Group parties" in the left panel are the country-level random intercepts of the empty model, while those in the "Out-Group parties" in the left panel are obtained by summing the random intercept with the fixed and random effects of the "Out-Group Party dummy" from the same model. The respective confidence intervals have been obtained from the standard errors produced by the empty model.

more accurate than in countries where ideological labels have a greater issue content. While this does not count as definite evidence for a an accentuation of in-group similarities, it can be explained by people's tendency to perceive more variability within their own group (Haslam et al. 1996; Nicholson 2012). Still, the findings clearly confirm our "accentuation hypothesis" with respect to the accentuation of out-group differences.

Discussion

This study shows that the meaning that left and right have in a given context – that is, whether they reflect substantive content such as policy preferences or group identities such as party attachments – is related to the way citizens perceive political parties. Specifically, we find evidence of two phenomena. First, when left-right has a strong symbolic component, citizens are better able to classify parties correctly in their ideological group. This suggests that in such circumstances, one important function of left-right is to tell citizens which parties belong together and which are separate. Second, we find that when the symbolic component of left-right is prominent, people tend to perceive parties belonging to the opposite ideological group more distant from themselves than they actually are. We argue that this phenomenon, called "accentuation", is due to people's innate tendency to use categorical information to form judgments about similarities and differences between objects. When citizens learn that a party belongs to the same group as themselves, they should infer that its views are congruent to their own. Conversely, when evaluating a party belonging to a different category, people will assume that its views are incompatible, and so they will push its position as far away as possible.

The idea that a superimposed classification can prompt an accentuation effect in the perceptions of similarities and differences between political parties can be transferred to all politically relevant categories. We focus here on left-right because it is a widespread political dichotomy, both among citizens of different countries and comparative researchers. Also, we

believe that the contextual variation of the importance of its two components (i.e. its ability to categorize both issues and actors) offers a unique opportunity to manipulate the salience of the categorization (as a reminder, "salience" refers to the task at hand, so the importance of the symbolic component reflects how much left and right are salient to categorize political actors instead of issues). Because left and right have different meanings in different contexts, our hypothesis posits that the more left and right reflect different groups of actors, the more the perceptions of differences and similarities between actors will be affected by the fact that some actors belong to the same group as the citizens evaluating them, and some actors do not. Hence, while we expect accentuation to work for any politically relevant categories, we think that left-right is the epitome of political categories and a perfect case to study the impact of categorization cross-nationally.

The accentuation effect implies that when left and right have a strong identitarian component, citizens tend to perceive the political environment as more polarized than it actually is. This has important consequences for the way we evaluate the impact of political perceptions on behavior. Previous studies have shown that when citizens perceive their party system as highly polarized, they are more likely to vote following a *directional* logic, that is, they choose the party taking the most extreme stance among those on their own side (Pardos-Prado and Dinas 2010). While categorization can drive voters to rely on directional considerations (Bølstad and Dinas 2017; Collins 2010), the accentuation effect implies that a form of directional thinking is already in place when citizens position parties on an identity-charged left-right space. Hence, perceived polarization and directional voting may just be two sides of the same coin: a political environment where ideological labels do not represent policy alternatives, but mutually-exclusive political camps.

Our findings are also relevant for the way we interpret classical Downsian models of ideological voting in such contexts where we know that ideology has a strong group meaning.

Where this is the case, as Arian and Shamir (1983) point out, “there exists a left-right space, but it is a political space, mainly a party space, and not an ideological space” (140). In this view, ideological voting becomes but a variation of partisan voting, where political group identities are signaled by ideological labels rather than party names. This point is particularly crucial as we use left-right congruence to evaluate representation. It has been shown that citizens do not respond to parties' actual policy statements but to their own perceptions of party positions, and that the two tend to be largely unrelated (Adams, Ezrow and Somer-Topcu 2011). Our study implies that such a mismatch could be due to the fact that left and right mostly refer to political groups, and not policies. Two expectations would therefore be that (1) where left and right have a strong policy meaning, citizens should be more responsive to parties' shifts in their policy platform, and (2) where left and right have a strong symbolic meaning, left-right congruence should be interpret as *group-sorting*, rather than representation. These are just speculations that would require empirical testing, but still indicate possible avenues for future research.

Furthermore, while here we focus on perceptions of parties, categorization may affect people’s perceptions of other citizens too. When left and right have a strong group meaning, people may perceive the whole public to be more polarized than it actually is. For instance, left-wing citizens would perceive their right-wing fellows to hold preferences and worldviews that are *categorically different* from their own. It has been shown that such perceptions act like a self-fulfilling prophecies, and prompt citizens to take more extreme positions themselves as a response (Ahler 2014). In the long run, this could reduce the chances of mutual understanding between ideological groups.

While we believe that the importance of the symbolic component of ideology is driven by the political elites, our data cannot provide definite evidence that this is the case. Moreover, left and right categorization is but one among many possible ways that similarities and differences are presented in the political discourse. For instance, the Italian populist party Five Star

Movement (5SM), which established itself in the mainstream political arena after the election of 2013, has repeatedly described itself as being "neither left, nor right". This rejection of the traditional ideological categorization would be hard to explain if we were to adopt a purely instrumental view of left-right as a super issue, but makes perfect sense if we take into account the refusal of the 5SM to enter in a coalition with any other traditional party. Indeed, whereas the establishment of the 5SM in Italy, as well as of other populist parties in other European countries, may introduce in the long run a new cleavage line that is orthogonal to the traditional left-right, this may not undermine the symbolic value of ideological labels. A natural next step would be then try to capture how the meaning of ideology develops in a given society, and to what extent the elites, new and old, and the public independently contribute to it. We think that this is an important direction for future research, as it implies casting light on one process regulating the creation and control of political meaning which has a great impact on the way citizens deal with politics.

References

Achen, C. H. (1982). *Interpreting and Using Regression*. Sage.

Adams, J., Ezrow, L., & Somer-Topcu, Z. (2011). Is Anybody Listening? Evidence That Voters Do Not Respond to European Parties' Policy Statements During Elections. *American Journal of Political Science*, 55(4), 370–382.

Ahler, D. J. (2014). Self-Fulfilling Misperceptions of Public Polarization. *Journal of Politics*, 76(3), 607–620.

Ahler, D. J., & Sood, G. (forthcoming). The Parties in Our Heads: Misperceptions About Party Composition and Their Consequences. *Journal of Politics*.

Allport, G. W. (1954). *The Nature of Prejudice*. Cambridge: Addison-Wesley.

Arian, A., & Shamir, M. (1983). The Primarily Political Functions of the Left-Right

Continuum. *Comparative Politics*, 15(2), 139–158.

Bakker, R., De Vries, C., Edwards, E., Hooghe, L., Jolly, S., Marks, G., … Vachudova, M. A. (2015). Measuring party positions in Europe The Chapel Hill expert survey trend file, 1999–2010. *Party Politics*, 21(1), 143–152.

Benoit, K., & Laver, M. (2006). *Party Policy in Modern Democracies*. London: Routledge.

Bølstad, J., & Dinas, E. (2017). A Categorization Theory of Spatial Voting: How the Center Divides the Political Space. *British Journal of Political Science*, 47(4), 829–850.

Brewer, M. B. (2007). The Importance of Being We: Human Nature and Intergroup Relations. *American Psychologist*, 62(8), 738–751.

Brody, R. A., & Page, B. I. (1972). The Assessment of Policy Voting. *American Political Science Review*, 66(2), 450–458.

Catellani, P., & Corbetta, P. (2006). *Sinistra e destra. Le radici psicologiche della differenza politica.* Bologna, Italy: Il Mulino.

Claassen, C., Tucker, P., & Smith, S. S. (2015). Ideological Labels in America. *Political Behavior,* 37(2), 253–278.

Cobb, R. W., & Elder, C. D. (1973). The Political Uses of Symbolism. *American Politics Research*, 1(3), 305–338.

Collins, N. A. (2010). Categorization-Based Spatial Voting. *Quarterly Journal of Political Science*, 5, 357–370.

Conover, P. J., & Feldman, S. (1981). The Origins and Meaning of Liberal/Conservative Self-Identifications. *American Journal of Political Science*, 25(4), 617–645.

Cover, T. M., & Thomas, J. A. (1991). *Elements of Information Theory*. New York: John Wiley & Sons.

Dahlberg, S. (2013). Does context matter – The impact of electoral systems, political parties and individual characteristics on voters' perceptions of party positions. *Electoral Studies*,

32(4), 670–683.

Devine, C. J. (2015). Ideological Social Identity: Psychological Attachment to Ideological In-Groups as a Political Phenomenon and a Behavioral Influence. *Political Behavior*, 37(3), 509–535.

Downs, A. (1957). *An economic theory of democracy*. New York: Harper and Row.

Drummond, A. J. (2010). Assimilation, contrast and voter projections of parties in left-right space: Does the electoral system matter? *Party Politics*, 17(6), 711–743.

Eiser, R. J., & Stroebe, W. (1972). *Categorization and Social Judgment*. London: Academic Press.

Ellis, C. R., & Stimson, J. A. (2012). *Ideology in America*. Cambridge University Press.

Fiske, S. T., & Taylor, S. E. (1991). *Social Cognition*. McGraw-Hill.

Fortunato, D., & Stevenson, R. T. (2013). Perceptions of partisan ideologies: The effect of coalition participation. *American Journal of Political Science*, 57(2), 459–477.

Fortunato, D., Stevenson, R. T., & Vonnahme, G. (2016). Context and Political Knowledge: Explaining Cross-National Variation in Partisan Left-Right Knowledge. *Journal of Politics*, 78(4), 1211–1228.

Freire, A. (2006). Bringing Social Identities Back in: The Social Anchors of Left-Right Orientation in Western Europe. *International Political Science Review*, 27(4), 359–378.

Goldstone, R. L., & Hendrickson, A. T. (2010). Categorical perception. *Wiley Interdisciplinary Reviews: Cognitive Science*, 1(1), 69–78.

Gordon, S. B., & Segura, G. M. (1997). Cross-National Variation in the Political Sophistication of Individuals: Capability or Choice? *Journal of Politics*, 59(1), 126–147.

Granberg, D., & Holmberg, S. (1988). *The Political System Matters: Social Psychology and Voting Behavior in Sweden and the United States*. Cambridge University Press.

Green, D. P., Palmquist, B., & Schickler, E. (2002). *Partisan Hearts and Minds*. New Haven:

Yale University Press.

Grömping, U. (2007). Estimators of Relative Importance in Linear Regression Based on Variance Decomposition. *American Statistician*, 61(2), 139–147.

Harré, R., & Van Langenhove, L. (1999). *Positioning Theory: Moral Contexts of Intentional Action.* Malden, MA: Blackwell.

Haslam, S. A., Oakes, P. J., & Turner, J. C. (1996). Social identity, self-categorization, and the perceived homogeneity of ingroups and outgroups: The interaction between social motivation and cognition. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of Motivation and Cognition* (Vol. Vol. 3: The interpersonal context, pp. 182–222). New York: Guilford Press.

Heit, E., & Nicholson, S. P. (2010). The Opposite of Republican: Polarization and Political Categorization. *Cognitive Science*, 34, 1503–1516.

Huber, J. D. (1989). Values and partisanship in left-right orientations: measuring ideology. *European Journal of Political Research*, 17(5), 599–621.

Huddy, L. (2001). From Social to Political Identity: A Critical Examination of Social Identity Theory. *Political Psychology*, 22(1), 127–156.

Huddy, L., Mason, L., & Aarøe, L. (2015). Expressive Partisanship: Campaign Involvement, Political Emotion, and Partisan Identity. *American Political Science Review*, 109(1), 1–17.

Inglehart, R., & Klingemann, H.-D. (1976). Party Identification, Ideological Preference, and the Left-Right Dimension Among Western Mass Publics. In I. Budge, I. Crewe, & D. J. Farlie (Eds.), *Party Identification and Beyond. Representation of Voting and Party Competition*. London: Wiley.

Iyengar, S., Sood, G., & Lelkes, Y. (2012). Affect, not Ideology. A Social Identity Perspective on Polarization. *Public Opinion Quarterly*, 76(3), 405–431.

Iyengar, S., & Westwood, S. J. (2015). Fear and Loathing across Party Lines: New Evidence

on Group Polarization. *American Journal of Political Science*, 59(3), 690–707.

Johnson, J. W., & Lebreton, J. M. (2004). History and Use of Relative Importance Indices in Organizational Research. *Organizational Research Methods*, 7(3), 238–257.

Johnston, R. (2006). Party Identification: Unmoved Mover or Sum of Preferences? *Annual Review of Political Science*, 9, 329–351.

Jost, J. T., Federico, C. M., & Napier, J. L. (2009). Political Ideology: Its Structure, Functions, and Elective Affinities. *Annual Review of Psychology*, 60, 307–337.

Kahneman, D., Slovic, P., & Tversky, A. (Eds.). (1982). *Judgment Under Uncertainty: Heuristics and Biases*. Cambridge; New York: Cambridge University Press.

Knutsen, O. (1997). The Partisan and the Value-based Component of Left-Right Self-placement: A Comparative Study. *International Political Science Review*, 18(2), 191–225.

Lau, R. R., & Redlawsk, D. P. (1997). Voting correctly. *American Political Science Review*, 91(3), 585–598.

Lau, R. R., & Redlawsk, D. P. (2006). *How voters decide: Information processing in election campaigns.* Cambridge University Press.

Leeper, T. J., & Slothuus, R. (2014). Political Parties, Motivated Reasoning, and Public Opinion Formation. *Political Psychology*, 35, 129–156.

Levendusky, M. S. (2009). *The Partisan Sort: How Liberals Became Democrats and Conservatives Became Republicans.* Chicago: University of Chicago Press.

Mason, L. (2015). "I Disrespectfully Agree": The Differential Effects of Partisan Sorting on Social and Issue Polarization. *American Journal of Political Science*, 59(1), 128–145.

McGarty, C. (1999). *Categorization in Social Psychology*. London: Sage.

McGarty, C., & Penny, R. E. C. (1988). Categorization, accentuation and social judgement. *British Journal of Social Psychology*, 27, 147–157.

McGarty, C., & Turner, J. C. (1992). The effects of categorization on social judgement. *British*

Journal of Social Psychology, 31, 253–268.

Medina, L. (2015). Partisan supply and voters' positioning on the left-right scale in Europe. *Party Politics*, 21(5), 775–790.

Merrill, S., Grofman, B., & Adams, J. (2001). Assimilation and contrast effects in voter projections of party locations: Evidence from Norway, France, and the USA. *European Journal of Political Research*, 40(2), 199–221.

Murphy, G. (2002). *The Big Book of Concepts*. MIT Press.

Nicholson, S. P. (2012). Polarizing Cues. *American Journal of Political Science*, 56(1), 52–66.

Palonen, E. (2009). Political Polarisation and Populism in Contemporary Hungary. *Parliamentary Affairs*, 62(2), 318–334.

Pardos-Prado, S., & Dinas, E. (2010). Systemic Polarisation and Spatial Voting. *European Journal of Political Research*, 49(6), 759–786.

Piurko, Y., Schwartz, S. H., & Davidov, E. (2011). Basic Personal Values and the Meaning of Left-Right Political Orientations in 20 Countries. *Political Psychology*, 32(4), 537–561.

Popp, E., & Rudolph, T. J. (2011). A Tale of Two Ideologies: Explaining Public Support for Economic Interventions. *Journal of Politics*, 73(03), 808–820.

Rubin, D. B. (2004). *Multiple Imputation for Nonresponse in Surveys*. Hoboken, New Jersey: John Wiley & Sons.

Schattschneider, E. E. (1960). *The Semisovereign People*. Hindsdale, IL: Holt, Rinehart and Winston.

Schneider, D. J. (2004). *The Psychology of Stereotyping*. New York: The Guilford Press.

Silber, J. H., Rosenbaum, P. R., & Ross, R. N. (1995). Comparing the contributions of groups of predictors: which outcomes vary with hospital rather than patient characteristics? *Journal of the American Statistical Association*, 90(429), 7–18.

Tajfel, H. (1981). *Human groups and social categories*. Cambridge: Cambridge University

Press.

Tajfel, H., & Turner, J. (1979). An Integrative Theory of Intergroup Conflict. In W. G. Austin & S. Worchel (Eds.), *The Social Psychology of Intergroup Relations*. Monterey, CA: Brooks/Cole.

Tajfel, H., & Wilkes, A. L. (1963). Classification and quantitative judgement. *British Journal of Psychology*, 54(2), 101–114.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Blackwell.

van Egmond, M., van der Brug, W., Hobolt, S., Franklin, M., & Sapir, E. V. (2013). *European Parliament Election Study 2009, Voter Study*.

Visser, M. (1994). Policy voting, projection and persuasion: An application of balance theory to electoral behaviour. *Political Psychology*, 15(4), 699–711.

Wedell, D. H., Hicklin, S. M., & Smarandescu, L. O. (2007). Contrasting models of assimilation and contrast. In D. A. Stapel & J. Suls (Eds.), *Assimilation and Contrast in Social Psychology* (pp. 45–74). New York: Psychology Press.

Wilke, A., & Mata, R. (2012). Cognitive Bias. In V. S. Ramachandran (Ed.), *The Encyclopedia of Human Behavior* (Vol. 1, pp. 531–535). Academic Press.

Zechmeister, E. (2006). What's left and who's right? A Q-method study of individual and contextual influences on the meaning of ideological labels. *Political Behavior*, 28(2), 151–173.

Zechmeister, E. J., & Corral, M. (2013). Individual and contextual constraints on ideological labels in Latin America. *Comparative Political Studies*, 46(6), 675–701.

SUPPLEMENTAL MATERIAL

Left-right Categorization and Perceptions of Party Ideologies

Contents

A. Models of relative importance: model specification and output

To obtain the measure of importance ratio between the symbolic and substantive component of left-right, we ran a separate OLS model for each country, where left-right self-placement is regressed over the chosen sets of predictors (see below), and calculated ω based on the fitted values of those models. We have also replicated the same routine modeling left-right self-placement as ordinal, obtaining almost identical results ($r = 0.98$, $p < 0.001$). We used the package "relimp" (https://cran.r-project.org/web/packages/relimp/relimp.pdf) version 1.0-5, ran on R version 3.3.2.

To control for possible differences in sample composition, models also included gender, education, and age (grand-mean centered). However, the contributions of these variables have been excluded from the calculation of ω. To account for possible non-linear relationships, all the scale and ordinal predictors are also included in the squared form. The equation for the specified OLS model is:

$$
\begin{aligned}
y = {} & \beta_0 + \beta_1 Gender + \beta_2 Age + \beta_3 Education^{[Low]} + \beta_4 Education^{[High]} + \\
& \beta_5 Class^{[1]} + \beta_6 Class^{[2]} + \beta_7 Class^{[4]} + \beta_8 Class^{[5]} + \\
& \beta_9 Standard + \beta_{10} Standard^2 + \\
& \beta_{11} Church + \beta_{12} Church^2 + \\
& \beta_{13} Religiosity + \beta_{14} Religiosity^2 + \\
& \beta_{15\text{-}25} Issue1\text{-}Issue11 + \beta_{26\text{-}36} Issue1\text{-}Issue11^2 + \\
& \beta_{37\text{-}n} PartyID + e
\end{aligned}
$$

The variables about *Class* (4 categories), *Subjective standards of living*, *Church attendance* and *Religiosity*, plus the eleven issue questions (together with the squared terms) reflect the substantive or "operational" component of left-right (the set of predictors that in the formula in the paper is called *H*). The group of *Party ID* variables account for the "symbolic" component of ideology (called *X* in the formula in the paper). The number of party-specific variables depends on how many different parties the respondents mentioned in each country, ranging from 4 (Belgium-Walloon, Czech Republic, Germany, Portugal) to 10 (Netherlands). Note that the estimated value of ω does not correlate significantly with the number of partisan groups (r

= 0.19, n.s.) or the share of partisans (r = 0.15, n.s.) in each country. Tables A1a and A1b report standard regression output for each country in the dataset.

Table A1a: Variable relative importance – standard regression output (AT – GR)

	AT	BE-F	BE-W	BG	CZ	DE	DK	EE	ES	FI	FR	GR
Intercept	3.84***	5.26*	-1.64	12.11**	4.65*	3.02*	2.48*	4.11*	-0.27	2.25	3.56***	2.51*
	(1.03)	(2.55)	(2.37)	(3.84)	(1.85)	(1.25)	(1.13)	(1.93)	(1.64)	(1.41)	(1.06)	(1.28)
Female	-0.36*	0.28	-0.62	-0.13	0.14	-0.04	0.03	0.17	0.01	0.10	-0.29	-0.07
	(0.15)	(0.30)	(0.33)	(0.24)	(0.17)	(0.17)	(0.16)	(0.20)	(0.17)	(0.15)	(0.17)	(0.17)
Age	0.01*	-0.01	0.02	0.00	0.00	0.01*	0.01	-0.01	-0.01	0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)
Low education	0.29	0.03	-0.53	-0.31	0.71	0.69	-0.29	-0.68	0.15	0.21	-0.00	0.28
	(0.78)	(0.70)	(1.10)	(0.91)	(1.17)	(1.20)	(0.24)	(0.85)	(0.26)	(0.27)	(0.33)	(0.30)
High education	0.14	0.20	-0.26	-0.50	0.08	-0.23	-0.24	0.04	-0.21	0.18	0.15	0.31
	(0.18)	(0.34)	(0.36)	(0.28)	(0.19)	(0.17)	(0.18)	(0.21)	(0.20)	(0.16)	(0.19)	(0.18)
Working class	0.06	0.24	-0.08	-0.48	0.09	0.08	-0.78**	0.24	0.15	-0.75***	-0.65**	0.20
	(0.23)	(0.41)	(0.55)	(0.26)	(0.25)	(0.25)	(0.24)	(0.24)	(0.20)	(0.21)	(0.24)	(0.23)
Lower mid.cl.	-0.15	-0.30	-0.10	-0.67	-0.21	0.40	0.13	0.32	0.51	-0.05	-0.53*	-0.06
	(0.25)	(0.49)	(0.59)	(0.34)	(0.21)	(0.24)	(0.35)	(0.28)	(0.26)	(0.20)	(0.25)	(0.29)
Upper mid.cl.	0.12	0.26	0.80	-0.49	-0.36	0.13	0.28	0.87*	0.25	0.03	-0.34	-0.01
	(0.23)	(0.43)	(0.46)	(0.94)	(0.28)	(0.26)	(0.20)	(0.42)	(0.32)	(0.23)	(0.26)	(0.28)
Upper class	-1.41	0.51	2.01*	-1.32	-0.94	1.27	-0.91	-1.48	-0.81	0.47	-0.63	0.84
	(0.72)	(0.78)	(0.77)	(1.55)	(0.55)	(0.78)	(0.56)	(1.01)	(1.02)	(0.82)	(0.56)	(0.67)
Church att.	0.02	-0.09	0.04	-0.26*	0.08	0.09	-0.04	0.14	0.14	0.08	0.17	0.17
	(0.07)	(0.13)	(0.13)	(0.12)	(0.10)	(0.08)	(0.11)	(0.16)	(0.08)	(0.09)	(0.10)	(0.10)
Church att. (sq)	-0.00	0.14	0.00	-0.16*	0.02	0.03	0.04	0.08	0.05	0.01	0.05	0.05
	(0.05)	(0.10)	(0.10)	(0.07)	(0.06)	(0.05)	(0.07)	(0.09)	(0.05)	(0.05)	(0.06)	(0.06)
Stn. of living	0.04	0.19	-0.09	0.31*	0.23**	0.09	-0.12	0.43***	0.13	0.14	-0.00	0.03
	(0.09)	(0.16)	(0.18)	(0.16)	(0.08)	(0.08)	(0.11)	(0.10)	(0.09)	(0.07)	(0.09)	(0.08)
Stn. of living (sq)	-0.02	-0.00	-0.20*	0.10	0.06	-0.06	0.06	0.00	-0.04	0.02	0.09*	-0.07*
	(0.05)	(0.08)	(0.09)	(0.07)	(0.04)	(0.04)	(0.05)	(0.05)	(0.04)	(0.04)	(0.05)	(0.04)
Religiosity	0.07	0.09	0.02	0.10*	-0.02	-0.03	-0.06	-0.02	0.05	0.01	-0.03	0.01
	(0.03)	(0.06)	(0.07)	(0.05)	(0.04)	(0.04)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)	(0.04)
Religiosity (sq)	-0.01	-0.00	0.00	0.01	-0.01	-0.03**	-0.03*	0.01	0.01	-0.01	-0.02	0.00
	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Issue 1	-0.62	-0.60	0.84	1.04	-0.03	-0.08	-0.47	-0.14	0.39	0.38	0.01	0.65
	(0.43)	(0.92)	(0.95)	(0.64)	(0.58)	(0.47)	(0.40)	(0.62)	(0.56)	(0.52)	(0.42)	(0.42)
Issue 2	-0.16	1.22	-0.74	-1.03	0.23	0.35	0.47	-0.11	0.41	0.00	0.25	0.27
	(0.37)	(0.90)	(0.88)	(0.61)	(0.36)	(0.42)	(0.39)	(0.55)	(0.45)	(0.41)	(0.37)	(0.39)
Issue 3	0.16	1.28*	0.31	0.34	-0.71*	0.49	-0.10	-0.29	0.31	0.46	-0.74*	-0.69
	(0.31)	(0.64)	(0.64)	(0.52)	(0.34)	(0.34)	(0.38)	(0.52)	(0.40)	(0.29)	(0.34)	(0.36)
Issue 4	0.06	-0.91	0.45	0.05	0.30	0.15	0.09	0.42	-0.57	0.03	0.17	-0.39
	(0.37)	(0.74)	(0.77)	(0.53)	(0.35)	(0.44)	(0.44)	(0.43)	(0.46)	(0.33)	(0.37)	(0.36)
Issue 5	0.43	0.22	0.37	0.47	0.44	0.39	0.39	0.01	0.46	0.13	-0.01	-0.17
	(0.33)	(0.70)	(0.75)	(0.56)	(0.38)	(0.39)	(0.44)	(0.45)	(0.39)	(0.34)	(0.41)	(0.34)
Issue 6	0.15	-1.83*	-0.33	0.21	-0.26	-0.32	-0.28	-0.46	0.15	0.54	-0.09	0.15
	(0.36)	(0.73)	(0.71)	(0.60)	(0.42)	(0.44)	(0.36)	(0.51)	(0.45)	(0.31)	(0.36)	(0.38)
Issue 7	-0.02	0.52	0.54	-1.77	-0.14	0.18	0.60	0.65	0.78	-0.10	0.06	-0.08
	(0.40)	(0.82)	(0.95)	(1.39)	(0.65)	(0.48)	(0.38)	(0.74)	(0.55)	(0.45)	(0.38)	(0.47)
Issue 8	-0.39	0.04	-0.47	-1.02*	-0.21	-0.27	0.10	0.02	0.10	0.53	0.57	0.83*
	(0.35)	(0.75)	(0.67)	(0.48)	(0.34)	(0.37)	(0.38)	(0.40)	(0.44)	(0.34)	(0.37)	(0.39)
Issue 9	0.08	-0.48	0.79	-2.22	0.46	-0.67	-0.03	-0.22	0.23	-0.30	-0.43	-0.76
	(0.33)	(0.82)	(0.92)	(1.36)	(0.67)	(0.41)	(0.41)	(0.56)	(0.53)	(0.48)	(0.43)	(0.43)
Issue 10	-0.10	-0.20	0.13	1.05*	0.59	0.76	0.07	0.09	-0.17	-0.02	0.23	-0.05
	(0.35)	(0.68)	(0.69)	(0.51)	(0.36)	(0.41)	(0.38)	(0.51)	(0.43)	(0.31)	(0.33)	(0.44)
Issue 11	0.46	-1.18	1.44	-0.31	-0.30	-0.12	0.14	0.26	0.13	0.28	-0.04	0.72
	(0.40)	(0.81)	(0.77)	(0.77)	(0.49)	(0.41)	(0.36)	(0.51)	(0.50)	(0.32)	(0.35)	(0.59)
Issue 1 (sq)	0.09	0.13	-0.17	-0.16	0.01	0.01	0.05	0.03	-0.04	-0.05	0.02	-0.08
	(0.06)	(0.13)	(0.14)	(0.09)	(0.08)	(0.07)	(0.06)	(0.09)	(0.08)	(0.07)	(0.06)	(0.06)
Issue 2 (sq)	0.04	-0.18	0.13	0.18	-0.03	-0.05	-0.05	0.03	-0.04	0.02	-0.03	-0.03
	(0.06)	(0.14)	(0.14)	(0.09)	(0.06)	(0.07)	(0.06)	(0.08)	(0.07)	(0.06)	(0.06)	(0.06)
Issue 3 (sq)	-0.01	-0.15	-0.11	-0.07	0.11*	-0.08	0.05	0.03	-0.03	-0.06	0.13*	0.15*
	(0.05)	(0.11)	(0.10)	(0.08)	(0.06)	(0.06)	(0.07)	(0.08)	(0.07)	(0.05)	(0.06)	(0.06)
Issue 4 (sq)	-0.01	0.22	-0.02	-0.05	-0.04	0.00	0.03	-0.06	0.10	0.01	-0.01	0.07

	(0.06)	(0.12)	(0.13)	(0.10)	(0.06)	(0.07)	(0.07)	(0.08)	(0.08)	(0.05)	(0.06)	(0.06)
Issue 5 (sq)	-0.08	-0.05	-0.02	-0.14	-0.06	-0.05	-0.05	-0.01	-0.07	-0.04	0.01	0.03
	(0.06)	(0.13)	(0.14)	(0.11)	(0.07)	(0.07)	(0.09)	(0.09)	(0.07)	(0.06)	(0.08)	(0.06)
Issue 6 (sq)	-0.02	0.32*	0.06	-0.03	0.04	0.07	0.03	0.05	-0.01	-0.10	0.02	-0.02
	(0.06)	(0.12)	(0.11)	(0.09)	(0.06)	(0.07)	(0.06)	(0.08)	(0.08)	(0.05)	(0.06)	(0.06)
Issue 7 (sq)	0.01	-0.07	-0.06	0.26	0.00	-0.02	-0.07	-0.07	-0.10	0.05	0.01	0.03
	(0.06)	(0.12)	(0.14)	(0.18)	(0.09)	(0.07)	(0.06)	(0.10)	(0.08)	(0.06)	(0.06)	(0.07)
Issue 8 (sq)	0.09	-0.06	0.15	0.25**	0.08	0.07	0.01	0.01	-0.01	-0.08	-0.08	-0.12
	(0.06)	(0.13)	(0.11)	(0.09)	(0.06)	(0.06)	(0.06)	(0.07)	(0.08)	(0.06)	(0.07)	(0.07)
Issue 9 (sq)	-0.00	0.07	-0.05	0.24	-0.07	0.12	0.02	0.03	-0.03	0.06	0.07	0.13*
	(0.06)	(0.12)	(0.14)	(0.17)	(0.09)	(0.07)	(0.06)	(0.08)	(0.08)	(0.07)	(0.07)	(0.06)
Issue 10 (sq)	0.01	0.01	0.03	-0.16	-0.08	-0.13	0.03	-0.01	0.04	0.01	-0.03	-0.00
	(0.06)	(0.11)	(0.11)	(0.08)	(0.06)	(0.07)	(0.07)	(0.08)	(0.07)	(0.05)	(0.06)	(0.07)
Issue 11 (sq)	-0.03	0.19	-0.21	0.06	0.06	0.05	0.02	-0.01	-0.02	-0.04	0.03	-0.10
	(0.06)	(0.12)	(0.12)	(0.11)	(0.07)	(0.07)	(0.06)	(0.08)	(0.08)	(0.05)	(0.06)	(0.08)
Party 1	-1.28***	0.27	0.43	-4.64***	-3.06***	1.26***	-1.54***	2.23***	4.36**	-2.04***	-3.05***	2.54***
	(0.30)	(0.58)	(0.70)	(0.42)	(0.36)	(0.32)	(0.35)	(0.61)	(0.41)	(0.37)	(0.67)	(0.30)
Party 2	0.80**	-0.10	0.38	0.19	0.69	-0.74*	0.99	-0.82	-2.66***	1.14**	-3.30***	-1.49***
	(0.30)	(0.80)	(0.69)	(0.88)	(0.58)	(0.35)	(0.88)	(0.46)	(0.34)	(0.36)	(0.78)	(0.30)
Party 3	3.01***	-1.64*	-2.61***	-0.37	-4.83***	-1.20*	2.73***	1.96***	-3.19***	3.00***	-2.55***	-4.43***
	(0.47)	(0.66)	(0.63)	(1.07)	(0.42)	(0.54)	(0.47)	(0.57)	(0.62)	(0.32)	(0.38)	(0.46)
Party 4	1.29	1.14	-1.54	2.21***	3.82***	-4.10***	-3.07***	-0.60		-4.78***	-0.90*	-2.78***
	(0.75)	(0.75)	(1.93)	(0.64)	(0.33)	(0.69)	(0.42)	(0.86)		(0.57)	(0.42)	(0.58)
Party 5	-1.49**	-1.97*	-1.01	2.69***	1.28	0.99*	1.24*	0.73	0.82	-1.17**	1.21	2.35***
	(0.45)	(0.87)	(0.70)	(0.47)	(0.76)	(0.48)	(0.55)	(0.99)	(0.93)	(0.42)	(0.71)	(0.68)
Party 6	1.10	0.06		4.43***			2.62***	-1.59	0.63	1.22	2.92***	-0.26
	(0.83)	(0.77)		(0.72)			(0.38)	(1.10)	(0.90)	(0.71)	(0.34)	(0.87)
Party 7	0.67	0.40		2.53			2.93		-3.31**	0.22	3.76**	
	(3.76)	(1.86)		(2.19)			(1.83)		(1.13)	(0.75)	(1.25)	
Party 8	-2.03	-0.55		3.13						0.34		
	(1.34)	(1.68)		(2.18)						(0.55)		
Party 9												2.15*
												(0.88)
Party 10									-2.92			
									(1.89)			
Party 11												
Party 12												
Party 13									2.61			
									(1.58)			
Party 14									-12.93			
									(8.36)			
Party 15									5.59			
									(8.23)			
R^2	0.37	0.30	0.39	0.58	0.55	0.30	0.46	0.25	0.55	0.50	0.54	0.48
Adj. R^2	0.33	0.17	0.25	0.53	0.52	0.25	0.42	0.18	0.52	0.47	0.50	0.45
Num. obs.	681	279	225	430	672	680	725	497	632	689	534	718

*** = p < 0.001; ** = p < 0.01; * = p < 0.05. Standard errors in parentheses.

Table A1b: Variable relative importance – standard regression output (HU – UK)

	HU	IE	IT	LT	NL	PL	PT	RO	SE	SI	SK	UK
Intercept	6.69**	0.21	3.20*	4.74*	1.38	4.80**	0.29	0.71	1.95*	4.00	4.95*	-0.88
	(2.45)	(1.34)	(1.54)	(2.21)	(1.24)	(1.77)	(2.02)	(3.81)	(0.86)	(2.05)	(1.99)	(1.22)
Female	0.01	0.57**	0.02	0.38	-0.06	-0.39	0.24	0.34	-0.15	-0.04	-0.06	-0.15
	(0.16)	(0.20)	(0.19)	(0.25)	(0.15)	(0.22)	(0.18)	(0.32)	(0.14)	(0.20)	(0.21)	(0.17)
Age	-0.00	0.02**	-0.01	0.00	-0.00	-0.00	-0.01*	-0.01	0.01*	-0.00	-0.00	-0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)
Low education	-0.25	0.05	-0.05	0.51	0.79	0.33	0.29	0.28	0.18	-0.22	0.47	0.52
	(0.41)	(0.38)	(0.42)	(0.74)	(0.46)	(0.39)	(0.23)	(0.63)	(0.36)	(0.39)	(1.67)	(0.65)
High edu.	-0.14	-0.43*	0.03	-0.15	0.01	0.30	0.41	-0.54	-0.04	-0.58*	-0.15	-0.07
	(0.19)	(0.20)	(0.22)	(0.25)	(0.15)	(0.25)	(0.23)	(0.35)	(0.15)	(0.24)	(0.26)	(0.18)
Working class	-0.26	-0.12	-0.49	-0.01	-0.09	-0.10	-0.30	-0.44	-0.24	-0.23	-0.01	-0.02
	(0.21)	(0.23)	(0.31)	(0.32)	(0.22)	(0.29)	(0.25)	(0.49)	(0.19)	(0.24)	(0.31)	(0.20)
Lower mid.cl.	-0.02	-0.23	-0.37	-0.29	-0.10	0.00	-0.01	0.14	-0.12	-0.14	-0.72**	-0.03
	(0.22)	(0.30)	(0.25)	(0.36)	(0.25)	(0.30)	(0.24)	(0.40)	(0.25)	(0.28)	(0.28)	(0.23)
Upper mid.cl.	-0.57	0.09	-0.03	-0.24	0.16	-0.31	-0.43	0.17	-0.02	0.53	-0.13	-0.40
	(0.62)	(0.38)	(0.32)	(0.45)	(0.19)	(0.39)	(0.38)	(0.65)	(0.20)	(0.33)	(0.36)	(0.50)
Upper class	1.14	-1.39	-0.11	0.84	0.60	0.13	0.45	0.71	-1.15	-0.55	0.78	-8.10**
	(2.10)	(0.91)	(1.19)	(0.81)	(0.39)	(0.80)	(1.45)	(1.20)	(0.80)	(0.88)	(1.09)	(2.19)
Church att.	0.13	0.07	-0.09	0.04	-0.02	0.12	-0.01	0.00	-0.14	0.24*	0.14	-0.06
	(0.08)	(0.08)	(0.07)	(0.15)	(0.08)	(0.15)	(0.08)	(0.16)	(0.10)	(0.09)	(0.09)	(0.07)
Church att. (sq)	-0.01	0.00	0.09	-0.06	0.05	0.03	0.14**	-0.08	-0.03	-0.13*	0.01	-0.07
	(0.05)	(0.06)	(0.06)	(0.10)	(0.05)	(0.09)	(0.05)	(0.11)	(0.05)	(0.06)	(0.07)	(0.05)
Stn. of living	-0.11	0.06	-0.10	-0.12	0.06	0.00	-0.07	0.33*	0.39***	-0.05	0.13	0.10
	(0.12)	(0.11)	(0.11)	(0.11)	(0.09)	(0.11)	(0.10)	(0.14)	(0.08)	(0.09)	(0.12)	(0.07)
Stn. of living-sq	0.04	0.09	-0.02	-0.03	0.03	-0.07	0.07	0.12	-0.09*	-0.02	0.16*	0.01
	(0.05)	(0.05)	(0.06)	(0.06)	(0.04)	(0.06)	(0.05)	(0.07)	(0.04)	(0.05)	(0.06)	(0.04)
Religiosity	0.04	0.02	0.12**	0.14*	0.04	0.16*	0.12**	0.12	0.06	0.06	0.01	0.07
	(0.03)	(0.05)	(0.04)	(0.06)	(0.03)	(0.07)	(0.04)	(0.08)	(0.04)	(0.04)	(0.05)	(0.04)
Religiosity (sq)	-0.00	0.01	-0.03**	-0.01	-0.01	0.00	-0.01	-0.00	0.00	-0.01	0.00	0.01
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
Issue 1	-0.73	0.39	-0.88	0.64	0.16	0.98	0.58	-0.68	-0.20	-0.72	-0.27	0.43
	(0.76)	(0.45)	(0.61)	(0.90)	(0.47)	(0.62)	(0.58)	(0.78)	(0.31)	(0.63)	(0.68)	(0.44)
Issue 2	0.37	0.02	-0.40	-0.41	-0.49	-0.27	-0.05	1.79*	-0.04	-0.21	-0.15	-0.20
	(0.39)	(0.46)	(0.45)	(0.70)	(0.49)	(0.58)	(0.54)	(0.75)	(0.34)	(0.56)	(0.45)	(0.38)
Issue 3	-0.03	0.48	-0.06	-0.14	0.51	-1.27*	0.54	0.15	0.18	-0.51	-0.42	-0.10
	(0.39)	(0.38)	(0.43)	(0.60)	(0.35)	(0.55)	(0.42)	(0.85)	(0.30)	(0.40)	(0.46)	(0.31)
Issue 4	0.41	0.53	0.15	-0.54	-0.13	-0.14	0.53	0.55	0.54*	0.29	-0.07	0.07
	(0.38)	(0.43)	(0.46)	(0.58)	(0.39)	(0.48)	(0.50)	(0.76)	(0.28)	(0.44)	(0.43)	(0.34)
Issue 5	-0.35	0.03	0.37	0.89	0.40	-0.20	-0.81	0.94	0.17	1.01*	-0.20	0.88*
	(0.38)	(0.40)	(0.46)	(0.63)	(0.36)	(0.44)	(0.44)	(0.77)	(0.33)	(0.44)	(0.45)	(0.37)
Issue 6	-0.43	-0.44	0.22	-0.42	-0.61	1.10	-0.83	1.13	0.40	0.48	0.32	0.59
	(0.42)	(0.40)	(0.45)	(0.65)	(0.41)	(0.56)	(0.49)	(0.84)	(0.27)	(0.53)	(0.43)	(0.32)
Issue 7	0.86	0.34	0.08	0.22	-0.09	-0.43	0.13	0.80	0.19	-0.44	-0.63	0.73
	(0.80)	(0.54)	(0.63)	(0.90)	(0.47)	(0.64)	(0.74)	(1.28)	(0.31)	(0.81)	(0.85)	(0.47)
Issue 8	0.01	0.00	-0.29	0.73	-0.52	-0.26	0.63	-0.15	0.31	0.18	-0.60	0.35
	(0.33)	(0.40)	(0.43)	(0.57)	(0.43)	(0.48)	(0.45)	(0.68)	(0.29)	(0.53)	(0.41)	(0.32)
Issue 9	-0.94	0.66	-0.16	0.05	0.13	-0.17	0.25	-0.72	0.41	0.11	0.80	0.54
	(0.91)	(0.53)	(0.51)	(0.63)	(0.46)	(0.61)	(0.73)	(1.57)	(0.29)	(0.64)	(0.60)	(0.46)
Issue 10	-0.59	0.32	0.29	0.10	0.52	-0.06	0.62	0.02	-0.33	0.34	0.46	-0.24
	(0.34)	(0.39)	(0.47)	(0.61)	(0.36)	(0.51)	(0.56)	(0.91)	(0.30)	(0.41)	(0.44)	(0.32)
Issue 11	0.39	0.23	0.92	-1.10	1.02*	0.08	0.96	-1.82*	0.20	0.19	0.10	-0.16
	(0.49)	(0.43)	(0.57)	(0.79)	(0.43)	(0.57)	(0.62)	(0.80)	(0.26)	(0.53)	(0.59)	(0.41)
Issue 1 (sq)	0.10	-0.05	0.14	-0.06	-0.00	-0.13	-0.07	0.10	0.05	0.10	0.04	-0.03
	(0.10)	(0.07)	(0.09)	(0.12)	(0.07)	(0.09)	(0.09)	(0.12)	(0.05)	(0.09)	(0.09)	(0.07)
Issue 2 (sq)	-0.03	0.02	0.10	0.08	0.11	0.04	0.01	-0.23*	0.03	0.04	0.05	0.05
	(0.06)	(0.07)	(0.07)	(0.11)	(0.08)	(0.09)	(0.08)	(0.12)	(0.05)	(0.09)	(0.07)	(0.06)
Issue 3 (sq)	0.01	-0.07	0.03	0.01	-0.08	0.21*	-0.09	0.00	-0.05	0.11	0.06	0.04
	(0.06)	(0.06)	(0.07)	(0.09)	(0.07)	(0.08)	(0.07)	(0.13)	(0.05)	(0.06)	(0.07)	(0.05)
Issue 4 (sq)	-0.10	-0.08	-0.01	0.10	0.04	0.04	-0.09	-0.09	-0.06	-0.03	0.02	-0.01
	(0.08)	(0.07)	(0.08)	(0.11)	(0.07)	(0.09)	(0.08)	(0.14)	(0.05)	(0.08)	(0.08)	(0.06)
Issue 5 (sq)	0.06	-0.02	-0.05	-0.17	-0.06	0.06	0.15	-0.13	-0.01	-0.14	0.03	-0.13
	(0.08)	(0.07)	(0.09)	(0.12)	(0.07)	(0.08)	(0.08)	(0.14)	(0.06)	(0.08)	(0.09)	(0.07)
Issue 6 (sq)	0.07	0.08	-0.06	0.06	0.14	-0.16	0.09	-0.16	-0.10*	-0.07	-0.06	-0.11
	(0.06)	(0.07)	(0.08)	(0.10)	(0.07)	(0.09)	(0.08)	(0.13)	(0.05)	(0.08)	(0.07)	(0.05)
Issue 7 (sq)	-0.11	-0.05	0.00	-0.00	0.04	0.07	-0.04	-0.08	-0.03	0.07	0.11	-0.06

	(0.10)	(0.08)	(0.09)	(0.12)	(0.07)	(0.09)	(0.10)	(0.17)	(0.05)	(0.11)	(0.11)	(0.07)
Issue 8 (sq)	-0.01	0.04	0.08	-0.10	0.14	0.04	-0.10	0.01	-0.02	-0.01	0.12	-0.03
	(0.06)	(0.07)	(0.08)	(0.10)	(0.08)	(0.08)	(0.08)	(0.11)	(0.05)	(0.12)	(0.07)	(0.05)
Issue 9 (sq)	0.14	-0.08	0.03	-0.01	-0.01	0.04	-0.04	0.11	-0.05	0.01	-0.11	-0.08
	(0.12)	(0.08)	(0.08)	(0.10)	(0.07)	(0.09)	(0.10)	(0.21)	(0.05)	(0.09)	(0.09)	(0.07)
Issue 10 (sq)	0.09	-0.03	-0.04	0.01	-0.10	0.01	-0.09	-0.01	0.06	-0.05	-0.08	0.05
	(0.05)	(0.07)	(0.07)	(0.10)	(0.07)	(0.08)	(0.09)	(0.13)	(0.06)	(0.08)	(0.07)	(0.06)
Issue 11 (sq)	-0.04	-0.03	-0.11	0.14	-0.12	-0.03	-0.13	0.28*	-0.02	-0.03	-0.01	0.04
	(0.07)	(0.07)	(0.08)	(0.12)	(0.07)	(0.09)	(0.09)	(0.12)	(0.04)	(0.08)	(0.09)	(0.06)
Party 1	3.07***	1.06**	3.57***	4.36***	-1.91***		-3.28***	2.68***	-4.57***	-0.09	-1.77*	-0.21
	(0.26)	(0.37)	(0.36)	(0.52)	(0.39)		(0.57)	(0.63)	(0.45)	(0.78)	(0.89)	(0.35)
Party 2	4.04***	0.80*	2.98***	-2.91***	1.51***	0.96	4.29***	-2.09***	-2.92**	-3.12***	-2.33***	2.53***
	(0.46)	(0.39)	(0.50)	(0.55)	(0.37)	(0.80)	(0.61)	(0.62)	(0.28)	(0.76)	(0.43)	(0.34)
Party 3		-1.10	-3.11***	2.86	1.99***		-3.47***	3.01***	1.32	0.89	2.93***	-0.56
		(1.04)	(0.39)	(1.88)	(0.49)		(0.60)	(0.81)	(0.71)	(1.07)	(0.52)	(0.55)
Party 4	-3.32*	-1.11*	-1.62**	-0.12	-0.97*		-0.67	3.08	1.69***	1.07	2.09**	0.77
	(1.29)	(0.52)	(0.59)	(1.12)	(0.42)		(0.40)	(2.22)	(0.40)	(0.91)	(0.72)	(1.35)
Party 5		-0.33	0.70	1.76	-2.44***	1.82	3.32***	-4.71	3.11***	2.99***	3.08***	-0.31
		(0.83)	(0.80)	(1.18)	(0.48)	(2.20)	(0.40)	(2.94)	(0.31)	(0.42)	(0.65)	(1.50)
Party 6	1.38	9.19	-4.07***		-0.50	-0.55		7.11*	1.99**	-2.99***	0.02	-0.95
	(1.23)	(9.60)	(0.77)		(0.82)	(1.78)		(3.07)	(0.73)	(0.38)	(0.89)	(0.90)
Party 7	-5.18***		-4.27***	0.31	0.66	-4.08***		0.50	-1.38**	-3.22***	-2.94*	-2.05*
	(0.41)		(0.66)	(1.54)	(0.70)	(0.56)		(0.98)	(0.45)	(0.65)	(1.41)	(0.99)
Party 8	0.13		1.11	-0.68	3.70***				2.94*	2.30**	1.89	-0.56
	(1.32)		(1.01)	(1.17)	(0.79)				(1.15)	(0.78)	(1.89)	(0.84)
Party 9				-0.23	-2.32***	1.56***			0.66	1.02		
				(1.79)	(0.45)	(0.42)			(0.82)	(1.58)		
Party 10				-1.62	2.08***	3.21***						
				(1.40)	(0.51)	(0.52)						
Party 11					4.52							
					(2.66)							
Party 12												
Party 13												
Party 14												
Party 15												
R^2	0.57	0.18	0.70	0.39	0.47	0.43	0.47	0.28	0.67	0.47	0.32	0.32
Adj. R^2	0.54	0.12	0.67	0.31	0.44	0.38	0.43	0.20	0.64	0.44	0.27	0.27
Num. obs.	621	675	488	403	776	455	585	422	731	703	570	724

*** = p < 0.001; ** = p < 0.01; * = p < 0.05. Standard errors in parentheses.

B. Perceptual bias supplementary tables – full model output

Table A2: Model for perceptual bias (full output)

	Baseline Model		Full Model	
	Coef	S.E.	Coef	S.E.
Intercept	0.654 ***	(0.059)	0.766 ***	(0.069)
Level 1: Individual x Party				
Out-Group Party	-0.715 ***	(0.163)	-1.288 ***	(0.133)
Partisan (Own Party)			-1.029 ***	(0.033)
Partisan (Other Party)			0.370 ***	(0.026)
Level 2: Individual Factors				
Low Education			0.066	(0.041)
High Education			-0.027	(0.022)
L-R Extremity			-0.036 ***	(0.007)
Political Interest			0.054 ***	(0.013)
Political Knowledge			0.018 **	(0.006)
Level 3: Country				
Number of Parties			-0.002	(0.023)
Party Polarization			-0.313 **	(0.113)
ω			-0.180 *	(0.084)
ω*Out-Group Party*			0.809 ***	(0.167)
N Observations	82272		82272	
N Respondents	12936		12936	
N Countries	24		24	
Variance Random Effects				
Intercept (Respondents)	0.546		0.560	
Intercept (Countries)	0.079		0.066	
Slope Out-Group Party (Country level)	0.630		0.250	
Residual	4.583		4.373	
AIC	366138		362733	
BIC	366203		362901	
Log-Likelihood	-183062		-181349	

*** = p < 0.001; ** = p < 0.01; * = p < 0.05

C. Descriptive Statistics

Table A3: Descriptive statistics (model for perceptual bias)

Variable	N	Mean	SD	Median	Min	Max
Perception bias	82272	0.333	2.330	0.310	-9.930	9.930
Out-Group Party dummy	82272	0.488	0.500	0.000	0.000	1.000
Supporter (Own Party)	82272	0.121	0.326	0.000	0.000	1.000
Supporter (Other Party)	82272	0.679	0.467	1.000	0.000	1.000
L-R Extremity	82272	0.990	1.501	1.000	-2.000	4.000
Low education	82272	0.073	0.261	0.000	0.000	1.000
High education	82272	0.422	0.494	0.000	0.000	1.000
Political interest	82272	0.148	0.811	0.258	-1.982	1.879
Political knowledge	82272	0.252	1.687	0.410	-4.822	4.493
Number of Parties	82272	0.382	1.722	0.000	-3.000	3.000
Party Polarization	82272	0.001	0.346	0.053	-0.637	0.716
ω	82272	0.496	0.591	0.551	-0.780	1.490

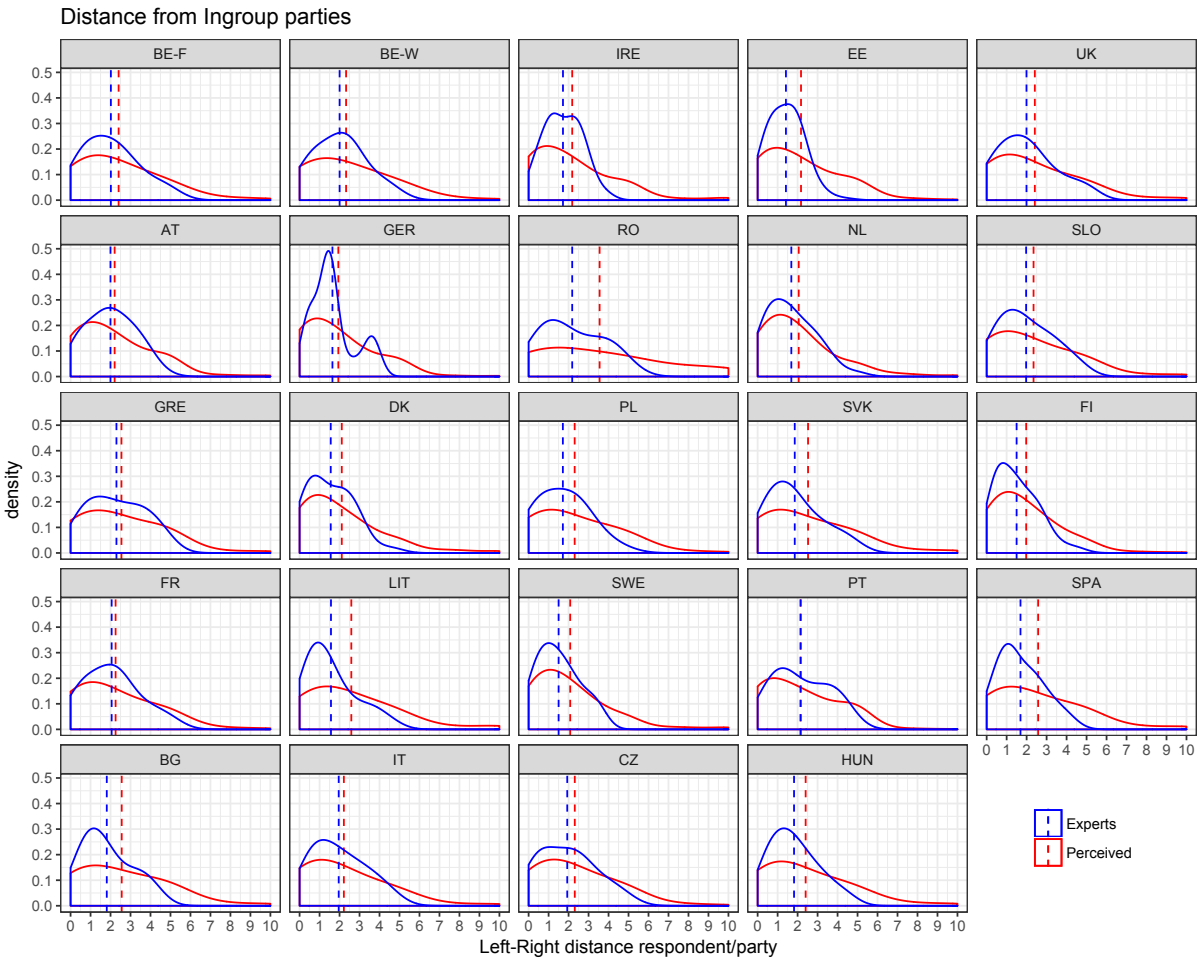

Figure A1: Average distance from respondents and in-group parties, using experts' and individually perceived party positions.

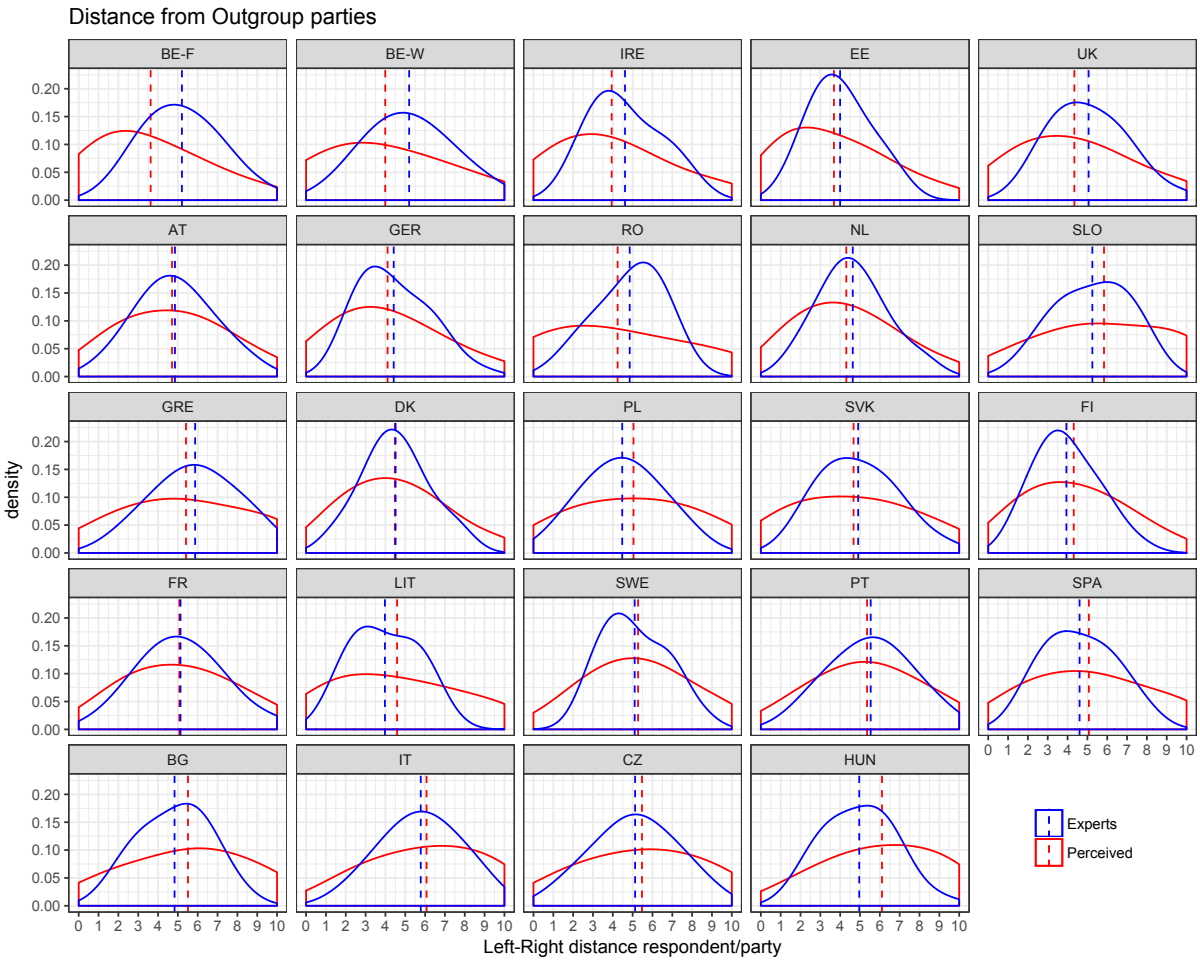

Figure A2: Average distance from respondents and out-group parties, using experts' and individually perceived party positions.

D. Question wording of relevant variables

EES data

(the question wordings reported here are taken from the UK questionnaire)

Left-right self-placement and party placements:

- *In political matters people talk of "the left" and "the right". What is your position? Please indicate your views using any number on a scale from 0 to 10, where 0 means "left" and 10 means "right". Which number best describes your position?*

- *And about where would you place the following parties on this scale? How about the (Party X)? Which number from 0 to 10, where 0 means "left" and 10 means "right" best describes (Party X)?*

Party attachment:

Categorical variable obtained combining the three following questions:

- *Do you consider yourself to be close to any particular party? If so, which party do you feel close to?* [Open ended]

- *Do you feel yourself to be very close to this party, fairly close, or merely a sympathiser?*

- *Do you feel yourself a little closer to one of the political parties than others?* [asked only if the answer to the previous question is "No" or DK/Refuse. Options: Yes/No]

- *Which party is that?* [Open ended]

Issues:

- *Now I will read out some statements to you. For each of the following statements, please tell me to what degree you agree or disagree with each statement. Do you 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree' or 'strongly disagree'?*

- *Immigrants should be required to adapt to the customs of [country].*
- *Private enterprise is the best way to solve Britain's economic problems*

- Same-sex marriages should be prohibited by law.

- Major public services and industries ought to be in state ownership..

- Women should be free to decide on matters of abortion

- Politics should abstain from intervening in the economy

- People who break the law should be given much harsher sentences than they are these days.

- Income and wealth should be redistributed towards ordinary people

- Schools must teach children to obey authority.

- A woman should be prepared to cut down on her paid work for the sake of her family.

- Immigration to [country] should be decreased significantly.

Social structural indicators:

Social class:

- If you were asked to choose one of these five names for your social class, which would you say you belong to - the working class, the lower middle class, the middle class, the upper middle class or the upper class?

Standard:

- Taking everything into account, at about what level is your family's standard of living? If you think of a scale from 1 to 7, where 1 means a poor family, 7 a rich family, and the other numbers are for the positions in between, about where would you place your family?

Religiosity:

- Apart from special occasions such as weddings and funerals, how often do you attend religious services nowadays? [Options: Several times a week; Once a week; At least once a month; A few times a year; Once a year or less; Never]

- Regardless of whether you belong to a particular religion, how religious would you say you are? On a scale from 0 to 10, where 0 stands for "not at all religious" and 10 for "very religious", where would you place yourself?

Other variables:

Political interest:

- To what extent would you say you are interested in politics? Very, somewhat, a little, or not at all?

Political knowledge is an additive index counting the number of correct answers to the following factual knowledge questions:

- Now some questions about the European Union and Britain. For these questions, I am going to read out some statements. For each one, could you please tell me whether you believe they are true or false? If you don't know, just say so and we will skip to the next one.

- Switzerland is a member of the EU

- The European Union has 25 member states

- Every country in the EU elects the same number of representatives to the European Parliament.

- Every six months, a different Member State becomes president of the Council of the European Union

- The British Secretary of State for Children, schools and families is Ed Balls.

- Individuals must be 25 or older to stand as candidates in British general elections.

- There are 969 members of the British House of Commons

CHES data

(the question wording was retrieved from the following website: http://www.chesdata.eu/2010/2010_CHES_questionnaire.pdf)

- We now turn to a few questions on the ideological positions of political parties in [country] in 2010. Please tick the box that best describes each party's overall ideology on a scale ranging from 0 (extreme left) to 10 (extreme right).

E. Alternative Operationalizations

E1. Relative importance of the left-right components using Grömping method

In the paper we employ Silber et al.'s (1995) technique to extract the relative importance of two different sets of predictors of left-right self placements: issue positions, socio-structural characteristics, and partisanship. Given our interest in the importance of political group correlates (captured by partisanship) relative to the importance of substantive correlates (captured by issues and socio-structural characteristics) of left-right, the method devised by Silber et al. is ideal: it allows to directly compare two groups of factors to one another, and quantify the relative importance of one versus the other. However, other methods have been devised to quantify the relative importance of different sets of predictors in a regression model. To our knowledge, the most recent is the one presented in Grömping (2007) and implemented in the R package "*relaimpo*" (see Grömping 2006). The algorithm in the "*relaimpo*" package runs a number of regressions adding individual predictors with different orders, and returns the average contribution to the model's fit, captured by the model R-Square, associated to each predictor. The predictors are then grouped together following the typology presented above (and discussed more extensively in the paper).

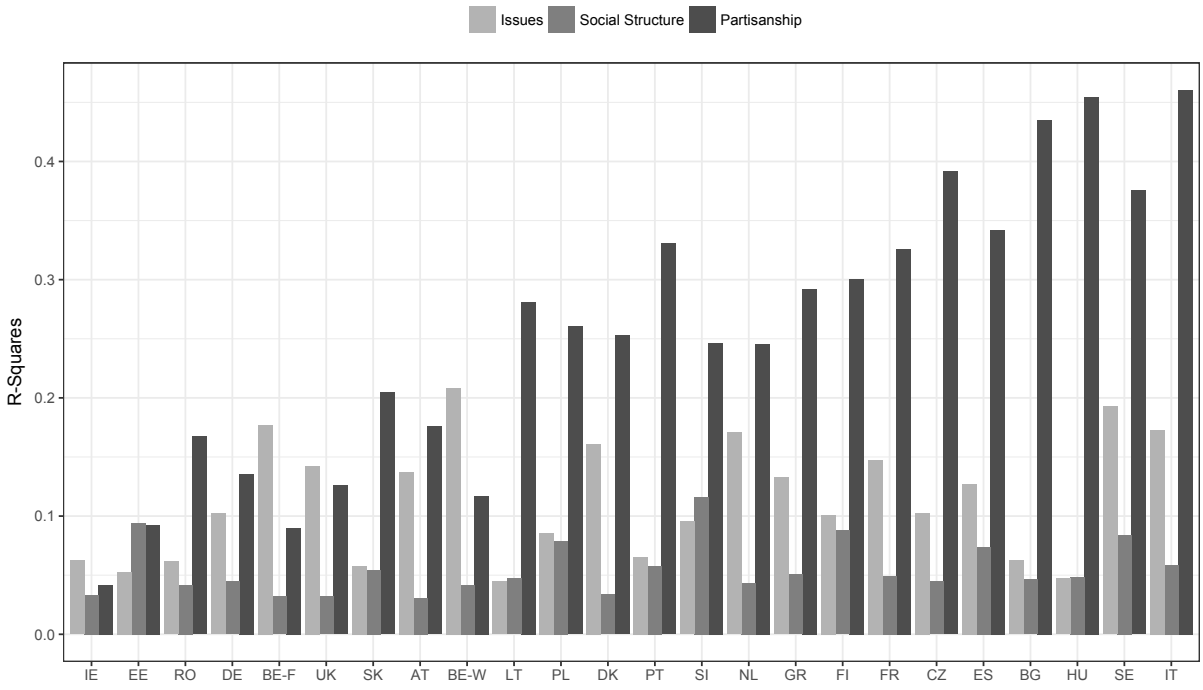

Figure A3: Relative importance of different sets of predictors of left-right self placement using Grömping method

Figure E2 shows the relative contribution of the three components in the countries of our sample. Countries are sorted by the average importance among all three components. Consistently with the findings reported in the paper in Figure 2, as well as with older (Inglehart and Klingemann 1976) and more recent (Medina 2015) literature, the partisanship component is by far the most important in most of the countries.

If we look at the ratio of the partisans over the other two components, as in Figure E3 and Figure E4 the resulting picture is very similar to the one obtained with Silber et al. method. The correlation of the two variables is 0.927, indicating that the results produced with the two methods are nearly identical.

An important insight that comes from comparing Grömping method with Silber et al. method is that the importance ratio value ω does not capture just the salience of the ideological cleavage in a country, but really it measures the extent to which partisanship correlates with ideology more than other substantive indicators. For instance, in Sweden all three types of indicators are rather strongly correlated with left-right, indicating that the left-right cleavage is very important in the country. However, Sweden has a lower ω score than countries like Hungary or Bulgaria, where left-right self placements are almost exclusively correlated to partisanship. Likewise, in Belgium the relative importance of issues is much greater than partisanship, indicating that issue positions are more correlated to ideological identities than partisan affiliations. This implies that in Belgium the left-right cleavage is rather salient at least in terms of framing issue preferences. Yet, the observed value of ω is very low.

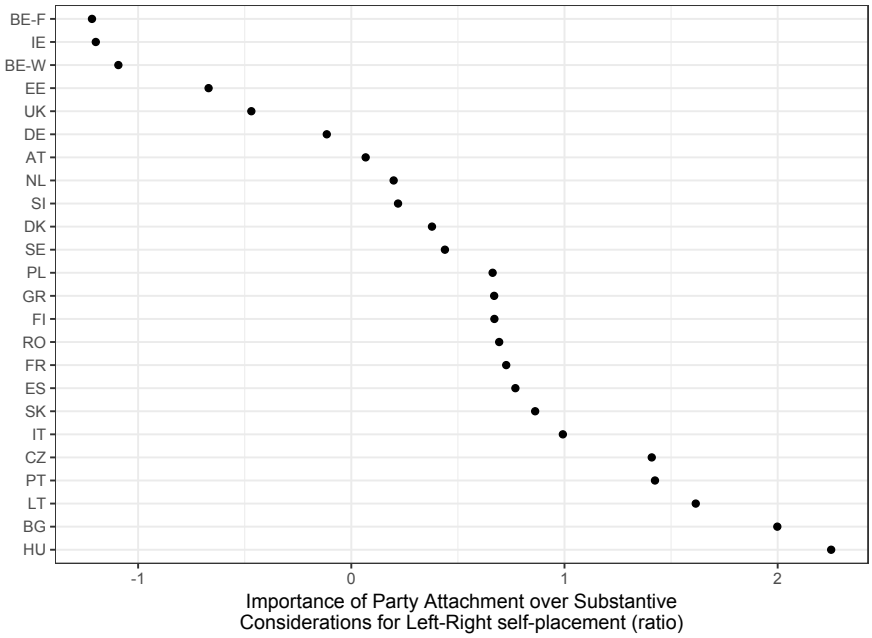

Figure A4: Importance Ratio - Symbolic versus Substantive Component of Left-Right (Grömping method)

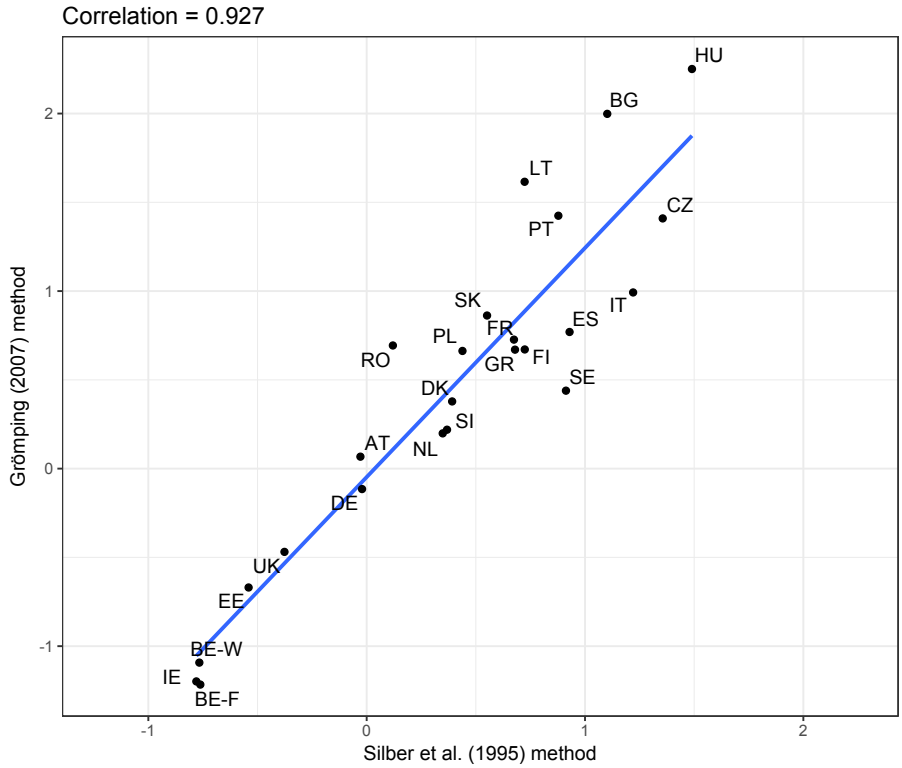

Figure A5: Comparison of Grömping (2007) and Silber et al. (1995) methods

E2. Discrimination and Importance Ratio

The results shown in Figure 3 in the paper are meant to be preliminary evidence of the reasons why the accentuation mechanism takes place, as discussed in the section "*Two goals of categorization: discrimination and generalization*". We chose to keep that section of the paper as such because modeling the two dependent variables in a multivariate setting would have required much more space to present and interpret. However, to show that our results for the "discrimination" model are robust to the inclusion of potential confounders, we performed a multilevel logistic regression with a dichotomous dependent variable indicating, for each party, whether a respondent placed it in the correct group or not. While in the calculations to produce Figure 3 in the paper we assigned 0.5 when a respondent positioned a party exactly in the center, here we coded such cases as wrong – note that this choice provides more conservative estimates of the degree of "discrimination" observed in a country than the analysis included in the paper. We modeled this variable in a three-level model, with individual perceptions nested within individuals and individuals nested within countries. Among the predictors, we included ω and some control variables at the individual and the contextual level. At the respondent's level, we included education (coded in three categories, "low", "middle", and "high"), age (centered around the country mean and standardized), the degree of left-right extremity, political information and an index of political knowledge (all centered around the grand mean). At the country level, we included the degree of party left-right polarization computed using the Chapel Hill data (centered around the grand mean), and the number of parties for which the left-right positions have been asked in the survey (centered around the grand median). We did not perform the bootstrap routine used in the paper to produce the results in the section "*Ideological groups and accentuation effect in political perceptions*", as this would have taken a considerable amount of time to compute. However, as it is the case in the paper for the results shown in Table 1, we expect the effect of ω to be robust in such a specification as well.

The results are reported in Table E1 below. The effect of ω is positive and rather strong, indicating that a greater importance of the group component of left-right in a given context corresponds to a higher probability to place a party in the correct left-right group for the average respondent of that context. This confirms the results shown in the paper. Moreover, as Figure E1 below shows, the predicted probabilities produced by this model follow a similar pattern to the one in Figure 3 in the paper.

Table A4: Multivariate multilevel model for party placement on the correct side

	Full Model		
	Coef		S.E.
Intercept	0.231	***	0.064
Level 2: Individual Factors			
Education	0.164	***	0.014
Age	-0.034	***	0.008
L-R Extremity	0.052	***	0.004
Political Interest	0.092	***	0.010
Political Knowledge	0.105	***	0.005
Level 3: Country			
Party Polarization	0.360	*	0.148
Number of Parties	-0.036		0.030
ω	0.396	***	0.080
N Observations	113353		
N Respondents	17722		
N Countries	24		
AIC	141447		
BIC	141553		
Log-Likelihood	-70712		

*** p < 0.001; ** p < 0.01; * p < 0.05

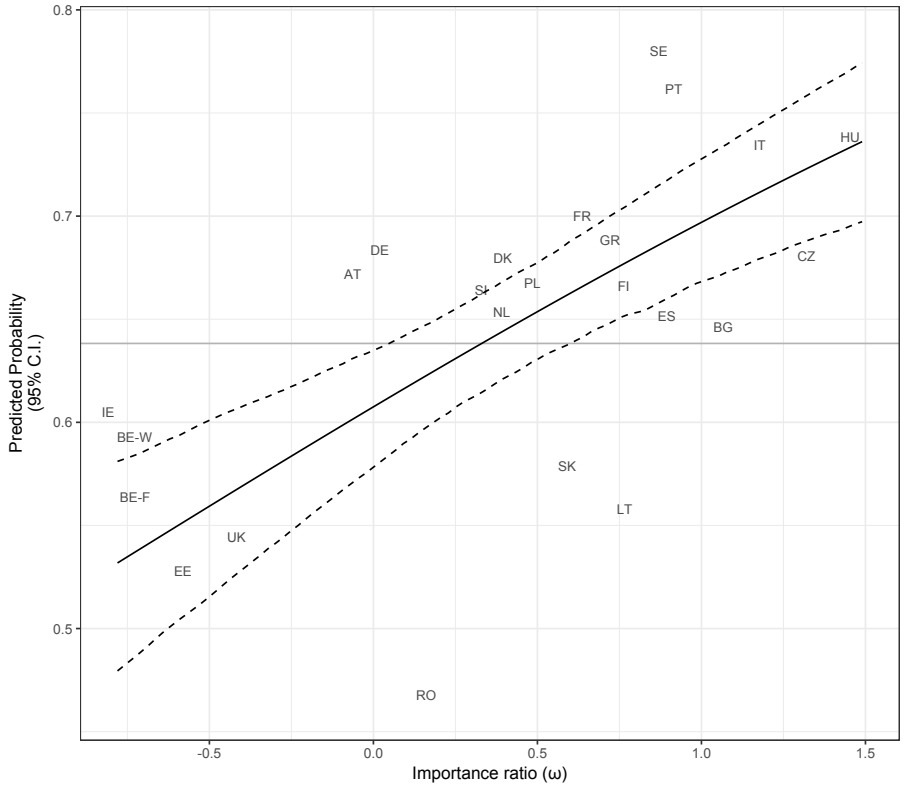

Figure A6: Predicted probability of party placement on the correct side

E3. Generalization as the perceived range of in-group and out-group parties

In the section "*Two goals of categorization: discrimination and generalization*" of the paper, we propose an operationalization of the tendency to *generalize*, that is, to infer characteristics of individual parties based on their ideological category membership, using entropy. In this section we propose an alternative operationalization of generalization obtained by looking at the *range of the perceived positions* of in-group and out-group parties. This way to operationalize generalization is less conservative than the one proposed in the paper, as it allows for greater variation in the individual perceptions of parties. Let us take as an example an individual placing four parties on the left-right scale. If the individual places two parties on position 3, and two parties on position 4, the observed entropy will be 0.5, that is middle way between minimal and maximal entropy. However, the range of the perceived positions will be 1, that is 1/11 of the total length of the continuum. Given the nature of the process of generalization, we believe that entropy is a more appropriate way to operationalize it: if people infer *all* the information that they have about parties from they category membership, they should logically place all the parties in the same place. However, individuals may infer *most of* the information that they have about parties from their group membership, and still rely on other sources of information related to the individual parties to determine their position. In other words, while looking at entropy produces a yes/no type of estimation, looking at the range allows for more nuanced degrees of generalization. A second advantage of using entropy rather than the range of the perceived positions is that the latter will inevitably vary from one country to another depending on the range of the *actual* positions that parties take. In other words, if parties within a given ideological bloc in a certain countries *do* take similar positions to one another, this will be captured to a certain extent by the perceived range, whereas entropy should be more robust to this source of variation. Nevertheless, the perceived range is an intuitive metric that should capture the tendency to generalize almost as effectively as entropy.

We divide parties in in-group and out-group in the same way as we do in the paper, and calculate the range looking at the absolute distance between the two most extreme parties in each group. Results are reported in Figure 5. The figure produces estimates of generalization that are not identical, but lead to the same substantive conclusions as the ones in the paper. First of all, we note that even using this operationalization, there is no significant correlation between ω and the average generalization among in-group and out-group parties in each country. Correlations are, respectively, $r = 0.32$ (n.s.) and $r = -0.06$ (n.s.). However, we also note a weak tendency to generalize *less* among the in-group parties as ω increases. This is consistent with the literature cited in the paper, arguing that individuals tend to perceive more variation in their in-group than

in their out-group (e.g. Haslam et al. 1996). Looking at the tendency to generalize among out-group parties, the figure shows no correlation at all with ω. Hungary remains the country where respondents tend to perceive out-group parties to be very similar to one another.

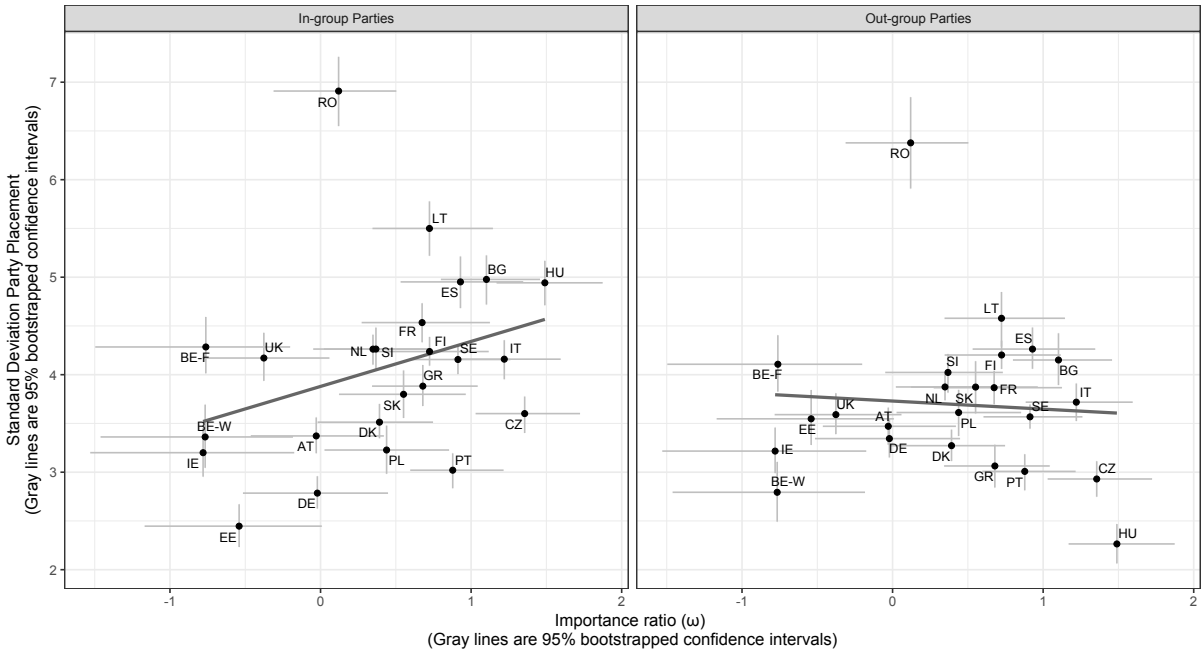

Figure A7: Range of party perceptions and importance ratio

References

Grömping, U. (2006). Relative Importance for Linear Regression in R: The Package relaimpo. *Journal of Statistical Software*, 17(1), 1–27.

Grömping, U. (2007). Estimators of Relative Importance in Linear Regression Based on Variance Decomposition. *American Statistician*, 61(2), 139–147.

Haslam, S. A., Oakes, P. J., & Turner, J. C. (1996). Social identity, self-categorization, and the perceived homogeneity of ingroups and outgroups: The interaction between social motivation and cognition. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of Motivation and Cognition* (Vol. Vol. 3: The interpersonal context, pp. 182–222). New York: Guilford Press.

Inglehart, R., & Klingemann, H.-D. (1976). Party Identification, Ideological Preference, and the Left-Right Dimension Among Western Mass Publics. In I. Budge, I. Crewe, & D. J. Farlie (Eds.), *Party Identification and Beyond. Representation of Voting and Party Competition*. London: Wiley.

Medina, L. (2015). Partisan supply and voters' positioning on the left-right scale in Europe. *Party Politics*, 21(5), 775–790.

Silber, J. H., Rosenbaum, P. R., & Ross, R. N. (1995). Comparing the contributions of groups of predictors: which outcomes vary with hospital rather than patient characteristics? *Journal of the American Statistical Association*, 90(429), 7–18.