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## *Party Government and Political Information*

We argue that the kind of political information voters should possess varies contextually in response to relevant political processes. Focusing on the partisan organization of legislatures, we derive hypotheses for what the typical American should know about politics at the national and state level and test these hypotheses in two studies. The first documents a dramatic change in American political knowledge at the national level in response to polarization—the replacement of individually oriented information with partisan information. While voters’ ability to identify the candidates running to represent them in Congress has been cut in half, their ability to rank order the parties ideologically has nearly doubled. The second study provides evidence that voters are better able to identify the majority party in their state legislature where partisan control of the legislative agenda and roll-call voting is stronger. We conclude by discussing the implications of our findings.

In the early 1970s, less than 40% of Americans could place the Democratic Party to the ideological left of the Republican Party, but, by the mid 2000s, nearly 70% of Americans were able to make this distinction. Over roughly the same period, the typical American’s ability to identify the candidates running to represent them in Congress fell by about 50%. In 2011, while 72% of Wisconsinites were able to recall the majority party of their state senate, only 18% of Virginians could correctly identify theirs. Contextual differences in political knowledge such as these are pervasive and substantial. They bear profound consequences for political participation and democratic responsiveness, and yet they are virtually unstudied. This article argues that these and other contextual differences in political information are driven by corresponding differences in the policymaking process and that citizens will obtain and retain specific kinds of political information when this information helps them complete political tasks in a satisfying

way. These tasks certainly include voting; however, we can also think of more general participation, such as discussing politics or making sense of political news, that require different kinds of information in different political contexts.

Our specific focus in this article is the partisan organization of legislatures in the United States. We argue that increasing party discipline in legislative voting reduces the value of legislator-specific information to understanding policymaking and politics more generally while it increases the value of partisan information—particularly partisan brands and majority status. Consequently, we hypothesize that increasing the role of partisanship in legislative voting should reshape the typical citizen’s information set to include *less* legislator-specific information and *more* partisan information. More specifically, we predict that as party discipline in legislatures increases, the typical voter becomes less likely to know the names and nonpartisan characteristics of individual legislators, but more likely to possess information on the ideological orientations of the parties and their majority status. Results from two studies support these hypotheses. The first examines changes in American voters’ ability to identify candidates running to represent them in Congress and their ability to ideologically rank order the Democratic and Republican parties over the last several decades. The second examines voters’ ability to identify the majority party of their state legislatures in 2011.

In the course of making our arguments and presenting evidence to support them, we make two salient contributions. First, the theoretical framework that we present adds to a growing multidisciplinary literature on “ecological rationality”—the idea that people adopt heuristic tools that appropriate for the choice/inference context in which they are operating (e.g., Goldstein and Gigerenzer 2002; Todd and Gigerenzer 2012). Typically, this literature focuses on which heuristics are being employed given their informational and processing costs (i.e., are they built upon cheap and available informational inputs, and are they “easy” to apply?) and their accuracy. For example, Fortunato and Stevenson (2017) show that Americans apply partisanship heuristics to infer the voting behavior of their senators more often when their senators are more loyal partisans. Here, however, we use the framework to predict which informational inputs people will possess, given how useful those inputs are (in conjunction with some simple rules) for understanding political processes. In sum, we argue that the empirical regularities of policymaking determine what one needs to

know in order to make sense of political processes, and this, in turn, reshapes the vocabulary political elites use to communicate political concepts, which helps facilitate changes in the aggregate distribution of political knowledge. Because this framework focuses on the relative value of information to voters in making political decisions, it stands in relief to a long tradition of research suggesting that most political information is only marginally valuable and that political knowledge functions more like an individual trait (e.g., Downs 1957; Popkin and Popkin 1994), and we believe it can be a valuable tool for understanding other salient contextual differences in political behavior at the mass and elite level.

Second, we document a substantial change to the political-knowledge profile of the typical American over the last several decades, as well as corresponding contextual differences in contemporary knowledge. Americans' ability to identify their congressional candidates has been cut in half over our period of study, while their ability to rank order Democrats and Republicans has increased by 80%, *and*, similar trends are apparent cross-sectionally at the subnational level. Though Hetherington (2001) notes that Americans' ability to rank order the parties increased from 1984 to 1996, this dramatic reorganization of political knowledge remains under appreciated and understudied.<sup>1</sup> Identifying this change and placing it in the context of changes in partisan organization not only provides evidence for our theoretical framework, but it also sheds light on the institutional roots of political knowledge and the far-reaching consequences of increasing party polarization, complementing previous research on the role of elite polarization on mass behavior (e.g., Druckman, Peterson and Slothuis 2013; Hetherington 2001) as well as research on affective polarization (e.g., Iyengar, Sood and Lelkes 2012).

Further, the empirical evidence that we present paints a different kind of picture of the electorate. The extant literature is rife with pessimistic depictions of the American voter as too ill informed to navigate politics. We find that, while voters are certainly not perfectly informed, they appear to naturally gravitate toward the most efficient pieces of information—those that, with a few simple rules, enable responsibility attribution and policy projections, given the empirical regularities of policymaking processes in a particular context. In other words, despite low aggregate levels of political information, our analysis suggests that the *type* of information citizens are likely to possess is responsive to political context.

### **What *Do* Voters Know?**

One potential reason the large changes in American political knowledge that we document and analyze here have gone relatively unremarked upon may be the behavioral literature's (very reasonable) focus on the individual—as noted above, there is a long line of research arguing that the instrumental value of most political knowledge is sufficiently marginal that the focus *should* be trained upon individual differences across citizens (e.g., Downs 1957; Popkin and Popkin 1994). As such, we have learned quite a lot about the correlates of political knowledge at the individual level over the years, and a substantial number of these empirical gains were built upon groundwork laid by Luskin (1990). In short, Luskin argued that the determinants of political sophistication are the resources, capacity, and motivation to invest in political learning (Carpini and Keeter [1996] advance a similar model). From this framework we get the theoretical intuition behind three of our most robust predictors of individual political knowledge: income, education, and interest (or variants thereof).<sup>2</sup>

Nearly every empirical model of political knowledge has found that higher levels of income, education, and political interest correlate to higher levels of political knowledge (e.g., Carpini and Keeter 1996; Prior 2005). Similarly, nearly every study has found that men tend to outperform women on questions of political knowledge, though whether that is due to response propensities, the type of questions we ask, or some other factor has been the subject of debate (e.g., Barabas et al. 2014; Mondak and Anderson 2004). This debate, however, is atypical of a literature that is generally in broad consensus regarding the individual-level predictors of political knowledge. Indeed, this individual-level consensus is likely one reason the literature has turned its attention to contextual factors. Access to different information sources, or the density of the information environment, have been found to drive differences in how much citizens know about politics (Jerit, Barabas, and Bolsen 2006; Prior 2005). Nicholson rather succinctly summarizes other contextual sources of knowledge variability, writing that “the electoral cycle, campaign spending, media coverage, issue characteristics, voter fatigue, and the number of days before the election shape voter awareness” (2003, 409). But these and many others studies not cited here, are, in a manner of speaking, still concentrating on one of Luskin's three pillars—they are searching for contextual factors that increase or decrease the cost of acquiring

political information by increasing the density of available information (Luskin's *resources*). Our focus here is identifying contextual factors that increase or decrease the *relative value* of certain pieces of information for participatory tasks, which will in turn make that information more or less likely to be acquired.

In this respect, the nearest neighbor of our study is the typology presented by Barabas et al. (2014). Barabas et al. argue that political knowledge varies on two dimensions—there is general and policy-specific information and there is information, that is changing and unchanging—and that the relevant correlates of these different information types are likely to vary. For example, while education is a strong predictor of general, unchanging political information (such as the institutional parameters of government), it is a poorer predictor of current policy information.

We see this as a remarkable contribution and a break from the literature's orthodoxy that “knowledge is knowledge,” born, in part, of the evidence presented by Carpini and Keeter (1996) that different types of political knowledge are highly correlated and their recommendation of a summary knowledge scale. As this summary scale came to dominate as the measure of choice, we collectively began to forget how much emphasis Delli Carpini and Keeter put on the qualitative differences in knowledge types—even structuring their scale for the express purpose of including each of their categories—and therefore failed to rigorously explore how these different knowledge types should vary in their usefulness, availability, or correlates. Indeed, some have argued that the study of political knowledge has simply grown detached from its initial purpose—assessing the degree to which citizens are equipped with the basic information needed to navigate the political-economic world and engage in the democratic process. Lupia elegantly summarizes this critique: “Most political knowledge questions are not derived from a replicable or transparent logic about how their answers bear on a voter's ability to make decisions of a particular quality in the voting booth” (2006, 219). In other words, while the Carpini and Keeter (1996) style framework (i.e., a summary knowledge scale) is excellent at parsing the electorate into who is politically knowledgeable and who is not, it does not allow us to understand if voters have the specific tools required for engaging politics in a particular context.<sup>3</sup>

Our theoretical framework and empirical tests are aimed directly at this point, and our focus in the next section is to provide an answer to the question, “what must voters know in order to cast

a satisfying ballot?” The answer we provide focuses on legislatures, the observable differences in their organization, and the bearing that these differences have on the relative value of different types of political information. We argue that the increasing salience of partisanship in Congressional voting over the last several decades should have fundamentally rewired the typical American’s knowledge profile, with information on *parties* supplanting information on *individuals*. We also argue and find evidence that similar differences in political knowledge are present at any given time *across* institutional contexts where the strength of partisan organization varies. In so doing, we draw a connection between the polarization of legislatures and citizens’ knowledge profiles not unlike previous work drawing connections between elite institutional polarization and citizens’ *preferences* (Druckman, Peterson, and Slothuus 2013; Hetherington 2001). We present our theoretical case by examining two hypothetical institutional contexts, which represent the most extreme cases for partisan organization.

### **What *Should* Voters Know?**

Our central argument is political contexts shape the type of information required to understand politics. In other words, if we believe voters are, in general, ecologically rational—that they gravitate toward information that is more useful for solving political problems, like deciding who to vote for—then their information set should be responsive to the empirical regularities of policymaking. To provide a framework for understanding how the empirical regularities of policymaking processes influence what voters should know about politics, we explore two idealized examples. First, consider a legislature institutionally equivalent to the US House, save the existence of parties. Such a perfectly nonpartisan legislature would very likely be organized in a manner familiar to most Congressional scholars: it might, for example, resemble Gilligan and Krehbiel (1990), where the legislature organizes to curtail uncertainty in policy execution, or it may resemble Weingast and Marshall (1988), where logrolling coalitions are organized by individuals seeking passage of their most desired policies. In either case, voting records and policy outcomes would be determined by the aggregation of individual policy preferences, free of the organizing influences or pressures of party organizations (e.g., Wright and Schaffner 2002). Because legislators are individual actors in such a nonpartisan

world, understanding the institution in any meaningful way would require citizens to have individually oriented information. That is, the aspects of the lawmaking process in this kind of legislature that are most salient to voters are likely to be the voting behaviors of their particular representatives and perhaps the distribution of agenda control amongst individual legislators (i.e., who holds legislative leadership positions).

We can think about the minimum information set that voters would need in order to cast a satisfying, policy-oriented prospective or retrospective vote in this context. A prospective voter, given her own policy preferences, would need information on the policy preferences of the candidates competing to be her representative.<sup>4</sup> More specifically, she would need to know the names of the candidates and then attach reasonably accurate policy preferences to those names so she could then compare the candidate preferences to her own and choose the best match.

A retrospective voter, given his perceptions of previous outcomes, would need information on the behavior of his incumbent legislator. This includes, of course, the incumbent's name and voting record on salient legislation (this need not be exhaustive; people may focus on only a single roll call if they so choose, as many voters reportedly focused solely on the Affordable Care Act in the 2010 congressional elections). The voter would then compare this record to the policy outputs of the legislature and determine whether or not his representative was on the "right side" of a sufficient number of votes to earn his support in the coming election; if not, he may choose to support the challenger. The information that ecologically rational prospective and retrospective voters would acquire in this nonpartisan context is summarized below.

#### Nonpartisan Legislature

Voter Type	Required Knowledge	
Prospective	candidate names	candidate preferences
Retrospective	incumbent name	incumbent voting record

Next, consider a case in which parties are present, and partisan organization in the legislative chamber is perfect. In this world, the majority party dominates the legislative agenda, and voting is perfectly disciplined within parties (i.e., all members of a party vote the same way on each roll call). Because the majority seeks policies that increase its brand value at the expense of the minority, many



roll calls should result in the majority and minority voting against one another en bloc. Further, because party leadership dominates the agenda, party brands are protected at all costs, and discipline is perfect, the role of individual legislators is necessarily marginalized. That is, individual legislators have little or no means to distinguish themselves from their copartisans inside the chamber—they are interchangeable. Following Schattschneider (1942), this is often called “party government,” an organization of legislative proposals, procedures, and voting behaviors that consolidate control of policymaking power and, in so doing, maximize the primacy of parties as cohesive organized units to the lawmaking process, typically at the expense of the individual. Several Congressional scholars have written extensively on how these cartels are constructed and maintained: Aldrich and Rhode (2000) and Cox and McCubbins (2005) are among the most widely cited, but perhaps an even better illustration for our idealized examples would be Cox’s (1987) account of the transition of the House of Commons from an individual-oriented institution to a party-structured institution that delegates nearly all policy authority to the cabinet.

From the voter’s perspective, selecting representatives to a party-dominated legislature is quite different from selecting representatives to a nonpartisan chamber. Rather than collecting information on individuals, voters require party-centered information. Assuming a nationalized two-party system and, again, taking voters’ policy preferences as given, a policy-oriented prospective voter would need to know the labels of the two parties competing for office and the relative positions of the parties on salient policies. Likewise, given some perceptions of policy outcomes, a retrospective voter would only need to know the identity of the majority party in the legislature. That is, if the outcomes are approved of, the voter supports the majority party; otherwise, the voter supports the challenger. The information that ecologically rational prospective and retrospective voters would acquire in this perfectly partisan context is summarized below.

### Perfectly Partisan Legislature

Voter Type	Required Knowledge	
Prospective	party names	party preferences
Retrospective	majority party	policy outcomes



Clearly, the informational requirements of voting in contexts of strong party government are different than the requirements in an individually organized legislature and most likely less costly to collect. Indeed, Levendusky (2010) highlights this while arguing that the increased clarity of choice under polarized party government can increase the stability of voting behaviors, and Levendusky's experimental research has recently been supported in observational analysis of several decades of American voting behavior (Smidt 2017). Recent research on how organization can influence the relative costs of information dissemination by campaigns (Kim and LeVeck 2013) or the relative electoral value of a party brand (Woon and Pope 2008) is complementary.<sup>5</sup>

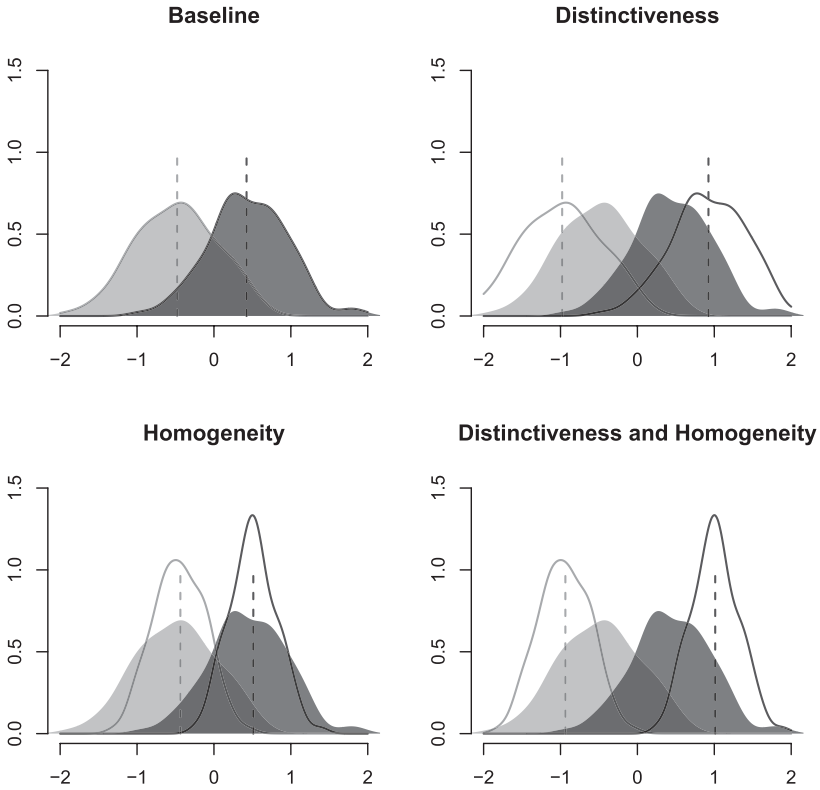
### **Congressional Organization and Political Information**

Over the past several decades, the US Congress has moved away from our idealized nonpartisan body and toward our idealized party-dominated chamber. Since the early 1970s, party cohesion in legislative voting has increased nearly monotonically, and the parties have also drifted apart in terms of their cardinal ideological positions. Our purpose here is not to weigh in on the causes of this change—Bonica (2014) offers a nice summary of, and contribution to, scholarship on this question—but to assess its effects on political knowledge in the electorate.

We argue that, in general, the typical voter should respond to the increased salience of parties in Congress by transitioning away from individual-oriented information and toward party-oriented information. Specifically, we argue that this trend affects the import and prevalence (or relative cost) of partisan information in relation to individual information in two separate, but related, ways. The first involves the increasing usefulness of party brands in predicting the behavior of individual legislators. We call this increasing *partisan homogeneity*. The second involves increasing the clarity of disagreement of the parties' positions across various issues. We call this increasing *partisan distinctiveness*. The concepts of partisan homogeneity and distinctiveness, though theoretically distinct, are empirically related, and they have grown in tandem over time. Consequently, they are often conflated (albeit usually implicitly), discussed as a single concept, or are seen as "two sides of the same coin," and most accounts use the term "polarization" to capture both concepts.

Conceptualizing polarization in this way, however, can obscure the fact that changes in partisan homogeneity and distinctiveness

FIGURE 1  
Decomposing Polarization



need not be codetermined. We illustrate this in Figure 1. In the top-left pane, we have a hypothetical baseline picture of distributions of ideal points for two legislative parties—a picture that is not unlike the true distribution of ideal points from the 92d House. In the bottom-left pane, we show how these distributions change if partisan homogeneity (the lack of variability of within-party preferences) were to increase while partisan distinctiveness (measured here as the distance between party medians) remains the same. Likewise, in the top-right pane, we change the baseline by increasing the distance between party medians without increasing partisan homogeneity. Finally, in the bottom-right pane, we increase both homogeneity and distinctiveness, to create a picture resembling what one would find in the contemporary Congress.

The difference between partisan homogeneity and distinctiveness is salient because changes in these two dimensions of Congressional behavior should have varying effects on the electorate's political knowledge. This is because the theoretical relationship between homogeneity and distinctiveness and the relative value of individualized information versus party information is not necessarily collinear. As we explain in more detail below, increasing partisan homogeneity reduces the relative value of candidate-specific information, but increasing partisan distinctiveness may not. Likewise, while increasing partisan distinctiveness, by definition, sharpens the ideological divide between parties, increasing partisan homogeneity may not. We begin with homogeneity.

### **Partisan Homogeneity and Political Information**

As partisan homogeneity increases, the usefulness of partisan knowledge increases in kind. One example of this comes from work on the usefulness of partisanship heuristics to infer the behavior of legislators. A number of scholars have examined how a simple partisanship heuristic allows a voter with little or no knowledge of the actual voting behaviors of individual representatives to forecast how a particular member of Congress (MC) has voted or will vote on a particular policy. By knowing which party a representative belongs to and the relative positions of the parties on the issue, voters can often apply the simple rule, "MCs vote with their party" to accurately infer their behavior. Research has shown this heuristic is applied widely, in both experimental (Lau and Redlawsk 2001) and observational studies (Ansolabehere and Jones 2010; Dancy and Sheagley 2013). As party loyalty in legislative voting has increased over the years, the average accuracy of the partisanship heuristic has also increased. This means that voters may accomplish more with less, so to speak—that the average voter can infer more Congressional behaviors, with greater accuracy, from the same small information set. As such, the usefulness of party brands as summary devices, or informational inputs to simple heuristics or other cognitive shortcuts has grown, increasing the net value of possessing party-centered information—for example, which party holds a majority or which party is more "left" and which party is more "right."

Over this same period, as party-centered information has become more useful to understanding Congress, individual-oriented information has decreased in its relative value. MCs defect from

their party less and less; therefore, information regarding individual MCs explains less and less of their behavior. Consider a distribution of ideal point estimates for a given party. As the party organization strengthens, party voting unity increases, and the expressed preferences of the party members converge on one another, shrinking the variance of the distribution. As unity approaches 1, the variance of the distribution of expressed policy preferences within the party approaches 0, and voters need only the distribution mean to describe the party. In this case, there is no benefit to individual-oriented information—all copartisans are interchangeable.<sup>6</sup>

Likewise, as partisan homogeneity increases, individual-oriented information is also likely to become more costly. As legislator-specific information becomes less helpful in understanding Congressional politics and policy outcomes, it is likely to become less prevalent in media reports and day-to-day political discourse. As Benoit and Laver have written:

*political discourse is rather like a giant feral factor analysis. The concepts that emerge—liberal versus conservative, left versus right—emerge because people over the years have found them simple and effective ways to communicate their perceptions of similarity and difference. (2012, 198).*

In the transition from a perfectly nonpartisan legislature to a perfectly partisan one, individual characteristics cease to communicate the important dimensions of similarity and difference as efficiently as partisan characteristics. Thus, these characteristics naturally recede from the greater political discourse while language regarding partisan characteristics or parties as organizations should increase substantially, a type of virtuous circle in which the most important concepts are the most utilized in elite communication and therefore most readily understood by the electorate. For example, between 1960 and 2000, the frequency of mentions of congressional party groups in popular dialogue—proportional to mentions of congress more generally—has increased over 600%.<sup>7</sup> Therefore, we expect that, over the last several decades (as partisan homogeneity has heightened in Congress), terms like “Democrat” and “Republican” or “liberal” and “conservative,” and their attached ideological connotations, have become more widely understood among voters and a more important part of their information set.

### Partisan Distinctiveness and Political Information

The homogeneity and distinctiveness of party brands have moved in tandem. Homogeneity has come from declining intrapartisan behavioral variation, while distinctiveness has increased as the parties have grown more dissimilar, on average, in their policy preferences. This increasing partisan distinctiveness has changed the utility and cost of partisan information, just as the increase in partisan homogeneity has made party-centered information more valuable and individual information less valuable. As the parties have drifted apart in their ideological positions, the divisions in their policy preferences have become starker. Levendusky, for example, points out that while in the 1970s, citizens were “not terribly clear” on the parties’ relative positions on abortion, today few citizens fail to make the correct distinctions (2010, 115).

The sharpening of ideological contrasts between the two parties contributes to the virtuous circle of partisan information dissemination. As the two parties’ positions diverge, media explanations of political issues and processes can increasingly be described in terms of partisan contrasts. Correspondingly, an increasing prevalence of elite and media discussion of politics in partisan terms reduces the average voter’s cost of obtaining salient partisan information (relative to individual information). Further, in this landscape, voters will increasingly come to learn about issues in partisan terms. That is, their initial introduction to an issue, such as health care or taxation, will be increasingly likely to be overtly partisan (i.e., a Democratic plan pitched against a Republican plan) as the middle ground between the parties in which they may compromise and cooperate continues to erode.

Note that these changes resulting from increased partisan distinctiveness are different from the changes we attributed to increasing partisan homogeneity. While growing homogeneity increases the number of candidates we may usefully paint with a generic party label, growing distinctiveness increases the distance between party positions and therefore also the extent to which those labels are meaningful for communicating similarity and difference across a large number of political issues. In other words, increasing partisan distinctiveness makes answering the question, “who is more conservative, Democrats or Republicans?” *easier*, while increasing homogeneity makes answering that question more *useful* to understanding and predicting legislative behavior. As such, one may expect homogeneity to have a greater impact on citizen knowledge

profiles than distinctiveness, all else equal, particularly in regards to reducing the salience of individually oriented information.

### Hypotheses

The discussion above yields two general empirical expectations. First, as the partisan homogeneity of legislative voting increases, particular members within parties become less behaviorally distinct, and as a result voters should come to possess less information about individual candidates. However, since parties may become increasingly ideologically dissimilar on average, while at the same time retaining a high degree of variation in the preferences and behaviors of individual members, we remain agnostic about the relationship between increasing distinctiveness and individual candidate knowledge. Second, as homogeneity and distinctiveness grow, the value of distinguishing parties in both position and role increases, and voters should therefore come to possess more information about the parties' relative ideologies and majority status.

To test these expectations, we present two studies, the first using the American National Election Studies (ANES) and the second using the Cooperative Congressional Election Study (CCES). In the first study, we assess the extent to which respondents are able to name the candidates running to represent them in both houses of Congress and the extent to which they are able to correctly rank order Democrats and Republicans on the left-right ideological spectrum. Our empirical expectations are:

*H1* As partisan homogeneity in Congressional voting *increases*, voters' ability to identify the names of their Congressional candidates will *decrease*.

*H2* As the partisan homogeneity and distinctiveness of Congress *increases*, voters' ability to correctly rank order Democrats and Republicans will *increase*.

In the second study, we assess the extent to which respondents are able to identify the majority party in their state legislatures. There is a great deal of variation in the homogeneity and distinctiveness of party delegations *across* state legislatures at any point in time as Shor and McCarty (2011) describe. This variability allows us to estimate the impact of these factors on voters' knowledge

profiles without concern for potential time-varying confounders. More specifically, as we discuss in detail below, we are confident that we have structured our analysis of voters' national political knowledge over time such that we are recovering clean estimates of the relationship of interest. However, this time-invariant cross-sectional study of state-level political knowledge is, by design, free of any potential temporal confounders, and this should alleviate lingering concerns that the evidence we uncover may be spurious or an artifact of unmeasured covariates that are correlated with time. In this study, our expectation is:

*H3* As the partisan homogeneity and distinctiveness in state legislatures *increase*, voters' ability to correctly identify the majority party will *increase*.

### Data and Measurement

In Study 1, we rely on ANES surveys. From 1978 to 2000, respondents were asked the following question:

*“Do you happen to remember the names of the candidates for Congress—that is, for the House of Representatives in Washington—that ran in this district in November? [if yes:] Who were they?”*

In addition to House candidates, respondents were also asked about Senate races in several surveys.<sup>8</sup> We use all such responses to create the first dependent variable for our analysis. Respondents who could not correctly recall any candidate names were coded 0, respondents who could recall one name were coded 1, and respondents who could correctly recall two or more names were coded 2.<sup>9</sup> In an ideal world, we would have more data to analyze; unfortunately the question was eliminated after 2000, and the ANES did not begin validating these responses until 1978, making iterations from previous years unusable.<sup>10</sup>

We measure party-centered information using the Republican and Democratic Party versions of the following question which was asked between 1960 and 2008:

*“We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal to*



*extremely conservative. Where would you place [party name] on this scale?"*

If the respondent places the Democrats to left of the Republicans, we code dependent variable as "correct"; if the respondent places the Republicans to the left of the Democrats or places both parties at the same point on the scale, we code the variable as "incorrect." Finally, if the respondent declines to place one or both of the parties, we code the variable as "don't know."<sup>11</sup>

To test our expectations, these two dependent variables are regressed on measures of the partisan organization of Congress. We have constructed two measures: one to capture the degree of intrapartisan homogeneity in the relevant chambers of Congress and one to capture the degree of interpartisan distinctiveness. Both measures are built from dynamic, common-space ideal point estimates of MCs over the past several decades (Carroll et al. 2009).

For our first independent variable, "homogeneity," we measure the cohesiveness of legislative voting within the parties. For each chamber, in each session, we calculate the standard deviation of the first-dimension common space, dynamic-weighted NOMINATE estimates for each party and multiply it by  $-1$  so that the term increases in value as copartisans become more similar in their voting behavior.<sup>12</sup> For our first dependent variable (candidate identification), we take the mean of the party standard deviations for each chamber and match that estimate to the contest for which respondents are asked to identify candidates. Thus, for a respondent asked to name her candidates for the US House in 1988, the independent variable would be the average of the (negative) standard deviation of Republican ideal points in the 100th House and the (negative) standard deviation of Democratic ideal points in the 100th House. For a respondent asked to name her Senate candidates in 1992, the independent variable would be the average of the (negative) standard deviation of Republican ideal points in the 103d Senate and the (negative) standard deviation Democratic ideal points in the 103d Senate, and so on.

The homogeneity measurements for our models of how well respondents know the left-right ordering of the parties must deviate somewhat from the above construction because this dependent variable does not make a distinction between the House and the Senate. Here, we take the standard deviation of *all* Congressional Republicans in a particular Congress (House and Senate) and the

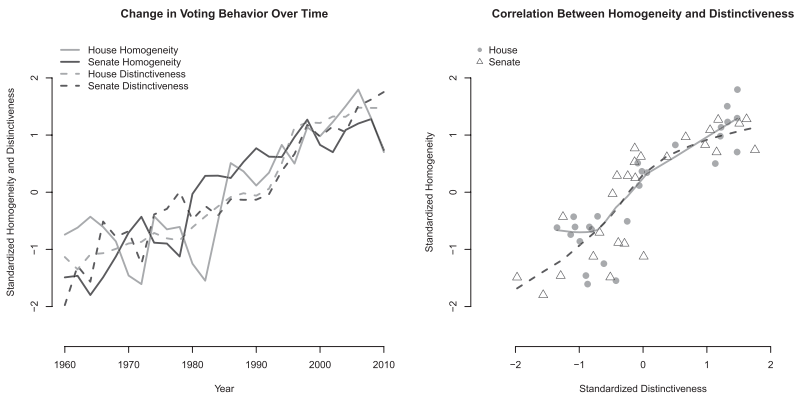
standard deviation of *all* Congressional Democrats in a particular Congress and average them such that we have one summary measure of partisan homogeneity for each Congress (which is again multiplied by  $-1$ ).

Our second independent variable, “distinctiveness,” captures interpartisan differences in expressed preferences. This variable is the absolute cardinal distance between the two parties’ median ideal points in the relevant chambers. For example, if a respondent is asked to name candidates in a House race in 1988, the corresponding value of distinctiveness will be the absolute distance between the Democratic and Republican caucus medians in the 100th House. Again, for our ideological rank-ordering dependent variable, we take the average across both Congressional chambers.

Figure 2 plots our main independent variables (homogeneity and distinctiveness) over time and against one another. These patterns should be familiar to most readers, given the amount of academic research dedicated to studying the increasing partisanship of Congressional behavior. As the figures show, these variables are correlated with time and each other. The correlations, however, are imperfect, and, fortunately, we have a sufficiently long sample period and a sufficiently large number of observations that we can account for these temporal correlations hierarchically. We discuss this in more detail below.

In Study 2, we rely on the 2011 CCES iteration. In this survey, respondents were asked, “which party has a majority of seats in the [state name] [assembly name]?” Each respondent was

FIGURE 2  
Description of Homogeneity and Distinctiveness



asked about both chambers of their state legislature, and voters from all 50 states were surveyed; however, we omit Nebraska from the analysis as it is technically a nonpartisan chamber. We code responses to these questions as “correct,” “incorrect,” or “don’t know.” Our independent variables of interest here are the same as above, homogeneity and distinctiveness—as the majority monopolizes the legislative agenda and the parties increasingly vote against one another en bloc, homogeneity and distinctiveness increase, which increase the relative value of knowing which party controls a majority of the chamber. These data are taken from Shor and McCarty (2011), who provide an excellent mapping of the distribution of left-right ideologies across all 101 state and federal legislative chambers of the United States by scaling legislative roll-call votes and National Political Awareness Test responses. These common-space ideal point estimates allow us to measure homogeneity and distinctiveness for all 98 state chambers on a common, comparable scale.<sup>13</sup>

## Study 1

### *Aggregate Analysis*

As a first cut, we estimate very simple models on aggregated data. In our view, it is helpful to examine such simple models that are “close to the data” to show the reader that the hypotheses are supported whether or not one employs complex statistical modeling. For the first, candidate knowledge, we simply calculate the mean number of candidates identified in all House races and all Senate races in each survey in which the question was asked. To be clear, surveys that ask about both House and Senate contests yield two observations—one for House races and one for Senate races. For the second dependent variable, we simply calculate the proportion of respondents that correctly rank order Democrats and Republicans on the left-right continuum in each survey module.

In Table 1, we regress average candidate knowledge on our focal variables, both separately and together, controlling for the type of race (House or Senate) and presidential election years when voters may be more engaged in politics and therefore more likely to have the knowledge on hand. As homogeneity and distinctiveness are on very different scales, they are standardized to

TABLE 1  
Aggregate Models of Candidate Knowledge

Variable	Model 1	Model 2	Model 3
Homogeneity	-0.069 (0.028)		-0.127 (0.050)
Distinctiveness		-0.026 (0.022)	0.047 (0.034)
Senate Race	0.432 (0.057)	0.291 (0.044)	0.117 (0.084)
Presidential Election Year	0.027 (0.032)	0.032 (0.037)	0.018 (0.031)
Intercept	0.348 (0.029)	0.392 (0.029)	0.344 (0.034)
<i>N</i>	18	18	18
<i>R</i> <sup>2</sup>	0.872	0.833	0.889

*Note.* Dependent variable is average number of candidates recalled in House and Senate races.

ease estimation and interpretation. It should be noted, however, that this does not change the substance of our results. As expected, intrapartisan homogeneity has a significant negative effect on candidate knowledge. As copartisans become more similar, and party labels offer more traction in inferring preferences and forecasting behaviors, voters become less likely to collect information on individual Congressional candidates. Consistent with our theoretical distinctions between homogeneity and distinctiveness, however, increasing the ideological distinctiveness of the parties, sharpening the contrast of Democratic and Republican positions, has no discernible effect on candidate knowledge. We also note that the explanatory power of these simple specifications is quite high. Even if we drop the senate race and presidential election-year indicators, the model  $R^2$  estimate is still 0.66, and this is not an artifact of a low-variation dependent variable: if we replace homogeneity and distinctiveness with a quadratic time term, for example, the  $R^2$  estimate falls to 0.15. All of this is to say that patterns of congressional organization are not simply statistically significant predictors of candidate knowledge, but *substantively* significant predictors that robustly outperform correlated alternatives.

In Table 2, we repeat this test for partisan knowledge. The results suggest that increasing intrapartisan homogeneity and interpartisan distinctiveness increase the proportion of voters that are

TABLE 2  
Aggregate Models of Party Knowledge

Variable	Model 1	Model 2	Model 3
Homogeneity	0.056 (0.015)		0.083 (0.049)
Distinctiveness		0.052 (0.016)	-0.029 (0.051)
Presidential Election Year	0.053 (0.029)	0.053 (0.031)	0.054 (0.030)
Intercept	0.516 (0.022)	0.516 (0.023)	0.515 (0.022)
<i>N</i>	21	21	21
<i>R</i> <sup>2</sup>	0.522	0.454	0.531

*Note.* Dependent variable is the proportion of respondents that correctly rank order Democrats and Republicans.

able to correctly rank order Democrats and Republicans ideologically. Again, the predictive power of the models is quite high, but it is significantly lower than for candidate knowledge. We believe that this is at least in part because partisan knowledge is durable and candidate knowledge is not. That is, if one learns the rank ordering of the two parties, they never have to relearn it, as it does not change over this period. On the other hand, candidate knowledge must be refreshed every two or six years, and therefore changes to the information environment should be more readily apparent in the data. We also note that the model containing both focal variables fails to support our distinctiveness hypothesis, but it is important to bear in mind that these measures are correlated at a fairly high level (because the values are averaged across chambers, the correlation is nearly five times greater than the measures used in the candidate-knowledge models), and this correlation, combined with the small *N* of just 21, creates identification problems—that is, both variables have a variance in factors score greater than 11, suggesting that the correct test is joint significance, which is  $p < 0.01$ . In the more rigorous model below, we are able to parse these effects with a larger number of observations and the help of some control variables. Nonetheless, we find the results of these models encouraging. Though they are simple tests, this first set of estimates buttresses confidence for our theoretical arguments which we hope to convince the reader of more thoroughly with our more demanding statistical models below.

*Individual-Level Analysis*

In our individual-level models, we add several control variables to our focal measures of homogeneity and distinctiveness. These are the usual suspects in models of political knowledge: the respondents' income, education, political interest,<sup>14</sup> race ("white" or otherwise), gender, age, and the mode of interview (telephone or in person), as well the respondent's strength of partisan affiliation. This last variable simply folds the usual 7-point directional measure of partisanship, such that 0 indicates a self-reported independence, 3 indicates either "Strong Republican" or "Strong Democrat," and the numbers in between represent intermediate levels of partisanship. As above, we also include an indicator for presidential election years, and in our individual candidate-knowledge model we include an indicator for Senate races.

In addition to these more standard variables, we add a few less common controls. To both models we add the respondents' birth year. This accounts for time trends or cohort effects—the idea is that voters socialized into political life at a particular time will behave differently than voters socialized into political life at another time even when controlling for their age. Before estimating, we subtract the birth year of our oldest respondent from the birth year of all respondents, making the variable's smallest value 0. We also attempt to account for oddities in party politics in our respondents' contexts by including a binary variable indicating that the respondent's state is represented in Congress by a single party and the average level of party discipline of the state's Congressional contingent. If voters are effectively exposed to only one party, they may be less able to distinguish the policy positions of Republicans and Democrats. Likewise, if states routinely choose very loyal legislators, or very disloyal legislators, that may influence the degree to which voters are attune to candidate or partisan characteristics apart from the prevailing national trends.

In the candidate knowledge model, we include the tenure of incumbent candidates, in number of Congressional sessions served, which enters the model as an implied interaction with an indicator for an incumbent being in the race (i.e., tenure variable may only be non-0 when an incumbent is running for reelection). We also add the margin of victory for the Congressional races in question for our candidate-knowledge model and the margin of victory for the presidential election at the state level, in presidential election years, for our partisan-knowledge model, since we expect

voters may be more invested in politics when the contests are competitive. This margin of victory measure is rescaled to the unit interval, where higher values indicate less competitive races.

Finally, we specify nominal dependent variables taking on one of three potential values for both models: 0, 1, or 2 for our candidate-knowledge model, and “correct,” “incorrect,” or “don’t know” for our partisan-knowledge model. Some readers may be surprised that we treat candidate recall as nominal rather than ordinal, but we made this choice for two important reasons. First, our theoretical story suggests a shift in probability density from being able to identify two candidates, to not being able to identify any candidates, rather than a shift from two candidates to 1, and one candidate to 0. In the perfectly nonpartisan world, prospective voters must compare the policy preferences of both candidates running to represent them and in the perfectly partisan world all individuals are interchangeable within parties and therefore any candidate knowledge is unnecessary. Knowing the preferences of a single candidate is not an intermediate stop in this transition. Second, there are variables in our model that should effect response probability in different ways. For example, while increasing political interest should increase the number of candidates recalled in a manner more closely resembling an ordinal process, incumbent tenure should not. A long-serving incumbent should make voters more likely to know one candidate’s name (the incumbent) and may also indicate a district so safe that many voters never learn the name of the challenger. This would result in an increase in the probability of observing a 1 and a decrease in the probability of observing a 0 or a 2. An ordinal framework would restrict the parameters’ ability to affect response-probability densities such that we would be unable to recover this relationship, and, as the results show, there are multiple variables that exert similar influences on the dependent variable. Finally, we remind the reader that an ordinal model is a special case of a multinomial model where the change in probability density is directionally restricted. Therefore, nominal estimation still allows ordinal relationships to manifest, but it does not force them to be so.

Both models present relatively complex data structures. More specifically, we have several nested and crossed-grouping structures in the data (e.g., a survey level, an election level, a state level, etc.) in which correlations in the dependent variables may manifest. Of course, there may be unmeasured variables associated with each



level that, if unaccounted for, may allow these correlations to bias the estimates of our variables of interest.

We address these unmeasured factors by estimating hierarchical multinomial logit models (i.e., mixed logit models) where we allow random intercepts at the level of the choice-alternative relative to the baseline response category. For example, in our candidate-knowledge model, where the baseline category is zero candidates identified, we estimate random intercepts for identifying one or two candidates for *each response*. Likewise, in the case of our party-knowledge model, where “don’t know” serves as the baseline category, we estimate random intercepts for answering correctly or incorrectly for each response. Since these random intercepts allow for unmeasured heterogeneity in each and every response in the data, this approach allows us to effectively capture the impact of unmeasured variables at every level of the data. So, for example, if there are important survey-level effects that are not captured by the variables in the model, these will be apparent if one aggregates the estimated response-level random effects to the survey level. Similarly, the effects of potential unmeasured time-varying confounders should also be accounted for.

We present our candidate-knowledge results first. The dependent variable is regressed on our independent variables of interest, homogeneity, and distinctiveness, as well as our control variables. Our expectation is that homogeneity, our measure of intrapartisan similarity in Congressional voting, will exert a negative effect on the number of candidates known—the less variation there is in the behaviors of individual MCs within party, the less salient individual-level information becomes. The results are given in Table 3.

The results from the model offer strong support for our theoretical expectation that knowledge about individual Congressional candidates is negatively correlated with the strength of partisanship in Congress, particularly the degree to which members of a given party are indistinguishable from one another in their voting behavior. Intrapartisan homogeneity is a robust negative predictor of individual-oriented knowledge. The strength of this relationship is illustrated in the top-two panels of Figure 3, which calculates predicted probabilities of each outcome for a typical respondent in the usual way with 95% confidence intervals (i.e., King, Tomz, and Wittenberg 2000).<sup>15</sup> We plot these response probabilities over the observed range of homogeneity while holding distinctiveness constant at its mean. The top-left pane plots the individual response

TABLE 3  
Individual-Level Model of Candidate Knowledge

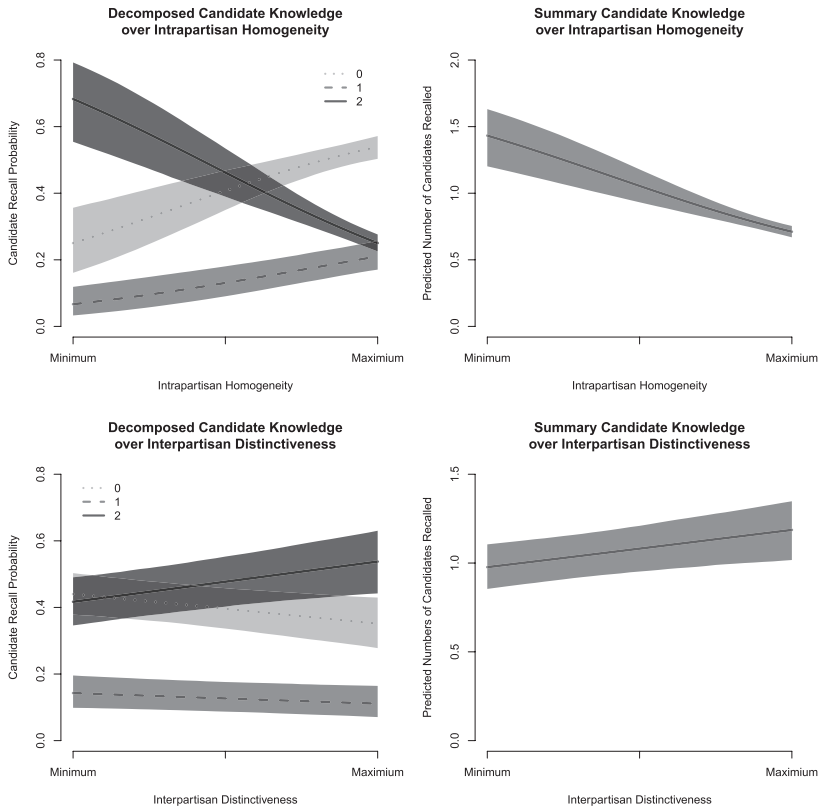
Covariate	One		Two	
Homogeneity	0.099	(0.073)	-0.523	(0.089)
Distinctiveness	-0.007	(0.046)	0.150	(0.054)
Education	0.250	(0.013)	0.363	(0.015)
Income	0.121	(0.016)	0.142	(0.019)
Female	-0.340	(0.033)	-0.449	(0.039)
White	0.502	(0.045)	0.952	(0.062)
Partisanship	0.119	(0.017)	0.139	(0.021)
Campaign Interest	0.538	(0.027)	0.772	(0.031)
Age	0.003	(0.008)	0.019	(0.010)
Birth Year	-0.018	(0.008)	0.007	(0.010)
Senate	-0.034	(0.152)	2.128	(0.188)
Presidential Election Year	0.024	(0.035)	-0.058	(0.042)
Margin of Victory	-0.100	(0.053)	-0.571	(0.066)
Incumbent	0.116	(0.051)	-0.185	(0.059)
Incumbent Tenure	0.014	(0.005)	0.011	(0.006)
State Discipline	-2.555	(0.592)	-2.570	(0.707)
Single Party State	0.201	(0.076)	0.060	(0.098)
Telephone	-0.182	(0.052)	-0.232	(0.067)
Intercept	-0.808	(1.058)	-5.336	(1.251)
var(Random Intercepts)	0.217	(0.454)	0.208	(0.250)
<i>N</i> (choices)	28552			
<i>N</i> (alternatives)	85656			
<i>ln</i> (likelihood)	-21756.725			

*Note.* Dependent variable is the number of Congressional candidates a respondent can correctly identify. Baseline response category is knowing zero candidates.

probabilities, and the top-right pane sums these probabilities into the average number of candidates correctly recalled.

As the top-left pane of the figure shows, although there is an increase in the probability of identifying one candidate, the overwhelming shift in probability due to homogeneity is a transfer from being able to recall two candidates to being able to recall zero. Indeed, our typical respondent recalls two candidates with a remarkable probability of greater than 0.68 when homogeneity is at its sample low (the 1978 House), but with less than 0.25 probability when homogeneity is at its sample high point (the 1998 House). The net result of this shift is that the typical voter has gone from being able to recall 1.43 candidates to only 0.71 candidates.

FIGURE 3  
Effect of Homogeneity and Distinctiveness on Candidate Knowledge



This is a substantial shift in knowledge profiles in just over two decades, which, of course, corresponds to a substantial shift in the organization of Congressional voting. Importantly, however, we *do not* contend that voters are becoming *less informed* over this period, but that this change corresponds to a shift in the *type* of knowledge that citizens acquire. Candidate-centered knowledge is simply less valuable when copartisans are interchangeable, so voters should acquire other types of information instead.

The distance between the parties, as shown in the bottom panes of Figure 3, also has a positive effect on candidate-centered knowledge, though it is less than 30% the total effect exerted by homogeneity. The data suggest that, all else equal, as the parties

separate ideologically, voters become more able to identify two candidates. We did not predict this effect, and our initial reaction in finding it here was to worry that that putting our two central variables in the same equation, given their correlation, might be generating statistical artifacts due to collinearity. However, this does not appear to be the case since omitting one of the two variables from the model produces very similar results (these models are given in Appendix A2 in the online supporting information). One possibility worth considering in future research is that the polarization of the two parties causes alienation at the center; thus, moderate voters, forced to choose between two generally unappealing alternatives, are motivated to invest in more candidate information to make an informed choice. A second possibility is that the widening gap between the two parties increases the potential stakes of the election, therefore compelling voters to pay more attention than they would otherwise. This possibility was raised in complementary research by Smidt (2017) documenting the disappearance of party switching by voters.

Before moving on, it is worth discussing some of the estimates on our control variables. As expected, all demographic variables behave as previous research would predict. Male respondents and those that are wealthier, better educated, more interested, white, and have stronger partisanship tend to have better candidate knowledge. The contextual variables behave intuitively as well—recall is higher in senate elections and more competitive elections and also better in in-person interviews relative to telephone interviews. Finally, the presence of an incumbent candidate substantially increases the probability of recalling a single name relative to zero or two names, and this is increasing with incumbent tenure.

The remaining variables are particularly interesting because they offer both direct and indirect support for our theoretical arguments. First, increases in state caucus-voting discipline substantially increase the probability of being able to identify zero candidates. This is very important. What the data are telling us is that, not only does increasing party homogeneity at the national level erode individual candidate knowledge, but, *holding national homogeneity constant*, localized increases in party discipline substantially quicken the pace of this erosion. In other words, voter knowledge profiles are adapting to both national and local contexts as congressional behaviors change. We also see evidence for this adaptation in the cohort variables. Holding age constant, later-born respondents, who are socialized into a political world in

which individual candidates are less and less behaviorally distinctive, are increasingly more likely to identify zero candidates, with the the majority of this change coming at the expense of being able to identify one candidate. Taking this ancillary evidence for our arguments together with the direct evidence from our hypothesis tests, we believe that the model offers very strong support for our theoretical framework.

To test our second hypothesis, we again estimate a hierarchical multinomial logit model, where we may observe one of three values of the dependent variable: respondents may rank order the Democrats and Republicans correctly, incorrectly, or respond that they “don’t know.” We include in the model the same focal variables and most control variables from the previous model, but we change the election specific measurements from House and Senate races to presidential elections. This also includes the removal of Senate election indicators and information regarding the incumbency of Congressional representatives. The results are provided in Table 4. Recall that our expectation is that homogeneity and distinctiveness will have a positive effect on partisan knowledge.

The estimates support our predictions. Increasing partisan homogeneity and the distance between the two parties increases the probability that voters are able to rank order Democrats and Republicans ideologically. As above, we generate graphics to examine the substance of these relationships by simulating response probabilities for the same typical voter, and these are reported in Figure 4.

The figure shows that increasing partisan homogeneity from the sample minimum to the sample maximum (roughly equivalent to transitioning from the unity of the Congress in 1970 to the unity of the Congress in 2004) increases voter knowledge of the ideological rank ordering of the parties from about 0.35 to about 0.73—*over a 200% change*. Making a similar change in interpartisan distinctiveness, transitioning from the sample minimum to the sample maximum (Congress in 1960 to Congress in 2008) would increase voter knowledge of the ideological rank ordering of the parties from about 0.49 to 0.75, all else equal. These are very large effects.

As in the candidate-knowledge model above, nearly all control variables exert effects that we would expect given previous research. Voters are more accurate in presidential election years, when the supply and salience of political discourse is heightened, and even more accurate if they live in a state in which the candidates

TABLE 4  
Individual-Level Model of Party Knowledge

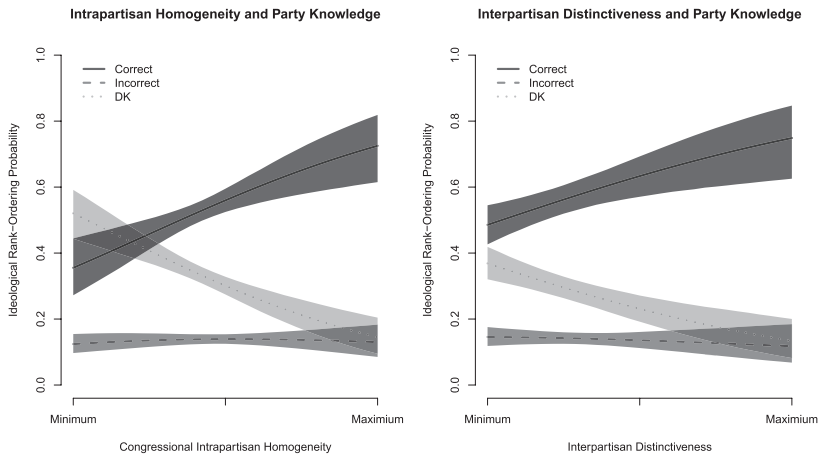
Variable	Correct		Incorrect	
Homogeneity	0.777	(0.169)	0.513	(0.067)
Distinctiveness	0.523	(0.133)	0.285	(0.094)
Education	0.691	(0.158)	0.123	(0.014)
Income	0.265	(0.062)	0.058	(0.018)
Female	-0.644	(0.137)	-0.305	(0.038)
White	0.533	(0.150)	-0.111	(0.047)
Partisanship	0.524	(0.098)	0.414	(0.020)
Campaign Interest	0.801	(0.175)	0.250	(0.026)
Age	-0.077	(0.016)	-0.044	(0.006)
Birth Year	-0.082	(0.018)	-0.032	(0.006)
Presidential Election Year	0.524	(0.135)	0.365	(0.082)
Margin of Victory	-0.719	(0.201)	-0.751	(0.153)
State Discipline	3.550	(0.882)	1.462	(0.471)
Single Party State	0.003	(0.090)	-0.070	(0.086)
Telephone	0.112	(0.073)	0.039	(0.065)
Intercept	0.846	(0.776)	0.540	(0.756)
var(Random Intercepts)	1.947	(0.810)	0.026	(0.254)
<i>N</i> (choices)		36031		
<i>N</i> (alternatives)		108093		
<i>ln</i> (likelihood)		-29635.634		

*Note.* Dependent variable is a respondent's ideological rank ordering of Democrats and Republicans. Baseline response category is "don't know."

are competitive. Further, all demographic control variables exert the effects we would expect in typical political-knowledge models. Though it is difficult to tell from examining the coefficients, age does have a small, but statistically robust, positive effect on party knowledge when interpreting age and birth-year effects jointly, meaning that we do not see the same level of socialization effect as we did in candidate knowledge. This is to be expected, however, as this piece of partisan knowledge is durable—it does not require refreshing over time, as candidate knowledge does, so we should expect people to accumulate it over time, even if older voters were born into a world in which this knowledge was less useful than younger voters.

As in the candidate-knowledge models, state-level party discipline exerts a very large effect in the expected direction—the greater the state-level pattern of party unity, the better able

FIGURE 4  
Effect of Homogeneity and Distinctiveness on Party Knowledge



are voters in that state to properly rank-order Democrats and Republicans, even when holding homogeneity and distinctiveness constant at the national level. As above, these effects provide ancillary support for our theoretical framework.

Taking the candidate- and partisan-knowledge models together, the dramatic shift in the aggregate distribution of voter knowledge over the period of our analysis supports the argument that voters come to possess the information that most economically allows them to participate in the democratic process. As the organization of Congressional voting has changed, Americans have come to possess less information regarding individual candidates, but also more information about parties as organizations.

### *Alternative Explanations*

Before moving to Study 2, we address some alternative explanations for the results presented here. There are two primary competitors: changes in media and unmeasured variables correlated with time. First, we believe it is important to state clearly that political elites, particularly media, are important to our overarching story. That is, we do not expect voters to observe partisan organization directly and then actively choose the type of information in which they will invest. Rather, we believe that changes



in partisan organization lead political elites to adopt different language to communicate different concepts; those that are most salient for understanding political interactions, given the state of the world. For the US Congress over the last several decades, that means transitioning from individual-level concepts to partisan concepts. However, we want to reassure the reader that the effects we have uncovered are not powered by changes in media—apart from those driven by changes in partisan organization—that may restructure the type of information available to voters.

Most notably, political communication experts have found that local media markets have been contracting, leading to fewer local newspapers, and therefore a dearth of local political coverage. If this change made “political junkies” more apt to turn toward national politics to get their “fix,” it may potentially influence our estimates. This may happen directly or indirectly by, perhaps, changing citizens’ engagement (Hayes and Lawless 2015), the agreement between their local and national preferences or behaviors (Hopkins 2018), or their polarization (Darr, Hitt, and Dunaway 2018). It may also be that coverage of their Congressional candidates has simply declined (Snyder and Strömberg 2010). While we do not believe that media market changes pose a great threat to our estimates, given that nearly all of this change occurred after our sample period (e.g., Peterson 2017), we nonetheless want to assuage concerns. To this end, in the online supporting information, we estimate models that control for the local number and circulation of newspapers (Gentzkow, Shapiro, and Sinkinson 2014) as well as the “localness” of broader political discourse. The results, which are nearly identical to those presented above, are given in Appendix A3 in the online supporting information.

The second potential confounder is a time-correlated omitted variable. As mentioned, we are confident that our models properly account for potential time effects; nonetheless, we model time explicitly in the online supporting information. The inclusion of various functions of time do not wash out our hypothesized effects, although it does substantially inhibit efficiency. Further, models identical to ours in every respect save the replacement of the focal variables with time functions underperform our models with probability  $\sim 1$ . All of these models are in Appendix A4 in the online supporting information. Finally, as we show in Study 2, evidence for our arguments is not limited to changes in knowledge over time, but it is also manifest in contextual variation in subnational legislative knowledge at a given point in time.

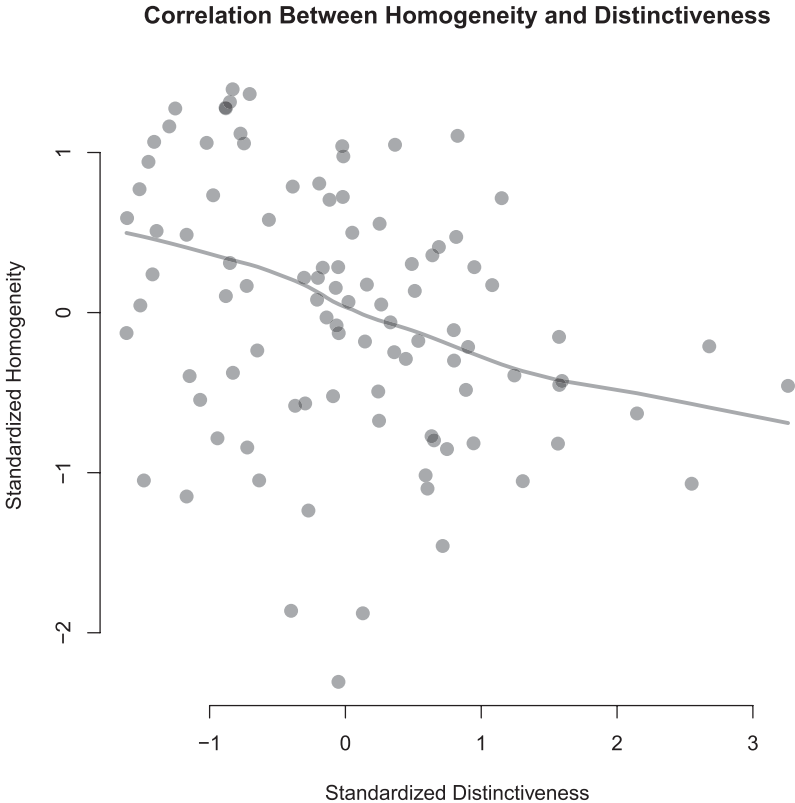
## Study 2

### *Aggregate Analysis*

We believe that the analyses in the preceding section bear strong support for our central hypotheses, but nonetheless we want to show that our framework is generalizable to cross-sectional differences in partisan organization and political knowledge at a particular point in time. This will demonstrate that our arguments “travel” to contexts other than Congress and also provide additional evidence that the results presented above are not merely an artifact of time-varying confounders. To this end, we analyze the cross-sectional impact of variability in homogeneity and distinctiveness on voters’ ability to identify the majority party in their state legislative assemblies using the 2011 CCES module.<sup>16</sup> As mentioned above, the American states provide an ideal laboratory to study the effects of partisan organization on political knowledge because the chambers are nearly identical institutionally, but they vary quite in the extent to which part affiliation structures roll-call voting. This is discussed in some detail by Shor and McCarty (2011), but the variability is also displayed graphically in Figure 5, which plots the standardized estimates of homogeneity and distinctiveness for each upper and lower house of all states, less Nebraska. Here, as opposed to the depiction on patterns of homogeneity and distinctiveness in Congress shown above, the two estimates are either weakly negatively correlated or simply uncorrelated. Of course, if we were to examine a particular chamber over time, the story may be different. Nonetheless, this degree of cross-sectional variability and the lack of correlation between the two measures across states are another feature of this secondary analysis.

Our first cut, as above, is a very simple model using aggregate data including only the main covariates and a few key control variables. Table 5 shows the results of this model where the dependent variable is the proportion of survey respondents that correctly identify the majority party of a legislative assembly in their state. The central independent variables are the level of partisan homogeneity and distinctiveness in each chamber, and we expect a positive relationship between both homogeneity and distinctiveness and majority knowledge. The models control for the popularity of majority party to account for the possibility that voters

FIGURE 5  
Relationship between Homogeneity and Distinctiveness across  
the American States



in states that are fairly homogenous in their partisanship will simply infer that the more popular party controls the legislature. This enters the models as the share of the state-level 2012 two-party presidential vote that each chamber majority party received and is labeled “state identification.”<sup>17</sup> We also include an indicator that the chamber has a true majority as two of the chambers, the Alaskan Senate and Oregonian House, were tied, having an equal number of Democrats and Republicans. Here, the correct response to the survey question, “which party has a majority of seats in the [state name] [assembly name]?” where available responses are “Republicans,” “Democrats,” “neither,” or “don’t know,” was

TABLE 5  
Aggregate Models of Legislative Majority Knowledge

Variable	Model 1	Model 2	Model 3
Homogeneity	0.018 (0.014)		0.031 (0.014)
Distinctiveness		0.022 (0.012)	0.031 (0.012)
State Identification	0.888 (0.127)	0.864 (0.126)	0.876 (0.124)
Majority Present	-0.099 (0.105)	-0.068 (0.105)	-0.069 (0.103)
Squire Index	-0.099 (0.105)	-0.163 (0.109)	-0.189 (0.108)
Intercept	0.178 (0.081)	0.173 (0.081)	0.173 (0.079)
<i>N</i>	98	98	98
<i>R</i> <sup>2</sup>	0.452	0.462	0.488

*Note.* Dependent variable is proportion of correct identifications of a state chamber.

“neither.” For these chambers, the value of state identification is 0; therefore, these two variables are an implied interaction, where majority support can only take on a non-0 value when “majority present” is equal to 1. Finally, we include a measure of legislative professionalism, the Squire (2017) Index, as recent research shows that more professional chambers attract more moderate candidates, which may reduce the incentive to collect information on majority status over the long term (Hall 2019).

The results support our expectations. Increasing homogeneity and distinctiveness is associated with an increase in voters’ aggregate ability to identify the majority party in their legislative chambers, and the full model results are quite strong. As above, the explanatory power of these models is high, and we find these results encouraging, although we hope to convince the reader more thoroughly with a more demanding test.

#### *Individual-Level Analysis*

Our individual-level model is very similar to those estimated above. We estimate multinomial logit models where the dependent variable may take on a value of “correct,” “incorrect,” or, “don’t know.” These responses are regressed on a very similar vector of

covariates. We, of course, include our focal variables and also income, education, political interest, gender, race, age, and (folded) partisanship (birth year is, of course, omitted as it is collinear with age in a single survey iteration). As in the previous model, we include an indicator for the presence of a true majority delegation and our measure of the majority party's popularity, but also an individual-level variable indicating that the respondent identifies with the party that actually controls the majority of each chamber to account for the possibility that voters are broadcasting their preferences onto their response (we call this "Party Agreement"). Because each respondent enters the data twice (once for each of their state's chambers) and we have respondents grouped into 49 states, it is necessary to account for these groupings. We employ the same method as above, estimating random intercepts for each response. Note that this should account for contextual factors as well, such individual differences due to locality (e.g., Carpini, Keeter, and Kenamer 1994) or contextual differences due to, for example, differing media densities (e.g., Rogers 2017).

The model results can be seen in Table 6, where "don't know" serves as the baseline response category. Again, the raw statistical results support our expectations about the contextual distribution of political knowledge: voters display a higher degree of partisan knowledge in contexts where that knowledge is more useful. In this case, the partisan identity of state legislative majorities is more widely known in states where parties are more salient to legislative voting, as evidenced by homogeneity and distinctiveness.

Figure 6 displays the effects of the focal variables, using the same typical individual as in Study 1. Over the range of observed homogeneity, pictured in the left pane, the probability of correctly identifying the majority party of a state assembly increases from 0.58 to 0.67. Over the range of observed distinctiveness, pictured in the right pane, the probability of correctly identifying the majority party of a state assembly rises from 0.60 to 0.69. The data are quite conclusive—as the salience of partisanship in structuring voting behaviors increases, so too does the level of partisan knowledge in the electorate.

Of course, these effects are smaller than the effects on national-level political knowledge reported above; however, there are two factors that are important to bear in mind. The first is that these are cross-sectional differences taken from a single survey, and, as such, we need not worry about potential confounders induced by the passage of time. The second is that the particular

TABLE 6  
Cross-Sectional, Individual-Level Analysis of Party Knowledge

Covariate	Correct		Incorrect	
Homogeneity	0.069	(0.020)	-0.113	(0.028)
Distinctiveness	0.141	(0.014)	-0.070	(0.020)
Education	0.202	(0.009)	0.038	(0.014)
Income	0.081	(0.004)	0.032	(0.006)
Female	-0.717	(0.026)	-0.314	(0.037)
White	-0.038	(0.031)	-0.437	(0.045)
Political Interest	0.855	(0.017)	0.370	(0.021)
Partisanship	0.219	(0.012)	0.145	(0.017)
Age	0.005	(0.001)	0.000	(0.001)
Party Agree	-0.418	(0.027)	0.000	(0.039)
State Identification	2.914	(0.178)	-3.055	(0.295)
Majority Present	0.263	(0.189)	0.470	(0.182)
Squire Index	-1.249	(0.106)	-0.244	(0.156)
Intercept	-4.296	(0.179)	-0.779	(0.156)
<i>var</i> (Random Intercepts)	0.028	(0.243)	0.444	(0.350)
<i>N</i> (choices)		39087		
<i>N</i> (alternatives)		117261		
<i>ln</i> (likelihood)		-31995.944		

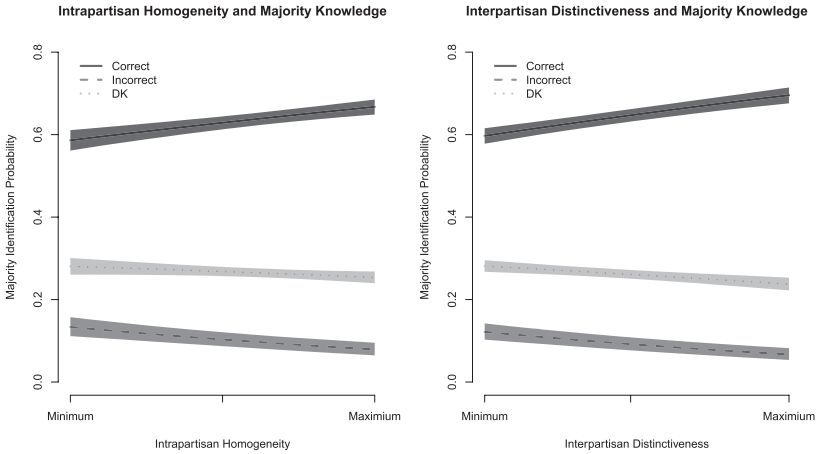
*Note.* Dependent variable is a respondent's identification of a state legislative chamber's majority party. Baseline response category is "don't know."

piece of political knowledge we are examining, knowledge of state legislative majorities, is a comparatively costly piece of information given the dominance of national politics in contemporary political discourse. For example, in the raw data, nearly 37% respond that they do not know which party controls their lower state assembly rather than hazard a guess—this is almost twice the rate of nonresponse as on the questions asking for Congressional majorities in the same survey. When this many respondents to the CCES, which skews toward a more politically interested segment of the population, refrain from hazarding a guess, a 15% (or 9 percentage points) increase in correct response probability is a dramatic effect.

## Discussion and Conclusion

We argued that citizens obtain and maintain certain kinds of political knowledge because it is useful for accomplishing political

FIGURE 6  
Effect of Homogeneity and Distinctiveness on Majority Party Knowledge



tasks. This implies that the kind of political knowledge that voters come to possess should be responsive to their institutional context and the empirical regularities of political processes. Our specific focus here was on partisan organization and the extent to which parties shape voting in the US Congress and legislatures in the American states. We argued that, as legislative voting becomes more partisan and individual legislators within parties become behaviorally interchangeable, voters should become less likely to possess information on individual legislative candidates and more likely to possess information about parties as groups, specifically their ideological rank ordering and majority status.

In testing our hypotheses, we documented a dramatic change in the knowledge profile of the typical American voter over the last several decades. American voters have exchanged information about the *individuals* running to represent them in Congress for information about the *parties* to which these candidates belong. In the aggregate, the number of Congressional candidates that ANES respondents could name was cut in half over a period of less than three decades. This knowledge was not simply discarded, however, it was supplanted by partisan knowledge. From the low point of intrapartisan homogeneity to its high point, voters' ability to rank order Republicans and Democrats doubles. This massive redistribution of American political knowledge has deep behavioral



implications. It shapes the relevant considerations that voters are capable of making at the ballot box while similarly changing the available language and information they have on hand to interpret and discuss political events.

We also documented significant cross-sectional variations in political knowledge and demonstrate a similar pattern: where legislatures are more partisan in their organization, voters tend to have more information about the parties. In this case, we learned that voters are significantly better able to identify the majority party of their state legislative chambers when the parliamentary agendas and voting patterns in those chambers are dominated by parties. Taken together, these two studies present what we believe to be a very compelling case for our theoretical framework and the general argument that political knowledge should be thought of in terms of its value in accomplishing political tasks—that the value of particular pieces of information should vary systematically in response to the empirical regularities in policymaking processes.

A natural question to ask is: what else can this framework help us learn about how voters understand the political world? Already there has been research in comparative politics documenting similar relationships between knowledge profiles and behavioral patterns and the enduring empirical regularities of policymaking processes. For example, Duch and Stevenson (2008) show that voters in countries where the chief executive is more easily identifiable and has more influence over growth and unemployment tend to weight economic performance more heavily in propensity to support the incumbent executive. Fortunato, Stevenson, and Vonnahme (2016) show that voters' ability to sort their political parties ideologically is driven by how important that ability is to understanding the formation of coalition governments. Duch, May, and Armstrong (2010) document estimates of pure spatial voting and also "coalition-directed" voting, and a comparison of these estimates reveals that voters in countries with long histories of coalition governance, like Denmark and Germany, place more weight on anticipated coalition formation outcomes when casting their ballots than voters in countries like Portugal and Ireland—countries which tend to alternate between single-party and coalition cabinets—who cast more sincere spatial votes. These studies present compelling evidence that voters adapt to their institutional context, gravitating to the information and behaviors appropriate to it. This suggests that, in the aggregate, voters are what social psychologists call "ecologically rational,"

naturally adaptive to the cognitive demands of their environment (Gigerenzer 2008; Gigerenzer and Gaissmaier 2011). For example, our general argument, which presumes a type of “ecological rationality,” would predict that voters have more information about individual mayoral candidates in American municipalities with nonpartisan elections than their counterparts in municipalities with partisan elections. Or, in countries with a formal recognition rule stating that the plurality party is granted formateur privileges, voters should be more adept at predicting which party will win a plurality, because it is more useful to understanding government formation and determining which coalitions are likely to form and which are not. An institutionally oriented theoretical framework for studying political information and choices can be a powerful tool in expanding our understanding of behaviors and outcomes throughout the democratic world. Indeed, these patterns should be evident not only in the behaviors and knowledge profiles of citizens, but also in elite discourse and political coverage in the media. The very language that evolves to describes political processes should contour to the institutional contexts that determine the empirical regularities of those processes, just as we noted above in documenting the rapid growth in popular discourse mentions to congressional party contingents as parties came to dominate congressional behaviors in the the United States.

Pivoting back to the specific empirical results we presented here, this evidence is part of a growing number of studies suggesting that increasing partisan polarization is not just changing how American political institutions function, but it is also fundamentally changing the way American voters think about politics and make political decisions. Taken together with insights from research on motivated reasoning and mass polarization (e.g., Hetherington 2001; Lebo and Cassino 2007), this article suggests that the changing structure of party interactions may have substantially deeper consequences than the present literature suggests. American voters’ political thinking is gradually being “rewired” into a fiercely partisan framework such that the typical voter is no longer able to even identify their congressional representative by name.

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## NOTES

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1. Both Hetherington (2001) and Abramowitz (2010) note increases in Americans' ability to rank order Democrats and Republicans over recent years, though with different explanations or goals. Hetherington, for example, marshals this evidence in support of a larger argument over growing polarization, while Abramowitz attributes the trend in increasing educational attainment. Of course, neither have argued that this knowledge should supplant individual-level information as we argue here.

2. Political interest enters empirical models in several different ways. Often, direct measures of interest are used, but we occasionally proxy for interest with other measures of political investment, such as a sense of civic duty, feelings of political efficacy, extremity of partisanship, and so on. For example, Prior (2005) uses all three in different models in the same article.

3. Other recent examples of articles examining the role of context on political knowledge include Lyons, Jaeger, and Wolak (2013) and Barth, Burnett, and Parry (2019).

4. We are not concerned here with "correct voting," so we do not ask if voters know enough to know what is "best" for them, but only if they know enough to choose the candidate that best reflects their preferences.

5. An anonymous reviewer raises the idea that increasing homogeneity in the composition of congressional districts may refocus attention from general elections to primary elections, and this may provide a drag on the reorganization of political knowledge. We believe that this is most certainly possible, but it would be a much more salient factor for primary voters than the general electorate. Because primary voters are a small fraction of the general electorate, our suspicion is that these mitigating effects would be small. Nonetheless, our empirical design accounts for this in part by including a measure of district competitiveness.

6. In practice, one could imagine that there may be constituency service benefits to representative specific information. If one's social security check does not arrive on time, one should know their Congressperson's name in order to reach out for help. For the time being, however, we put these nonlegislative activities aside.

7. Details of this estimate are in Appendix A1 in the online supporting information.

8. The ANES asked respondents to name Senate candidates in all iterations over that period save 1984 and the period from 1994 to 2000. We also note, for those using the cumulative data file, there is an error in the addition of the 1996 module to the cumulative file that corrupts responses to these questions: we noticed this error during diagnostic examination of the data. The cumulative file responses suggest levels of candidate knowledge in 1996 that are far too great to be credible, and, after examining the original data, we found that there was indeed an error in aggregating 1996 into the cumulative file. We correct the error by removing all 1996 responses from our cumulative file and substituting in responses from a stand-alone version of the 1996 data.

9. About 50 respondents could recall three candidate names—enough to note here, but not enough to identify a fourth category of the dependent variable.

10. Between 1958 and 1974 respondents were asked if they remembered the candidates running to represent them, but the surveyors did not follow up and ask for the names of the candidates. Also, a previous reader asked that we substitute candidate recognition for candidate recall, citing tables comparing the two in seminal work by Jacobson (2008). In the book, the “recognition” measure is derived by adding the number of respondents who can recall the candidates to the number who are willing to offer a thermometer placement, while discarding nonvoters. Because this conflates true recall with a willingness to simply offer a survey response (and discards nonvoters, respondents systematically less likely to recall their candidates), we believe this is an inappropriate measure of candidate knowledge and reiterate: there is no stand-alone “candidate recognition” data in the cumulative ANES data.

11. Changing “tied” placements from “incorrect” to “correct,” or even “don’t know” responses, does not change the substantive conclusions of our estimates.

12. Recall that common-space DW-NOMINATE scores scale both houses of Congress for all sessions, and the scores are therefore both temporally comparable and comparable across houses.

13. We note here, that there is an alternate measure of the extent to which the majority party dominates the legislative agenda, the aggregate proportional reduction in error (APRE) (Poole 2005), and we discuss and analyze that measure in Appendix A5 in the online supporting information;—it also robustly supports our arguments.

14. We use the “interest in campaigns” measure of political interest rather than “interest in public affairs.” Both questions were not asked in one wave during our sample period, 1974 and 1970, respectively. To account for missingness in 1974, we estimate interest in campaigns using the public affairs responses and all other demographic variables for all years other than 1970 and 1974, and we use those model estimates and the true values of the independent variables to impute campaign interest for 1974. Omitting this wave does not significantly alter our results. We also impute income as if missing at random. The level of

nonresponse for this variable is quite high and imputing it significantly improves statistical power. Compared to models without imputation, the imputed models slightly dull the effects of income, but the other variables are substantively unchanged.

15. The particular respondent pictured here is a 45-year-old white man with median education, income, strength of partisanship, and campaign interest, naming candidates competing for a seat in the US Senate where one of the candidates is an incumbent with one full term (three sessions) of experience. The margin of victory and voting discipline of the state delegation are held at their mean, and the state is represented by both parties.

16. Though the choice of module was somewhat arbitrary, the 2011 module is attractive in part because it is off-cycle, meaning that idiosyncrasies in the cross-sectional distribution of political knowledge driven by campaign effects should be subdued for nearly all states. We nonetheless attempt to account for these perturbations hierarchically as in the analyses above.

17. Note that this also helps us to proxy for competition, which Lyons, Jaeger and Wolak (2013) suggest is correlated state-level political knowledge.

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### Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

#### Appendix A1

Figure S1: Standardized References to Congressional Party Groups Over Time

#### Appendix A2

Table S1: Comparison of Focal Variable Inclusion *Note*. Baseline response category is knowing zero candidates

#### Appendix A3

Table S2: Individual-Level Model of Candidate Knowledge Adjusting for the Density of Local Media Markets



Table S3: Individual-Level Model of Party Knowledge Adjusting for the Density of Local Media Markets and the “localness” of the Greater Political Discourse

Appendix A4

Table S4: Individual-Level Model of Candidate Knowledge with Quadratic Time Term *Note*. Dependent variable is the number of congressional candidates a respondent can correctly identify. Baseline response category is knowing zero candidates

Table S5: Individual-Level Model of Party Knowledge with Quadratic Time Term *Note*. Dependent variable is a respondent’s ideological rank-ordering of democrats and republicans. Baseline response category is “don’t know”

Table S6: Individual-Level Model of Candidate Knowledge With Cubic Time Term. *Note*. Dependent variable is the number of congressional candidates a respondent can correctly identify. Baseline response category is knowing zero candidates

Table S7: Individual-Level Model of Party Knowledge With Cubic Time Term *Note*. Dependent variable is a respondent’s ideological rank-ordering of Democrats and Republicans. Baseline response category is “don t know.”

Appendix A5

Table S8: Cross-Sectional, Individual-Level Analysis of Party Knowledge. *Note*. Dependent variable is a respondent’s identification of a state legislative chamber’s majority party. Baseline response category is “don t know.”

Figure S2: Partisanship of Legislative Voting and Majority Knowledge