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Conditions of proximity and directional voting: Voter sophistication, political information, and party identification

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ABSTRACT

This paper contributes to the debate among supporters of the proximity and the directional models of vote choice. It provides a two-fold contribution: first, I utilize a series of critical tests which allow for a straightforward identification of proximity and directional voters and the aggregation of the respective shares at the party, election, and country levels. Secondly, I focus on the reasons which reinforce these alternative or complimentary models. In comparison to the standard proximity model, directional voters are less educated and less informed. They are also more likely to select opposition parties and favor actors with somewhat unclear ideological platforms. At the election level, directional voting is also driven by party system polarization.

1. Logics of vote choice

One or two decades ago, the field of spatial voting was characterized by intense and persistent debates among supporters of the standard Downsian proximity model and challengers, who advocated an alternative, directional model of vote choice. Following Downs (1957), the proximity model defines issue scales as ordered dimensions of substantive ideological or policy positions. Voters are supposed to select candidates or political parties which most closely match their positions within this political space (cf. Davis et al., 1970; Enelow and Hinich, 1984; Hinich and Munger, 1992). In contrast, the directional model adopts a binary perspective on political issues and suggests that voters like parties which are on "their" side of an issue, but reject parties on the "other" direction. This preference is considered more "intense" when voters or parties move towards the margins of the scales (cf. the concepts presented by Rabinowitz and MacDonald, 1989; MacDonald and Rabinowitz, 1993a,b; MacDonald et al., 1995, but also the criticism leveled by Lewis and King, 1999; MacDonald et al., 1998; Merrill and Grofman, 1999; Westholm, 1997, 2001).

Conceptually, I utilize a typological approach to identify proximity and directional voters at the individual level (cf. Fazekas and Méder, 2013; Tomz and Van Houweling, 2009). Substantively, I seek to separate proximity from directional voters by focusing on the informational contexts. I demonstrate that voter sophistication, political information, and the heuristics of party identification contribute to proximity voting. In contrast, anti-government affect and party system polarization drive the directional model of voting. The proximity model requires higher levels of detailed political knowledge or, alternatively, the provision of non-spatial cues or heuristics which may or may not be realistic and empirically held by individual voters and/ or represented in the electorates (cf. Achen and Bartels, 2016; Hinich and Munger, 1994; Lupia, 2016).

In contrast, the mere approval or rejection of some political issue, which lies at the heart of the directional model, does not presume highly informed and/ or sophisticated voters. Rabinowitz and MacDonald (1989) are among the first and most prominent scholars in the spatial modeling tradition who have challenged the core rationality assumptions of the Downsian model. They suggest that voters, instead of being fully informed and instrumentally rational actors, react emotionally to political symbols (cf. Stokes, 1963 and, more generally, Edelman, 1964). Therefore, voters are either for or against one or the other *direction*, and they reject or support these issues with varying levels of *intensity*.

Furthermore, spatial and non-spatial motives of vote choice are complementary rather than alternative. Due to persuasion effects, voters may adopt issue positions of candidates or parties they identify with, and they may reject the stances of other actors they do not identify with. Systematic empirical associations of spatial and non-spatial predictors open up a number of alternative causal pathways: some voters may cast a "spatial" vote by evaluating party positions within the political space, but other individuals may also vote "spatially correctly" when they apply non-spatial predictors such as party identification as heuristics. Low-information voters may thus use attachment to party labels as a shortcut to identifying their spatial favorites and act as if

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they were fully and sufficiently informed (cf. Lau and Redlawsk, 1997, 2006).

Ultimately, individual-level effects are embedded with contextual effects. Another strand of the literature has moved to (different kinds of) multilevel models and focuses on the effects of context-level predictors, most notably of party system polarization. According to the responsible party model, polarization may not only be perceived as some destructive feature of political competition, but rather as a means of delivering information and reinforcing substantive policy competition. A polarized party system with high levels of ideological or programmatic distinction or crystallization provides voters with clear party signals and cueing information. Imminent studies thus find that party system polarization tends to strengthen spatial voting in general (Lachat, 2008) and the directional model more specifically (Pardos-Prado and Dinas, 2010; Fazekas and Méder, 2013).

2. Spaces, models, information, and context

2.1. Formalizing proximity and directional voting

Throughout this contribution, I focus on a simple, one-dimensional political space. The utility a voter receives from selecting each of party alternatives may be represented by an absolute distance metric. Note that i indexes voters, and j indexes party alternatives. Thus, v_i represents the position of voter i, and $p_{i,j}$ denotes the position of party j as perceived by voter i:

$$u_p = f(v_i, p_{i,j}) = -|v_i - p_{i,j}|$$

In contrast, directional theory rests on the definition of a neutral point (n), usually the scale mean. The directional model further posits that voters like parties on "their" side of an issue and reject parties on the "other" side (Matthews, 1979). Directional utility u_d increases if voters or parties move towards intense positions at the margins of the scale (Rabinowitz and MacDonald, 1989). In turn, parties that are too extreme or intense and move beyond the limits of a "region of acceptability" are supposed to be punished by the voters (cf. the detailed account by Gallati and Giger, 2020):

$$u_d = f(v_i, p_{i,j}) = \left(v_i - n\right)\left(p_{i,j} - n\right)$$

However, proximity and directional utilities are highly collinear by definition and often overlap in their predictions of vote choice (cf. the formal demonstration by Merrill and Grofman, 1999, 170–172). The partial equivalence of proximity and directional utility terms also carries over to the application of statistical models. For instance, the evaluation of unified proximity and directional models by discrete choice models such as conditional logit or alternative-specific probit is impeded by excessive collinearity issues that frequently produce inconclusive, inefficient, or unstable statistical findings (cf. Lewis and King, 1999; Merrill and Grofman, 1999; Tomz and Van Houweling, 2008).

2.2. Voter sophistication, information, and cues

Only a few publications have focused on the impact of voter sophistication, political information, and party cues on the prevalence of proximity or directional voting. These contributions differ considerably in their conclusions: MacDonald et al. (1995, 472–474) find that, regardless of political sophistication levels, *all* voters tend to *always* apply the directional model in U.S. presidential and Norwegian parliamentary elections. Dow (1998) and Merrill and Grofman (1999, 79) conclude that voter sophistication and political information have only little impact on the strength of proximity and directional voting in U.S. presidential elections. However, experimental data presented by Tomz and Van Houweling (2008, 313) reveal that less educated citizens are more than twice as likely to apply the directional logic than more educated ones.

Some of the first fundamental criticism of the Downsian model was put forward by Stokes (1963). His objections focus on the "ordered dimensions axiom" and challenges the assumption that issue scales provide voters with a set of fine-grained and strictly ordered ideological standings or substantive policy alternatives. Likewise, Rabinowitz and MacDonald (1989, 94) insist that voters "do not see issues in the sharp positional fashion that the traditional theory assumes", but rather perceive them from a "diffuse", "dispositional", or "symbolic" angle. The salience of (select) ideological or policy issues does not originate from the rational and sober appraisal of political information, but these issues need to trigger emotions and salient symbols so as to be rendered relevant and salient. Proximity calculus will therefore require higher levels of voter sophistication, political information and party cues than directional affect.

Relatedly, the discussion in this paper underscores the impact of informational shortcuts or heuristics, most significantly of party identification, which help voters to "vote correctly", i.e. to act as if they were rational, fully-informed utility maximizers (Lau and Redlawsk, 2006). In addition to the careful and well-informed evaluation of ideological standings or policy positions, the reliance on long-standing party identification may open up an alternative causal pathway to the proximity vote. Therefore, I expect voters who follow their party identification to apply proximity calculus, while those who follow symbolic affect to cast a "directional" vote.

2.3. The informational context

In addition, I consider features of the alternative parties competing in the elections: Merrill and Grofman (1997) argue that the proximity model tends to fit established, well-known candidates and/ or lists, while directional voting accounts for the success of novel political actors, of challenger, or protest parties. In the same vein, Cho and Endersby (2003) empirically demonstrate that proximity voting applies to casting a vote for an incumbent party, while directional voting corresponds with selecting an opposition party. Relatedly, actors in opposition are in a better position and face higher incentives to move out of the political center and to present themselves as directional favorites.

Next, I focus on the wider informational context established by the programmatic crystallization of individual political parties and the polarization of entire party systems. Starting with an additive argument, both features govern the creation and signalization of ideological or programmatic cues and provide information on spatial party competition that may be picked up by sophisticated and informed voters. Higher levels of party crystallization and party system fragmentation are supposed to enhance the relevance of electoral issues, to reinforce programmatic competition, and to increase the impact of ideological or policy considerations on vote choice (cf. for some general arguments Zaller, 1992 and for more general applications to vote choice Knutsen and Kumlin, 2005 and Lachat, 2008).

Turning towards the dynamics of proximity and directional voting, Pardos-Prado and Dinas (2010, 762–769) highlight party system polarization and the spatial elasticity of the ideological spectrum. With increasing levels of party system fragmentation and polarization, its individual actors face incentives to spread out more evenly and to assume more polarized issue positions at the margins of ideological or policy scales (cf., for a formal argument, Cox, 1990). If polarization thus also implies patterns of centrifugal party competition, voters are confronted with a supply of more or less extreme (or intense) platforms, and each of these choice options would likely be a directional favorite. In line with Pardos-Prado and Dinas (2010) and Fazekas and Méder (2013), I posit that party system polarization contributes to directional voting. In contrast, centripetal effects and the moderation of the party positions rather account for the proximity model.

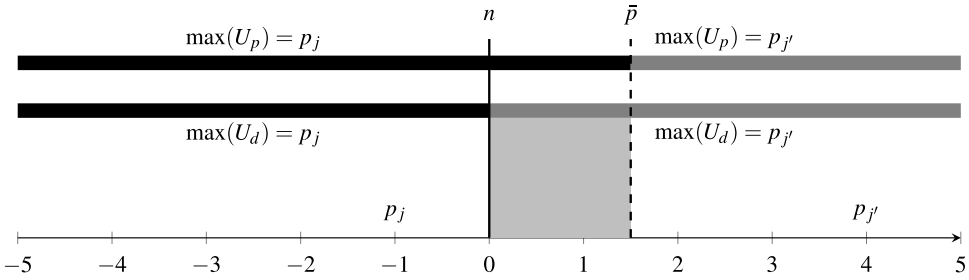

Fig. 1. Defining and formalizing critical tests. Notes: p_j and $p_{j'}$ (with $p_j < p_{j'}$) are two alternative party platforms located on a unidimensional eleven-point scale ranging from −5 to 5, and $\bar{p}$ is the mean point between both alternatives.

3. From descriptive typologies towards critical tests

Some more recent contributions turn away from the evaluation of unified spatial models with a common effect parameter for the entire electorate (cf. Iversen, 1994; MacDonald and Rabinowitz, 1993a; Merrill and Grofman, 1999), but instead focus on the setup of critical tests so as to discern voter types at the individual level. This approach builds upon three exhaustive and mutually exclusive categories that identify strict proximity s_p, strict directional s_d, and strictly tied voters s_t:

s_p The category of strict *proximity voters* includes all voters who select a party that yields the highest spatial utility, but is not at the same time the directional favorite. Therefore, $s_p = 1$ applies when the voter selects a party that is ranked first on the proximity and second or lower on the directional scale. $s_p = 0$ applies in any other case.

s_d The alternative category of (strict) *directional voters* includes voters who select their first choice on the directional utility scale that, however, does not yield the highest spatial utility on the proximity scale ($s_d = 1$). Otherwise, s_d equals zero.

s_t Due to the high collinearity of proximity and directional utility terms, a considerable number of survey respondents are supposed to be (strictly) *tied voters*. This label refers to individuals who select a party which is their first choice according to both proximity and directional considerations. $s_t = 1$ thus indicates that the voter selects a party which is ranked first both on the proximity and on the directional utility scale. In all other cases, $s_t = 0$ applies.

Every spatial voter belongs to one (and only one) of the above voter types. In turn, individual voter types may be easily aggregated at the party-, election-, or national levels. Their relative frequencies π by definition sum up to one ($\pi[s_p] + \pi[s_d] + \pi[s_t] = 1$).

Next, we advance from formalized typologies towards causal effects and spatial configurations which drive voters towards the proximity or directional logics. Discriminating tests usually require spatial configurations of an individual voter and at least two candidates or parties when more "intense" platforms at the margins of an issue dimension (likely directional winners) compete with less "intense", but concomitantly more proximate parties (likely proximity winners). However, there are various scenarios which do not allow for any meaningful distinction among proximity and directional voting, because they by definition result in ties of proximity and directional predictions (cf. the extensive discussions for two- and multiparty systems by Tomz and Van Houweling, 2008; Fazekas and Méder, 2013).

Fig. 1 illustrates logical limitations in the set of critical tests by two constructed examples: there are only two parties $p_j = -1$ and $p_{j'} = 4$ which are located at opposing sides of the neutral point ($p_j < n < p_{j'}$). In the directional model, all voters positioned to the left of the neutral point are supposed to favor p_j, while those to the right of n are expected to select $p_{j'}$. In the proximity model, all voters to the left of the midpoint of both parties $\bar{p}$ likely favor p_j and those to the right of $\bar{p}$ are expected to select $p_{j'}$. As explained and formally demonstrated by Tomz and Van Houweling (2008, 307;316–317), only voters located in the interval from the midpoint of both parties to the neutral point ($n < v_i < \bar{p}$), characterized by the gray-shaded area, are confronted with both unique and divergent predictions by the proximity and directional models. For voters located outside of this area the proximity and directional models predict identical spatial preferences. Note that these findings also hold when both parties are located at the same side (or direction) of the issue dimension ($p_j < p_{j'} < n$ or, vice versa, $p_j > p_{j'} > n$).

This brief discussion clearly reveals the configurations of voter and party positions that, by definition, allow for (strict) directional voting ($s_d = 1$). Party positions ($p_{i,j}$) must move towards the scale margins or, respectively, the limits of the "region of acceptability", while voter positions (v_i) need to be sufficiently centrist so as to prevent any directional favorite to be concomitantly turned into a proximity favorite at the same time. (Because similar typological approaches have previously been suggested by Tomz and Van Houweling (2008) and Fazekas and Méder (2013), I have moved the detailed discussion of the entire catalog of criteria to the Online Appendix A.1.) Relatedly, Adams et al. (2017) show that, in a proximity model, centrist voters are less likely to employ spatial calculus and, at the same time, tend to hold lower levels of political information. These findings illustrate additional causal pathways that drive voters away from proximity calculus and render them more open and available for directional affect.

4. Data and operationalization

For the subsequent empirical analysis, we employ the "CSES Integrated Module Dataset" (henceforth: CSES IMD) that cumulates the first four waves of CSES and thus includes a heterogeneous set of more than 280,000 interviewees, 174 individual elections, and 55 countries over a time span from 1996 to 2016. (Note that data and documentation are available via the CSES website at https://cses.org/data-download/cses-integrated-module-dataset-imd/.) For consistency, I exclusively focus on elections to national parliaments, to i.e. to lower houses in bicameral systems, so that the dataset compiled for the analyses includes of subset of 163 post-election surveys from 53 different, heterogeneous polities. Most of these election segments cover interviews with roughly 1000 to 2000 eligible voters with a minimum of $N = 860$ voters in Hong Kong (2004) and a maximum of $N = 4495$ voters in Canada (2008).

According to the key theoretical considerations lined out above, the empirical analyses utilize a set of variables, which have been gathered in all (or most) of the national election segments:

Reported vote choice: Starting with the dependent variable, the various post-election segments of the CSES IMD include information on reported vote choice for each individual election segment.

Spatial party positions: So as to identify strict proximity (s_p), directional (s_d), or tied voters (s_t), I require additional information on spatial positions to calculate proximity and directional utilities. Any of the CSES segments report(s) individual-specific voter self-placements and alternative-specific placements of up to nine parties on an ideological left–right scale ranging from zero to eleven. For the subsequent analyses, I center these scales by subtracting five points so that all voter and party placements are confined to an interval ranging from minus five to five ($v_i, p_{i,j} \in [-5, 5]$).

Party identification: The CSES IMD also includes data on party identification to capture electoral heuristics. In most of the country- and election-specific survey segments, voters are required to indicate their general "closeness" to a specific political party. This survey item has been established as the key indicator of party identification and may be easily converted into a series of alternative-specific binary dummies which indicate whether an individual identifies with some specific party or not.

Educational attainment: Turning towards the cognitive resources held by individual voters, I proxy voter sophistication by educational attainment. The CSES IMD includes a comparative index of formal education levels which implements a five-point scale and discriminates among (0) no education, (1) primary, (2) secondary, (3) post-secondary, and (4) university education.

Knowledge items: While formal educational attainment may be linked to the ability to process (political) information, a battery of knowledge items presents a more dynamic and straightforward assessment of empirical exposure to political information. The first three waves of the CSES project have specified batteries of three binary knowledge items in most country and election segments, but the forth wave has added an additional, forth knowledge item. The role of political knowledge has recently been highlighted by contributions that characterize the contexts for decision- or game-theoretic models.

However, Elff (2019) has referred to serious drawbacks of the specific measurement strategies in the CSES IMD: the knowledge items fielded in different countries and waves have been criticized for lacking discriminatory power within and comparability across the individual survey segments. Therefore, instead of running a battery of complex and demanding IRT models, I have opted to use a simple additive knowledge index which ranges from zero to three to proxy current political information levels held by each voter.

Incumbency: The incumbency status of alternative choice options is closely linked with the proximity and directional logics. The contextual data, which is part of the CSES IMD, provides a binary indicator of vote choice for an incumbent or for an opposition party. In line with Cho and Endersby (2003), I posit that incumbent parties are rather evaluated by proximity calculus, but opposition parties tend to be assessed by directional affect.

Party consistency: Previous contributions have argued that voters tend to apply the proximity logic when they evaluate well-known parties, but tend to resort to directional affect for parties they know only little about. I operationalize this key indicator at the party level by the standard deviation of *all* alternative-specific party placements $p_{i,j}$ from its respective mean position $\bar{p}_j$.

Party system polarization: The CSES IMD also provides contextual information at the election level. Previous studies suggest that party system polarization contributes to spatial voting and to the application of the directional model of vote choice (Fazekas and Méder, 2013; Lachat, 2008; Pardos-Prado and Dinas, 2010). The CSES IMD provides information on party positions and vote shares that enables us to compute the Dalton (2008) polarization index: $D_p = [\sum_{j=i}^{J} s_j(p_j - \bar{p}^2) * 0.2]^{0.5}$. Note that s_j indicates the seat share won by candidate or party j, p_j indicates the unified ideological position taken by party j, and $\bar{p}$ denotes the mean position in the party system.

Party families: Ultimately, the most recent version of the stacked CSES IMD also includes typologies which capture the party family of each viable alternative on the ballot. I have aggregated some of the more fine-grained categories and differentiate among Christian and conservative, ethno-regionalist, green, liberal, social-democratic, and socialist/ communist parties.

The Online Appendices A.2 and A.3 provide additional information on data sources, their operationalization for the subsequent analysis, and the measurement of key variables.

5. Counting spatial, proximity, and directional voters

The statistical analysis matches the typological models spelled out above. I begin the presentation of empirical evidence by exploring the general consistency of vote choice with *any* definition of the spatial model, i.e. with the proximity *or* the directional voter types. Across all heterogeneous electoral and national contexts, about 75.4 percent of all voters in the CSES IMD cast a spatial vote which is consistent with proximity ($s_p = 1$) and/ or directional voting ($s_d = 1$). Thus, about three quarters of the interviewees supported a candidate or party which was either their proximity favorite, their directional favorite, or both. Vice versa, the remaining 24.6 percent of the respondents failed to vote "spatially correctly" or adhered to some alternative, non-spatial motives of vote choice. These findings and their variability are rendered more specific, when I aggregate individual survey responses at the election level: the share of spatial voters ranges from only 40 to 50 percent in Belgium-Wallonia, Brazil, or Peru towards more than 90 percent in some elections conducted in the Czech Republic, Mexico, Turkey, or the Ukraine. The results not only corroborate the significance of spatial utility calculus for party evaluation and vote choice. Their variability across diverse institutional and political settings also refers to the contextual heterogeneity of vote choice and to the importance of institutional and political contexts.

I further narrow the focus to the group of spatial voters and identify whether their behavior is consistent with the strict directional ($s_d = 1$), the strict proximity ($s_p = 1$), or with both models ($s_t = 1$). Across all election segments and election surveys, I find that roughly 35.8 percent of the voters are strict proximity, about 20.9 percent are strict directional voters, and the remaining almost 43.3 percent of the "spatial" electorate are tied among both logics of vote choice. These results cogently reproduce knowledge established by previous work: both proximity and directional models are backed up by observational (and also by experimental) data, but generally, there tend to be more proximity than directional voters in most electorates (similar findings are provided by Fazekas and Méder, 2013; Tomz and Van Houweling, 2008). The high share of tied voters unambiguously reflects the overlap of proximity and directional voting and the resulting difficulties to conceptually and empirically disentangle the two logics of vote choice (cf. the detailed account by Lewis and King, 1999).

I next explore the reliability and robustness of these tentative findings for each election and survey segment covered by the CSES IMD. Fig. 2 presents the shares of strict proximity ($\pi[s_p]$), strict directional ($\pi[s_d]$), and strictly tied voters ($\pi[s_t]$) at the election and country levels. In the ternary plot, and at the aggregate level, strictly tied scenarios are still the most common outcome. What is even more, the points are notably shifted towards the lower left corner which indicates the higher impact of proximity calculus and the comparatively less significant

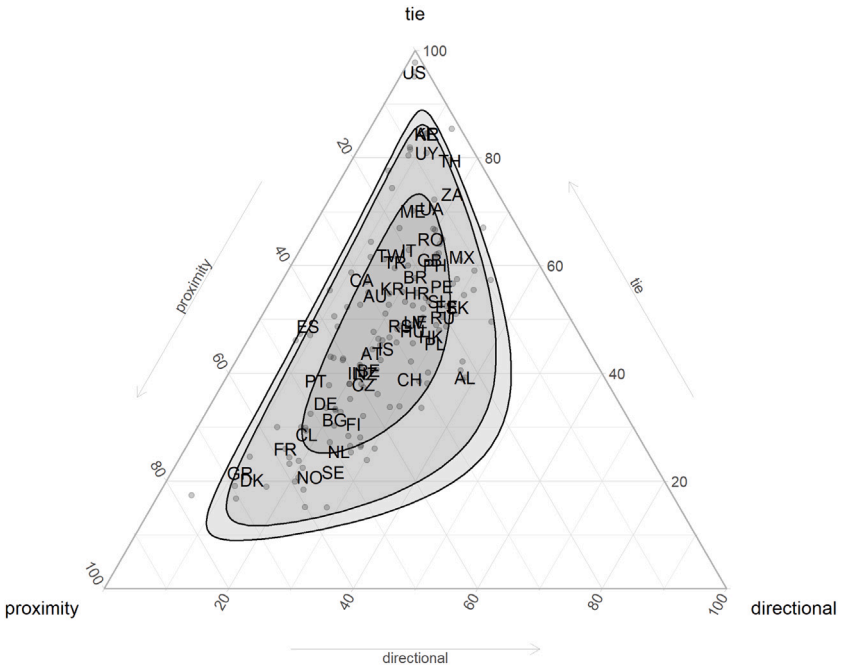

Fig. 2. Ternary plot of strict proximity, strict directional and strictly tied electorates. Notes: This plot covers all spatial voters in the CSES IMD. The Ternary plots display three quantities which sum up to 100 percent. Here, the shares of strict proximity ($\pi[s_p]$), strict directional ($\pi[s_d]$), and strictly tied voters ($\pi[s_t]$) are aggregated at the election and country levels. The gray dots represent the 148 parliamentary elections, the two-digit ISO 3166-2 codes label the country context. Country and election-wise results and country codes are listed in the Online Appendix A.4.

role of directional affect. Strict proximity voting is most common in a number of Danish, Greek, and Norwegian elections when roughly more than 60 percent of the electorate in a straightforward manner apply classical proximity calculus. In contrast, the directional logic appears to be dominant in some newer democracies: more than 30 percent of the voters in select Albanian, Czech, Polish, Hungarian, or Slovakian elections pick a directional favorite that is not, at the same time, the most preferred platform on the proximity scale.

Across all election segments covered by the integrated CSES data, more than fifty percent of the spatial voters have overlapping predictions by the proximity and directional models. These ties obstruct the way towards meaningful and discriminatory empirical tests. Nevertheless, strict ties are also meaningful observations per se, and their share varies widely from one election to the other. In some North European elections ties of proximity and directional winners are not particularly common and affect only 20 to 30 percent of the voters. This applies, for instance, to some Dutch, Norwegian, or Swedish elections. Vice versa, more than eighty percent of the interviewees in some (Latin) American and African electorates are spatially tied voters. This applies to a set of Argentine, Brazilian, Mexican, Kenyan, South African, and U.S. elections.

6. Accounting for proximity and directional voting

6.1. Identifying proximity and directional voters

In this section, I evaluate the individual- and context-level determinants of proximity and directional voting. I thus focus on a subset of the electorate and of the dataset: I do not consider non-voters and voters that do not cast a spatial vote, I cannot continue with strictly centrist voters that are located in the precise center of the left–right dimension ($v_i = 0$) and thus do not yield divergent directional utility terms ($v_i p_{i,j} = 0$), and I exclude voters who located themselves at the margins of the ideological scale ($vi = -5$ or $v_i = 5$, respectively) so that proximity and directional voting always predict identical choices by definition.

Table 1
Determinants of directional voting.

	β	σ	min (β)	max (β)	$\hat{R}$	eff. N
(1) party id.	−0.27	0.03	−0.32	−0.22	1.00	2684
(2) inc. vote	−0.28	0.03	−0.33	−0.23	1.00	2803
(3) educ. attainment	−0.08	0.01	−0.11	−0.06	1.00	2464
(4) knowledge index	−0.12	0.01	−0.15	−0.10	1.00	3023
(5) party unclarity	0.61	0.05	0.51	0.72	1.00	1900
(6) party system pol.	0.19	0.06	0.07	−0.31	1.02	682
(0) intercept β_0	−2.86	0.34	−3.55	−2.22	1.02	503
Standard deviations of (Crossed) random intercepts:						
Election segments:						
σ (Intercept γ_j)	0.92	0.13	0.67	1.18	1.00	6335
Party families:						
σ (Intercept γ_k)	0.92	0.13	0.67	1.18	1.00	6335

Notes: Summaries of posterior distributions from a Bayesian hierarchical logit model covering 49,009 voters that are nested in 108 election contexts. Estimation with four parallel chains in Stan with a warm-up set of $N = 2000$ and an additional evaluation set of $N = 4000$ samples each.

These choices leave us with 49,009 individual cases from the 108 election contexts. Within this group of critical cases, roughly 63.1 percent are classified as proximity voters ($s_d = 0$), and the remaining 36.9 percent apparently follow the directional decision rule ($s_d = 1$). For the analysis, I evaluate the dependent variable s_d by a multilevel hierarchical logit model, and perform Bayesian MCMC in Stan so as to obtain coefficient and uncertainty estimates. I also include random intercepts which capture the electoral context (γ_j) and the party family (γ_k) of the selected option. For each of the models, I specify $N = 4000$ iterations and apply four parallel Markov chains.

Table 1 focuses on key determinants of proximity and directional voting. The upper part of the table presents logistic regression coefficients derived from Bayesian MCMC, their associated estimation error, and the lower and upper bounds of the Bayesian highest probability intervals (HPD). Because Bayesian data analysis and the evaluation of the respective models entirely focus on effect parameters and their respective uncertainty, the table does not report any significance levels.

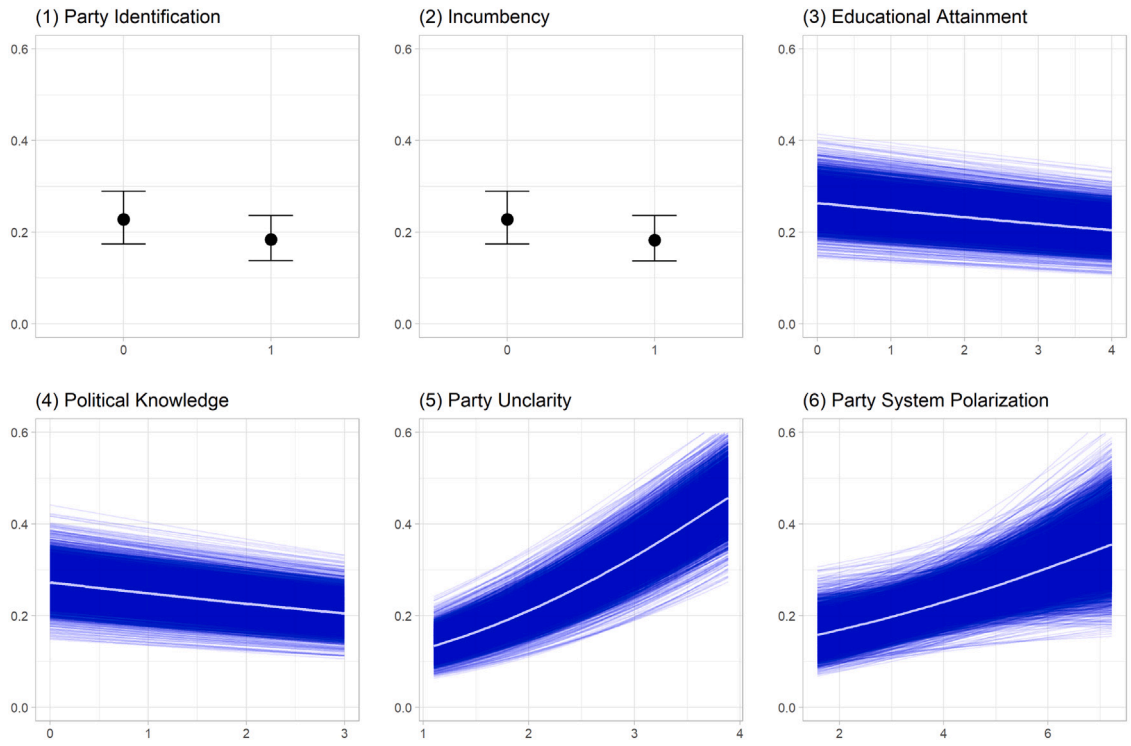

Fig. 3. Marginal effects on directional voting. Notes: The predictive margins are based on the model in Table 1. The *x*-axis shows the values of the predictor variables, the *y*-axis reports the associated probabilities to cast a directional vote. Predictions and predictive uncertainty are indicated by spaghetti plots.

For frequentists, similar information may be provided by evaluating whether the 95% Bayesian HPD excludes zero, whether the split-$\hat{R}$ is close to one, and whether the effective sample size ESS is sufficiently large (for further checks and details cf. Gelman et al., 2013).

In Table 1, the dependent variable is zero for strict proximity voters ($s_d = 0$) and one for strict directional voters ($s_d = 1$) or tied voters ($s_t = 1$). I begin the presentation of empirical findings with the two binary indicators which capture party identification and incumbency: both coefficients are negative, statistically and substantively meaningful. In other words: directional voters do not tend to vote in line with any existing party identification, and they do not tend to support incumbent candidates or parties. These features relate to general characteristics of directional voting and allude to a desire for change, to a certain extent of political dissatisfaction, and to affective rather than sober and rational motives of vote choice. Fig. 3 presents predictive margins to illustrate effect sizes. The results in subpanels 1 and 2 show that both the effects of party identification and incumbency are robust, substantive, but also limited: incumbency and party identification exert a negative impact on directional voting and each reduce the probability to cast a directional vote by some six to seven percentage points.

Next, I consider the impact of the key variables educational attainment and political knowledge. For either predictor I obtain negative and substantively meaningful logistic regression coefficients. Therefore, highly educated and well-informed voters tend to follow the proximity rule, but individuals with lower levels of education and political knowledge are more likely to be directional voters. These findings at the individual voter level confirm key features of proximity and directional voting (and voters) laid out in the theoretical argument.

Fig. 3, subpanels 3 and 4 plot the implied effect sizes. Beginning with educational attainment, the probability that a voter who did not complete any formal education casts a directional vote is almost thirty percent, and this likelihood drops to less than twenty percent for those who hold a university degree. Likewise, voters who do well in the CSES battery of knowledge questions are by more than ten percentage points less likely to follow the directional model and rather evaluate party alternatives by the proximity rule. These results closely correspond to the cognitive and informational underpinnings of these models: proximity voting assumes substantial cognitive and informational capacities of the voters, while directional voting involves the (more or less intensive) approval or rejection of a binary issue and is closely linked with affect and symbolic politics.

Considering that both predictors tend to be empirically associated, the joint effect of voter sophistication on the application of proximity or directional voting is, in line with the key hypotheses, considerable. Across all observations, the correlation of educational attainment and empirical voter knowledge is weak to moderate with Spearman's $\rho = 0.22$. Within the individual election segments this association ranges from no association ($\rho \sim 0$) to strong correlations ($\rho > 0.5$).

Turning from the voter towards the electoral alternatives, the multilevel model also provides substantial evidence on conditioning effects the clarity of the informational environment. The hierarchical logit model in Table 1 immediately refers to the robust substantial effects emerging from the clarity of party profiles. (Recall that I apply the standard deviations of left–right placements by all voters as a yardstick for party clarity). The predictive margins in Fig. 3 illustrate that these effects are indeed substantial: for minimum levels of party unclarity, the probability to follow a directional logic is only little higher than fifteen percent. However, at maximum levels of party unclarity, the probability increase to almost fifty percent.

Next, I proceed to contextual features at the election level. Following a series of previous publications, I focus on the conditioning effects of party system polarization (cf. Lachat, 2008; Pardos-Prado and Dinas, 2010; Fazekas and Méder, 2013). The elasticity of the party system is supposed to produce centrifugal patterns of party competition that drive political parties out of the ideological center and often result in parties taking more "extreme" or "intense" standings than their supporters. The empirical results presented in Table 1 and Fig. 3 clearly confirm these findings. Party system polarization significantly contributes to the likelihood of casting a directional vote: with low levels of polarization, the probability to select a strict directional favorite is less than twenty percent; with higher levels of polarization, this probability increases to almost forty percent.

Ultimately, I briefly evaluate the random effects part of the multilevel logit model (cf. Table 1). Recall that I have specified crossed random intercepts: random intercepts at the election (γ_j) and party levels (γ_k) are included to capture differences in the baseline shares of proximity, directional, and tied voters that have not been sufficiently modeled by the substantive predictors discussed above. The variation of election-level random intercepts is substantial, and any model that ignores them would be misspecified. In addition, I also consider crossed random intercepts at the party family level. The obtained random intercepts clearly demonstrate that the probability to cast a directional vote also is also affected by party-level context. Voters that select a centrist party alternative, such as conservative, Christian democratic, green, or socialist parties, are far less likely to cast a directional vote than others who support more "intense" communist, ethno-regionalist, or nationalist platforms.

6.2. More complex models and robustness checks

To conclude the discussion, I check the empirical robustness of the results. For this purpose, I have specified a series of additional Bayesian hierarchical logit models which go beyond the simpler random intercept models presented and discussed above. I specified five additional random effects models which, in addition to the crossed random intercepts, also include random slopes at the election level so as to capture context-dependent effects of party identification, incumbency, educational attainment, empirical political knowledge, and party unclarity. Note that I run a separate model to estimate these random slopes in turn, because even the flexible Bayesian modeling approach cannot (and is not meant to) address contextual variability of all explanatory variables.

Throughout, random effects models provide a better fit than the baseline random intercept model, and the estimates for random slopes at the election level often vary considerably. However, in contrast to preceding findings by Lachat (2008, 692–694), I did not detect interactions among individual-level variables such as political information and/ or sophistication with contextual features, most prominently with political polarization. Nonetheless, the findings also underscore the robustness of the obtained effect parameters across more than one hundred electoral contexts: For instance, the effect of party identification on the likelihood to cast a directional vote is negative in all but twelve survey segments, formal educational attainment is associated negatively with directional voting in all but thirteen, and the political knowledge indicator is correlated negatively in any of the 108 parliamentary elections or survey segments, respectively.

Ultimately, I also compared the findings derived from the Bayesian multilevel models with simple logistic regression models that were run separately for each of the 108 post-election survey segments. Only a few of these models, which are based on smaller sample sizes, are somewhat off scale, and, of course, all of the election-specific models are estimated with lower levels of precision. Nevertheless, findings derived from both specifications correlate very strongly and thus confirm the confidence in the reliability and robustness of key findings. Further details on the robustness checks are presented in Online Appendix A.5.

7. Summary and perspectives

The empirical analysis has arrived at four principal conclusions: first, the typological approach following Tomz and Van Houweling (2008) and Fazekas and Méder (2013) enables me to focus on critical cases and to classify each individual either as informed by proximity calculus, driven by directional affect, or tied among both logics. In line with previous evidence derived from experimental data (cf. Tomz and Van Houweling, 2008), I find that proximity voting is about twice as frequent as directional voting. However, as also recognized before, the substantial share of spatially "tied" voters also illustrates a lack of discriminatory power. While proximity and directional voting claim fundamentally different perspectives on voter decision-making, both formal representations of and empirical predictions are remarkably similar.

The second, more substantive conclusion addresses some simple descriptive features. The exhaustive data of the CSES IMD enables us to clarify some controversies concerning the impact of political sophistication on vote choice: while for instance MacDonald et al. (1995) and Merrill and Grofman (1999) do not report any effect, I side with Tomz and Van Houweling (2008) and conclude that higher levels of voter sophistication and political information are associated with proximity voting, lower levels are linked with directional voting.

Thirdly, I find significant empirical evidence to characterize and differentiate proximity and directional voters at the individual level. In spatial terms, directional voters are often centrists that select intense options at the margins of an issue scale. With reference to non-spatial motives, directional voters usually do not follow any party identification and more frequently cast votes for opposition parties.

The fourth finding refers to the informational context. The empirical analysis by and large confirms the findings presented by Pardos-Prado and Dinas (2010) and Fazekas and Méder (2013): polarized party systems contribute to the spatial elasticity of individual parties and party systems and thus enable and reinforce directional voting. At the same time, directional voters tend to support diffuse instead of concise platforms that take more "intense" positions within these polarized party systems.

Data availability

Data will be made available on request.

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Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.electstud.2021.102436.

References

Achen, C.H., Bartels, L.M., 2016. Democracy for Realists: Why Elections Do Not Produce Responsive Government. Princeton University Press, Princeton.

Adams, J., Engstrom, E., Joeston, D., Stone, W., Rogowski, J., Shor, B., 2017. Do moderate voters weigh candidates' ideologies? voters' decision rules in the 2010 congressional elections. Political Behav. 39 (1), 205–227.

Cho, S., Endersby, J.W., 2003. Issues, the spatial theory of voting, and british general elections: A comparison of proximity and directional models. Public Choice 114 (3/4), 275–293.

Cox, G.W., 1990. Centripetal and centrifugal incentives in electoral systems. Am. J. Political Sci. 34 (4), 903–935.

Dalton, R.J., 2008. The quantity and the quality of party systems: Party system polarization, its measurement, and its consequences. Comp. Political Stud. 41 (7), 899–920.

Davis, O.A., Hinich, M.J., Ordeshook, P., 1970. An expository development of a mathematical model of the electoral process. Am. Political Sci. Rev. 64 (2), 426–448.

Dow, J.K., 1998. Directional and proximity models of voter choice in recent US presidential elections. Public Choice 96 (3/4), 259–270.

Downs, A., 1957. An Economic Theory of Democracy. Harper and Row, New York.

Edelman, M., 1964. The Symbolic Uses of Politics. University of Illinois Press, Champaign, Illinois.

Elff, M., 2019. Probleme der messung politischen wissens im internationalen vergleich. In: Westle, B., Tausendpfund, M. (Eds.), Politisches Wissen. Relevanz, Messung Und Befunde. Springer VS, Wiesbaden, pp. 71–93.

Enelow, J.M., Hinich, M.J., 1984. The Spatial Theory of Voting: An Introduction. Cambridge University Press, Cambridge.

Fazekas, Z., Méder, Z.Z., 2013. Proximity and directional theory compared: Taking discriminant positions seriously in multi-party systems. Elect. Stud. 32 (4), 693–707.

Gallati, L., Giger, N., 2020. Proximity and directional voting: Testing for the region of acceptability. Elect. Stud. 64, 102024.
Gelman, A., Carlin, J.B., Stern, H.S., Dunson, D.B., Vehtari, A., Rubin, D.B., 2013. Bayesian Data Analysis. CRC Press, Boca Raton.
Hinich, M.J., Munger, M.C., 1992. A spatial theory of ideology. J. Theor. Politics 4 (1), 5–30.
Hinich, M.J., Munger, M.C., 1994. Ideology and the Theory of Political Choice. University of Michigan Press, Ann Arbor.
Iversen, T., 1994. Political leadership and representation in West European democracies: A test of three models of voting. Am. J. Political Sci. 38 (1), 45–74.
Knutsen, O., Kumlin, S., 2005. Value orientations and party choice. In: Thomassen, J. (Ed.), The European Voter. A Comparative Study of Modern Democracies. Oxford University Press, Oxford, pp. 125–166.
Lachat, R., 2008. The impact of party polarization on ideological voting. Elect. Stud. 27 (4), 687–698.
Lau, R., Redlawsk, D.P., 1997. Voting correctly. Am. Political Sci. Rev. 91 (3), 585–598.
Lau, R.R., Redlawsk, D.P., 2006. How Voters Decide: Information Processing in Election Campaigns. Cambridge University Press.
Lewis, J.B., King, G., 1999. No evidence on directional vs. proximity voting. Political Anal. 8 (1), 21–33.
Lupia, A., 2016. Uninformed. Why People Seem to Know So Little about Politics and What We Can Do about It. Oxford University Press, Oxford.
MacDonald, S.E., Rabinowitz, G., 1993a. Direction and uncertainty in a model of issue voting. J. Theor. Politics 5 (1), 61–87.
MacDonald, S.E., Rabinowitz, G., 1993b. Ideology and candidate evaluation. Public Choice 76 (1/2), 59–78.
MacDonald, S.E., Rabinowitz, G., Listhaug, O., 1995. Political sophistication and models of issue voting. Br. J. Political Sci. 25 (4), 453–483.
MacDonald, S.E., Rabinowitz, G., Listhaug, O., 1998. On attempting to rehabilitate the proximity model: Sometimes the patient just can't be helped. J. Politics 60 (03), 653–690.
Matthews, S.A., 1979. A simple direction model of electoral competition. Public Choice 34 (2), 141–156.
Merrill, S., Grofman, B., 1997. Symposium. The directional theory of issue voting: II: Directional and proximity models of voter utility and choice: A new synthesis and an illustrative test of competing models. J. Theor. Politics 9 (1), 25–48.
Merrill, S., Grofman, B., 1999. A Unified Theory of Voting. Directional and Proximity Spatial Models. Cambridge University Press, Cambridge.
Pardos-Prado, S., Dinas, E., 2010. Systemic polarisation and spatial voting: Systemic polarisation and spatial voting. Eur. J. Political Res. 49 (6), 759–786.
Rabinowitz, G., MacDonald, S.E., 1989. A directional theory of issue voting. Am. Political Sci. Rev. 83 (1), 93–121.
Stokes, D.E., 1963. Spatial models of party competition. Am. Political Sci. Rev. 57 (2), 368–377.
Tomz, M., Van Houweling, R.P., 2008. Candidate positioning and voter choice. Am. Political Sci. Rev. 102 (03), 303–318.
Tomz, M., Van Houweling, R.P., 2009. The electoral implications of candidate ambiguity. Am. Political Sci. Rev. 103 (1), 83–98.
Westholm, A., 1997. Distance versus direction: The illusory defeat of the proximity theory of electoral choice. Am. Political Sci. Rev. 91 (4), 865–883.
Westholm, A., 2001. On the return of epicycles: Some crossroads in spatial modeling revisited. J. Politics 63 (2), 436–481.
Zaller, J.R., 1992. The Nature and Origins of Mass Opinion. In: Cambridge Studies in Public Opinion and Political Psychology, Cambridge University Press, Cambridge.