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Electoral System Incentives for Interparty and Intraparty Politics

Brian F. Crisp, Patrick Cunha Silva, Santiago Olivella, and Guillermo Rosas

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List of Abbreviations

ABM	Agent-Based Model
A-M	Aldrich-McKelvey
AME	Additive and Multiplicative Effects
AP	Average Personalism
AV	Alternative Vote
BC	Borda Count
CART	Classification and Regression Tree
CLPR	Closed-List Proportional Representation
EMD	Earth Mover's Distance
N	Effective Number of Parties
N_v	Effective Number of Electoral Parties
N_s	Effective Number of Legislative Parties
FLPR	Flexible-List Proportional Representation
FR-LPR	Free-List Proportional Representation
F-PR	Fortified Proportional Representation
GBM	Gradient-Boosting Machine
I–I	Interparty–Intraparty
I^3	Interparty & Intraparty Electoral Systems Incentives Dataset
LN	limited Nomination
LV	limited Vote
MMC	Mixed-Member Compensatory
MMI	Mixed-Member Independent
MNTV	Multiple Non-Transferable Vote
MSE	Mean Squared Error
OLPR	Open-List Proportional Representation
PELA	Parliamentary Elites of Latin America
PMP	Policy-Making Process
PR	Proportional Representation
PBV	Party Block Vote
MAJ	Majoritarian
SMD	Single-Member District
SMDP	Single-Member District Decided by Plurality
SNTV	Single Non-Transferable Vote
STV	Single Transferable Vote
TDE	Total Duvergerian Effect
TR	Two-Round
TR-MNTV	Two-Round Multiple Non-Transferable Vote
TRSMD	Two-Round Single-Member District
V-DEM	Varieties of Democracy
V-PARTY	Varieties of Party Identity and Organization

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Materials Available from This Project

The website for this project, of which this book is only one part, can be found at https://i3dataset.com/.

At that website you will find the following items:

- Interparty & Intraparty Electoral Systems Incentives Dataset[I^3] dataset: Dataset of electoral rules, covering elections since 1945.
- `i3pack` R-package: package allowing users to employ our simulation tools to build their own scenarios.
- `RMarkdown` replication files: code and datasets used to replicate the findings in each chapter in Parts III & IV of the book.
- I^3 dashboard: an interactive dashboard that allows users to easily compute our indexes (TDE and AP)
- A set of PowerPoint slides that can be employed to teach the material covered in the book.

If you make use of any of these materials, please cite this book:

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PART I

THE RULES OF THE GAME

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1
Party Politics

Legislatures are integral to the functioning of a representative democracy. Parliaments, congresses, and assemblies play many roles—not necessarily the same ones in every democracy—but their primary duty is to draft and adopt the laws that govern their countries. How exactly legislatures go about making laws and the content of the laws they adopt are in large part at the discretion of the elected members of the branch itself (sometimes with a broad framework provided by a written constitution). Elected officials may be guided by their belief in some set of core principles regarding the nature and scope of government, but their ability to act on these principles will be a function of the institutions or formal rules and procedures that structure the democratic process. An institution that is part of every representative democracy—the one that is the focus of this book—is the electoral system used to select the politicians who will be empowered to govern.

Citizens in many countries around the world are familiar with the electoral rules to which they are subject, but they may or may not be aware of the variety of systems that exist elsewhere. Only in rare instances, if ever, are they likely to ponder the extent of the variation in such rules and why it exists. It exists, typically, because the actors with the power to select the rules to be used—founders, framers, reformers, and, increasingly, courts—had some goals in mind in terms of the way they expected representation to work, and they have reason to believe that the design of the rules will influence the behavior of democratically elected representatives as they pursue office and carry out their duties once selected. We believe this too.

When seeking to shape the form of representation that will occur, the goals that can be pursued are multiple and sometimes contradictory. For example, founders or reformers may wish to create a system where a single party is likely to control all the levers of power, making it clearly responsible for the successes or failures of government. Conversely, in most cases, the designers of democratic institutions, including the electoral system, may wish to assure that voters can freely express their heterogeneous preferences and then have those preferences translated more or less proportionally to seats in the legislature.

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It is possible that reformers are tired of parties with muddled and vague platforms, but instead wish politicians to form parties that offer clear and specific policy platforms that they will responsibly pursue if they win the election. Again, often contrary to this goal, reformers in other contexts may be tired of faceless representatives who dutifully follow the dictates of their parties' leaders and put little to no effort in developing some kind of personal bond with the voters who elected them. As we will show, the electoral system chosen to elect members of the legislative branch can be designed to pursue such varied forms of representation.

Practitioners of politics, not just academic political scientists like the authors, recognize the potential importance of electoral system design. An outgoing authoritarian regime in Chile imposed on the country an electoral system intended to limit the size of the party system and to over-represent voters on the right. For the lower house of Congress (the Chamber of Deputies) the system awarded two seats per district (it had low *district magnitude*) and required the first-place party to win twice as many seats as the second-place party to get both seats (it had a disproportional *seat allocation formula*). The system worked as planned, incentivizing the formation of two large electoral coalitions and rewarding the center-right with a proportion of congressional seats greater than its proportion of the vote. Voter frustration with the limited choices available to them eventually led to dissatisfaction with the government and repeated mass protests. Since, its return to democracy in the early 1990s, Chile had appeared to be a bedrock of political stability in a region not typically known for its adherence to regularly scheduled elections and turnover of power. The scale and intensity of the anti-government expressions took many casual observers by surprise. In 2015, Congress finally responded with an electoral reform that increased the number of seats per district to anywhere from three to eight seats. As a result, the proportionality between votes and seats has increased dramatically, and Congress now contains a more heterogeneous set of actors. In 2017, in the first election after the reform, 17% of the seats went to parties that had not won seats previously.

For decades the Japanese lower chamber was elected under a system where each voter cast a single vote for an individual candidate in order to fill multiple seats in each district, with seats going to the candidates who had received the largest number of individual votes. Votes that were cast for candidates other than those in the seat-winning spots played no role in allotting seats. The fact that candidates from the same party were pitted against one another in every district—while being pitted against members of other parties as well—meant that legislators who wanted to get reelected had to be able to show voters what

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they individually—not as members of some unified party—had accomplished while in office. House members sought to hold onto their seats by supplying voters in their districts with particularistic rewards—targeting their districts with, and individually claiming credit for, government spending. The practice was economically inefficient and laden with corrupt practices. Public pressure for change mounted dramatically, but the long-ruling Liberal Democratic Party (LDP) refused to adopt reforms. Its failure to do so finally led to loss of control over the government, and in 1994 the new legislature adopted a significant electoral reform within six months. The system it adopted created one tier of elections where a sole representative of a party competed in a district for the single seat to be awarded and another tier where multiple seats were awarded and parties nominated lists of candidates. The lists were "closed" in the sense that voters were not allowed to signal a preference for one candidate on a list over another. In short, the system prohibited competition among members of the same party in an effort to diminish the incentive to cultivate a personal reputation based on reckless government spending.

In sum, electoral systems matter because they make some forms of representation—or party politics—more likely than others. Electoral systems can induce systems with few parties, one of which is likely to control the legislature, or to encourage heterogeneous voters to elect a parliament with a variety of political parties that accurately reflect their preferences. The choice of electoral rules put in place can encourage candidates and elected officials from a party to stand together to responsibly support a single set of policies, or they can encourage politicians to try to build personal connections with their constituents based on targeted projects and constituency service.

The bulk of this chapter is devoted to describing aspects of *interparty politics*—relationships among parties—and *intraparty politics*—relationships within parties. We will briefly enumerate multiple political forms of behavior that fall into each category. We hope that readers will appreciate how understanding the reasons for variations in these behaviors across countries (and over time) is fundamental to understanding why citizens get the forms of representation they get. Our ultimate goal is to illustrate that the variations in interparty and intraparty politics that we see around the world are at least in part—perhaps in large part—due to the electoral systems they use to elect their legislatures.

After elaborating on party politics and developing a conceptual framework for depicting its richness, we will tell readers about the structure of the rest of the book; we will describe the ancillary materials that we have developed,

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which vastly increase the outputs of this project; and we will make the case for who ought to read this book (everybody!) and why.

1.1 The Politics of Interparty Competition

Interparty politics involves the relationship among parties, including their number and relative size, as well as where they locate themselves in a policy space, and how this location corresponds to citizens' preferences. These are fundamental aspects of the relationship between party systems and representation. Let us elaborate briefly on each of these interparty outcomes of interest.

The Effective Number of Parties: Some electoral systems discourage many parties from entering the electoral arena, and motivate the parties that do decide to compete to stake out centrist positions near one another on an ideological continuum. This gives voters incentives to look for the *viable* party that most closely reflects their preferences. Even those who would prefer noncentrist policies may be forced to vote for their most preferred moderate option—or not at all.[1] We refer to such systems as "strong" or "constraining." On the opposite end, other electoral systems institutionalize incentives that encourage multiple parties to enter the electoral arena and to spread themselves relatively widely across the ideological continuum, offering a greater variety of policy platforms. Voters, regardless of their favored policies, can generally find a party with a reasonable prospect of winning seats and a manifesto that closely reflects their preferences. We call such systems "weak" or "permissive."

According to Duverger (1954), single-member district decided by plurality (SMDP) systems are likely to generate two-party competition, a statement known as Duverger's Law. By contrast, proportional representation (PR) systems (and majoritarian systems that feature two-round or run-off rules) tend to sustain multiple parties. Duverger argued that electoral systems play both a *mechanical* and *psychological* role in translating votes into seats. The mechanical component is simply the formula that determines how votes translate into seats. The psychological component of Duverger's Law refers to when political elites and voters act in anticipation of the mechanical effects of electoral rules. Faced with constraining rules, parties that perceive themselves to be less popular may decline to enter the electoral arena. Similarly, voters who believe their favored party has no chance of winning may vote strategically for

[1] In a small number of countries such as Belgium or Brazil, voting is compulsory.

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the most similar viable option. If contestants (entering parties and candidates) and voters coordinate efficiently within the given electoral system, few votes should be cast for losing parties or candidates.[2] Both Leys (1959) and Sartori (1968) argue that the same sorts of calculations are necessary under PR, but as the proportionality of the votes-to-seat translation increases, they apply to fewer candidates/parties and voters—thereby constraining the size of the party system by less than under SMDP rules.

An almost insurmountable challenge that scholars have faced when attempting to separate the impact of Duverger's psychological effect of electoral system incentives from their mechanical effect is how to observe voters' "sincere" preferences. We cannot know the extent to which voters opted to strategically defect to a seemingly more viable option if we do not know which option they most preferred in the first place. Their vote choice tells us something about their true or sincere preferences, but it is already a product of their efforts to anticipate how the mechanical effect of the system will translate (everyone's) votes into seats. We will get ahead of ourselves a bit by revealing that our simulations-based approach allows us to solve this problem. We will create voters and endow them with (sincere) preferences. The simulations can tell us for which candidate or party they would vote if that option's viability was not known or considered—their sincerely preferred option—and for which candidate or party they would vote once they are given information about every competitor's prospect of winning a seat—their strategically preferred option. The extent of the change in choices—when the strategic option is not the most preferred option—is Duverger's psychological effect.

Party Locations in the Policy Space: Beyond their number and relative size, electoral systems also influence parties' ideological locations. The policy space is often conceived of as unidimensional, with positions arrayed from Left to Right or from state control over the economy to unfettered market governance. Through their manifestos, campaigns, and policies pursued while in office, parties position themselves in support of a certain basket of policies on a wide array of issues, including the labor market, government finance, tax structures and rates, openness to international trade, and government ownership of the means of production. Scholars often aggregate these policies to indicate a single location on the ideological spectrum.

[2] Of course, this assumes that entrants care exclusively about winning the race they enter and that voters seek only to influence the seat allocation that will occur after this election. If candidates or voters have other goals—for example, registering a preference for an alternative program—votes "wasted" on non-viable choices may not be a true sign of coordination failure. Cox (1997) identifies a number of assumptions that must hold in order to coordinate around an "appropriate" number of entrants.

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Cox (1990) reasoned that parties faced *centripetal* incentives—pressure that encourages them to congregate in the center of the ideological spectrum—in electoral systems with low district magnitude.[3] It is important to keep in mind that the *center* of the ideological continuum can vary from party system to party system, and does not refer to some single point on a hypothetical, universal spectrum.[4] Conversely, systems ensconce *centrifugal* incentives, encouraging parties to disperse across the ideological spectrum when district magnitude is high.[5]

Citizen to Politician Congruence: How do the effective number of parties and their locations in a policy space relate to citizens' preferences? *Congruence* compares where voters' and candidates' preferences lie in a given policy space (Powell Jr., 2000). This concept blurs the boundary between interparty and intraparty politics. If we were interested in the extent to which voters and the representatives they choose share preferences for a given set of policies, this would seem to be an intraparty relationship between a specific politician from a given party and supporters of that party. However, when we think of a system-level phenomenon—the locations of all parties relative to all voters—our focus is really on the interparty spread of both actors.

We reason that this relationship is driven by the same electoral rules that determine the effective number of parties and the locations they choose to stake out. When discussing congruence, we can focus on whether the preferences of the median Member of Parliament reflect those of the median voter (one-to-one congruence). Depending on how we think legislative bodies reach collective decisions, we may also be interested in whether the distribution of citizens' preferences mirrors that of their elected representatives as a whole (many-to-many congruence) (Achen, 1978; Golder and Lloyd, 2014).

Weak electoral systems translate the preferences of a fragmented or heterogeneous electorate into a fragmented parliament as voters spread their support across the many parties that enter the electoral arena and those parties are awarded seats. Conversely, the system becomes stronger or more constraining when district magnitude, or the number of seats to be allocated in the district after the election, decreases, when disproportional formulas are used, and when legal thresholds increase. Strong electoral systems discourage the

[3] He also reasoned that centripetal incentives would prevail where voters had many votes and were required to cast all of them.

[4] Cox (1990, 513) puts it nicely: "In an electorate in which 50% of the voters are to the left of Marx, and 50% to the right, Marx would be considered centrist. Thus, the interpretation of the central clustering theorem is not in terms of the content or substance of ideology, but in terms of the array of opinions in each district."

[5] And also when voters have few votes and partial abstention is permitted.

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preferences of a fragmented or heterogeneous electorate from creating a fragmented parliament. In this case, entering elites and voters need to strategically coordinate around the limited set of viable candidates or risk wasting their efforts on losers.

The Interparty Dimension of Politics

Figure 1.1 depicts the terms we use to talk about interparty incentives. It is an adaptation of Shugart (2001*a*, *b*). At the extremes of the interparty dimension, we will simply refer to systems as Very Weak or Very Strong. Between these two extremes, the terms Permissive and Constraining capture the interparty political incentives that are imposed by electoral systems.

We consider this dimension to be a continuum. The labels are not hard and fast categories but simply a heuristic to indicate our expectations about how electoral systems with varying incentives shape the behavior of political elites and voters. In Chapter 4, we measure electoral system incentives on the interparty dimension.



Figure 1.1 Interparty electoral incentives: Electoral incentives set different degrees of permissiveness and constraint on the interparty political dimension

1.2 The Politics of Intraparty Competition

Intraparty politics entails the relationship between candidates, including incumbent representatives and the constituents who have the power to elect them or vote them out. The relationship between constituents and representatives is shaped by the topics that parties and candidates emphasize in their campaigns, their level of eagerness to provide constituency service, and whether the legislative branch is primarily known for delivering broad, programmatic policies or targeted, particularistic (pork-barrel) outputs. Intraparty politics also involves relationships between party bloc leaders in the legislature and rank-and-file legislators, colloquially known as "backbenchers." The relationship between leaders and backbenchers includes outcomes such as how legislative committees are structured and how cohesively partisan blocs

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vote. As with interparty politics, electoral rules create incentives for intraparty politics that affect the behavior of party leaders, legislators, and constituents.

While the incentives regarding *inter*party politics revolve around a system's potential for proportionality across different distributions of voters' preferences, the incentives related to *intra*party politics center on the extent to which rules promote competition among members of the same party. When electoral rules allow potentially intense intraparty competition, we hypothesize that those incentives will encourage *individualistic* or *personalistic* forms of behavior. In such settings, appealing to voters based solely on a shared party reputation is insufficient. This may require copartisans to behave in ways that diminish the party's shared reputation. Where intraparty competition is intense, we would expect the average member of Parliament (MP) to be a noteworthy individual. In Chapter 4 we develop a measure we call Average Personalism (AP) to capture the extent to which an electoral system allows voters to reward individual candidates who may stand out due to their proven competence, charisma, fame outside of politics, physical appearance, etc.[6]

In systems with low (or no) intraparty competition, we argue that incentives will encourage *party-centric* forms of behavior. Since the rules prevent voters from directly rewarding individual candidates, candidates are not motivated to develop an individual reputation. The most efficient way to get re-elected is to focus on the party's shared reputation and to build legislative institutions and processes that are best suited to enhancing that reputation. In such settings, we would expect most MPs to be faithful representatives of their parties, and to be relatively indistinguishable from one another in personal terms. Chambers elected under such electoral systems will be characterized by lower levels of AP. Here, we briefly elaborate on intraparty outcomes.

Campaign Focus: The campaign trail is perhaps the most obvious place to look for manifestations of vote-seeking incentives. Candidates must strike a balance between boasting about their own individual traits and

[6] Electoral system features that allow for more-or-less intraparty competition are not synonymous with the idea of "the intensity of intraparty competition." Our AP measure is intentionally limited to the formal rules that make up the electoral system. While we capture variations in incentives ensconced in formal institutions, we do not wish to capture variation in behavior. The intensity of intraparty competition is more than just a question of whether voters can express a preference among copartisans and the number of seats being contested where they can do so. It also includes factors like how many copartisans emerge to contest an election, how many emerge relative to the seats over which they are competing, and whether those candidates who do emerge are of equally high quality. Holding these factors constant or assuming that their variation averages out over observations, we expect relatively high correlation between the rules that go into the construction of AP and the intensity of intraparty competition. Where behavioral factors are not constant or do not average out across observations, the personal vote-seeking incentives imposed by the electoral system and the intensity of intraparty competition faced by a group of given candidates may only be loosely related.

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accomplishments and talking about what their parties stand for and have achieved. By promoting their *party's* stance, candidates can distinguish themselves from competitors in other parties, but not from other candidates in their own party. In contrast, by promoting their own individual characteristics, candidates can distinguish themselves from competitors from their own *and* other parties. For example, candidates may speak about their bravery and leadership during military service, or claim credit for important policies they advocated while serving in a previous office—perhaps in a state-level legislature—now that their ambition has compelled them to seek a seat in the national legislature or the presidency.

Constituency Service: A second area where we would expect intraparty competition to matter is constituency service, which is often singled out as an important means of earning electoral support. We conceive of the effort broadly as including any activity that addresses non-policy grievances or the interests of citizens in a politician's district. Since these actions are not related to a party's program or manifesto, constituency service is often non-partisan. Constituency service typically involves providing private or club goods that benefit a small set of constituents (Crisp and Simoneau, 2018) such as finding lost social security checks or encouraging municipal authorities to spruce up local parks (Cain, Ferejohn, and Fiorina, 1987). It is thus typically associated with personal vote-seeking incentives. The relatively direct and one (legislator) to one (constituent) or few (constituents) nature of the interaction makes it easy for individual legislators to claim personal credit.

Cameral Procedures: A third area concerns the cameral procedures that legislators must fashion to govern their assemblies in ways that allow them to efficiently develop the (personal or party) reputations that will earn them votes. For example, in some cases legislators have very few opportunities to introduce bills—sometimes called private-member bills—that reflect their own priorities, but instead spend all of their time dealing with bills introduced by the government. Even where private-member bills are permitted, there can be restrictions on the amount of floor time that can be devoted to them or hurdles set on the minimum number of legislators who must cosponsor them. Such rules help parties build collective reputations and limit an individual member's ability to personally claim credit for legislative business. Likewise, rules can assure members will have long terms of service and the right to remain on committees in which they have built expertise. Rules can also endow those committees with property rights, making it difficult (if not impossible) for the legislation most salient to a given member to proceed without his or

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her input. Clearly, individual members in control of their tenure in strong committees can use these committees to enhance their personal reputations.

Party Unity: A fourth outcome of interest is the willingness of legislators to build reputations as "mavericks" that defy party leaders so as to distinguish themselves from competitors within their own party. In this case, what is good for the individual legislator may be very different from what is good for the party. Parties will struggle to implement the policies they promised to supporters if voting discipline in the legislature is too low. A party cannot build a reputation for delivering on its promises if its legislators do not regularly coordinate with one another. The incentives institutionalized in the electoral system may be reflected in the rules governing cameral voting procedures (e.g., how dissenters will be punished). To help avoid dissent altogether, rules may allow a "substitute" legislator to attend debates on a bill if the "regular" member is not expected to support the position advocated by party leaders.

Policy or Pork: Finally, where personal vote-seeking incentives are high, we might expect legislators to focus on projects and policies targeted to benefit their specific constituents and constituencies (pork barrel). For example, instead of thinking about trade policy as a principled balance between government intervention and free markets, legislators may instead focus on what is best for the major employers in their individual districts. Fleeting coalitions of legislators from across parties may form to support bills to deliver pork to their districts. In a "log roll," members agree to trade support on a series of votes in order to pass multiple bills, each of which is important to a subset of representatives. Yet where party vote-seeking incentives are high, disciplined parties may be likely to stake out and steadfastly pursue a consistent set of policies, clearly locating themselves on the ideological continuum. They can use this coherent bundle of policies to gain the support of voters who prefer them as well. Where no single party controls a majority of the legislative seats, we might expect relatively stable coalitions of parties—with their individual members in lockstep and close to one another on the ideological continuum—to form a government coalition in support of a shared programmatic platform.

The Intraparty Dimension of Politics

The intensity of intraparty competition established by the electoral system has wide-ranging implications for intraparty politics. We hypothesize that electoral systems can significantly influence relationships between party leaders

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and their backbenchers in the legislature and between elected representatives and their constituents. These incentives may shape the content of political campaigns, the structure of legislative chambers, the behavior of legislators and the time they allocate to various activities, and the type of policy outputs that most frequently emerge from the policy-making process. Part IV of the book provides evidence of these connections.

In Figure 1.2, we depict a continuum based on incentives to cultivate a party reputation (and thus lower levels of AP) or personal reputation (higher levels of AP).[7] At the *Highly Centralized* end of the spectrum, we will place systems that promote the creation of party collective reputations as almost the only factor that matters for winning elections. Systems in which parties and their shared reputations are *not* expected to be the focus of elections or policy-making are at the *Highly Individualistic* end of the spectrum. In such systems, politics will instead revolve around personalities and otherwise noteworthy individuals. For heuristic purposes, we label the space between these extremes as having incentives that are "party oriented" or "candidate oriented." We will

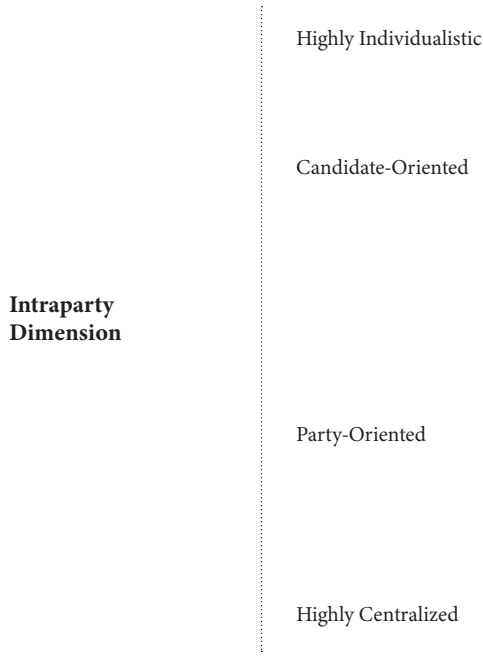


Figure 1.2 Intraparty electoral incentives on the intraparty political dimension

[7] Our labels are similar to those used by Shugart (2001*a*, *b*) to describe various points along this continuum.

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locate systems on the continuum defined by their intraparty incentives, and will then use these locations to explain the variation in other important aspects of representation, like campaigns, constituency service, cameral procedures, legislative voting unity, and pork-barrel expenditures.

1.3 The Two-Dimensional Interparty–Intraparty Space

Electoral incentives set different degrees of individualism and centralization. We have now informally suggested why we care so much about understanding the detailed workings of electoral systems. Electoral systems incentivize certain acts of democratic representation: if one type of system is in place in one country and another type of system is in place in another country, the ways in which politics will be conducted will vary across the two. We have discussed acts of democratic representation or the ways in which politics will be conducted in terms of the relationships between parties (interparty politics) and in terms of the relationships within parties (intraparty politics).

In interparty terms, we loosely made the case that electoral rules can be combined into electoral systems that can vary from being very weak or enabling to very strong or constraining. Weak systems allow a heterogeneous group of voters to freely express their preferences with the confidence that their chosen candidate or party is likely to obtain some level of representation in parliament. Strong systems encourage voters to think hard about which parties or candidates are actually viable and to abandon their sincerely-preferred option for a relatively similar option that is more likely to obtain seats. In Figure 1.1 we depicted a spectrum of electoral system incentives on the interparty dimension.

In intraparty terms, we suggested that electoral rules can be combined into electoral systems that can vary from being highly individualistic to highly centralized. Candidate-oriented systems allow voters to award their votes to specific candidates and therefore encourage elected officials to focus on cultivating the personal reputations that will earn them those votes. Party-oriented systems make it difficult or impossible for voters to express a preference for individual candidates and therefore encourage politicians to focus on the collective reputations of their parties. In Figure 1.2 we depicted a spectrum of electoral system incentives on the intraparty dimension.

Figure 1.3 combines those two previous plots into what we will call the two-dimensional Interparty–Intraparty (I–I) space. Every electoral system institutionalizes incentives for interparty politics and incentives for intraparty

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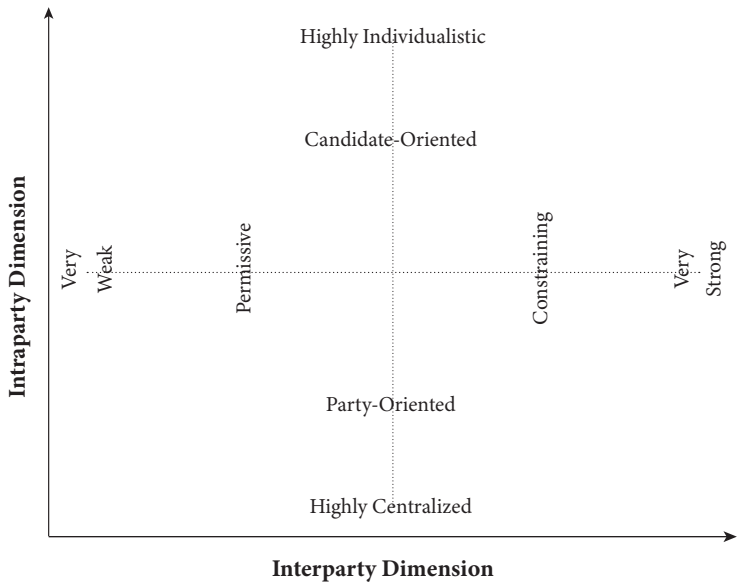


Figure 1.3 Electoral inter- and intraparty incentives Electoral incentives set different degrees of permissiveness and constraint and of individualism and centralization on a two-dimensional political space

politics. We intend to capture *any* system's incentives on both dimensions, which is equivalent to finding the coordinates that locate the system on the I–I space. We have given an impressionistic account of our intuition thus far, but in Part II of the book we will be more systematic and precise.

We will explain in Chapter 4 the use of simulations to measure how different values of ballot access, ballot type, vote pooling, level and number of votes cast, district magnitude, seat allocation formulas, and legal threshold *combine* to influence both whether voters are encouraged to coalesce behind a relatively limited set of offerings and whether they are able to elect representatives who stand out for notable individual characteristics. We emphasize the word "combine" here because it reflects why we took the relatively unusual step of making thousands and thousands of simulated elections central to our project. Rather than treat the effects of various electoral rules one at a time or resorting to naïve aggregations of them into a single (usually additive) index, simulations allow each rule to speak for itself regarding the role it plays in creating interparty and intraparty incentives in combination with the values taken by all the other rules that make up a given system. As we said, much more on this in Chapter 4.

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1.4 Structure of the Book

This chapter has so far provided an overview of the expected effects of electoral system incentives on party politics that Parts III and IV of the book explore in more detail. Electoral incentives are the independent variables or causal factors in our theories. Early in the book we devote significant space to ensuring we have captured electoral incentives accurately so we can then use them to explain several aspects of interparty and intraparty politics—our dependent variables or outcomes. In Chapter 2 we introduce the seven most important electoral rules that capture incentives imposed by electoral systems and theorize about the incentives they generate for interparty and intraparty politics. Those rules are *district magnitude*, *seat allocation formula*, *legal threshold*, *ballot access*, *ballot type*, *vote pooling*, and *level and number of votes cast*. In Chapter 3, we use what we learned about individual electoral *rules* in Chapter 2 to define and discuss electoral *systems* that are created when we combine these rules in specific ways. We organize our discussion around the three broad families of electoral systems: majoritarian, proportional, and mixed. Simplifying greatly, majoritarian systems award the contested seat(s) to the top vote-getter. Proportional systems allot the multiple seats being contested in a district based on the percentage of the votes contestants receive. Mixed-member systems, as the name suggests, use majoritarian rules in one tier of the system and proportional rules in another, putting members from both tiers into parliament.

We devote Part II of the book to explaining our measurement strategy. In Chapter 4, we develop our simulations—millions of elections that take place *in silico*, in environments that are identical with respect to voters' preferences, the personal attributes of candidates among which they express their choices, and the ideological locations of the parties competing, but differ on the electoral rules that translate votes into seats. Each simulated election provides us with an expected value of interparty incentives (Total Duvergerian Effect (TDE)) and an expected value of intraparty incentives (Average Personalism (AP)). In Chapter 5, we use machine learning models to help discern which rules and/or combinations of rules are most responsible for the outcomes of interest in the simulations—differences in the locations of parties that won seats based on voters' sincerely preferred locations, and the average level of personalism among members of partisan blocs within legislatures.[8] In Chapter 6 we use

[8] Throughout the book, we will provide examples of the traits that might be associated with having a noteworthy personal reputation. There is an important thread in the literature on electoral competition

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gradient-boosted models to derive expected values of interparty and intraparty incentives for real electoral systems. We do this by inputting the actual values of ballot type, vote pooling, level and number of votes cast, district magnitude, seat allocation formula, and legal threshold for 1,528 real-existing country-system cases into the models we generated in Chapter 4.

In Part III (Chapters 7–9), each chapter deals with an aspect of *interparty* politics that scholars think is affected by electoral rules: (i) the effective number of parties in the system (the number of parties weighted by their size), (ii) the policy platforms parties should offer relative to what others are offering (that is, the distribution of Left–Right positions they should take) in order to attract as many supporters as they can, and (iii) whether the policies promised by elected representatives closely reflect the preferences of the citizens who voted for them (congruence). Each chapter describes an indicator of the interparty phenomenon of interest collected from sources appropriate for testing hypothesized relationships. We then use our measures of electoral system incentives for interparty politics (TDE) to explain variation across those observations.

The chapters in Part IV (Chapters 10–14) each deal with an aspect of *intraparty* politics that scholars think is a function of electoral rules: (i) the focus of political campaigns, (ii) the amount of time and resources representatives devote to the non-policy concerns of people in their districts (constituency service), (iii) how officials design the rules and policy-making procedures they must abide by during their work (cameral rules), (iv) the levels of party unity displayed by party blocs in the legislature, and (v) whether parties primarily focus on programmatic policy concerns or particularistic rewards for some of their supporters. As in Part III, each of these chapters describes an indicator of an intraparty politics outcome. We then use our measures of electoral system incentives for intraparty politics (AP) to explain variation across those observations.

Chapter 15 concludes by reviewing what we have learned and by suggesting promising avenues for future research. We will point out that the theorizing we do throughout the book does not stray dramatically from the vast literature that precedes us, and the empirical findings we present in Parts III and IV are largely supportive of the expectations generated by that theorizing. More importantly in terms of our contribution, we take the opportunity to stress to readers the strides forward we have made in terms of measuring interparty

that use the term "valence" to refer to any of many traits a candidate might possess that most voters would view positively. We connect our work to formal models that incorporate the idea of valence in Section 4.2.

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and intraparty incentives—or the Total Duvergerian Effect (TDE) and Average Personalism (AP) as we will call them. Our simulation-based approach allows us to account for the values taken by seven individual electoral rules and how they work *in combination* with one another to encourage certain behaviors and outcomes that manifest themselves both in interparty politics—the relationships among political parties—and intraparty politics—the relationships within political parties. We also elaborate on the many products generated by our project—see the discussion immediately below—that will allow consumers with varying levels of technical skills to "poke around" in our measures. This include the ability to tweak or revise them in ways that accommodate different assumptions about the nature of voters and of politicians—this could include, for example, accounting for voters who value candidates' personal traits far beyond the ideological positions they take or examining differences in the politics of party system size or campaign content when politicians are primarily centrist or primarily extremists. The flexibility of the approach and the transparency with which we present our own efforts to employ it more fully than it has been done in the past should foster fruitful and innovative research in the future.

1.5 Products From the Larger Project

The larger project of which this book is part provides several additional resources that we hope readers will use to further their own research into how electoral system incentives work and to teach others about their interests. They include:

- A ready-made set of election-system incentive scores, the Interparty & Intraparty Electoral Systems Incentives Dataset (I^3): The TDE scores are an ordinal measure of the degree to which an electoral system constrains the ability of actors to act sincerely. The AP scores are a cardinal measure of the expected proportion of high-valence politicians in an electoral system. We offer TDE and AP scores for 1,528 electoral systems for 140 countries from 1945 to 2015 calculated to work for two different purposes: a predictive model trained on district-level simulations and a predictive model calibrated on country-level simulations. These data additionally contain information on ix electoral rules employed in each of these 1,528 electoral contests. For some of these electoral contests, we also include information about district magnitude at the district level. In addition, we will update the dataset to include electoral contests

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at least until 2024. These data can be downloaded in multiple formats (https://i3dataset.com/).

- An `R` package (`i3pack`) with functions encoding all seat allocation formulas discussed in the book. In addition to including implementations of all these seat allocation formulas, the package also provides four predictive gradient-boosting machine (GBM) models (as `R` objects) that can be employed to generate scores of future electoral systems. These models produce two types of TDE and two types of AP scores ("types" depend on the calibration units we employ, either simulations at the district or the country level). Any reader with access to `R` can simulate results using a variety of election rules, and feed new sets of electoral rules into our predictive GBM models to come up with TDE and AP scores.
- A user-friendly dashboard that automates the procedure described in the previous paragraph. For those users who do not wish to use `R`, we offer an appealing graphical user interface where they can select the electoral features of an electoral system and produce TDE and AP scores for that system. The only downside of this tool is the inability to produce scores of multiple systems at the same time, but this downside is more than compensated by the accessibility and user-friendliness of the dashboard (https://i3dataset.com).
- A set of PowerPoint slides that can be employed to teach the material covered in the book.
- A set of `RMarkdown` files to replicate all of the work in the book. These files would be especially handy for more intrepid readers that would like to introduce different micro-assumptions about voter, candidate, and party leader behaviors into our simulations.

In producing these additional materials, we aim to make it easier for scholars to include indicators of interparty (TDE) and intraparty (AP) electoral system incentives in our I^3 dataset into their research on electoral politics and representation. While we have wrapped up our data collection efforts, the GBM models we make available ease the task of extending the dataset into the future. Scholars need only collect indicators of the seven electoral rules we discuss in Chapter 2 for any electoral system used in the future, and our models will generate TDE and AP scores for that system. Finally, presentation slides summarizing the content of each chapter of the book and the easy-to-use on-line dashboard for generating TDE and AP scores and see them in a comparative context are meant to help ease those new to the study of electoral systems into the field. Please cite this book when you make use of the additional products generated as part of the project.

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1.6 Rationale, Scope, and Likely Readership

While there is existing research on many of the questions raised in the manuscript, our project is entirely unique in two ways. First, we transparently and systematically generate precise values for the interparty and intraparty incentives exerted by electoral systems. Heretofore, efforts to quantify incentives—especially for intraparty politics—have been impressionistic and (sometimes intentionally) naïve, typically limited to categorical or ordinal level indicators resulting from somewhat arbitrary coding rules. As we will detail in Part II of the book, we have run hundreds of thousands of simulated elections under different electoral systems and derived interval-level indicators of the extent to which these systems encourage voters to express their preferences for a wide array of offerings (as opposed to coalescing around a limited number of party offerings) and allow voters to fill legislatures with noteworthy individuals (as opposed to anonymous party loyalists). We refer to the indicator of incentives on the interparty dimension as the Total Duvergerian Effect or TDE—the difference between the effective number of parties when votes are cast sincerely and when seats are allocated after votes have been cast strategically—and the indicator of incentives on the intraparty dimension as Average Personalism or AP—the ability of voters to elect representatives with notable, individual qualities (without entirely ignoring the candidates' ideological positions). Second, we have put together what we believe is the largest, most detailed, and most up-to-date dataset on electoral systems. It covers nearly 150 countries observed over a 70-year period. We have details of the systems used to conduct more than 1,500 elections for national legislatures. Gradient-boosted models using the results of our simulations allow us to assign TDE and AP scores to every electoral system employed in each of the 1,500+ elections in our dataset.

The book makes several contributions. First, our simulations provide scholars and practitioners the means to estimate the likely impact of electoral systems on several outcomes of central importance to political representation. We provide the code necessary to replicate our simulations, and it is thoroughly annotated, making it easy for others to evaluate the decisions we took when building the simulations and to alter any of them to suit their own understanding of elections and their own particular research interests. This also means that in the future, as founders and reformers continue to adopt new combinations of electoral rules, our simulation-based approach can be used to assign TDE and AP scores to those yet-to-be-imagined systems.

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Second, for those interested in empirically testing the effects of electoral systems on political representation, the book provides unique, more precise measures of the incentives institutionalized in systems around the world. Unlike the most widely used measures of interparty incentives, our approach incorporates systematic observation of the interaction between sincere preferences and electoral systems, something that is confounded by data using preferences as revealed through votes (which conflate the mechanical and psychological effects of electoral systems). Because our parties, candidates, and voters are simulated, we know their sincere preferences and can observe the extent to which they can act on them without compromise given the electoral system in place. Unlike the most widely used measures of intraparty incentives, our approach provides a metric that, rather than only allowing for ordinal comparisons of system incentives, permits more nuanced and precise interval-level measures. Both our measure of interparty incentives, TDE, and our measure of intraparty incentives, AP, are built allowing component electoral rules to interact in rich and complex ways.

Third, the book drives home the fruitfulness of our approach by illustrating how TDE and AP scores of electoral systems can be used to explain interparty and intraparty outcomes of interest with data of widely varying types taken from very diverse places and times. Each of these original scholarly tests could stand on their own as a paper contributing to the literatures on electoral politics, legislative politics, and representation, more generally.

The book is also unique in terms of the intended breadth of its readership. It is written in a didactic style that will be appealing for use in advanced undergraduate courses. We are careful to use straightforward prose and to define any specialized electoral system terminology whenever it is introduced. There are, however, some sections of a few chapters that will be most tractable for more advanced readers who already have exposure to coding and quantitative methods. We do our best to make these intelligible to all readers, but these chapters are geared toward giving graduate student readers and other political scientists the opportunity to replicate and extend our work. We use online repositories to make our simulations and the models that employ their results available to these more advanced audiences. As we noted above, we also offer a dashboard where less technically inclined users can experiment with how different electoral rule inputs produce different interparty and intraparty incentives.

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2

Electoral Rules

Electoral systems are sets of formal rules that create incentives for strategic behavior on the part of voters, (pre-) candidates, party elites, and elected representatives, including rank-and-file legislators and their party bloc leaders (Duverger, 1954; Leys, 1959; Sartori, 1968; Carey and Shugart, 1995; Cox, 1997). They translate votes into seats won by candidates and parties. The rules used to perform this translation influence the actions of candidates during campaigns, the calculus of voters when making a vote choice, and the decisions of representatives about how to spend their time once in office. As we suggested in Chapter 1, when electoral rules are combined to create an electoral system, that system establishes incentives for the conduct of both *interparty* and *intraparty* politics (Shugart, 2001*a*, *b*). In this chapter we will define the rules that make up every electoral system. We will divide them into those that are thought to influence interparty politics and those that are thought to influence intraparty politics.

All electoral systems are defined by a common set of component rules that not only determine the broad family to which an electoral system belongs, but also specify how that system differs from others in the same family (see Chapter 3). These rules address important features of the electoral process, including who controls the candidate selection or ballot access stage, whether the ballot allows the voter to select only a party or to choose individual candidates, whether votes cast for one candidate can help other candidates get elected, the number of votes an individual can cast in a given election, the number of seats filled in each election to represent the district, the formula used to translate votes into seats, and whether there are pre-defined vote share thresholds a party must clear in order to obtain seats. Each of these rules can take on a number of different values. When combining these values into a system, there are many possible combinations, as we describe in the remainder of this and the next chapter.

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2.1 The Component Rules of Electoral Systems

We focus on seven rules that are the basic components of every electoral system.[1] We will describe the seven component rules. Chapter 4 presents scores that fully capture the incentives we believe shape interparty and intraparty politics in different electoral systems. We first discuss the three rules that most scholars agree shape incentives for interparty politics. Then we explore the five rules that shape incentives for intraparty politics. Because we think that district magnitude shapes both dimensions of party politics, it appears in both lists.

2.1.1 Rules Frequently Thought to Shape Interparty Incentives

Table 2.1 provides a succinct definition of the three electoral rules with interparty implications. Let us provide some detail on the basic functioning of these rules. Based on our understanding of prior work in this area, we believe that *district magnitude*, *seat allocation formula*, and *legal thresholds* are primarily responsible for shaping incentives for interparty politics—the number of parties and their relative size, the locations they stake out in the policy space, and how those locations match up with citizens' ideological preferences. We will address the relationship between electoral system incentives and each of these outcomes of interest in Part III of this book. While we are motivated by the existing literature, our simulation-based approach (see Chapter 4) allows us to make a significant departure. We allow for the possibility that more complex dynamics are at work and that rules, or interactions of rules, heretofore not suspected of being major determinants of interparty politics affect the size of the likely need for strategic voters to abandon their most preferred option. We will capture this dynamic with our measure of the Total Duvergerian Effect (TDE).

District magnitude. District magnitude (M) sets the number of seats to be filled at the district level. This rule is closely linked to the potential for proportionality between the number of votes a party receives and the number of seats allotted to it. In general, the correspondence between seat shares and vote shares becomes tighter as M increases—that is, as long as the designers of the system value proportionality, as is the case in proportional representation

[1] We do not discuss additional rules that introduce further variation in electoral systems but rarely play an important role in distinguishing among them, such as gender and minority quotas, reserved seats, and term limits.

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Table 2.1 Electoral rules with interparty implications: The table presents rules that we anticipate having an effect on the *interparty* dimension of electoral competition, along with their definitions

Rule	Definition
District magnitude	The number of members to be elected in each district in each election
Seat allocation formula	The mathematical formula used to translate votes won by each contestant into seats obtained by each contestant
Electoral threshold	A predetermined quantity of votes needed by any contestant in order to be eligible for seats allotted by the seat allocation formula

(PR) systems. As the family name suggests, adopters of such systems, to varying degrees, value the ability to award seats to parties commensurate with the votes they receive, even when a diverse group of voters holds heterogeneous preferences. As M increases, the party winning the most votes is typically less likely to be awarded all (or even most) of the seats, and parties receiving the second-most, third-most, fourth-most votes, and beyond are more likely to get some seats. In Chapter 4 we simulate results for a variety of electoral systems, including those in which M ranges from 1 to 150.

Many countries elect the same number of representatives in every district, while others use districts of widely varying magnitudes (usually the result of using a subnational set of boundaries drawn for other administrative purposes, like state or department lines). Some countries, including Israel and Slovakia, use a single nationwide district to choose all MPs (150 and 120 members respectively). The average district magnitude for the 1,528 elections in our dataset ranges from 1 in 371 elections, to 450 observed in Ukraine's single nationwide district in 2006 and 2007. Average district magnitude was less than 30 in 1,166 elections.

Seat allocation formulas. Our second electoral rule, the *seat allocation formula*, is also related to a system's potential for proportionality. The first distinction among seat allocation formulas—one that separates families of electoral systems—is between plurality/majority and proportional systems. In the common single-member district decided by plurality (SMDP) system, the seat allocation formula—plurality—is part of the system's name. The lone seat goes to the top vote-getting party or candidate regardless of how many votes they won. Other formulas used in systems with only one seat at stake ($M = 1$) involve a second round of voting, or at least the possibility of a second round—a run-off or the transfer of votes from one candidate to others in a single round. Two-round systems have a threshold (usually 50%); if no party

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receives that share of votes, the top two (or more) parties proceed to a second round. In the second round, the seat allocation formula might be plurality or majority (if only two competitors go forward to the second round, majority holds by definition). Though plurality and majority tend to be associated with $M = 1$ systems, they can also be used to hand out multiple seats in districts where $M>1$, as in Singapore's party block vote system.

PR rules vary in terms of the mathematical formula used to translate votes into seats. Seat allocation formulas used in PR systems involve the use of either a *quota* or a *divisor*. A quota is a number of votes that, if reached, guarantee that the party will win a seat. Quotas are established by dividing the total number of votes cast in a district by a number related to *M*. For example, the *Hare quota* is simply the number of votes cast in a district divided by *M* (other quotas add some integer to *M*). A party obtains as many seats as the number of times it reaches the quota. A quota can thus be considered the price (in votes) that parties have to pay to obtain a seat.

Some seats may remain unallocated after seats are distributed to parties that obtain full quotas; some (or all) parties may have a few votes left in their tallies after "spending" their quotas. These unspent votes, known as remainders, are used to distribute unallocated seats left after all quotas are fulfilled. Unallocated seats are allotted using either the *largest remainder* or *highest average* method. The former uses any votes a party won that were not part of a full quota. Seats are simply awarded sequentially to the parties with the most leftover votes. The latter approach divides parties' vote totals by the number of seats they obtained via full quotas. Remainder seats are then allocated sequentially to parties based on the average "price" they paid, in votes, for each seat obtained via the quota.[2]

The divisor method divides parties' vote totals sequentially by some series of numbers, generating *quotients* that are used to hand out seats. Commonly used divisors are named after their inventors, including D'Hondt and Sainte-Laguë. Using the D'Hondt method, parties' vote totals are successively divided by 1, 2, 3, 4, 5, and so on. Seats are then awarded sequentially starting with the party with the largest quotient until no more seats are available. As noted above, any seat allocation formula used in a PR system usually results in a more proportional relationship between votes and seats than a plurality/majority system, but these formulas also vary in the degree of proportionality they achieve.

Table 2.2 demonstrates how a hypothetical set of votes would be translated into seats using the Hare quota with largest remainder formula (between 1945 and 2015, the Hare quota method was used in at least 466 elections in 56

[2] The modified highest average method is calculated by adding one or more units to the first divisor.

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distinct countries). It shows that Party B clears the quota more than twice—its total votes net the party 2 seats—but it also had the most remaining votes that fell short of a full quota, netting it 1 additional remainder seat. With 10 seats to hand out, even Party E, which receives less than 7% of the vote, obtains a seat using this method. Appendix A illustrates how different quota and divisor systems work with the same hypothetical example.

As noted above, under the D'Hondt divisor rule, a party's total number of votes is sequentially divided by 1, 2, 3, etc. (from 1945 to 2015, the D'Hondt method was used in at least 316 elections in 39 distinct countries). Table 2.3 provides an example of how a hypothetical set of votes would be translated into seats using this method. Party A, with 100 votes, is awarded the first seat, and its vote total is then divided by 2. With 80 votes, Party B is awarded the second seat, and its vote total is then divided by 2. With 60 votes, Party C is awarded the third seat, and its vote total is divided by 2. Since half of Party A's original total is still greater than the votes received by Party D or Party E, Party A is awarded the fourth seat, and its original vote total is now divided by 3. This process continues until all 10 seats are allocated. While the number of parties, number of votes, and number of seats are identical to those in Table 2.2, under the D'Hondt seat allocation formula the lowest vote-getting party receives no legislative seats and the largest party picks up an additional seat.

Legal electoral thresholds. While choices related to district magnitude and the seat allocation formula significantly shape how votes are translated into seats for both large and small parties, some designers of electoral systems employ a third electoral rule to more directly influence whether small parties can claim seats. *Legal electoral thresholds* are used to deny seats to parties that fail to obtain a minimum level of support (within a district or

Table 2.2 Converting votes into seats (Hare method): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Hare Quota with Largest Remainders were used

Party	Votes	Quota	Votes/Quota	Automatic Seats	Remainder	Remainder Seats	Total Seats
A	100		3.33	3	0.33	0	3
B	80		2.66	2	0.66	1	3
C	60		2.00	2	0.00	0	2
D	40		1.33	1	0.33	0	1
E	20		0.66	0	0.66	1	1
Total	300	30		8		2	10

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Table 2.3 Converting votes into seats (D'Hondt method): For the same hypothetical scenario as in Table 2.2, we now compute the number of seats these parties would receive if the D'Hondt allocation formula were used instead

Party	Votes	Denominator					Seats
		1	2	3	4	5	
A	100	**100**	**50**	**33.33**	**25**	20	4
B	80	**80**	**40**	**25.66**	20	16	3
C	60	**60**	**30**	20	15	12	2
D	40	**40**	20	13.33	10	8	1
E	20	20	10	6.66	5	4	0
Total	300						10

across the country), even if the district magnitude and seat allocation formula rules would have entitled them to representation. Some electoral system architects may normatively value high levels of proportionality between votes and seats—as "true" a representation of voters' preferences as possible—but they also recognize that decision-making in highly fragmented representative assemblies can be a challenge, as too much diversity may lead to gridlock. Supporters of small parties often hold more extremist views than the rest of the population (hence their small size), and thresholds may be employed to prevent such views from influencing the policy-making process.

Legal electoral thresholds are only found in list PR systems and in the proportional tiers of mixed-member systems that use a list PR system—though qualified majority and absolute majority systems arguably establish a threshold of sorts in single-member systems. Thresholds are the minimum vote share that a party needs to surpass in order to qualify for the distribution of seats. Thresholds vary in size, scope, and in the denominator over which they are calculated. If there is more than one district, a threshold may apply at either the district or national level. For example, a party in Belgium must receive at least 5% of the votes in a district to qualify for seats in that district, whereas a party in Sweden needs 4% of the votes in the country as a whole to qualify in any district. Thresholds are commonly calculated using the total number of valid votes (e.g., Austria and Croatia). In some countries, such as Argentina and Kyrgyzstan, the number of registered voters is used to compute the threshold.

In practice, constitutional engineers have employed thresholds with specific political purposes. In a bid to decrease parliamentary fragmentation by preventing small religiously and ethnically based parties from winning seats,

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Turkey has employed an electoral threshold of 10% of the national vote along with the D'Hondt seat allocation formula to award 600 seats in 87 multi-member districts.[3] In 2002, this rule allowed Recep Tayyip Erdoğan's Justice and Development Party to obtain nearly two-thirds of the parliamentary seats with only 34.28% of the vote because several parties did not meet the threshold and thus did not qualify to obtain seats. Liechtenstein's Landtag has 25 seats—elected by free-list PR in two districts of 10 and 15 members—and the country has a threshold of 8% of the vote enforced at the district level. In 2017, four parties entered the parliamentary elections, and all of them won seats. The smallest (Free List) won 12.6% of the vote and 12% of the seats. Any entrant earning fewer votes would not have obtained seats. The Czech Republic has a sliding scale of thresholds for pre-electoral coalitions of parties: a party running solo needs to win 5%, coalitions with two parties need 10%, three parties need 15%, and four or more parties need 20%.

2.1.2 Rules Frequently Thought to Shape Intraparty Incentives

Table 2.4 shows five electoral rules most often associated with intraparty incentives. District magnitude appears again, as this is a rule with effects on both inter- and intraparty politics. In Part IV of the book, we examine a host of outcomes that we expect to be at least partly determined by *ballot access*, *ballot type*, *vote pooling*, the *number and level of votes cast*, and *district magnitude*. Prior research in this area (some of which we cite in this part) leads us to suspect that as the intensity of intraparty competition rises, so will the chamber's level of Average Personalism (AP). Where electoral rules allow voters to single out individual politicians, candidates—including incumbents—will strive to be notable, and notable candidates will be more successful. We might expect ballots that permit intraparty competition to promote personal vote-seeking behavior, such as campaigning based on a candidate's individual attributes and accomplishments. In Part IV we look not only at campaign content but also at the provision of constituency service, cameral rules regarding the legislative process, levels of party unity, and the balance struck between legislators working to provide programmatic policy vs. pork-barrel rewards. We will capture the extent to which an electoral system allows voters to award individual candidates, even over their copartisans, with our measure of Average Personalism, AP.

[3] This threshold can be circumvented by running as an independent. Kurdish parties therefore do not field candidates under a single banner, but instead unofficially endorse independents.

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Ballot access. The first electoral rule that the existing literature suggests is related to intraparty incentives is *ballot access* or candidate selection—the process by which individual candidates are placed on the ballot or party candidate lists. In some countries, a single process is codified in national statutes and followed by every party. In other systems, subnational governments determine how ballot access works in their jurisdictions. In still other cases, ballot access is left to individual parties; thus it is possible to observe within-system variation that is not a function of national or even subnational legal statutes. For example, in Argentina, a federal law requires all parties to use primaries to select their candidates for congress, but in neighboring Brazil, parties are allowed to select the candidate selection process they will employ, with some parties concentrating the power to select candidates in the hands of party leaders and others leaving it to the party's supporters to vote for who should run under its banner.

Thus, examples of processes governing ballot access include the proverbial "smoke-filled backroom" where a small cadre of very high-ranking party officials handpicks the candidates who will run on behalf of the party in each district, and even rank them if more than one seat needs to be filled. This process can be contrasted with an "open" primary—one not limited to party members and sympathizers—held at the district level. The first involves a few actors far removed from the district, while the latter involves a large number of actors from the district.

These examples point to the two conceptual dimensions along which ballot access varies. The first is whether the process is conducted within the district or at a more aggregated level. The second is whether it is carried out by leaders of the party or by actors less concerned about the party as a collective unit.[4] For the sake of simplicity, imagine a 2×2 table in which the "where" dimension takes the values "above the district" and "within the district," and the "who" dimension takes the values "leaders" and "followers." As the examples above made clear, processes conducted by leaders outside the district generate very different incentives than those conducted by followers within the district. In the former, the selectors of candidates are likely to stress fealty to the party line, while in the latter they may be looking for a strong connection to the constituency. The other two cells of our imaginary 2×2 table include middling categories with somewhat indeterminate consequences.

In some systems, the route to the ballot in the general election is almost entirely in a pre-candidate's hands. Ballot access in these systems requires gathering signatures or paying a fee for the opportunity to compete in the general

[4] For a more complex scheme, see Rahat and Hazan (2001).

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election: we might call these open or self-endorsement systems. Despite the low barrier for getting on the ballot and the limited involvement of many other actors (voters or party leaders), such rules do have implications for *ballot type* (see immediately below) because such open processes arguably increase the chances that two or more members of the same party will end up competing in the general election.

While ballot access significantly shapes candidates' incentives, it is the electoral rule for which we have the least systematic empirical data. As mentioned above, it is often not spelled out in legal statutes, which makes data collection challenging. Furthermore, ballot access characteristics cannot be inferred from values taken by other rules. For example, it might be tempting to assume that an electoral system that otherwise strengthens parties would be paired with ballot access procedures that also privilege party leaders. While logical, this is not necessarily the case. Incentives produced at the candidate selection or ballot access stage can be at odds with incentives established by an electoral system's other rules. Ballot access can also vary across parties in the same system and even within parties in different districts.

As we discuss in Chapter 3, because they can vary so much across and within otherwise identical electoral systems, ballot access rules are not traditionally used to *define* electoral systems. However, it is still important to consider how ballot access shapes intraparty incentives. In Chapter 4 we produce simulations in systems where party leaders choose candidates vs. systems where voters choose who should compete in a district, and we analyze the impact of different selectorates on whether a party's candidates (i) have similar ideological preferences (homogeneity) and (ii) whether they possess traits that make them stand out as individuals (personalism).

Ballot type. Ballots can allow voters to "disturb" the order in which candidates on a party or sub-party list are elected. This is the fundamental difference between closed- and open-list PR systems (closed-list proportional representation (CLPR) and open-list proportional representation (OLPR), respectively). Under OLPR, voters cast their vote for an individual candidate on a party's list—what is often referred to as a "preference vote." In some systems, voters must express their vote at the individual candidate level (e.g., Finland). In others, like El Salvador, while a preference vote is an option, voters are allowed to simply signal a party-level vote (leaving the list prepared at the ballot access stage undisturbed by their individual votes). When the election is over, the preference votes received by a party's candidates are totaled or pooled (see vote pooling below) to determine how many seats the party wins, and the list may be reordered so that those with the most preference votes are first in

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Table 2.4 Electoral rules with intraparty implications: The table presents rules that we anticipate having an effect on the *intraparty* dimension of electoral competition, along with their definitions

Rule	Definition
Ballot access	The process by which one is made a candidate, and the actors involved in it
Ballot type	Whether the ballot allows voters to express a preference for a particular candidate within a party, and, if so, whether it is mandatory
Pooling	The level to which votes are pooled before seats are allocated
Votes	The number of votes a voter can cast and at what level
District magnitude	The number of members to be elected in each district in each election

line to receive a seat should the party win one or more. There are plenty of values that the relative openness of a list can take. Flexible-list PR systems allow a party's list to be reordered, but only if the preference vote earners exceed certain thresholds.[5] The ability to reshape a party's candidate list introduces intraparty competition into the electoral arena, a concept we discuss in further detail in Chapter 3.

Ballot type has two moving parts. First, are voters required to signal a preference at the candidate level, is a simple party choice an option, or is a party-level vote the only option? Second, where preference votes are required or allowed, is the list automatically reordered, or do other requirements need to be met before that occurs? Where a party-level vote is an option alongside an individual preference vote, as it is in Brazil's OLPR system for electing its lower chamber of congress, candidates may end up behaving as if only individual-level votes existed because they can assume that at least some party supporters will express a candidate-level preference. This is particularly likely where lists are automatically reordered based on preference votes. In Chapter 4 we build these variations in ballot type into our simulations of electoral outcomes and examine the implications for intraparty dynamics such as ideological cohesion and the election of candidates with notable individual characteristics.

Our dataset of electoral systems, which includes information on the rules employed in 1,528 elections from 1945 to 2015, contains 314 elections in 43

[5] Where a single candidate from each party competes, voters cannot influence the list presented to them since, by definition, voters cannot change the order of a list of 1. Where parties propose multiple candidates, but candidate names are not pre-arranged on the ballot in list form, voters have ample influence over who gets elected.

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unique countries that used plurality to select one representative in a single-member district. In this system, parties only nominate one candidate; thus the list cannot be changed. Our data also contains 403 closed-list PR elections in 58 unique systems in which individuals voted for a list of candidates they could not disturb. We also have 355 elections in 40 countries with ballots that allow voters to choose from among copartisans (these include flexible, open-, and free-list systems). More than half of these were open-list PR systems where candidate lists *had to be reordered* after the election based on preference votes. Finally, the dataset features 59 elections in 20 countries run in a two-round (TR) system; in a few instances, such as Syrian elections held between 1947 and 1961, TR systems are combined with $M>1$. As a result, there are variations of the system with intraparty competition as voters cast more than one vote and can award them to candidates of the same party.

Vote pooling. Our third intraparty electoral rule concerns *vote pooling*—the level at which votes are counted before seats are allocated. If votes are cast at the party level (see the next rule), they almost by definition pool to that level. In most list systems that allow votes to be cast for individual politicians, the votes for individual candidates from a given party are also pooled (i.e., added together) to the party level for the purposes of seat allocation. Thus, even if individual candidates who receive some number of preference votes are ultimately not elected, their votes are added to their party's tally when determining how many seats the party obtains.

When parties field only a single candidate per district, votes by definition pool to the party level. The individual candidate and the party are synonymous, and a party reputation alone is sufficient to distinguish the candidate from all other competitors in the district. Of course, given that candidates are the sole representatives of the party in their district, individual traits or histories are bound to play a role in voters' calculus about whom to support.

In some systems, a party may run multiple lists of candidates in the same district, and votes for members of one of the party's lists can be pooled to the level of the candidate's sub-party list but cannot be pooled to help members of the party on other sub-party lists. This may motivate candidates to cultivate a collective (sub-party list) reputation, but not to the extent that pooling to the level of the whole party creates. For example, Colombia employed sub-party lists combined with pooling at the sub-party level between 1958 and 1998. Switzerland currently uses sub-party lists, though pooling occurs at the party level.

Finally, if votes do not pool at all, a vote will only help elect the individual candidate for whom the vote was originally cast. For example, in some

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instances multiple seats are awarded within a district by plurality: the seats go to the individual candidates with the most votes. A party may field more than one candidate in these systems, but a vote cast for one of them does nothing to help his or her copartisans. A candidate who wins more votes than they need to win a seat, in a sense deprives his or her copartisans of that support. The single non-transferable vote (SNTV), the system used to elect the lower house of Parliament in Japan was one such example until a major electoral reform in 1993.

Most contemporary cases in our dataset (more than 90%) pool votes at the party level—usually because only a party-level vote can be cast (see the next rule), but also when any vote cast for an individual candidate (or sub-party list) is aggregated to the party level for seat allocation purposes.

Number and level of votes. We call the fourth rule *votes*, as this rule determines how many votes each individual can cast and the level at which they are cast—a single vote for one party, multiple votes for multiple candidates, or a single vote below the party level (sub-party list or individual candidate). In the first variation, a voter need dig no deeper than the party level to decide how to vote: a party's reputation is sufficient to make a choice from among the available options.[6] Most distant from allowing voters to rely solely on parties' reputations is a variation that requires voters to express a single, discrete preference at the individual level. In such systems, candidates on the ballot are frequently not discernible from all others based on partisan identity alone.

Two of the most widespread electoral systems (one majoritarian and one proportional) only allow voters to cast a single vote at the party level—SMDP and CLPR, respectively. Together they account for about 43% of the electoral systems in use around the globe—and they split their total almost evenly. So, as far as the number and level of votes cast are concerned, these systems have the same incentives regarding intraparty politics. However, as we pointed out above, every electoral system is made up of seven electoral rules, and while two systems may share the same values on one rule, they may take on very different values on others. Despite having *vote* in common, SMDP and CLPR are great examples of how rules combine to create systems with divergent incentives. We talk more about these systems in the next chapter.

Some systems give voters a third variation—an option to choose whether to express a preference for a specific candidate/set of candidates or to simply cast

[6] As with vote pooling, we classify a *vote* as "party level" if voting for the party and voting for a single candidate yield the exact same result. Admittedly, in such cases the vote is in some sense also at the individual level, but it cannot be used to distinguish among candidates within the same party, which is the key element.

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a vote for a party. If the first variation discussed above focuses on the party and the second places the spotlight on the individual, this third variation falls somewhere in between, sending a somewhat mixed signal about the balance between the need to develop party and personal reputations.

Finally, when casting multiple votes for multiple candidates, the voter still needs more information than simply the reputation associated with a particular party label to make an effective choice, but his or her choices are not all or nothing. The voter spreads his or her expression of preferences across multiple options. He or she might make one or more vote choices on one dimension—candidates' (partisan identification and) prior public service in the district, for example—and one or more additional choices to emphasize descriptive representation, thus prioritizing candidates' (partisan identification and) gender or ethnic identity. Again, sub-party information plays a role but the voter's multiple choices diminish the zero-sum nature of the decision, as the voter can communicate preferences for a number of desirable traits.

District magnitude. In theory, *district magnitude* (*M*) can take any positive integer as a value. Yet the vast majority of districts used to elect Members of Parliament (MPs) around the world choose 20 or fewer members—though some districts have much higher magnitudes. For instance, the list tier of Ukraine's mixed-member system uses a nationwide district to select 225 of the country's 450 MPs (the other half are chosen in single-member districts) (see Chapter 3 for more detail).

In intraparty terms, *M* is almost always closely related to the number of candidates a party will nominate. Under some circumstances, more nominees could make a given candidate relatively anonymous, while in other cases it could motivate individual candidates to differentiate themselves from their copartisans (Carey and Shugart, 1995). The difference is related to ballot access and/or ballot type. If the number of competing copartisans increases faster than the number of seats a party is likely to win, district magnitude will have a differential effect (Crisp, Jensen, and Shomer, 2007). In other words, where there is intraparty competition, rising *M* might intensify that competition, while if intraparty competition is barred or muted, increasing *M* will make individual candidates increasingly anonymous. In Chapter 4 we run repeated simulations of how electoral rules impact intraparty politics with *M* taking values of 1, 2, 3, 5, 6, 10, 30, and 150, a range that captures the values taken by *M* in most electoral systems around the world.

We establish in Chapter 3 that only three types of electoral systems, by definition majoritarian, have district magnitudes that must be equal to 1. They account for about 40% of the cases in our dataset. Electoral systems with $M = 1$ are studied the most frequently, likely because SMDP, the most numerous

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system among those with $M = 1$, is used to elect the UK House of Commons and the legislatures in many former British colonies, including the United States, Canada, and India.

2.2 Summary

As a point of reference as you read the remainder of this book, Table 2.5 provides an overview of the rules discussed in this chapter and the values they can take. We have almost certainly missed some of the options that creative

Table 2.5 Common values for electoral rules: Seven component rules of electoral systems and the most common values they take

Rule	Possible Values
District magnitude	≥ 1
Seat allocation formula	Plurality Qualified majority Absolute majority Quota method (Droop, Hare, Hagenbach-Bischoff, Imperiali) Divisor method (D'Hondt, Sainte-Lagüe, Modified Sainte-Lagüe)
Electoral threshold	% of valid votes at the district level % of valid votes at the national level % of turnout at the district level % of turnout at the national level % of registered voters at the district level % of registered voters at the national level
Ballot access	Party leaders, above the district Party leaders, within the district Voters, above the district Voters, within the district
Ballot type	Party level, no preferential vote Candidate level, party level vote is allowed Candidate level, party level vote is not allowed
Pooling	Party Level Sub-party level Candidate level
Votes	One vote, party level One vote, sub-party level One vote, candidate level Multiple votes, party level Multiple votes, sub-party level Multiple votes, candidate level

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founders and reformers have invented. Still, we are confident that we have covered the values that are taken by these seven rules in the vast majority of electoral systems employed around the world—currently and historically. You may want to "dog ear" the page that contains Table 2.5, as you will find it useful to refer back to it on a regular basis. Additional intricacies of electoral systems (such as rules regarding the *cumulation* of a voter's multiple votes on a single candidate or party) are beyond the scope of our book. In this chapter we focused on the rules most relevant for comparing the incentives various electoral systems create for interparty and intraparty politics. In Chapter 3 we demonstrate how the component rules discussed here can be combined into 17 different electoral systems.

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3

Electoral Systems

In Chapter 2 we described the seven component rules that shape the incentives that electoral systems impose on interparty and intraparty politics. The chapter also discussed how prior work links the values a rule can take to incentives for citizens to vote strategically and/or for candidates to cultivate a personal reputation. We introduced two concepts—Total Duvergerian Effect (TDE) and Average Personalism (AP)—that are built to capture these incentives, that is, for citizens to vote strategically and for candidates to cultivate a personal reputation. In this chapter, we explore how the seven component rules *combine* to create eighteen distinct electoral systems. It is possible to define systems that drive incentives further to the extremes on both dimensions of the Interparty–Intraparty (I–I) space (see Figure 1.3). In practice, most systems combine values of rules that point to a certain level of moderation on at least one of these dimensions. In Chapters 4 and 5 we will map these eighteen systems on the (I–I) space based on the interparty and intraparty incentives they impose.

While we define seven rules that are components of *every* electoral system, some of these rules vary not only across families, or across systems within the same family, but also *within* systems of the same type. For example, ballot access and candidate selection procedures vary across and within systems. Likewise, a legal threshold can be applied across many different types of systems. Similarly, though seat allocation formulas generally distinguish majority/plurality systems from their proportional representation (PR) list counterparts, at a more detailed level these rules can vary across systems within both the pluralitarian/majoritarian and proportional families. For example, a closed-list PR system (defined below) can allocate seats via a number of specific formulas—D'Hondt, Sainte-Laguë, Droop, or Hare. Finally, while the distinction between a district magnitude of 1 and a district magnitude greater than 1 is often important, within the $M > 1$ category lots of values are possible without necessarily forcing us to define a new electoral system.

In this chapter we divide electoral systems into three groups or families. After briefly discussing the commonalities across systems that are shared by

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members of the family, we then use all the electoral rules covered in the previous chapter to define individual systems, pointing out characteristics they share or do not share with other systems in the same family. We provide summary tables to give readers succinct reference points they can use as they read the remainder of the book.

3.1 Electoral System Families

As we note at the beginning of Chapter 2, electoral systems can be grouped into three broad families: proportional, pluralitarian/majoritarian, and mixed (Reynolds, Reilly, and Ellis, 2005). Proportional systems allot multiple seats in each district, and to a greater or lesser degree their rules tend to assure that parties receive a proportion of the seats commensurate with the proportion of the votes they earned. Pluralitarian/majoritarian systems, by contrast, often award just one seat, though they are by no means prohibited from having multimember districts; the largest parties often receive significantly more seats than the proportion of votes they earned. Mixed-member systems combine elements of the other two families by establishing one tier that awards seats according to proportional representation and a second tier that distributes seats based on majority/plurality (and, every so often, by creating more than two tiers). Each of these broad families includes specific electoral systems that can be distinguished based on the rules defined in Chapter 2. We now describe how component rules generate different systems within each of these three broad families.[1]

3.2 The Proportional Representation Family

There are at least six distinct electoral systems within the PR family:[2] closed-list proportional representation (CLPR), open-list proportional representation (OLPR), flexible-list proportional representation (FLPR), free-list proportional representation (FR-LPR), fortified proportional representation (F-PR), and single transferable vote (STV).

[1] Some electoral systems described below are known by different names. A list with the alternative names is available in Appendix B.

[2] Counts of the observed frequency of each system are based on our collection of electoral systems employed in 1,528 elections from 1945 to 2015.

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We suspect that CLPR systems provide some of the strongest incentives to concentrate on enhancing a shared party reputation. In other words, the AP score in these systems should be relatively low; thus by definition, the systems will be in the Party-Centric to Highly Centralized range of the Intraparty Dimension of the (I–I) space. Most importantly, the majority of CLPR systems prohibit intraparty competition in general elections because voters generally cast a single vote at the party level without the possibility of reordering the list of candidates (see Table 3.1). Though rare, intraparty competition is possible under specific combinations of rules in CLPR systems. For example, in Argentina, intraparty competition occurs at the primary stage, when parties field multiple sub-party lists of candidates. At the general election stage, intraparty competition can happen when sub-party lists are allowed. For example, until the 2002 election, Colombian voters could choose among multiple lists from the same party and votes were pooled to the sub-party list level. As a

Table 3.1 Most common electoral rules in proportional representation systems: For each of the PR systems we discuss throughout the book, the table presents the most common values of Ballot type, Vote Pooling, Number and Level of Votes Cast, and District Magnitude

Electoral System	Ballot Type	Vote Pooling	# & Level of Votes Cast	District Magnitude	Seat Allocation Formula
Closed-List Proportional Rep. (CLPR)	Closed	Party Level	One (Party Level)	>1	Quota or Divisor
Flexible-List Proportional Rep. (FLPR)	Flexible	Party Level	One (Candidate or Party Level)	>1	Quota or Divisor
Open-List Proportional Rep. (OLPR)	Open	Party Level	One (Candidate or Party Level)	>1	Quota or Divisor
Free-List Proportional Rep. (Fr-LPR)	Open	Party Level	M (Candidate Level)	>1	Quota or Divisor
Fortified Proportional Rep. (F-PR)	Closed	Party Level	One (Party Level)	>1	Quota or Divisor
Single-Transferable Vote (STV)	Open	Candidate Level	One (Candidate Level)	>1	Quota or Divisor

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result, Colombia experienced high levels of intraparty competition and personalization of politics.[3] Because intraparty competition is the exception in these systems, we anticipate that parties in CLPR systems can make meaningful policy promises that they will pursue in a credibly cohesive manner once in office. However, we do not expect constituents to form a strong bond with specific Members of Congress, as multiple members are elected in each district and those in the same party have few incentives to distinguish themselves from one another. *Weak* or *permissive* rules—we use the terms interchangeably—instead require ideologically heterogeneous voters to coordinate strategically on only the most viable candidates to avoid wasting their votes. The TDE in these systems should therefore be relatively low, which suggests that CLPR will be located in the Very Weak to Permissive range of the Interparty Dimension of the I–I space. CLPR is by far the most widely used proportional list system (403 of the 782 PR elections in our dataset), and is employed in elections in countries as geographically distant as Argentina, Benin, Indonesia, Israel, Rwanda, Senegal, and Ukraine.

OLPR systems exhibit the same level of proportionality between votes and seats (or the same relatively permissive incentives) as similarly designed CLPR systems. As we noted above, seat allocation formula held constant, increasing district magnitude is almost always associated with higher levels of proportionality. Therefore, we expect them to also have relatively low TDE, and to be located in the Very Permissive to Permissive range of the Interparty Dimension of the (I–I) space. A version of OLPR was also used for almost three decades in post-Pinochet Chile; the D'Hondt method was employed to apportion seats in two-member districts, an abnormally low *M* for a proportional representation system. As intended by its architects, Chile's binomial OLPR system over-represented the policy preferences of those on the right of the political spectrum.

However, OLPR and CLPR pose significantly different intraparty incentives. Under OLPR, voters cast one vote, typically at the candidate level. Some OLPR systems allow voters to choose between a party- and a candidate-level vote, while others only permit the latter. In contrast to CLPR systems, the ballot in OLPR systems gives voters a chance to reorder the list of candidates, votes

[3] Such a combination of rules led scholars to argue that Colombia's CLPR worked similarly to a single non-transferable vote (SNTV) system (Cox and Shugart, 1995), a majoritarian system that incentivizes competition among co-partisans (see discussion below). Another example of CLPR with high levels of intraparty competition comes from Uruguay (Moraes, 2010). Unlike Colombia, Uruguayan parties can field multiple sub-party lists, but votes pool to the party level.

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(still) pool to the party level, and voters cast a vote at the candidate level. OLPR requires candidate lists to be reordered based on the number of preference votes each candidate receives. On some occasions, voters can cast multiple preferential votes for candidates from the same party. For example, in Peru, voters can cast up to two preferential votes for candidates in the same party list. Unsurprisingly, well-known candidates are rewarded with more preferential votes. For instance, studying the local Belgian elections, Dodeigne and Pilet (2024) find that candidates with previous political experience (e.g., mayors, councilors) receive more preferential votes. Furthermore, Söderlund and Von Schoultz (2024) find that celebrity candidates get a larger share of preferential votes in Finland, though the importance of this status fades with time.

Clearly the possibility of casting (at least one) preferential vote creates more candidate-oriented incentives than CLPR, as candidates must distinguish themselves not only from opposition party candidates but also from other members of their own party. Members care about the shared party reputation because votes pool to the level of the list, which is why we do not expect OLPR systems to be at the Highly Individualistic extreme of the intraparty dimension. Foreshadowing our examination of the observable implications of intraparty incentives, the personal vote-seeking incentives institutionalized in OLPR may make agreement among copartisans somewhat difficult, mostly because legislators must cultivate a personal reputation among their constituents.

Though OLPR is not as popular a system as CLPR, our dataset includes 172 elections in twenty-one countries that were held under OLPR between 1945 and 2015.[4] Brazil provides perhaps the best known example of OLPR with several studies leveraging the case (e.g., Mainwaring, 1999; Nicolai, 2006; Calvo, Guarnieri, and Limongi, 2015; Cheibub and Sin, 2020), but variations of this system have been employed in countries as diverse as Finland, Greece, Iraq, and Sri Lanka.

FLPR systems, we expect, exert interparty incentives that are similar to those of other PR list systems as they can take values for district magnitude, seat allocation formula, and legal threshold that are similar to those in CLPR or OLPR systems. FLPR systems should fall somewhere between OLPR and CLPR in terms of intraparty incentives: under FLPR, intraparty incentives should be neither highly individualistic nor highly centralized. FLPR systems usually pool votes at the party level before allocating seats across parties.

[4] OLPR is also used in combination with CLPR in Colombia.

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As with OLPR (but not CLPR!), voters can (and sometimes must) cast preference vote(s) at the individual candidate level under FLPR. Where citizens have multiple votes, these must be cast for members of the same party. However, unlike in OLPR systems, candidates in FLPR systems only climb the party's list if they obtain a *pre-defined share* of the preference votes cast. The ways in which these thresholds are calculated and the degree of burden they impose on candidates vary widely across systems. In some cases, such as in the Czech Republic, the thresholds can be quite high (7% during the 2002 and 2006 elections to the Czech Parliament, for instance); thus candidates are very unlikely to move up the list. For this reason, many scholars have concluded that FLPR's incentives for intraparty behaviors are closer to those of a CLPR system than those of an OLPR system. For candidates who struggle to move up a party's list, their best prospect of obtaining a seat is almost solely a function of how many seats the party gains. However, there is some evidence that even where climbing from an unelected list position to an elected one is rare, the presence of the candidate-level preference vote option motivates MPs to engage in more personalistic behavior (Put, Smulders, and Maddens, 2019; Smrek, 2019). For example, in Slovakia, where candidates compete in a single at-large district with $M = 150$ and voters can cast up to four preferential votes for candidates in the same party list, candidates who receive higher counts of preferential votes are likely to be rewarded with better pre-election list positions in future elections (Crisp et al., 2013). In some systems, like Austria, Belgium, and the Netherlands, at least a handful of MPs are regularly elected via preference votes. In our dataset, FLPR appears in 13 European countries at some point during the postwar period.[5]

In **FR-LPR systems** interparty incentives remain unchanged; we expect intraparty incentives to again fall between the party-centered incentives of CLPR and the candidate-centered incentives of OLPR. As in FLPR and OLPR, voters can express multiple candidate-level preference votes in FR-LPR. Unlike flexible-list and open-list systems—here is where the "free" part comes in—these preference votes can be awarded to members of *different* parties, a practice known as *panachage*.[6] Party lists are automatically reordered based on those preference votes. As in the other list systems, votes typically pool to the party level. In Switzerland, where this system has been used for

[5] These countries are Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Iceland, Netherlands, Norway, Slovakia, Sweden, and Turkey. France and Turkey no longer use this system.

[6] Some FR-LPR systems allow voters to cast a single vote for a party, but that vote is treated as a preference vote for each one of the candidates on the list as it was submitted by the party prior to the election.

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the entire period covered in our dataset, parties are allowed to field numerous sub-party lists. Though votes pool to the party level, the existence of multiple sub-party lists likely further increases the incentives for competition among co-partisans due to the growth in the number of candidates.

Because FR-LPR systems give voters multiple preference votes, intraparty competition is not zero sum. Yet, since voters can spread their votes across multiple parties, this can weaken the usefulness of party-level reputations even more than in OLPR. In other words, in an OLPR system a voter can usually only reward one candidate (and therefore only one party), while under FR-LPR voters can reward individual candidates from different parties. This unprecedented set of options for voters raises the question of whether the signal sent by party leaders when they rank their candidates resonates with voters or if voters simply ignore elites' preferences. In OLPR and FLPR systems, we could thus compare leaders' vs. voters' rankings of candidates to evaluate whether the electoral rules weaken the influence of parties (see, for instance, Crisp et al., 2013), or study the downstream consequences of party elites' decisions to rank certain candidates higher on the ballot to begin with (see, for instance, Cunha Silva and Crisp, 2020). In our dataset, FR-LPR is or was used to elect legislators in six countries, one in South America (Ecuador), two in Central America (Honduras and El Salvador), and three in Europe (Slovenia, Switzerland, and Luxembourg).

The last type of list proportional system is typically referred to as **F-PR**, but is also known as proportional representation with a majority bonus. In F-PR systems, the list that receives the largest vote share is awarded a bonus in seats. For example, in Italy in 2006, the coalition that received the most votes was initially awarded 340 (or 55%) of the seats in the lower chamber with only 48.3% of the vote. The remaining 277 seats were then distributed proportionally to the parties and coalitions that surpassed the electoral threshold (using Hare with largest remainders as the seat allocation formula). In some systems, parties need to surpass a specific threshold to win the bonus; in others the bonus is simply awarded to the top vote-getting party regardless of its total. In French municipal elections, a list needs the absolute majority of votes to win 50% of the seats automatically; otherwise, a second round is organized in which a simple plurality is required to win the bonus. The French case also differs from the Italian example regarding the distribution of the remaining seats. While in Italy the list that obtains the most votes does not participate in this distribution, in France the top vote-earning party is given a majority of the seats and is then awarded a proportion of the remaining seats commensurate with its vote total. Our dataset includes 37 elections (27 of which were

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closed list) in ten countries in Latin America and Europe that used this type of system. In 2019 Greece held the last election in which this system was used at the national level. As mentioned, and unlike the other list-based proportional representation system, ballot type does not define F-PR. Due to the fact that F-PR has been mostly combined with closed-list, we use this ballot type in our simulations. As a result, we anticipate that this system behaves similarly to CLPR in terms of intraparty competition.

The final proportional system, **STV**, allows voters to express their preferences in a very detailed manner by ranking candidates who compete in the same district.[7] This system is used in Australia's Senate, Malta's House of Representatives, and Ireland's Dáil Eireann. Given the information burden posed by the possibility of ranking (all) candidates, M is often kept low in these systems. Thus, in interparty terms, we may expect STV systems to be permissive, but somewhat less so than PR list systems, which tend to have very large district magnitudes. We expect our simulations in Chapter 4 to establish that STV has relatively high incentives to cultivate a personal vote, that is, to be closest to the "highly individualistic" end of the intraparty spectrum based on their AP scores. This is because the ballots allow multiple members of a party to compete against each other and win seats based on how many preference votes they garner. Those preference votes can transfer, but they need not transfer from one co-partisan to another since voters can rank candidates from different parties.

Though voters can rank all candidates in an election, we consider STV to be a system in which voters cast a single vote at the candidate level. This is because even when expressing M preferences, any individual voter's ranking can only elect one candidate—which thus constitutes one vote. To allocate seats, STV systems rely on a quota based on the relationship between the number of votes cast and the number of seats to be filled (with the latter, M is always greater than one). The Droop quota ($\lfloor \frac{V}{M+1} + 1 \rfloor$) is frequently used. Every candidate ranked first by a number of voters greater than the quota is elected. Votes they receive in excess of the quota are then redistributed to candidates who did not clear this bar based on the rank orderings provided by voters. If these transfers put another candidate over the threshold, this other candidate is then elected. Of the remaining candidates, the one ranked first by the fewest voters is eliminated and votes for that candidate are redistributed to whoever their

[7] Whether voters must rank *all* candidates on the ballot or only a few varies across STV systems. In Australian Senate elections, for example, voters have the option to cast a single vote for a party's list, which ranks the candidates of that party in the order in which they appear on the list.

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supporters ranked second. If this redistribution results in a candidate clearing the quota, that candidate is elected. Eliminations and redistributions are repeated until *M* candidates have met the quota.

STV makes strategic voting a challenge, as it requires voters to have good knowledge of the complete preference orderings of other voters in the district. Since it is difficult to forecast the series of transfers that will occur to determine who gets elected, some scholars use STV results to gauge voters' sincere preferences regarding candidate characteristics like gender (Schwindt-Bayer, Malecki, and Crisp, 2010).

We summarize the values electoral rules can take in PR in Table 3.1. We do not include a column for seat allocation formula because these systems can adopt any of a wide variety of methods for allocating seats, *except* plurality/majority. We also do not include a column for legal threshold because just about any level is an option in most PR systems. The values taken by seat allocation formula and legal threshold do not distinguish one type of PR system from another. That they have an *M* greater than one is a characteristic shared by PR systems as a family, but it serves as a very low floor and not a ceiling. In other words, as we noted above, PR systems have used magnitudes as low as 2 and as high as several hundred. In most PR systems, votes get pooled to the level of the party—in some because that is the level at which they are cast and in others because the intent was to pursue proportionality between parties' votes and seats. Most PR systems allow voters to cast just a single vote, but there is a good deal of variation on the level at which it can or must be done. Finally, ballot type varies widely and is frequently what distinguishes one type of PR system from another. We anticipate that systems will be characterized by higher levels of AP as we go from closed to flexible to open ballots, but we leave it to Chapter 4 to try to verify and make more precise these expectations.[8]

3.3 The Majoritarian/Pluralitarian Family

Within the majority/plurality family, we count ten distinct electoral systems: single-member district decided by plurality (SMDP), two-round (TR), multiple non-transferable vote (MNTV), two-round multiple non-transferable vote (TR-MNTV), alternative vote (AV), party block vote (PBV), limited vote (LV), single non-transferable vote (SNTV), and limited nomination (LN). We expect

[8] Table 3.1 includes the STV, the only PR system that avoids use of a list.

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systems in this family to be located toward the Constraining or Very Strong end of the Interparty Incentives dimension. As the family name makes clear, these systems use plurality or majority (the latter only in two-round or run-off elections) allocation formulas to translate votes into seats. The most frequently used systems in this family award one seat per district (M=1), but this is not true for every system in the family. In practice, most pluralitarian/majoritarian systems with $M > 1$ have lower average magnitudes than most PR systems (see Table 3.2). A significant outcome of majority/plurality systems is that the relationship between votes and seats can be quite disproportional—giving the only seat or few seats in a district to candidates and parties with minority support—if voters fail to coalesce around a (typically very small) number of viable candidates. Majority/plurality systems are the second-most frequently employed means of choosing representatives, trailing PR systems by a margin of 534 to 782 elections in our dataset of postwar electoral contests.

In an **SMDP** system, voters get a single vote, cast at the party level, to fill the only contested seat, and that seat goes to the top vote-earner regardless of the level of support they receive. In our dataset, we observe that 43 countries used SMDP in 314 elections between 1945 and 2015.[9] With only one seat to hand out, proportionality, especially at the district level, is typically low in systems that use SMDP unless there is a single exceedingly dominant party, which is unusual in democracies. Given that only the top vote-earning party gains representation, it does not make sense for a large number of parties to enter the electoral fray unless their leaders are all equally convinced that they can win a plurality of the vote. While SMDP is frequently criticized for its potential for disproportionality, it is often lauded for leading to single-party governments who can easily be held accountable for government performance and for the clear connection it establishes between an individual representative and their constituency.

In its most typical form, the ballot type of single-member district decided by plurality (SMDP) can be thought of as providing an incentive to cultivate a party (rather than personal) vote. Since each party presents a "list" of candidates that contains one member, voters cannot disturb the list. The typical SMDP system also pools votes to the party level because, again, voters cast a single vote at the party level. However, less frequently used versions of SMDP have ballot access processes that allow more than one candidate from a party

[9] Not counting the mixed-member systems we describe in the next section, SMDP is sometimes employed to elect some seats in parliament while another electoral system is used to choose the remaining seats. SMDP is paired with MNTV in nine countries and PBV in one.

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to run in the general election. Introducing intraparty competition in this way could upend vote-seeking incentives through changes to ballot access, ballot type, vote pooling, and votes cast.

While ballot type emphasizes party, the low magnitude (M=1) of any form of SMDP probably acts as a counterbalance. Under SMDP, ballot type, vote pooling, and votes cast all take on the same values as in CLPR systems, but under CLPR a party's candidate list can be very long (as a function of M), making many individual candidates quite obscure. Under SMDP, the party list contains exactly one member, perhaps making it efficient for electoral purposes to draw attention to the attributes and accomplishments of that candidate. Our simulations in Chapter 4 increase the precision of our measurements regarding this system's intraparty incentives.

TR systems send voters to the polls twice if no candidate receives a prespecified vote share the first time around. Such systems therefore potentially make more candidates viable during the first round of elections, making interparty incentives slightly less strong or constraining than in single-round SMDP systems. The hurdles for avoiding a second round vary across TR systems, but in the most frequently used version the top two candidates go on to a second round if no candidate receives a majority of the votes in the first round; in the second round, by definition, the top vote earner will be able to claim majority support. Compared to SMDP, more parties may enter candidates to run under TR because they reason that, while they may not win the first round, they might have a chance to proceed to the second round with a strong showing and thereby pick up voters from parties that were eliminated after the first round. Also, parties may enter the first round expecting they will not make the second round but hoping to show enough strength that those parties that do go on to the next round will seek to curry their favor in return for the votes of their supporters. In the end, however, just like SMDP, there is only one seat to hand out.

Regarding intraparty incentives, in TR (as in SMDP) the party and the individual candidate are synonymous. No party nominates more than one candidate per district (when multiple parties are competing).[10] Voters do not have a choice among copartisans in the general election. However, following the logic of Carey and Shugart (1995), because voters cast a vote in both rounds and have the option of changing their party preferences in between rounds,

[10] In the US state of Louisiana, candidates from all parties compete in a primary. If no candidate obtains a majority of the votes cast, a second (general) election is held, pitting the top two finishers in the primary against one another. It is possible that those two will be copartisans.

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Table 3.2 Most common electoral rules in pluralitarian/majoritarian systems: For each of the pluralitarian/majoritarian systems we discuss throughout the book, the table presents the most common values of Ballot type, Vote Pooling, Number and Level of Votes Cast, and District Magnitude

Electoral System	Ballot Type	Vote Pooling	# & Level of Votes Cast	District Magnitude	Seat Allocation Formula
Single-Member District Decided by Plurality (SMDP)	Closed	Party Level	One (Party Level)	1	Plurality
Two-Round Single-Member System (TR)	Closed	Party Level	One (Party Level)	1	Absolute Majority
Multiple Non-Transferable Vote (MNTV)	Open	Candidate Level	M (Candidate Level)	>1	Plurality
Two-Round Multiple Non-Transferable Vote (TR-MNTV)	Open	Candidate Level	M (Candidate Level)	>1	Plurality
Alternative Vote (AV)	Closed	Party Level	One (Party Level)	1	Absolute Majority
Party Bloc Vote (PBV)	Closed	Party Level	One (Party Level)	>1	Plurality
Limited Vote (LV)	Open	Candidate Level	M–1 (Candidate Level)	>1	Plurality
Single Non-Transferable Vote (SNTV)	Open	Candidate Level	One (Candidate Level)	>1	Plurality
Limited Nomination (LN)	Closed	Party Level	One (Party Level)	>1	Plurality

the TR system is akin to one in which voters cast votes for more than one candidate, perhaps slightly increasing the incentives to cultivate a personal vote. Ballot type, vote pooling, and magnitude remain unchanged from SMDP (see Table 3.2). Much less frequently, two rounds have been used in districts with $M > 1$.

Unlike SMDP and TR systems, **MNTV** systems (also known as bloc vote systems) award more than one seat per district and voters can cast as many votes as there are seats. In interparty terms, these systems have the same

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potential as SMDP to be constraining, as even a relatively narrow plurality of votes can win all the seats in a district. Just like in SMDP, if supporters of the same party comprise the plurality in each district, they can win every seat in the legislature. However, if the groups that hold pluralities vary across districts, again, the system works like SMDP in interparty terms, generating a legislature with more than one party. If $M > 1$, multiple parties can potentially win seats in a district unless voters coordinate perfectly along partisan lines.

Even though $M > 1$, votes for members of the same party do not pool in MNTV, unlike in list PR systems (see Table 3.2); this should create more individualistic incentives than SMDP or TR because it potentially pits copartisans against one another. If citizens only vote along party lines, candidates' personal reputations need not come into play. However, since voters can spread their multiple votes across individual candidates from multiple parties, it would be unwise for a competitor to rely solely on the reputation of his or her party. Given the way in which intraparty competition is encoded in MNTV systems, this system's ballot type is akin to giving voters a chance to disturb a list: individuals must cast votes for candidates, these votes do not pool at the party level, and the top M vote-earning candidates are elected—which is similar to what happens with an automatically reordered list under OLPR. MNTV has been used to select national assemblies in sixteen countries in the postwar period, including Mauritius, Mongolia, and Thailand, and in conjunction with SMDP to elect another nine lower or only houses.[11]

TR-MNTV systems combine TR and MNTV systems. As in MNTV, voters have M votes. However candidates need a *qualified* majority of votes to win a seat in the first round (usually equal to 100/M); otherwise, a second round is held in which candidates only need to receive a plurality of the votes to win. The combination of two rounds with $M > 1$ means that more parties are likely to win seats in a district in TR-MNTV systems than in any other majoritarian system. In some TR-MNTV systems, such as the one used in French communes with fewer than 1,000 inhabitants, all candidates advance to the second round; therefore parties and voters have no incentives to behave strategically. In terms of intraparty incentives, we hypothesize that candidates have few reasons to coordinate with their copartisans to run party-centered campaigns

[11] When a country uses two different electoral systems to choose members of the same chamber, this variation can be leveraged to estimate the causal effects of the two systems while holding many system-level factors constant. For example, MNTV is used in conjunction with SMDP to elect the Brazilian Senate, where scholars have investigated candidate entry and voter concentration across the two systems; MNTV predictably generates more entrants and a greater spread of voters across candidates than SMDP systems (Crisp and Demirkaya, 2020).

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given that they are competing against each other. Our dataset includes fifteen elections in six countries that used this system.[12]

The **AV** system, also known as "instant run-off," is used in single-member districts in only two lower or only houses (Australia and Papua New Guinea), but several US states and cities have adopted it or are considering doing so. Rather than allowing voters a single vote at the party level, this system lets voters rank the candidates competing in a district from most to least preferred. If a *majority* of voters ranks a candidate first, that candidate wins the available seat. If no candidate obtains a majority of votes, the one with the fewest first-place votes is eliminated and her votes are distributed to the candidates who her supporters ranked second (similar to what happens under STV). If this redistribution gives another candidate a majority of the votes, that candidate is elected; if not, the second-weakest candidate is eliminated and his votes are redistributed among the remaining candidates. This process of elimination, redistribution, and recounting continues until a candidate obtains majority support. While this system allows voters to express much more information than simply their most preferred (viable) candidate, it also requires the voter to have information on which to base their ranking.

In interparty terms, a voter who is uncertain about the viability of her most preferred candidate can rank that candidate first with the certainty that, if this candidate is eliminated, the vote would then transfer to her second-most preferred option. This should encourage more parties to enter electoral races and promote sincere voting. Though this psychological effect may influence the distribution of votes, the mechanical effect of having only one seat per district may still limit the impact of AV on the proportionality of votes to seats. AV systems are information intensive, especially because they often force voters to rank all candidates. In Chapter 4, we simulate the proportionality of the seats-to-votes translation in AV systems assuming that voters vote sincerely—that is, rank candidates from first to last as the ideological distance between the voter's preferred positions and candidates increases. However, due to the complexity of full rank orders, we were unable to simulate any kind of strategic voter behavior such as ranking a less-preferred but viable candidate over a preferred but not viable one.

As in other single-member systems, under AV parties put forward only one candidate, thus equating the candidate and party levels. The information requirements are higher, as voters need to establish ranked preferences over all

[12] Note that TR-MNTV uses a "qualified majority" in the first round. Candidates are elected if they receive a vote share equal or larger than $\frac{Total\ Votes}{M}$. Otherwise, a second round is held. In the second round, candidates are elected based on the plurality rule. In Table 3.2 we listed the plurality as the seat allocation formula for the sake of simplicity.

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the offerings. To the extent that voters rely on candidate-level reputations when deciding how to vote, we could argue that this slightly heightens the need for a personal reputation compared to SMDP and TR. That said, partisan identification is sufficient to distinguish candidates from one another. The need to rank candidates for vote transfer purposes is akin to having multiple votes to award to multiple candidates, which may make party vote-seeking incentives slightly weaker than in SMDP or TR. Other observable incentives posed by AV are less obvious; there is an ongoing debate over whether the system promotes moderation in interparty terms. The contested argument is that the need to rank candidates or parties encourages parties to stake out the center of the ideological spectrum so that voters who rank one moderate party first will also award high ranks to similarly moderate parties (Fraenkel and Grofman, 2006; Horowitz, 2007).

The **PBV** system, like MNTV, is a pluralitarian/majoritarian system used exclusively in multi-member districts (we will soon talk about other majoritarian multi-member district systems). However, unlike the MNTV, PBV allows voters only one vote, as in SMDP or TR (see Table 3.2). Their vote is cast for a party list of M candidates. The list that receives the most votes, no matter how few, obtains all M seats. In interparty terms, PBV has the potential to be quite disproportional. As with SMDP, the plurality seat allocation formula means that failing to coordinate on one's most preferred *viable* party leads to obtaining no seats; M seats could be awarded to one's least preferred option. However, by this logic, the increase in M does not make the system significantly more disproportional than SMDP. That said, if a PBV system awarded a different number of seats in different districts, the party or parties that won the larger M districts would be advantaged relative to those that won districts with fewer seats. PBV is used in conjunction with SMDP in systems like Côte d'Ivoire and Singapore—and in combination with TR in Mali. No country currently elects its entire legislative chamber using PBV.

In intraparty terms, voters cannot disturb the party lists because they cast a single vote pooled at the party level. We would therefore not expect PBV to incentivize candidates to cultivate a personal vote. Given that a voter is selecting a list, rather than an individual as in SMDP, a given candidate's personal attributes, activities, and reputation are relatively unimportant. This is partly what Carey and Shugart (1995) had in mind when they talked about the differential effect of district magnitude. In systems with lists that voters cannot disturb, the individual identity of candidates on the list becomes more irrelevant as the list gets longer.

The **LV** system, like MNTV, awards multiple seats in each district by plurality. Also like MNTV, the ballot pits copartisans against one another, voters cast

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multiple votes at the candidate level, and their votes do not pool beyond that level (see Table 3.2). The only difference between the two systems is that under LV, voters have fewer votes than there are seats—usually M–1 votes. Thus, we would expect the two systems to have identical interparty incentives.

In terms of intraparty competition, LV and MNTV look quite similar: voters must disturb the list (potentially choose among copartisans or automatically (re)order candidates), voters cast multiple votes for candidates, and those votes do not pool. The candidate-oriented nature of the LV system might be heightened by the relative scarcity of preference votes to go around—fewer votes than seats. Parties might be able to alleviate this pressure by nominating fewer than M candidates, but the intraparty incentives are likely to approach the highly individualistic end of the spectrum. Only one election in our dataset employed this system (Japan in 1946), which makes it difficult to empirically test for any of the incentives we think it might ensconce.

The **SNTV** system is also used in multi-member districts, though district magnitude is typically kept relatively low, making this system more permissive than SMDP but not as proportional as most list systems. Voters have one vote that they cast at the candidate level, and seats are allocated by plurality (see Table 3.2). To be most successful, parties must field only the number of candidates they can get elected and distribute their supporters more or less evenly across them, taking into account what supporters of other parties are likely to do. Over-nominating can spread supporters too thinly across candidates, potentially preventing any of the party's candidates from winning a seat even if there is ample overall support for the party.

Under SNTV, voters act as if they must reorder a "list" in the sense that multiple candidates from the same party may appear, voters must distinguish among them, and the distinctions they make automatically determine the winners. The single vote cast at the candidate level does not pool or transfer. In sum, this electoral system would appear to foster the strongest incentives to cultivate a personal reputation, meaning it should generate high AP scores in our simulations. A well-established thread in the literature focuses on personal vote-seeking in Japan when it used SNTV; it was associated with less programmatic campaigning, more pork-barrel spending, and more individualistic position-taking (Cox and Thies, 1998; Catalinac, 2016, 2018). Between 1945 and 2015, twenty-seven elections in five countries used SNTV.[13]

The last system in the majority/plurality family does not appear in most classification schemes. Matthew S. Shugart refers to these systems as **closed-list**

[13] These countries are Afghanistan, Japan, Jordan, South Korea, and Taiwan.

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plurality with limited nominations or LN. Voters only get one vote, which is cast for a closed party list (see Table 3.2). In intraparty terms the system is identical to CLPR; candidates have among the lowest incentives to cultivate a personal vote. District magnitude is usually M=3: the top vote-getting party is awarded two seats, and the third seat goes to the second-place finisher even if it has very little support. With an increase in M, other ratios of seats for the first- and second-place finishers are possible. With $M > 1$ and guaranteed representation for a second-place vote earner, these systems are more permissive than SMDP, but their short lists and the reward for the top vote earner likely make them less proportional than virtually all list PR systems. LN continues to be a popular choice for electing members to upper houses in Latin America (e.g., in Argentina and Mexico), but it is not used in any lower or only houses. In interparty terms, this system's designers seek to guarantee some seats for an opposition party while assuring the largest party a majority of seats in the chamber. In intraparty terms, LN systems have very short, closed lists and pool votes at the party level, which suggests they might impose slightly more party-centric incentives than SMDP. While this distinction is not reflected in the ballot types used, pooling, or number and level of votes cast, as in MNTV, it is accounted for by the differential effect of district magnitude (Carey and Shugart, 1995): individual candidates on a closed list (no intraparty competition) become more obscure as the list becomes longer.

As Table 3.2 makes clear, the pluralitarian/majoritarian family of electoral systems is very diverse in terms of the values taken by component rules. Again, we do not include a column for legal thresholds. As we noted before, most systems in the family award seats to plurality vote-getters, regardless of the proportion of votes received. A few impose very high thresholds, but these are barriers to competing in a second round (where the number of entrants is restricted) or quandaries that can be overcome via the receipt of vote transfers. For similar reasons we omit a column for seat allocation formulas. The typical seat allocation formula for majoritarian systems is almost always plurality, though the formula can be something different (something stronger) where the number of entrants is restricted. Ballot type, the level of vote pooling, the number and level of votes cast, and district magnitude frequently change values across plurality/majority systems. While this richness exists in terms of possible electoral system designs, in practice the preponderance of plurality/majority systems used in the "real world" have M=1, a closed ballot type (because the party "list" contains only one member), voters cast one vote at the party level, and votes pool to the party level (because the vote is cast at that level).

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3.4 The Mixed-Member Family

There are two varieties of mixed-member systems. Both have two electoral tiers—one proportional list tier and one majority/plurality tier (often referred to as the nominal tier)—and voters typically cast one vote in each tier. The relationship between the tiers distinguishes the two varieties from one another.

In **mixed-member compensatory (MMC)** systems, only the votes (pooled to the party level) cast in the proportional tier are used to determine the number of seats won by each party. Parties whose proportion of seats won in the nominal tier is less than their proportional-tier vote total are "compensated" with seats in the latter. For example, a party that wins nominal-tier districts that account for 10% of the seats in the chamber but obtains 15% of the vote in the proportional tier would have the right to claim enough additional seats from the proportional tier so that its total seat share in Parliament approaches 15%. Conversely, parties that fare particularly well in the nominal tier may have relatively few members obtain office in the proportional tier, as the parties' seat totals cannot exceed those merited by their proportional-tier vote shares. Given the role of the proportional tier under MMC, we predict that in our simulations these systems will prove to be as permissive, in interparty terms, as PR list systems. In fact, given that many of them use large-*M* statewide or nationwide districts for their proportional tiers, they may, in practice be even more permissive than many PR list systems.

In intraparty terms, MMC systems mix party-centric incentives for proportional-tier candidates (see our discussion of CLPR above) and somewhat more candidate-centric incentives for those in the nominal tier because they compete in *M*=1 districts (see our discussion of SMDP above). We discussed the observable implications of each of these systems above, and under MMC systems they are both at work. The original MMC system was adopted in postwar Germany. In our dataset, MMC systems were used in sixty-one elections between 1945 and 2015 in up to ten countries.[14]

In turn, **mixed-member independent (MMI)** systems separate the two tiers in terms of seat allocation. Unlike under MMC, a party that fares poorly in the majority/plurality tier is *not* compensated with proportional tier seats. Put another way, a party that fares well in the majority/plurality tier is *not* punished with a loss of seats in the proportional tier. Parties receive the proportion of list-tier seats that their list-tier vote share warrants, rather the proportion

[14] In addition to Germany, these are Albania, Bolivia, Hungary, Italy, Lesotho, New Zealand, Philippines, Tunisia, and Venezuela.

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of *all* seats that their list-tier vote share warrants. For example, a party that wins 10% of all nominal-tier districts but only 5% of the total vote share gets to keep all nominal-tier seats plus 5% of list-tier seats. As a result, MMI has the potential to introduce large differences between vote and seat shares. The incentives generated by this system are thus likely less permissive (i.e., receive higher TDE scores) than they are in PR, or even MMC, systems.

We reason that developing a personal reputation is more important for winning majority/plurality seats (i.e., more candidate-centered) because they are awarded independently (rather than in lieu of list-tier seats), which increases the winner's payoff for capturing nominal-tier districts. For these reasons, we might expect MMI systems to end up closer to the center of the I–I space (i.e., to receive middling AP scores) than MMC systems. While MMC was the first mixed system to be used, variations of MMI are now much more widespread; in our dataset, MMI has been used in 114 parliamentary elections in thirty countries.

A great deal of scholarly work has evaluated the relationship between tiers in mixed-member systems and whether incentives in one influence behavior in the other. Most work in this area has focused on voters' behavior, and seeks to determine whether vote choices made in one tier are "contaminated" by the calculus used to make vote choices in the other tier (Shugart and Wattenberg, 2001). For example, does the existence of strong or constraining nominal tiers diminish the effective number of parties in PR tiers relative to the number of parties if only a list PR system is used? A smaller strand of research has focused on the behavior of members of parliament, specifically how the differences in vote-seeking incentives across tiers play out. For example, does a nominal-tier deputy feel particularly free to enhance his or her own personal reputation if his or her party is well represented in the PR tier? Sometimes these types of questions are framed as trying to figure out whether mixed-member systems result in "the best of both worlds"—entailing the preferred aspects of both majority/plurality systems and PR list systems (Shugart and Wattenberg, 2001).

3.5 Conclusion

This chapter describes *most* of the systems used to elect national legislatures. All electoral systems fall within one of three broad families that are characterized primarily by the method of seat allocation (majority/plurality, proportional, or mixed). Within these families, systems are defined by a

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unique combination of ballot type, degree of vote pooling, and/or number and level of votes cast; such systems are constantly evolving, and we cannot say with certainty that we have covered every possible combination of such characteristics.

The chapter has previewed our sense of how a system's rules likely shape incentives for interparty and intraparty politics. Our expectations regarding how systems incentivize certain interparty and intraparty behaviors often vary as much *within* families as they do *across* them. Interparty incentives vary between systems that have the potential to be either particularly restrictive (forcing a heterogeneous group of voters to strategically coalesce behind a few viable candidates to avoid wasting their votes) and particularly permissive (allowing a heterogeneous group of voters to vote sincerely for a variety of parties without feeling that they are wasting their votes). Intraparty incentives vary to the extent that systems empower highly individualistic candidates, at one extreme, or highly centralized partisan blocs, at the other.

But how might we order systems based on the extent to which they encourage the party system to contract (leaving a very limited number of major parties) or expand (creating a multiparty system)? Likewise, how might we more precisely order systems in terms of the extent to which they focus attention on the reputations of parties as collectives or on candidates as individuals? Our reasoning thus far has mainly focused on the likely consequences of changing electoral component rules *one at a time* and even those simple intuitions have been very imprecise, to put it mildly. However, as this chapter has made clear, electoral systems are complex combinations of rules that can generate unexpected behavioral incentives. As Shugart and Taagepera (2017*b*, p. 285) acknowledges, "we can develop logical quantitative expectations about the impact of electoral systems, provided the system is relatively simple. [...] Our reason for not attempting to model more complex systems is that, the more additional complications are added to rules, the more difficult it is to make meaningful predictions." The difficulty of arriving at *meaningful predictions* about how complex electoral systems affect interparty and intraparty incentives drives our plan to *simulate* the effects of electoral systems on such outcomes in Chapter 4. The result of our efforts will be very precise measures of incentives for interparty political outcomes and intraparty political outcomes—our Total Duvergerian Effect (TDE) and our Average Personalism (AP)—for every electoral system, in all their complexity, that we have just defined.

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PART II

INCENTIVES IN THE I-I SPACE

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4

Simulating the Effect of Electoral System Incentives

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Electoral systems, like other types of social systems (or natural systems, for that matter), comprise multiple interrelated component rules, as described in Chapters 2 and 3. The study of systems is generally complicated by the fact that their components typically interact in ways that can be hard to keep track of, and have consequences that are difficult to anticipate; they can thus lead to outcomes that appear surprising or even unpredictable. Many electoral system reforms thus fail to achieve their goals—leaving policy-makers scratching their heads and scholars rushing to offer potential explanations.

Reforms in many countries have generated unintended consequences because electoral systems are *complex*. After the move towards open-list PR introduced in Colombia's 1991 Constitution, for instance, the system became even *more* disproportional, prompting yet another reform a mere ten years later. Although it is useful to understand the expected effects of each individual component rule, a given system's ultimate impact on party system size or party strength cannot be gleaned by considering these rules in isolation. Thus far we have oversimplified our discussion of electoral system incentives in at least three ways. First, we have explained how electoral rules combine to form electoral systems. Yet, when highlighting some observable implications, we have treated these rules in isolation—for example, how a particular behavior might change if we alter the level at which votes pool, or the number and level of votes cast. However, if one of those changes heightens personal vote-seeking incentives and the other diminishes them, we have not even tried to speculate on the likely effect on the level of personalism in the system.

The second way in which we have simplified our discussion of electoral system incentives is by ignoring an even more profound complexity. We theorized that voters care about candidates' ideological proximity *and* personal qualities. They would like to maximize their utility on both fronts, but we have not explored how they weigh potential trade-offs between these characteristics. Voters may care about a candidate's ideological proximity to their own views

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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much more than their admirable personal qualities; the opposite could also be the case. We seek to explore the impact of variation in the weights voters assign to these two qualities. We do not know what balance voters strike between the two, but we can show how variation in this balance shapes their vote choices.

This raises a third complexity that we have been avoiding. We have set up a two-dimensional space comprised of an interparty and an intraparty dimension. The incentives imposed by a given system can be "mapped" onto each dimension. Thus incentives will move back and forth or up and down along these dimensions when we change electoral rules. When we try to think about differences in multiple rules (complexity 1) and about voters trying to strike a balance to make a choice on two dimensions simultaneously (complexity 2), we quickly realize that it is very complicated to locate systems in that two-dimensional space. Electoral rules may interact in ways we have never considered, which affects the incentives they pose in directions we could never have expected. We use computer simulations to help resolve these complexities.

We simulate millions of elections that take place *in silico* in environments that are identical with respect to the preferences of voters, the personal attributes of candidates among which they express their choices, the ideological locations of the competing parties, and the behavioral rules that translate preferences and attributes into votes. We keep these factors constant across electoral systems for two reasons. First, it makes the preferences of voters independent of the rules that govern elections, thus rendering them *exogenous*. Endogenous behavior can often muddle the direction of causality in a system, so ensuring that factors such as voter preferences are exogenous allows us to isolate and observe the effects of changing component rules. In fact, as we outline below, political scientists often claim to know voter *preferences*; however, we really mostly get to see vote *choices*, and we write as if such expressions really corresponded to deeply held preferences, when we know fully well that vote choices are as much a function of preferences as of the electoral rules under which voters operate. Second, our approach allows us to consider scenarios that may not arise naturally in the world, such as systems that seek to incentivize staking extreme positions in environments in which voter preferences are not at all polarized. Our ability to consider this kind of scenario will inform the creators of future electoral systems who seek to combine the component rules in new ways.

Simulations provide us with a simple measurement strategy—that is, a plan to build quantitative indicators that we can employ in empirical tests. Many prior studies in the field of electoral politics produce ordinal categorizations for central concepts in the literature. For example, in one of the canonical

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works in the study of intraparty politics, Carey and Shugart (1995) build a rank order of electoral systems that yields thirteen categories. Based on their extensive knowledge of electoral systems, Carey and Shugart provide an educated ranking of electoral systems based on the incentives they generate to cultivate a personal vote. As good as this ranking is (and as influential as it has been), it has two undesirable characteristics. The first is that it remains impressionistic. Though it is fairly uncontroversial (at least to us) that a single-member district decided by plurality (SMDP) system ought to produce much stronger incentives to seek a personal vote than a closed-list proportional representation (CLPR) system with a large district magnitude, it is less obvious (at least to us) that a system in which party leaders lack control over access to the ballot, the general election uses open-list ballots, and voters have multiple votes (i.e., a free-list proportional representation (FR-LPR) system) provides different incentives than one in which party leaders lack control over access to the ballot, the general election uses a transferable vote, and voters have just one vote (i.e., a single transferable vote (STV) system). Yet the ranking provided in Carey and Shugart (1995) suggests that this is the case. Even if we agree that these systems produce different personal vote-seeking incentives, we still lack a good yardstick with which to measure *how much* of a difference exists among different electoral systems. The second undesirable characteristic is that existing rankings do not include a *ratio scale*, that is, a means of determining the size of the gaps between systems in terms of incentives. They tell us that rule A provides stronger incentives to seek a personal vote than rule B, *but they do not tell us by how much.*

Our simulations allow us to supply *quantifiable* outputs, such as the amount of variation in the proportion of elected candidates with high levels of noteworthy personal attributes, that we should expect to see in a specific electoral system or family of systems. More importantly, simulations help us provide such quantifiable outputs even for electoral systems that are very complex or that are only used infrequently (for which data is scarce). We can even produce quantifiable outputs for electoral systems that are logically feasible but do not, to our knowledge, yet exist.

Our measures will not generate perfectly calibrated scores of a given output, but we believe they will avoid some of the endogeneity that has affected many previous attempts to understand the consequences of politician–voter interactions in different electoral systems (a phenomenon sometimes dubbed the "conservation of disproportionality," Taagepera and Shugart, 1991; Cox, 1997). For example, an individual may decide *not* to vote for their preferred party in an SMDP system if they do not believe it has a chance of winning. They may instead vote for a less-preferred viable party. If other voters act in a

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similar way, this action reduces the amount of disproportionality that a measure like, for example, Gallagher's index is able to detect. Our simulation-based approach allows us to go beyond simply measuring the degree of disproportionality based on the votes and seats awarded to *viable* parties chosen by *strategic* voters, and measure the *real* degree of disproportionality based on the parties that voters would sincerely prefer to vote for. Paired with the ability to run millions of elections at very little cost—compared to running real elections—and with full transparency, these benefits of studying electoral systems through computer simulations outweigh the realism of observational data. While the comparative study of real-world electoral systems and their consequences has a long and venerable history in political science, and we will ultimately rely on real-world data to explore some of the connections we introduced in Chapter 1, simulations offer a uniquely valuable way to obtain hard-to-observe quantities of interest and to elicit theoretical expectations. In addition, they offer students of electoral politics a chance to practice with quantitative data wrangling and analysis tools, using simple but powerful programming principles.

In the rest of this chapter, we explore how simulations help us understand the effects of using different electoral rules and contrast our decision-theoretic simulations with other comparable approaches. We then present the details of our simulation exercise, explaining our choices at every step of the election algorithm. We conclude the chapter with a reminder of the kinds of measurements we expect to obtain from our simulated election results, emphasizing our ability to "map" electoral systems on an Interparty–Intraparty spatial continuum. We briefly discuss the potential to use these simulations to answer other related questions.

4.1 A Simulated World

For our purposes, simulated worlds comprise electorates and candidates that are little more than homunculi who live as computer bytes and are characterized by two features. Individual voters are represented by an *ideal point* (i.e., a summary measure of their preferences on some policy or ideological dimension) and a desire to vote for a candidate with *valence* (non-ideological, personal qualities such as charisma, integrity, or overall competence that allow a candidate to stand out from the crowd, including copartisans). Entire electorates are just distributions of individuals who have these two features. Parties and rank-and-file candidates, the other two types of actors in our simulated world, also have ideal points. In addition, candidates are endowed with a

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second "non-positional relational reputation," or *valence* (Calvo, Chang, and Hellwig, 2014)—a summary measure of the personal qualities that captures how recognizable their individual qualities are to voters.

As an example, Figure 4.1 depicts the ideal points of 500 voters (as stars in the top row) and three party leaders (as solid shapes along the bottom row) in a simulated world. Candidates can also be placed on the same space. Our simple simulated world can thus be populated with ten candidates from each party by sampling them from normal distributions centered around each party leader. Each candidate will then have been assigned a valence value ranging from 0 (no valence) to 1 (highest possible valence). These candidates—depicted in Figure 4.2 as party-specific shapes with sizes that reflect their corresponding valence—represent all the alternative candidates who can be selected as their party's standard bearers. Their locations and valence levels will determine which parties voters ultimately choose to support on election day, and (together with voters) they form the hypothetical "environment" on which incentives generated by electoral systems will operate. Section 4.3 details how our simulations follow a set of pre-defined algorithmic steps: the component rules of electoral systems define the bounds within which this environment operates, translating the fully known preferences of voters and parties into elected legislators at both the district and national levels. In the next section we discuss our approach to the study of electoral system incentives.

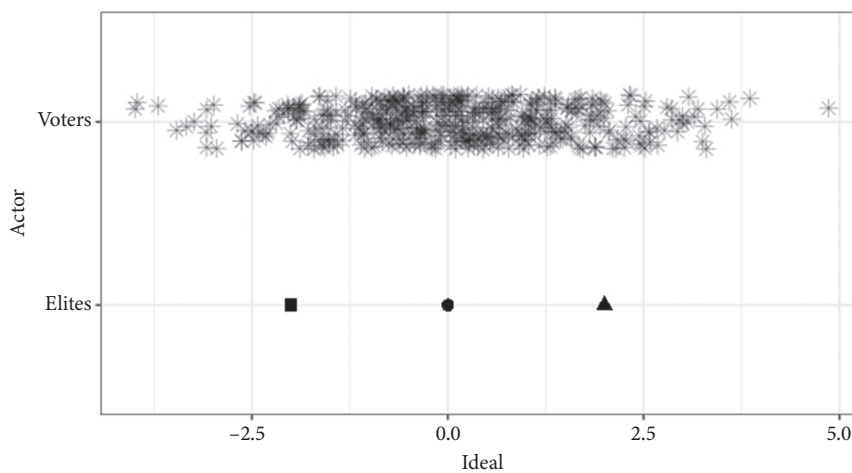


Figure 4.1 Simulated world, voters, and party elites The figure shows the simulated ideal positions of 500 voters (top row) and three party elites (bottom row).

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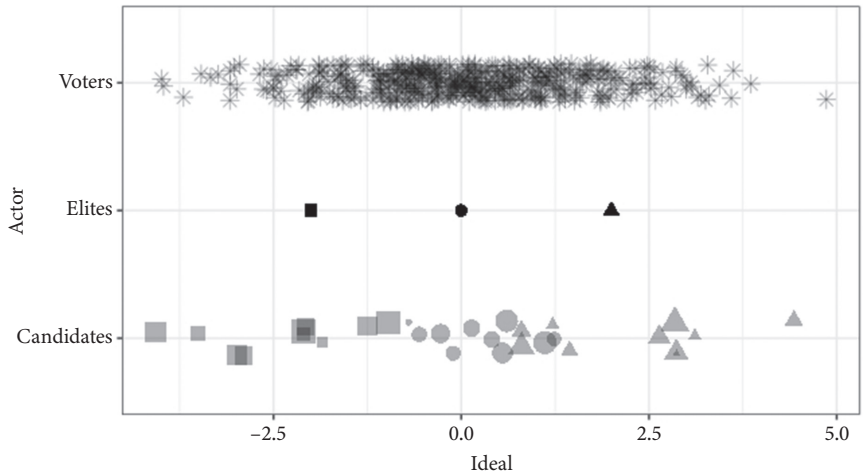


Figure 4.2 Simulated world, voters, party leaders, and candidates The figure illustrates the simulated ideal positions of 500 voters (top row) and three party leaders (middle row), and thirty potential candidates (ten from each party, in the bottom row). For candidates, the size of the party-specific shape represents the amount of valence (or personal qualities) the candidate is endowed with.

4.2 Our Approach

Political scientists have traditionally studied the consequences of electoral regimes by arguing that certain electoral systems promote particular interparty or intraparty behaviors. As we have done in previous chapters, political scientists typically reason through the effects of various rules, sometimes assigning each rule an impressionistic score to aggregate and summarize their thinking (e.g., Carey and Shugart, 1995; Gallagher and Mitchell, 2005). For all their heuristic usefulness and clarity, we have already made clear the shortcomings of this approach.

Formal models of electoral behavior serve as excellent tools to analyze how certain outcomes follow logically from a given set of axioms, and the field of electoral politics has produced ample knowledge based on such models. Formal models start with plausible assumptions about human motivations—for example, candidates want to win elections, voters want to elect politicians who represent their policy preferences, etc.—and seek to understand whether these assumptions generate alternative behaviors under various electoral rules. Because these assumptions are formulated in unambiguous terms, and since formal mathematical logic is brought to bear on these assumptions,

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the end result is a fairly elaborate understanding of the foundations of electoral behavior (see, e.g., Cox, 1997; Schofield, 2003; Adam, Merrill III, and Grofman, 2005; Schofield and Sened, 2006). In particular, the output of such models can help researchers characterize the behaviors of voters and politicians as creating an *equilibrium* in which the behaviors of one set of actors represent the best response to the behaviors of others, and vice versa.

In general, though, formal models work best with a very small number of "moving parts" (e.g., component rules). Game theory and other mathematical/analytic tools have less commonly been used to model how the *entire collection* of electoral rules operate *together* to alter the behavior of voters and candidates. As we are interested in the interplay of all the component rules we have identified in previous chapters, our simulations do not use a traditional game-theoretic approach to study the impact of electoral systems on the behavior of relevant actors or the characteristics of ensuing party systems.

To deal with the complexities introduced by considering as many moving parts as those that define most electoral systems, a form of computer simulation known as an agent-based model (ABM) takes into account dynamics and behavioral adaptation of actors to relatively complex scenarios. An ABM starts by creating a number of fictitious political actors who are then set free to roam a simulated world in which they make decisions. The distinguishing feature of the decision-making mechanisms of these actors is adaptability. In an ABM, adaptive actors can look at their own past behavior and that of others to determine which actions netted them larger benefits (see, for instance, the agent-based simulations of Laver and Sergenti, 2011; Ting et al., 2011). While useful in their ability to consider complex decision contexts (like those generated by electoral systems), we decided against using ABMs in our simulations precisely because this adaptability may obscure some of the features we hope to measure.

An ABM, for example, might tell us that candidates in an SMDP system will optimally be winnowed down to two, which is great if we seek to quantify the expected number of parties in the electorate. But we want to measure how constraining or permissive an electoral rule is compared to a baseline in which voters elect the candidates they sincerely prefer. Because agents in the ABM adapt their expressed preferences in ways that may be close to optimal, we would never know which candidates beyond the final two would have garnered voters. We would still learn that SMDP systems are highly disproportional (a second-place party with 49.9% of the vote would still not get representation), but in a way this measure already discounts the full force of the incentives that lead politicians and voters to act strategically. Our argument

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against the use of ABM is thus similar to the one we made about the implicit underestimation bias inherent in measures such as the Gallagher index (see page 79). Our goal is to use algorithmic steps to observe the extent to which the same simulated worlds can elect different sets of legislators when using different electoral rules.

Instead of game theoretic and agent-based approaches, then, we settle on a *decision-theoretic* simulation framework: we set up our simulations such that politicians react to what they perceive to be the voters' preferences, and voters then choose which politicians to support based on a strategic calculus. We do not require these behaviors to necessarily be best responses to each other. We wish to confront highly complex electoral systems that combine multiple characteristics and create elaborate incentive structures that are not always easy to analyze formally—and to do this without making too many drastic simplifying assumptions. As a result, we have set up our simulations to allow the simultaneous interplay of the many component rules that make up a real electoral system. Admittedly, we cannot provide a fully analytic derivation of why certain rules lead to particular behaviors with the clarity and elegance of formal mathematical models. In other words, we may find that certain combinations of rules are associated with certain values of a quantity of interest—for example, the extent to which legislatures are composed of notable individuals (Average Personalism (AP) scores)—but be unable to explain *why*. That is the trade-off we make by choosing a computational over an analytic approach.

4.3 Algorithmic Elections

As in our simple example above, we begin our simulations at the top of Figure 4.3 by sampling a set of ideal policy positions for 1,000 voters from a standard normal distribution and selecting a set of equidistant positions of k parties along the $[-2, 2]$ interval.[1] We allow the initial number of parties k to vary across different runs of our simulated elections (with $k \in \{4, 6, 8, 10\}$) to account for the fact that electoral systems may operate differently under party systems of different nominal sizes.[2]

[1] At the general election stage, and to better reflect real-world scenarios in which each electoral district contains many more than 1,000 voters, we will multiply by a factor of 100 as if we had drawn that many voters at each of these locations.

[2] All of the code used in our simulations is available at https://i3dataset.com which can be used to verify our results and explore how the effects of different electoral systems might change under alternative assumptions about, for example, error rates.

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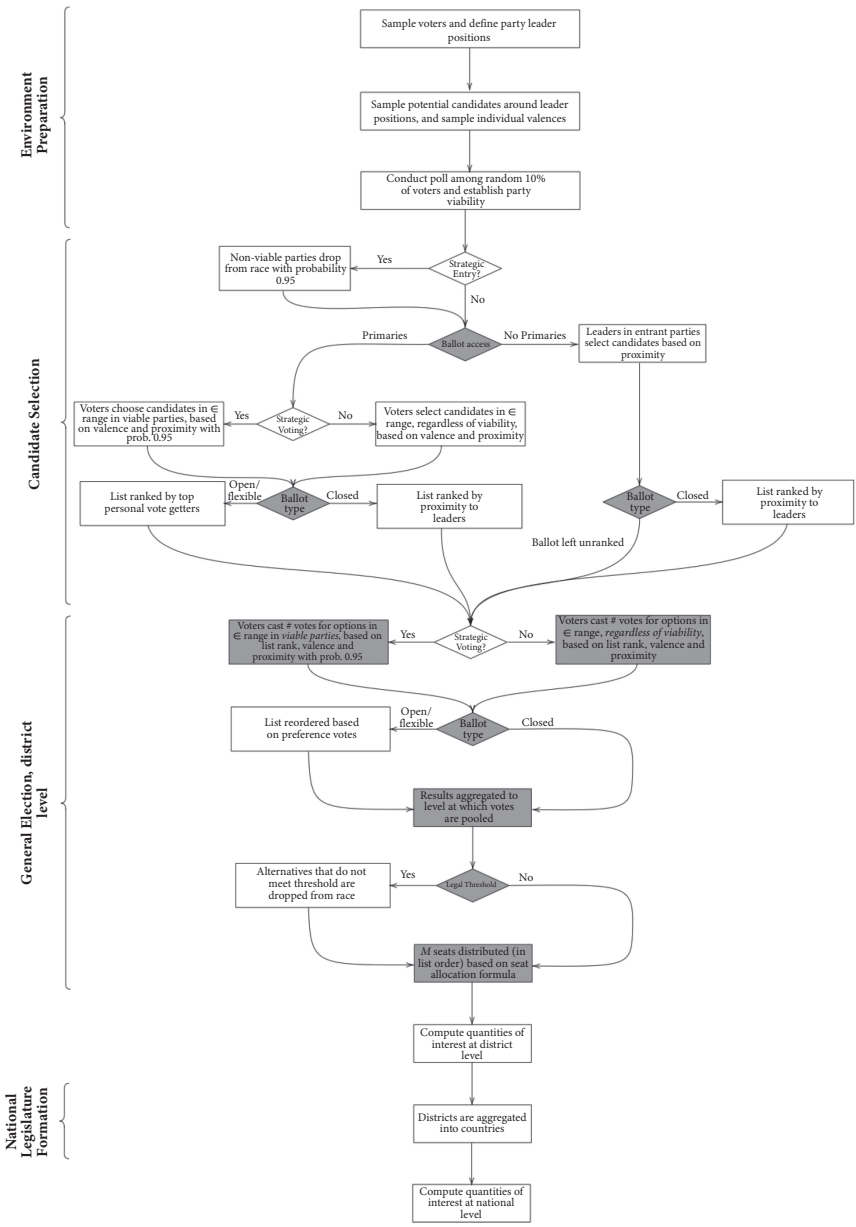


Figure 4.3 Flowchart of election simulations The figure illustrates the flow of control for our election simulations, turning policy preferences into elected parties, and culminating in the computation of our quantities of interest. Steps involving one or more electoral component rules are shaded gray.

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Next, potential rank-and-file candidates are drawn from normal distributions centered around the selected elite positions. In addition to these sampled policy positions, candidates are also randomly endowed with a *valence* feature, which we think of as an abstract way of representing any non-policy-related individual qualities that may universally appeal to voters—charisma, trustworthiness, competence, etc. Rather than coarsen differences along such dimensions, we allow candidates to vary on a spectrum of possible valence (or noteworthy traits, characteristics, or attributes) to generate more nuanced representations of individual characteristics. Accordingly, for each candidate in the pool we sample valence independently from a beta distribution so that values of valence fall between 0 and 1.[3]

Note that our simulation strategy makes candidates' valence and ideal policy positions independent of one another and of electoral systems used—all three elements of the simulation can be modified while holding the others constant. This may strike some as a usual decision because both theory and empirical evidence suggest these three things are *not* independent of one another in practice (e.g., Groseclose, 2001; Schofield and Sened, 2006; Buisseret and Van Weelden, 2022). Such empirical associations, however, are often the result of strategic decisions. Candidates with low valence, for instance, may choose to distinguish themselves from others (and thus improve their electoral chances) by adjusting their policy positions to make them stand out in unusual and extreme ways. In turn, certain electoral systems may incentivize candidates and parties to alter their positions in hopes of making electoral gains, as we saw in Chapter 2. By keeping these elements independent in our simulations, we generate the opportunity to explore situations that are unlikely to be observed in practice, but which can shed light on the (potentially heterogeneous) consequences of electoral rules. As we indicated earlier, our measurement strategy is not contaminated by issues of endogeneity that tend to obfuscate similar exercises based on observed election outcomes. By keeping positions, valences, and electoral system types independent of each other, and given the decision-theoretic nature of our simulations, we avoid putting the proverbial rabbit in the hat by making voters more sensitive to personal traits under some systems than others, or by making certain positions more attractive by virtue of associated valence levels.[4]

[3] A beta distribution is often employed to model variables in the unit range, that is, variables that can only take values between 0 and 1. We use a mean of 0.33 and concentration of 6 to sample candidate valences. Usually, the beta distribution is parameterized by two shape parameters; using this parameterization, we sample valence from a beta(2, 4) distribution.

[4] The entirety of our simulated elections contains a large sample from the joint distribution of valences and ideal policy positions for each combination of electoral system components. As a result,

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In addition, and while our simulation approach does not allow actors to learn from the past or adapt their behavior based on how they expect others to act, the capacity to anticipate the consequences of others' actions is an important feature of elections. Accordingly, we want to account for how *strategic behavior* (i.e., behavior that rationally anticipates an undesirable outcome and takes preemptive steps to avoid it) affects the relationship between electoral rules and political outcomes, even if our decision-theoretic approach does not reflect *strategic interactions* between electoral actors.

To do so, we consider two alternative scenarios for each of our simulations. In the first, parties choose to run in an election regardless of whether they expect to garner enough votes to win a seat, and individuals vote for their most preferred options regardless of their electoral prospects. We call this the naïve, or *sincere*, scenario. In the second scenario, we endow parties and voters with a kind of first-order rationality, allowing parties to refrain from running in an election and voters from wasting votes on non-viable alternatives once they have credible information about the electoral prospects of all potential contestants. Since actors' choices may not always align with their original preferences, we call this the *strategic* scenario. We create strategic scenarios for all electoral systems except alternative vote (AV) and STV, because strategic behavior under these systems would require an extraordinary amount of information about voters' full preference orderings over multiple candidates; thus, running even a small simulation would be prohibitively costly in computational terms.

As the creators of these simulated worlds, we can observe all the preferences of all actors in each election. The actors themselves, however, are never privy to such perfect information. Voters are not aware of the preferences of other voters, and parties cannot observe voters' ideal points. Thus, in order to allow for the kind of rational defection that characterizes strategic scenarios, our simulations offer actors the type of incomplete information that is likely to drive decisions in real elections—a pre-election "poll" that asks 10% of the electorate how they would vote in the sincere scenario. The results supply (imperfect) information about the electoral viability of different candidates and parties, which allows actors to make strategic decisions. This completes the simulation stage we call "Environment Preparation" using braces on the left side of Figure 4.3.

researchers interested in exploring a world in which valence and positions are correlated can do so easily by replicating our measurement exercise with a sample of elections that result in such correlations (e.g., by sampling simulated elections on the high-high and low-low ends of the values of valence and positions), effectively simulating the kind of sample selection process that strategic behavior generates in the real world.

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After sampling policy positions and candidates' valences, and once voter polls have been conducted, the simulation proceeds in two stages. In the *party entry and candidate selection* stage (labeled **Candidate Selection** in Figure 4.3), parties first decide whether to enter the race based on their electoral prospects (measured using the voter polls). In the strategic scenario, parties review the results of the poll and "non-viable" parties (i.e., those that are not predicted to win at least one seat or be one of the top two "losers") flip a biased coin, and decide to stay in the race with a probability of 0.05. This probabilistic step allows us to capture strategic "mistakes"; parties may remain in a race despite being unlikely to win a seat, for instance if they are running to draw attention to a niche issue. We also consider systems in which the number of allowable lists per party varies (taking on a value of either 1, 2, 3, or 5 for all parties in the election), which allows us to consider situations in which parties spread their support too thinly.

Once parties decide to enter the race, **ballot access** rules define the procedure via which candidates are chosen from a pool of rank-and-file members. When primary elections determine ballot access, *voters* choose the candidates. Otherwise, party leaders select a single candidate (in non-list-based systems) or at least M candidates (in list-based systems) to form one or multiple lists. In the latter procedure, the top diamonds labeled "ballot type" in the figure, we allow candidates to either be left unranked or to be *ordered* in the ensuing lists according to party leaders' preferences, which are exclusively a function of policy positions. In other words, parties care primarily about how closely candidates' preferences reflect those of the party, ignoring their personal qualities (as captured by their valence). When primaries determine ballot access, candidates will be ranked according to the number of votes they received in the primary round of elections, which are a function of both their valence *and* their policy positions. This concludes the "Candidate Selection" stage of the process.

Next, the simulation proceeds with the district level election stage, labeled "General Election, district level" in Figure 4.3. When citizens vote in either a primary or general election, we consider their ability to do so both strategically and sincerely. When they behave strategically, voters (like parties) flip a biased coin and either vote sincerely (regardless of the poll results) with a probability of 0.05 or choose their preferred alternative among the "viable" parties with a probability of 0.95 (the probabilistic move is again designed to capture errors in judgment and/or "protest" votes). In the sincere scenario, voters ignore a party's viability when casting their ballots. Under both the strategic and sincere scenarios, however, voters register their preferences in the form of one

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or multiple votes (depending on the **number of votes** allowed to each voter), which can be cast for entire lists or individual candidates, depending on the **level at which votes are cast** in the electoral system being simulated.

How do voters decide which alternatives they prefer? A simple way of formalizing these preferences is to construct a *utility function*—a device that translates the ideal policies of voters and candidates, as well as candidate valence values, into a quantity that summarizes the benefit a voter derives from choosing a particular candidate. This utility function, denoted $U_i(x_i, x_c, v_c)$, is given by:

$$U_i(x_i, x_c, v_c) = -(x_i - x_c)^2 + \beta_i v_c - \mathbf{1}_{[x_i \pm \epsilon]^{\complement}}(x_c), \tag{4.1}$$

where x_i and x_c are the ideal policy positions of voter i and candidate c, respectively, v_c is the valence of candidate c, and β_i is a voter-specific positive parameter that governs the extent to which valence affects a voter's evaluation of a candidate *vis-à-vis* his or her policy position. The third term in $U_i(x_i, x_c, v_c)$ is an indicator function defined as

$$\mathbf{1}_A(x_c) = \begin{cases} \infty & \text{if } x_c \in A \\ 0 & \text{otherwise} \end{cases}$$

where A is the complement of the interval $[x_i - \epsilon, x_i + \epsilon]$, which produces a utility of negative infinity for candidates whose position lies outside an acceptable range around the voter's ideal point.

This utility-based formalization of preferences encodes three important points. First, as the difference between the ideal policies of a voter and a candidate increases, the voter's preference for that candidate decreases exponentially.[5]

Second, a value of β_i indexed by voter implies that not all voters value valence equally. To avoid inadvertently tilting the results in one direction or

[5] This focus on the distance between policy positions proposed by candidates and voters' ideal policies puts our formalization in the realm of "proximity" models of voting, popularized by Anthony Downs (1957) and Duncan Black (1958), which have been a workhorse of formal theories of voting and elections in Political Science for many decades. Such proximity-based approaches to modeling elections are not the only way of formalizing vote choice, however, and important alternatives exist—such as those based on social choice theory (e.g., Austen-Smith and Banks, 2000) or on notions of direction, rather than proximity (e.g., Rabinowitz and Macdonald, 1989). Our proposed framework is not incompatible with these alternative formalizations of vote choice, however. Social choice-based models, for instance, can rely on notions of proximity to define individual preference orderings, and the utility function defined in Equation 4.1 is a special case of a more general specification that contains both directional and proximity elements (Lewis and King, 1999). While we focus on the more prevalent proximity-based model throughout this book, interested readers can easily modify the proposed framework (and particularly the definition of Equation 4.1) to accommodate alternative formal assumptions about voting utility.

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another, we allow voters to have different levels of interest in personal qualities, and randomly assign one of three values of β_i (1, 5, or 10) to every voter. Given the scale of the distance term and the valence terms, we chose values that translate to some voters caring almost exclusively about the ideological proximity of their choices (β=1), others giving great weight to individual candidates' personal noteworthiness (β=10), and a third group of voters striking a balance between these two decision rules (β=5).

Third, the indicator function makes some candidates' ideologies too far removed from the voter to be attractive to her, regardless of the candidates' individual appeal and under both sincere and strategic scenarios. The acceptability of far-away candidates is determined by a common distance away from each voter's ideal point (denoted by ϵ). To ensure voters are not inadvertently too picky in terms of ideological distance, we sample this ϵ at random from the range of observed (squared) distances between all voters and all candidates, and fix it at the same value for every voter.[6]

Figure 4.4 illustrates these characteristics of voter utility. It depicts the utility that a voter whose ideal point lies at the origin of all axes derives from choosing a candidate with any ideal policy position and any quantity of valence. Higher (lower) utilities appear closer to the darker (lighter) end of the spectrum. Candidates with different policy positions may therefore give a voter the same level/shade of utility, provided they make up for their differing ideological distances with enough valence. The smoothly decaying surface along the x-axis (the line extending from the north-west to the south-east) reflects the quadratic loss in policy distance, while the upwards-sloping increase in utility along the y-axis (north-east to south-west) reflects the fact that more valence is always preferable to less. Finally, the sea of light gray beyond an ϵ distance from the origin on the x-axis reflects the idea that utility is very low (and equally so) for candidates beyond a given distance from the voter's ideal point. Such utility functions allow us to compute each voter's degree of preference for all candidates in all parties. Thus we can feed preferences into

[6] The notion of policy positions falling within an acceptable range of a voter's ideal point is common in spatial models of elections, where it has primarily been used to model voting abstentions due to *alienation*—or the idea that voters choose to withdraw from the election process entirely because alternatives are too far removed from their ideal policy outcomes (e.g., Hinich and Ordeshook, 1969). It is also similar to constructs in alternative models of voting—including the directional theory of voting proposed by Rabinowitz and Macdonald (1989), which posits that rather than focusing on specific policy positions, voters care about the more diffuse notions of policy *direction* and *intensity* that put candidates within a "region of acceptability." Under their directional theory of voting, candidates are evaluated depending on whether their proposals are on the same "side" of an issue as the voter, but also on the intensity with which both the voter and the candidate care about the corresponding issue without the latter being perceived as caring *too* much about it (i.e., without the candidate falling outside of a region of acceptability, beyond which they'd be deemed as being too extreme). For an excellent primer on the role this kind of acceptable range plays on spatial and other models of voting, see Hinich and Munger (1997).

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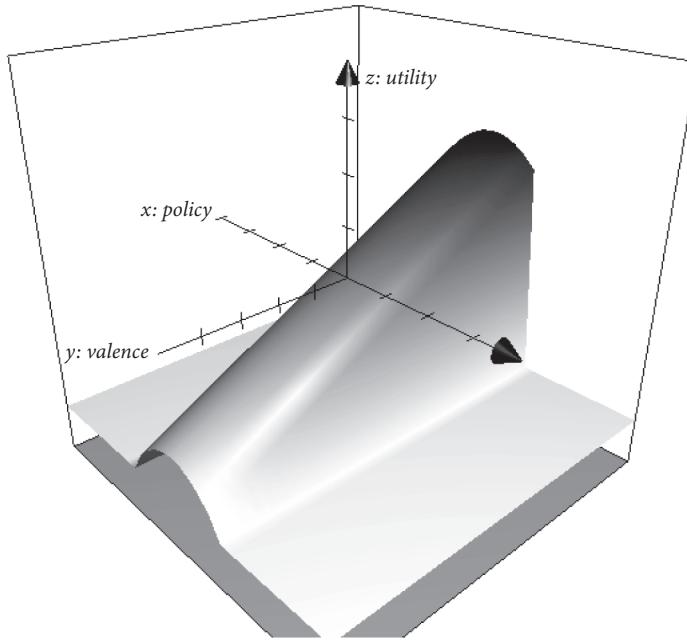


Figure 4.4 Utility of voting for a candidate, conditional on platform and valence: The figure illustrates the utility (vertical axis) that a voter with a given ideal policy (located at the origin of the plot) receives from choosing a candidate with any ideal policy position (x-axis) and any level of valence (y-axis). Darker shades indicate higher utility.

the device described by Equation 4.1 to determine which candidate (or party) each voter will choose to vote for.

Where citizens can vote for individual candidates (e.g., open-list systems), valence plays a very clear role in determining vote choice: an individual will vote for the candidate whose combination of policy positions and valence makes her the most attractive alternative. If individual votes cannot be cast, valence still matters, but voters must also consider a candidate's *chances of winning* if votes cannot reorder the candidate list: candidates further down the list will have lower chances of being elected, all else being equal. To capture this, and for closed-list systems, we include an additional term in the voter's utility that decreases with a candidate's original list position: we add a term equal to $1/\sqrt{\text{position}_c}$ to U_i (defined above in Equation 4.1).

After utilities have been translated into votes, the election is completed through the process of seat allocation, during which the **ballot type** (see the second to last diamond in Figure 4.3) determines if contending lists are reordered based on preference votes. These votes are then aggregated to the level stipulated by the **vote pooling** rules in place, and the **legal electoral**

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threshold (if one exists) is used to determine which alternatives are still eligible to receive seats (see the last diamond of Figure 4.3). At this point, M seats are distributed to parties and their candidates according to the **seat allocation formula** (see the last shaded rectangle in Figure 4.3). This can be easily done once votes are pooled at the correct level, since seat allocation formulas are effectively deterministic functions that translate votes into seats.

In addition to the seven component rules of electoral systems, our simulations require us to stipulate several other moving parts (some of which we have mentioned briefly already). These ancillary arguments include the number of parties k running in an election, the number of lists (or candidates) per party, the weight β_i assigned by each voter to a candidate's valence, the "tolerance" ϵ for ideological dissimilarity, and the probability that a party will mistakenly (or intentionally) stay in a race it cannot win. Setting each of these moving parts defines a unique simulation world in which a different election can be observed; these ancillary parameters need to be defined each time a simulated election takes place. Table 4.1 contains the values that these ancillary arguments take in our simulations.

In summary, we simulate elections in a total of 17,816 distinct electoral system configurations (see Table 4.2). Together with combinations of all ancillary arguments, as well as strategic and sincere scenarios, these electoral system combinations are used in over 71 million elections—far more (and under much more varied conditions) than we could observe using real-world data. Since each election is independent of every other, the whole simulation process can be easily parallelized (i.e., run simultaneously in independent computer cores) to dramatically increase computation speed.[7]

Table 4.1 Values of ancillary arguments in election simulations: The table contains all the values used by ancillary simulation arguments (a.k.a. hyperparameters) used to generate election results in each of our simulation exercises.

Ancillary Argument	Values in Simulation
Number of parties k	{4, 6, 8, 10}
Number of lists per party	{1, 2, 3, 5}
Valence weight in utility, β_i	{1, 5, 10}
Acceptable ideological distance to ideal point, ϵ	~Unif(min. obs. distance^2, max. obs. distance^2)
Probability of error in strategic entry/strategic voting	0.05

[7] The book's public repository at https://i3dataset.com contains R code for the entire exercise.

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One last caveat to our simulation exercise is in order. A relatively small number of unique values is used for some of our component rules because our most comprehensive set of simulated district magnitudes (viz., 2, 5, 10, 25, 30, 45, 50, 75, 100, and 150, in the context of list proportional representation (PR) systems) is extremely coarse (see the last row of Table 4.2). Generating simulations using a finer grid of magnitudes, however, would require exponentially more computational resources—making the whole exercise impractical. Since district magnitude plays such an important theoretical and empirical role in both intra- and interparty dimensions of electoral politics, we must address this shortcoming without imposing insurmountable computational costs.

To tackle this issue, we rely on fast and flexible multiple imputation techniques routinely used to handle missing data to generate interpolated values of all quantities derived from the simulated elections with *all* magnitudes between 1 and 150 (for systems in which such magnitudes are meaningful). We employ multiple imputation by chained equations (as implemented in the `mice` package in R) to generate five complete datasets with observed (i.e., simulated through the procedure we described above) and interpolated (i.e., imputed) values of our quantities of interest in scenarios with magnitudes between 1 and 150.[8]

Although the interpolation through imputation solves the problem of having too few relevant scenarios, it introduces a slight complication: it generates five different datasets to work with throughout the rest of the book. Although we could simply average the interpolated values of our outcomes of interest, this would assume away the uncertainty that is inherent in the imputation process. Accordingly, we incorporate this uncertainty into our subsequent analyses by fitting five separate models, and aggregating point estimates and standard errors using techniques designed to produce unbiased results with adequate coverage (Rubin, 1987; Little and Rubin, 2019).[9]

[8] We justify our approach by assuming that the values of our outcomes of interest (which we will discuss in the subsequent section) in contexts with district magnitudes missing in the range of 1 to 150 are missing *conditionally at random*. This means we assume that all we need in order to accurately predict values of these quantities is contained in the set of electoral components and ancillary parameters we use to simulate our synthetic elections. Since our simulations fully control the environment in which these quantities are generated, the assumption holds as a matter of course.

[9] We obtain point estimates $\hat{\bar{\theta}}_{\text{pool}}$ by averaging across the estimates obtained in all five analyses, and compute standard errors by accounting for variation estimated within and across different analyses, using the following formula:

$$\widehat{\text{SE}_{\text{pool}}} = \sqrt{\frac{1}{M}\sum_m \text{Var}(\hat{\theta}_m) + \frac{M+1}{M(M-1)}\sum_m (\hat{\theta}_m - \hat{\bar{\theta}}_{\text{pool}})^2},$$

where $\hat{\theta}_m$ is the point estimate obtained in each of the M=5 analyses, and $\text{Var}(\hat{\theta}_m)$ is the estimated variance of the point estimates in each analysis.

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Table 4.2 Electoral system configurations used in the simulations: For every electoral system configuration, we show the values taken by each electoral rule. Different combinations of these values within electoral system generate unique scenarios under which we simulate elections

System	Ballot Access	District Magnitude	Seat Allocation Formula	Threshold	Number of Votes	Ballot Type	Vote Pooling
SMDP	Primary, Party Leaders	1	Plurality	0.0	1	Closed	Party
LN	Primary, Party Leaders	3	Plurality	0.0	1	Closed	List, Party
SNTV	Primary, Party Leaders	2, 3, 6, 10	Plurality	0.0	1	Open	Candidate
LV	Primary, Party Leaders	2, 3, 6, 10	Plurality	0.0	$M - 1$	Open	Candidate
MNTV	Primary, Party Leaders	2, 3, 6, 10	Plurality	0.0	M	Open	Candidate
AV	Primary, Party Leaders	1	Absolute Majority	0.0	1*	Closed	Party
TR	Primary, Party Leaders	1	Absolute Majority	0.0	1	Closed	Party
TR-MNTV	Primary, Party Leaders	2, 3, 6	Plurality	0.0	M	Open	Candidate
PBV	Primary, Party Leaders	3, 6, 10	Plurality	0.0	1	Closed	Party
STV	Primary, Party Leaders	3, 5, 10	Droop	0.0	1*	Open	Candidate
List PR	Primary, Party Leaders	2, 5, 10, 25, 30, 40, 50, 75, 100, 150	D'Hondt, Droop, Fortified, Hagenbach-Bischoff, Hare, Imperiali, Modified Sainte-Laguë, Sainte-Laguë,	0.0, 0.01, 0.03, 0.05, 0.1	1, M	Closed, Flexible, Free, Open	List, Party

* Voters must rank candidates.

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4.3.1 Our Quantities of Interest

To capture electoral incentives along the two dimensions of party competition, we calculate two quantities of interest. The first, which we call Total Duvergerian Effect (TDE), allows us to quantify the strength of electoral systems. TDE lets us capture the reductive (or constraining) effect of electoral systems by comparing the number of parties elected under strategic vs. sincere conditions. Sincerely cast votes indicate voters' preferences unaffected by concerns about the impact of electoral rules. The distribution of seats after strategic voting gives us a picture of how both Duverger's psychological and mechanical effects change voters' behavior. The difference between the two is the TDE, which we can capture at the electoral district level.

The Effective Number of Parties (N) is a standard way to quantify the size of a party system. It varies depending on whether it is computed using party vote or seat shares. N is defined as:

$$N = \frac{1}{\sum_k p_k^2},$$

where p_k is either the vote or seat proportion of the kth party (Laakso and Taagepera, 1979).

We measure *sincere N* based on the number of *votes* and *strategic N* based on the number of *seats*; both are computed at the district level but can be aggregated to a national average—as we will discuss below—for the chamber as a whole.[10] The TDE is thus calculated as:

$$\text{TDE} = \text{N}_v^{\text{sinc.}} - \text{N}_s^{\text{strat}}. \tag{4.3.1}$$

We enjoy a real advantage over most previous efforts to precisely quantify both Duverger's psychological and mechanical effects. The mechanical effect is easy to observe. For many, many elections, scholars have access to voters' expressed preferences in the form of their votes, and after the application of a seat allocation formula, we can compare that distribution of votes across parties to the subsequent distribution of seats across parties. While capturing the mechanical effect is thus straightforward, scholars are typically left working with voters' "expressed preferences" (i.e., how they *actually* voted), and these expressions can be strategic. If they are strategic, then these decisions already reflect the psychological effects that stem from anticipating an electoral system's mechanical forces. However, because our elections are held in

[10] Consistent with our approach, the value of *strategic N* for single-member district (SMD) is simply 1.

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a simulated environment, we get to observe voters whose *sincere* preferences are known to us; after all, we assigned them such preferences from a known distribution of our choosing. Because our TDE captures this complete picture, it is an ideal measure of interparty incentives.

We employ our second quantity of interest, Average Personalism (AP), to measure the *intraparty* incentives of electoral systems. It is based on the incidence of high-valence individual representatives within the ranks of parties elected at the district level. AP reflects the main mechanism through which systems can generate incentives for more personalistic (rather than party-centric) behaviors. A natural reference level against which to compare our measure of AP is the average level of valence in the population of potential candidates. Given our choice of distribution from which to draw individual valence values, the corresponding baseline is one-third (i.e., the mean of the beta distribution from which valences are drawn).

As part of our algorithmic simulation process, we can choose the balance that voters would prefer to strike between voting for a candidate who shares their policy preferences (i.e., who is proximate to them ideologically) and voting for a candidate with desirable personal qualities (i.e., who has valence). It is very important to reiterate that in our simulations the balance voters strike between opting for policy proximity or for admirable personal characteristics (high valence) is *not* a function of the electoral system in which they are making their choice. To the contrary, we want thousands of sets of voters who would prefer to strike identical balances between ideology and personalism to do their best to achieve that balance under rules that vary dramatically in terms of whether, for example, the ballot type allows for a choice among copartisans or whether the vote cast for one candidate can or cannot pool to elect another. The average level of personalism (AP) we see when looking at the representatives elected under any given set of rules gives us a precise indicator of the relative incidence of high-valence candidates in different electoral systems.

Finally, consider that we calculate TDE and AP at the district level, which is of course the actual level at which electoral incentives operate. However, we are in need of TDE and AP scores calculated at the national level, either because we explore implications that transcend the district level or, more often than not, because we simply lack data at the district level and are forced to make do with data at the national level. In order to obtain a national measure of the TDE and AP while ensuring that the environments across simulations that use different electoral systems remain comparable, we simulate 500 different districts under each set of rules. We then combine these districts into "countries"

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(or full legislatures with 150 seats) by sampling this pool with replacement. Sampling with replacement allows us to generate multiple simulations of a country's national election, where a country is defined as a set of districts with systems that share the same set of component rules (e.g., magnitude, seat allocation formula, legal threshold, ballot access, ballot type, and vote pooling level).[11,12] For each set of component rules, we create 500 unique countries. When creating these countries, we do not hold constant the number of competing parties. As a result, such as in the real world, not all parties appear in all districts in the simulated countries. We then calculate country-level measures of the TDE in these "countries" and the average AP across districts to place each system on the *interparty* and *intraparty* dimensions.

4.3.2 The Interparty and Intraparty Incentives of Electoral Systems

The main purpose of the simulations is to populate the space defined by the two dimensions of party politics we introduced in Figure 1.3. If we relied solely on theoretical advances in the study of elections, we could roughly approximate the positions of many electoral systems on this space, especially along the interparty dimension. Yet we know of no theory that would allow us to move beyond even impressionistic assessments of where different electoral systems fall on the intraparty dimension. Consequently, we consider the simulation-based TDE and AP indexes as quantifiable outcomes that can be located on the Interparty–Intraparty (I–I) space, with AP on the *y*-axis and TDE on the *x*-axis (see Figure 1.3).

Because each simulated election produces a numeric score for both AP and TDE, we can already produce point estimates of the constraining or empowering effects of various electoral systems with much more precision than previous impressionistic attempts. Figure 4.5 plots within-system average AP and TDE scores at the *district level* for fifteen types of electoral systems. It confirms that majoritarian systems, particularly the party block vote (PBV), are very strong or highly constraining, whereas proportional systems, including the STV, are very weak or permissive. Thus, voters in PR systems do not have to go as far from their sincerely preferred choice, if they have to abandon it at all, to find a viable option, which is what they would typically have to do in a

[11] We also keep constant the number of lists each party is running.

[12] To create mixed-member countries, where (by definition) districts from different tiers do not share many of these component rules, we sample from district-level simulations that use SMDP and CLPR, with each half of the chamber coming from each system. We allow for overhanging seats in mixed-member compensatory (MMC) systems.

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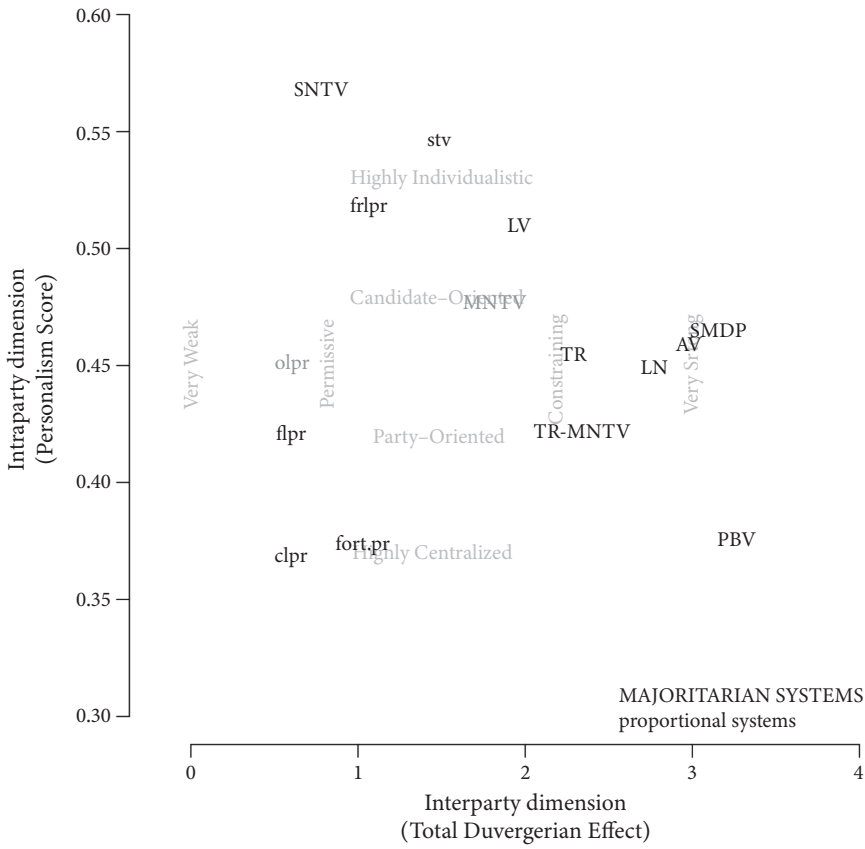


Figure 4.5 Placement of *district*-level simulated electoral systems The plot shows the average location of six proportional and nine majoritarian systems on the (I–I) space based on AP and TDE scores calculated at the district level (averages are over scenarios where district magnitude varies)

majoritarian system. On the *y*-axis, systems like STV, open-list proportional representation (OLPR), single non-transferable vote (SNTV), FR-LPR, limited vote (LV), or multiple non-transferable vote (MNTV) give candidates strong incentives to cultivate personal reputations, whereas CLPR or fortified proportional representation (F-PR) are clearly party-centered systems. For two-round (TR) systems, we distinguish between the most common form (which is paired with single-member districts) and less common forms that are used when the district magnitude is larger than 1 (we refer to this system as two-round multiple non-transferable vote (TR-MNTV)). Figure 4.5 illustrates that TR-MNTV is the weakest, most party-oriented system in our set,

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while the more common variation of TR (in the north-east quadrant of the plot) provides extremely strong incentives on the interparty dimension and is also more candidate oriented.

We can also aggregate district-level simulations to the *national* level to explore electoral system incentives at this level. Figure 4.6 indicates that nationwide aggregation tempers the strong constraining effects of majoritarian systems on TDE.[13] Though the relative placement of systems in the I–I

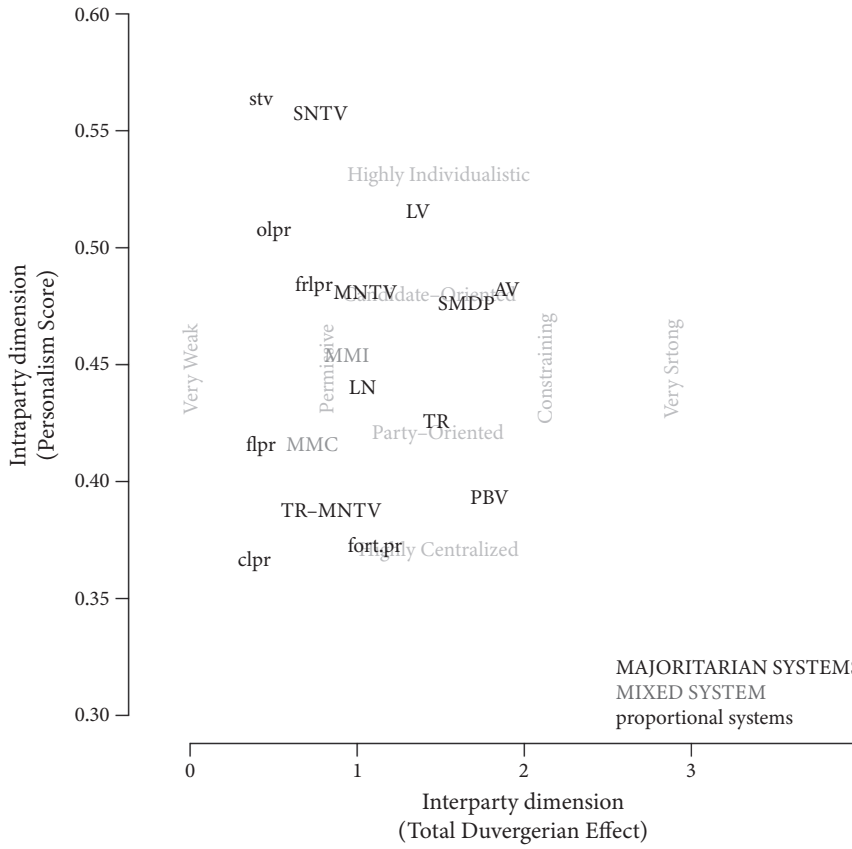


Figure 4.6 Placement of *country*-level simulated electoral systems The plot shows the average location of six proportional, nine majoritarian, and two mixed systems on the (I–I) space based on AP and TDE scores calculated at the country level

[13] The second column in Table 4.3 reproduces the coordinate values of TDE and AP that we use in Figure 4.6.

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space does not change dramatically, the combination of several heterogeneous districts at the country level eliminates some of the disproportionality in the correspondence between voter preferences and elected representatives that is so conspicuous at the district level. For instance, in the United States, votes for the Democratic Party in districts that go to the Republican Party will increase the sense of disproportionality in the translation of votes to seats, but Democratic candidates will win in other districts where Republican votes will be similarly wasted. The end result is that the distribution of seats in the National Congress will look more like the distribution of votes throughout the country, which tempers the degree of disproportionality that occurs at the district level.

Thus, the output of our simulations—the average within-system TDE and AP scores of Figures 4.5 and 4.6—helps us conduct cardinal (as opposed to merely ordinal) comparisons among electoral systems. These index scores not only establish that SMDP systems are more likely to elect personally notable politicians than CLPR systems. This standard implication has been investigated repeatedly as part of the research program that followed Carey and Shugart (1995). Our approach can also provide a clearer, easier-to-justify estimate of *how much more* the average politician is encouraged to seek a personal vote in such systems. We find that STV systems are on average more personalistic than OLPR systems; under STV we expect 20% more average personalism (high valence MPs will win 20% more seats) than under OLPR (see district-level AP scores in Table 4.3). The same is true for the study of interparty politics: our simulations allow us not only to corroborate that PR systems are weaker than SMDP systems (one of the best understood results in the so-called Duvergerian agenda; see, e.g., Taagepera and Shugart, 1991), but also to look *within* PR systems to quantify the extent to which quota or divisor rules affect the number of political parties that obtain parliamentary representation.[14]

If we treat differences in TDE as an indicator of electoral system strength, or the degree to which different systems limit (heterogeneous) voters' ability to elect their preferred representatives, the most constraining system is PBV (as seen when considering values along the horizontal axis of Figures 4.5 and 4.6), followed closely by SMDP and AV systems in which a single seat has to be won by majority, plurality, or ranked choice. Mixed-member compensatory systems, and the most commonly used types of PR systems, are very permissive. This will surprise no one: mixed-member compensatory systems are known

[14] Figure 4.6 does not include differences between quota and divisor systems. TDE and AP scores at the individual election level are available upon request, and we can aggregate them by divisor/quota categories if/when needed.

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Table 4.3 Personalism and Total Duvergerian Effect scores: Using election simulations at the country and district levels, we estimate personalism and Duvergerian effects for sixteen electoral systems (mean scores, with standard deviation immediately below)

System	Personalism		Duvergerian Effect	
	Country	District	Country	District
AV	0.48	0.46	1.99	2.97
	0.03	0.00	1.08	1.33
CLPR	0.36	0.37	0.41	0.60
	0.10	0.10	0.69	1.32
FLPR	0.42	0.42	0.43	0.58
	0.04	0.04	0.67	1.34
Fort.PR	0.37	0.37	1.09	1.05
	0.09	0.09	0.08	0.82
FrLPR	0.48	0.52	0.75	1.04
	0.03	0.07	0.30	0.83
LN	0.44	0.45	1.03	2.73
	0.01	0.01	0.03	1.06
LV	0.52	0.51	1.36	1.97
	0.07	0.06	0.37	0.21
MMC	0.42		0.73	
	0.04		0.33	
MMI	0.46		0.91	
	0.00		0.12	
MNTV	0.48	0.48	1.06	1.86
	0.03	0.02	0.04	0.09
OLPR	0.51	0.45	0.48	0.61
	0.06	0.01	0.61	1.31
PBV	0.39	0.38	1.81	3.26
	0.07	0.09	0.88	1.66
SMDP	0.48	0.47	1.74	3.16
	0.02	0.01	0.81	1.54
SNTV	0.56	0.57	0.78	0.77
	0.12	0.12	0.27	1.13
STV	0.56	0.55	0.42	1.47
	0.12	0.10	0.67	0.35
TR	0.43	0.45	1.47	2.28
	0.03	0.01	0.51	0.56
TR-MNTV	0.38	0.42	0.92	2.36
	0.08	0.04	0.12	0.65

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to inherit the characteristics of whichever proportional rule they employ to fill "upper tier" seats, and PR systems produce, at most, relatively weak incentives for strategic coordination. Our finding that various types of PR obtain similar scores (except for the slightly more constraining FR-LPR) is also unsurprising: incentives for interparty competition affect the personal characteristics of candidates elected under lists with different ballot access configurations (more on that below), but they do not influence the relative size of the party contingents elected to the national chamber.

Which electoral systems are more likely to elect representatives with high personalism scores (i.e., incentivize them the most to cultivate personal reputations)? The vertical axis of Figures 4.5 and 4.6 (and the first two columns of Table 4.3) presents the AP scores of 16 different electoral systems. The AP score denotes the level of personalism of the average representative elected under a given electoral system. Our simulations generate candidate personalism scores from a probability distribution in which expected personalism equals one-third. If electoral systems did not exert incentives to seek out candidates with higher personalism scores, the numbers in the vertical axis of this figure would all be very close to 0.33, which is obviously not the case. Candidates with distinguishing personal characteristics therefore enjoy an electoral premium. Figures 4.5 and 4.6 clearly show that STV and SNTV systems obtain the highest scores. Very close to these systems, FR-LPR, OLPR, and LV also produce relatively high degrees of personalism. The least personalistic system is CLPR, and most of the plurality/majoritarian systems (i.e., SMDP, AV, TR) are near the center of the AP scale.

4.4 Other Potential Uses for the Simulation Approach

In the next chapter we describe how to feed our simulations into predictive models to assess how the interaction among component rules affects AP and TDE. However, our simulation exercise could be used in ways that go beyond mapping systems onto the two-dimensional space of party politics.

Simulations like the ones described in this chapter can help us understand phenomena that can remain elusive when using real-world data. Data on the *exogenous* preferences of all major actors involved in the electoral process—including voters, parties, and candidates—make it far easier to explore theories that involve the useful (but empirically elusive!) notion of "ideology." Consider, for example, Cox's (1990) notion that certain systems generate centripetal forces, which we discussed briefly in Chapter 1. Later in

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the book we measure such connections by tracking the ideal positions of parties elected under different systems (capturing the variation in their positions, for instance), and weighting parties' positions by the number of seats they hold—a measure we call the *weighted variance of ideological positions held by parties in the legislature*, or *wVar* for short.

Like *wVar*, a number of quantities can help us understand other political consequences of electoral systems, such as the overall utility that an electorate obtains from the candidates who win office in a given election, the degree of proportionality between votes and seats that each system induces, the number of political parties that will obtain in equilibrium (Chapter 7), as well as the distribution of their ideological positions (Chapter 8), and the amount of congruence between elected legislators and voters (Chapter 9). Similarly, the same election algorithm can be used to explore relationships that remain difficult to analyze empirically, such as that between proportionality and the number of parties running in an election, or between electoral abstention and the overall importance of personalism vis-à-vis ideological components of an individual's voting calculus. We employ our simulations to explore some of these issues in the remainder of the book. Future work can use these kinds of techniques to investigate many related questions. In the next chapter we analyze component rules, alone and in interaction with one another, as predictors of AP and TDE scores.

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5

Component Rules and Interparty and Intraparty Incentives

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In Chapter 4 we presented a simulation framework that helped us observe—in a controlled setting, without the confounding factors that typically plague observational data—the potential inter- and intraparty incentives generated by different types of electoral systems. These simulations generated quantifiable measures that allow us to locate electoral systems in the Interparty–Intraparty (I–I) space, which we mapped in Figures 4.5 and 4.6. These maps represent a useful and necessary first step toward understanding how different electoral systems generate inter- and intraparty incentives. In this chapter we evaluate how each of the component rules of electoral systems relates to our two main quantities of interest. Recall that in Chapter 2 and Chapter 3 we speculated that (1) Total Duvergerian Effect (TDE) would primarily be a function of district magnitude, seat allocation formula, and electoral threshold and that (2) Average Personalism (AP) would primarily be a function of ballot type, number and level of votes cast, vote pooling, and district magnitude.

Given the complexity of the algorithms employed to construct our simulations, examining individual components might appear to be an exercise in futility. These algorithms operate over multiple and varied distributions of voters' ideological preferences and politicians' valence characteristics that introduce an element of serendipity into TDE and AP scores. Indeed, the relationship between component rules and systems' position in the I–I space under our simulation framework remains something of a "black box" to this point. In this chapter we strive to appreciate the extent to which these incentives—TDE and AP—might change whenever reformers manipulate parts of these systems. We will investigate which component rules are the largest determinants of positions on each dimension. In an attempt to better understand *how* inter- and intraparty incentives are generated in our simulations as a function of the various component rules that make up electoral systems, in the following subsections we describe the degree of variation in TDE and AP conditional

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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DOI: 10.1093/9780198956587.003.0005

on the values taken by each component rule, broken down by *electoral family* (majoritarian and proportional; we omit mixed systems since we base our analysis on district-level simulations).

These conditional distributions are still incomplete portraits of how individual component rules determine incentives on the inter- and intraparty dimensions, since they do not account for any potential interactions. As we graphically portray how each component rule is associated with TDE and AP, it is important to keep in mind that we *are not* holding other component rules constant. Our simulations exclude certain combinations of component rule values, and when we "average over" all component rules but one, we often encounter results that fail to comport with common sense, as when we describe below the Droop quota as somewhat more constraining than other seat allocation formulas. Whenever such results obtain, we hasten to explain why they come about. In the end, the analysis in this chapter simply allows us to set expectations about how accurately our simulation approach scores real electoral systems, a task we pursue in Chapter 6. For this goal alone, portrayals of the marginal association between TDE and AP, on the one hand, and each component rule, on the other, are sufficient.

5.1 The Marginal Effects of Component Rules on TDE

As we elaborated in Chapter 2, prior work suggests that district magnitude, seat allocation formula, and legal threshold impact a system's potential to proportionately translate votes into seats (Duverger, 1954; Leys, 1959; Sartori, 1968; Cox, 1997). We use our TDE scores to capture that mechanical process, as well as the behavior of the competitors and voters who anticipate it.

5.1.1 District Magnitude

District magnitude—the number of seats to be allotted to competitors after an election—affects the proportionality of the votes-to-seats translation. The larger the number of seats, usually the more proportional the translation can be. Figure 5.1 displays the variation in expected TDE across integer values of M. The smoothed lines capture average values of TDE (on the y-axis) conditional on various levels of M (on the x-axis). There is no theoretical limit to the number of seats that could be awarded to each district in a majoritarian

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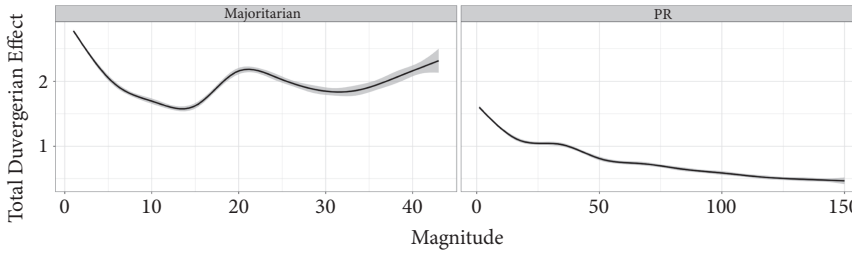


Figure 5.1 District magnitude and TDE Distribution of TDE scores across varying district magnitude (M), by electoral system family

system. It would be possible to design a legislature with 150 seats, all of which go to the first-past-the-post winner in a single, nationwide district (i.e., using a party block vote system). But because majoritarian systems tend to be paired with low-M districts, our simulations do not generate large-M majoritarian systems. Our simulated single-member district (SMD), alternative vote (AV), and two-round (TR) systems only include $M = 1$; we consider values of M up to 16 for single non-transferable vote (SNTV), up to 27 for limited nomination (LN), and up to 29 for limited vote (LV), and up to 33 for two-round multiple non-transferable vote (TR-MNTV) systems. We consider even larger district magnitudes for two additional majoritarian systems: up to $M = 42$ for multiple non-transferable vote (MNTV) and up to $M = 83$ for party block vote (PBV). We chose these quantities to be consistent with our observation of real-world systems.[1] Because of these bounds, when we discuss the association between M and TDE or AP scores in majoritarian systems, we truncate all plots at $M = 43$.[2]

In the left plot of Figure 5.1, our descriptive inferences are based on information from *all* majoritarian systems for $M = 1$, from *six* majoritarian systems for M up to 16, and from only *two* majoritarian systems for M up to 42. Over the full range of M, we see ups and downs in average TDE, which are obviously a function of the types of majoritarian systems included in each segment. We observe over the range $1 \leq M \leq 16$ that increasing district magnitude makes majoritarian systems much less constraining (i.e., TDE scores drop quickly). After $M = 16$, our descriptive inferences are based on simulations from five types of majoritarian systems—LN, LV, MNTV, PBV, and TR-MNTV; we observe higher values of TDE for these systems, suggesting

[1] The PBV system that inspired such a large district magnitude is Senegal: its 1963 election was run in a single district of magnitude $M = 82$.

[2] Our predictions, however, include all simulations.

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that they again become fairly constraining.[3] Between $M = 20$ and $M = 30$, we again observe a slight decrease in TDE. This result is produced by systems like LV, and TR-MNTV that become slightly less constraining as M increases.

Descriptive inferences for proportional systems are much easier to summarize. Here we also stand on firmer ground, since we create simulated electoral systems with varying M up to 150 for all of the major proportional systems except single transferable vote (STV), which we cap at $M = 6$. As the right plot of Figure 5.1 indicates, TDE smoothly decreases with M at the district level. In other words, proportional representation (PR) systems become less constraining—or more permissive—as M increases. PR systems at their most constraining (when $M = 2$) are expected to be only about as "strong" as the least constraining of the majoritarian systems in the left plot of Figure 5.1.

5.1.2 Seat Allocation Formula

Votes are translated into seats via mathematical formulas based on the district magnitude. Some formulas (majority/plurality ones, for example) tend to reward the top vote-getter(s) with a proportion of seats that outweighs the proportion of votes they receive. Proportional formulas, as the term suggests, do this to a lesser degree, and specific quotient or divisor rules can tweak the process of translating votes into seats to give an advantage to some competitors (those with relatively more or relatively fewer votes) over others.

The seat allocation formula is the only component rule that adopts markedly different or unique values across electoral families. Majoritarian and proportional systems employ completely different formulas. Figure 5.2 illustrates that majoritarian systems use either plurality (first past the post) or absolute majority to allocate relatively small numbers of seats in a district (typically one). By contrast, proportional systems utilize a variety of quota or divisor seat allocation formulas to allocate relatively large numbers of seats in a district.

In box-and-whisker plots like the ones in Figure 5.2, the bottom, middle line, and top of each box represent, respectively, the 25th, 50th, and 75th percentiles of the distribution of TDE scores portrayed on the y-axis. The whiskers extend to the largest (smallest) value of y no further than 1.5 times the distance between the 25th and 75th percentiles. Any values that are larger (or smaller)

[3] We do not present inferences beyond $M = 43$, which would be based exclusively on simulated PBV systems.

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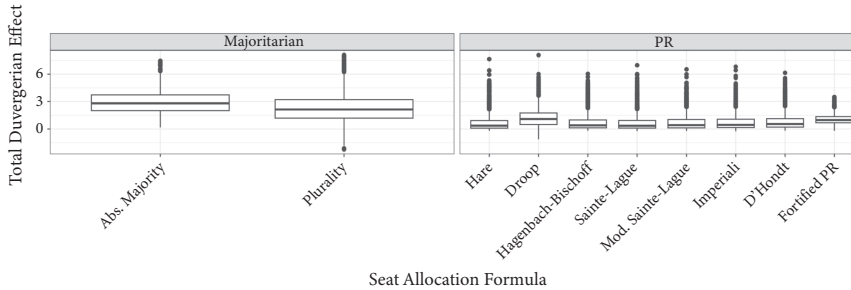


Figure 5.2 Seat allocation formula and TDE Distribution of TDE across different seat allocation formulas, by electoral system family

than the top (bottom) whisker are outliers that are depicted as individual dots. For example, in Figure 5.2, the plot corresponding to district-level absolute majority scenarios suggests that the median TDE score hovers around 2.8, that 50% of all TDE scores lay between 2.0 and 3.8, that there are no negative TDE scores, and that there are a few outliers beyond TDE ≥ 7.5. Most scores thus fall within the box, rather than the whiskers.

In the left plot, the absolute majority allocation formula is expected to be more constraining than its plurality counterpart, given that the median TDE score for the former is larger than for the latter. TDE scores under plurality are more dispersed, suggesting that more varied scenarios are likely under this allocation formula. We even sampled a "hyper-permissive" scenario with a negative TDE value, which would appear to be all but impossible with an absolute majority. We explain why negative TDE scores are possible in the last section of this chapter. The finding that absolute majority appears more constraining than plurality may seem contrary to conventional wisdom and to the original rationale proposed by Duverger that fragmentation will be larger (using Duverger's language) under double-ballot (two-round) than under a single ballot rule (single-member district decided by plurality). When we compare the scores for only those two systems (two-round and single-member district decided by plurality), we do find support for Duverger's proposition. However, the results in Figure 5.2 average over multiple systems. Specifically, TDE scores for absolute majority obtain only in AV and TR systems, whereas scores for plurality include LN, LV, MNTV, PBV, SNTV, and TR-MNTV systems.

The right plot illustrates that differences in expectations across seat allocation formulas within various types of proportional electoral systems are relatively narrow. Again, proportional systems are not particularly constraining (especially in large-*M* districts, as we saw before). The Hare and Droop seat

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allocation formulas are typically considered the "most proportional" (which we interpret as the "least constraining"/lowest in TDE), and the D'Hondt and Imperiali formulas as the "least proportional" (or "more constraining"/highest in TDE). We detect little evidence that these expected differences are particularly large. If we look exclusively at median TDE scores, and fortified proportional representation (F-PR) seat allocation formulas are slightly more constraining than almost all of the other proportional formulas, but these differences are relatively small. As in our finding regarding the relative permissiveness of majoritarian formulas, the presence of the Droop quota as one of the most constraining formulas among the PR systems may seem odd. Previous work by both Lijphart (1986) (based on hypothetical examples and formal work) and Benoit (2000) (based on simulations) ranks the Droop quota as one of the most permissive formulas. Our results resemble their ranks once we compare seat allocation formulas only in *list*-based PR systems. The inclusion of STV (and its low average magnitude) among the cases depicted in the right plot of Figure 5.2 ends up diminishing the permissiveness of the Droop quota.

5.1.3 Electoral Threshold

Thresholds set a minimum vote share that parties must obtain in order to claim seats in the legislature. They can be used to truncate the process of translating votes into seats. Thresholds—regardless of what the district magnitude and seat allocation formula might otherwise dictate—preclude competitors who failed to achieve a certain vote share from obtaining any representation in the elected assembly.

Electoral thresholds thus have the potential to very strongly constrain competition along the interparty dimension—preventing relatively small parties from obtaining seats. Such thresholds only make sense in proportional systems (or in the proportional tiers of mixed systems); in majoritarian systems, the "natural" threshold corresponds to the smallest plurality share that a candidate needs to win a seat in the district, typically $1/M$. Because of this logical limitation, our simulations do not include thresholds for majoritarian systems. For proportional *list* systems (i.e., for all systems except STV), we consider five threshold levels: 0%, 1%, 3%, 5%, and 10%. As expected, Figure 5.3 reveals that proportional systems become more constraining as the electoral threshold increases, yet the box plots depict a large number of outliers. The median TDE score is relatively high without a threshold (0%), but starting at a threshold of 1%, TDE scores increase monotonically with threshold levels.

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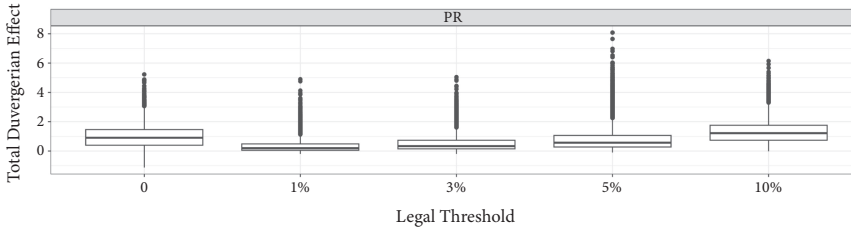


Figure 5.3 Electoral threshold and TDE Distribution of TDE across five different electoral thresholds, by electoral system family

5.2 Marginal Effects of Component Rules on AP

Just as we did for TDE, in this section we concentrate on the component rules that are typically associated with incentives to cultivate a personal vote which are, as we suggested in Chapter 2, ballot type, number and level of votes cast, and vote pooling. We also consider district magnitude, but in conjunction with ballot type, as the interaction of these variables has long been suspected to affect incentives along the intraparty dimension in very specific ways (Mayhew, 1974; Fenno, 1978; Cain, Ferejohn, and Fiorina, 1987; Carey and Shugart, 1995; Renwick and Pilet, 2016). Our AP measure is designed to capture the degree to which intraparty incentives heighten the importance of individual candidates.

5.2.1 Ballot Type

Extant theories of political behavior have identified ballot type as perhaps the most important determinant of incentives to cultivate a personal vote. If the ballot type allows candidates from the same party to compete against one another, their individual attributes—not their shared partisanship—will play a larger role in their electability. Open-ballot structures drive candidates to distinguish themselves not only from candidates in other parties, but *especially* from those *in their own parties*. Consistent with this logic, Figure 5.4 establishes that open-ballot structures produce the highest expected AP scores, and closed ballots the lowest. The former are associated with great variation in the range of AP scores among PR systems. Their personal-vote-enhancing properties also appear among majoritarian systems, based on the location of median TDE scores in the left plot of Figure 5.4. However, when we compare open and

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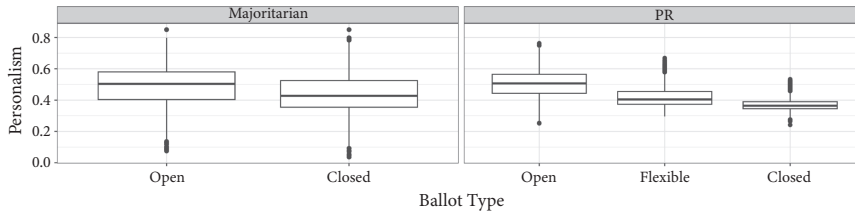


Figure 5.4 Ballot type and AP Distribution of AP across closed, open, and flexible ballot structures, by electoral system family

closed majoritarian systems (excluding "flexible" ballot structures), within-ballot structure variation in AP scores is so large that we would be hard-pressed to detect a statistically significant difference.

5.2.2 Number and Level of Votes

As we mentioned in Chapter 2, electoral systems can vary in the *number and level of votes* each voter can cast. For example, individuals may be restricted to casting a single vote at the party level, or the system may allow them to cast multiple votes for multiple candidates below the party level or for sub-party lists of candidates.

Our simulations consider four possible values for the number and level of votes. The modal electoral system allows voters to cast a single ballot (One) in each electoral contest. In majoritarian systems like SMD or in proportional systems such as closed-list PR, voters select their preferred candidate or party. Occasionally, electoral systems allow voters to cast multiple ballots. In this case, we distinguish among three scenarios: casting as many ballots as there are seats in the district (Total Seats), casting as many ballots as there are seats in the district minus 1 (Total Seats – 1), and casting as many ballots as there are candidates (Total Candidates).[4] In principle, the ability to cast multiple ballots should make it possible to reward candidates with different valence attributes—one for integrity, another for charisma, another for experience, etc.

Figure 5.5 conveys our findings regarding the number and level of votes cast and AP scores. Proportional systems that allow multiple votes clearly promote

[4] Our simulations do not allow proportional systems to have Total Seats – 1 votes or multiple votes in mixed systems. Mixed systems give each voter a single vote because the *number of votes* is codified at the tier level.

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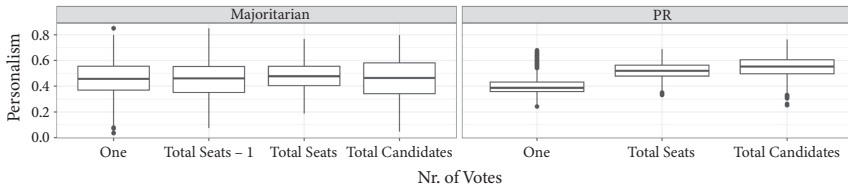


Figure 5.5 Number and level of votes and AP Distribution of AP across varying numbers of votes awarded to voters, by electoral system family.

higher levels of AP. In majoritarian systems, however, our simulations do not identify clear differences in the level of personalism induced by having one or multiple votes. This may be the case because the number of votes voters can cast in pluralitarian/majoritarian systems is not systematically correlated with additional component rules that would promote personal vote-seeking behaviors.

Individuals can vote at the candidate, sub-party list, or party-list levels, and electoral authorities can then allocate seats at any of these levels. In many systems, votes for individual candidates still "pool" at the party level, so individual candidate reputations might still help promote other candidates from the same party. Votes cast and pooled *below* the party-list level establish personalistic incentives, since candidates compete both across and within parties. Where votes cast for a candidate only elect that candidate, copartisans will have increased incentives to focus on their individual attributes and to earn (preference) votes themselves.

Figure 5.6 demonstrates that pooling votes below the party level leads, on average, to more personalistic behavior (i.e., higher AP scores). In systems that do not pool votes (i.e., votes count only for the candidate for whom they were cast), median AP scores are the highest in both majoritarian and proportional systems.

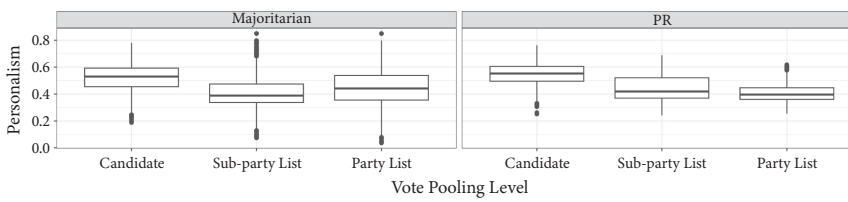


Figure 5.6 Vote-pooling level and AP Distribution of AP across systems that pool votes at the candidate, sub-party list, or party list levels, by electoral system family

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5.2.3 District Magnitude and Ballot Type

District magnitude is the only component rule that structures incentives on both dimensions, as we discussed in Chapter 2. In the case of intraparty incentives, Carey and Shugart (1995) argue that M exerts a differential effect that is conditional on ballot type. Where ballot type makes intraparty competition possible, Carey and Shugart maintain that increasing M incentivizes candidates to cultivate a personal vote—which would boost AP scores. Conversely, where ballots are closed, Carey and Shugart reason that M would drive intraparty competition *down*, since long lists of anonymous candidates would have no reason to eschew their anonymity.[5]

The plots in Figure 5.7 suggest a complicated relationship between M and AP in majoritarian systems (again, up to $M = 43$). In the range $1 \leq M \leq 16$, increasing district magnitude barely dents AP scores in either open- or closed-ballot systems. After $M = 16$, our descriptive inferences are exclusively based on simulations from a limited number of majoritarian systems. Above $M = 25$, AP scores fall markedly for closed-ballot systems, and remain more or less level, but then increase, in open-ballot systems. The range over $M > 30$ is the only segment that validates Carey and Shugart's conjecture. This segment only keeps simulations corresponding to MNTV and PBV systems. In other words, our simulations only recover anything akin to the difference anticipated by Carey and Shugart in majoritarian systems as M grows particularly large. This holds in the handful of majoritarian systems that could credibly ever have relatively large M.

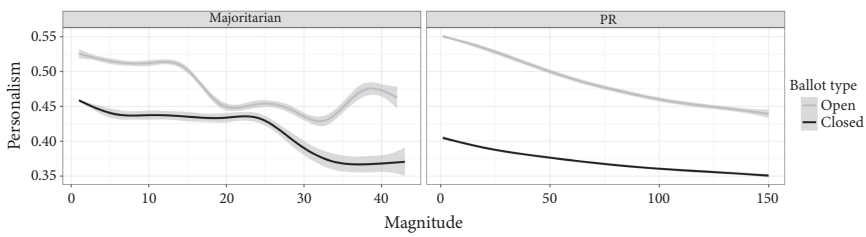


Figure 5.7 District magnitude, ballot type, and AP Distribution of AP across varying district magnitude (M) and ballot type combinations, by electoral system family

[5] For a review of studies which argue that M alone does not drive the intensity of intraparty competition in open-list systems, see Crisp et al. (2021, 2013).

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We simulated worlds with varying M up to 150 for all of the major proportional systems (we capped STV at $M = 6$). The right panel of Figure 5.7 illustrates that AP smoothly decreases with M in both open and closed systems. While we find that open-ballot systems produce much higher AP scores than closed-ballot systems throughout the entire range of M, the theoretical argument in Carey and Shugart (1995) would have led us to expect an upward slope for open-ballot systems instead of the downward slope we observe in the right plot of Figure 5.7. If politicians do have an increasing incentive to cultivate a personal reputation in open-ballot PR systems as M increases, our simulated voters are not paying any attention to valence characteristics. For our simulations to deliver outcomes more in line with Carey and Shugart, we would need to contrive voters who weigh valence more heavily than ideology or high-valence candidates who disproportionately enter the electoral fray in open-list proportional representation (OLPR) systems *as magnitude increases*. Without making such difficult to swallow leaps (particularly as to the "as magnitude increases" bit), our simulations otherwise uncover higher AP where Carey and Shugart's logic tells us to expect it. The only part of their theorizing for which we fail to find support is the idea of a differential effect of district magnitude. The lack of a difference across systems with and without intraparty competition may be the case because vote-seeking incentives are a function of the number of (serious or strong) copartisans faced *relative* to the seats to be filled, and not just a function of seats alone (Crisp, Jensen, and Shomer, 2007).

In addition to the component rules discussed above, our simulations also varied voters' ideological preferences and the number of politicians entering the electoral arena. Even when we average all the values taken by the latter two factors, the expected connections between component rules and TDE and/or AP remain. The simple bivariate relationships explored in this section thus give us confidence that our simulations work as intended, providing support for most of our intuitions expressed in earlier chapters and giving more precise measures of the size of the effects suggested.

5.3 Accounting for Negative TDE Scores

Readers might have noticed some outcomes that at first thought might seem anomalous—party systems that seem to expand due to constraining electoral rules. We want to pause here to address the existence of negative TDE scores.

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Recall from Chapter 4 (section 4.3.1) that TDE is measured by calculating the Effective Number of Electoral Parties (N_v) in a sincere world and subtracting from it the Effective Number of Legislative Parties (N_s) in a strategic world. N_v in a sincere world captures the distribution of preferences in an electorate unfettered by the effects of the electoral system, while N_s indicates the distribution of preferences in an electorate after Duverger's psychological and mechanical effects have both come into play. Almost all electoral systems constrain, to a greater or lesser degree, the expression of voters' preferences, which means that we expect $N_v > N_s$, resulting in positive TDE scores.

Figure 5.8 summarizes the results—the TDE and AP scores—of 3,540 simulation scenarios. The wide range of values taken by interparty and intraparty

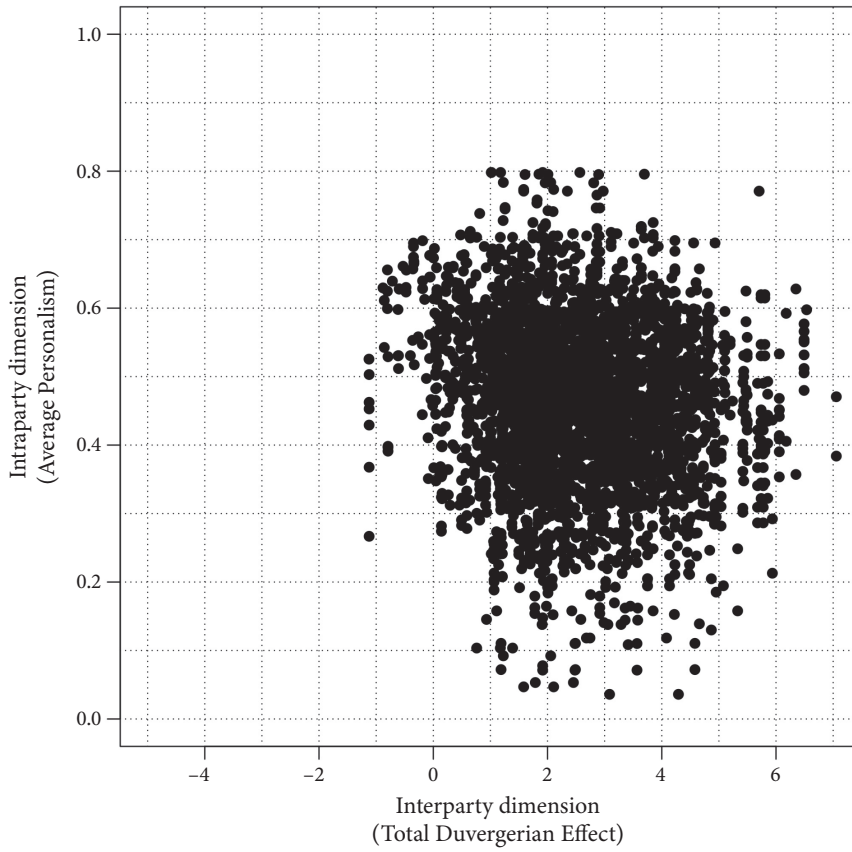


Figure 5.8 TDE and AP scores in simulations The plots show TDE and AP scores from 3,540 simulation scenarios

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incentives across systems suggests that the practice of interparty and intraparty politics varies quite dramatically from place to place (and the next two parts of the book test the extent to which this is true).

The TDE scores are negative for a few of our simulations. There are at least two instances in which negative TDE scores would be understandable. First, some electoral systems are designed to reward small parties disproportionately. One can imagine an extremely (overly?) proportional system that allocates seats to several very small parties. N_s could therefore end up being marginally larger than N_v. In addition, majoritarian systems like LV are designed to protect second-place finishers in low-M districts by awarding them at least one out of M seats, except in the most lopsided cases of defeat. In such instances, TDE would be negative because the legislative party system is bigger than it "should" be based on the intended sincere votes.[6]

Second, negative TDE scores can occur regularly if parties offer their supporters more than an optimal number of copartisan candidates from which to choose. This can be costly when the votes for one candidate from a given party cannot help other candidates from that party get elected (their votes do not "pool"), as in SNTV systems. Suppose that 40% of voters sincerely prefer Party A, but Party A ends up nominating a number of candidates equal to 60% of the seats to be allocated in the district. If Party A's supporters then distribute their votes evenly across all those options, Parties B, C, and so on will win seats that Party A could have won had it coordinated better. Therefore, the party system would be larger in terms of seats than in intended votes (sincere preferences) before the election, producing a negative TDE score.

5.4 Conclusion

The simulation framework we construct in Chapter 4 generates enormous variation in TDE and AP scores across the simulated electoral systems. These scores summarize complex incentive structures that we think will pattern political competition *between* and *within* parties. Our simulations quantify these incentives in various scenarios that vary in terms of the distribution of voters' ideological preferences, the distribution of individual valence among

[6] Another potential scenario that would produce negative TDE scores involves parties that estimate greater voter support than the seats they are likely to be awarded (due to combinations of district magnitudes and seat allocation formulas). If this party directed its "surplus" supporters to vote for other (perhaps ideologically similar) small parties, N_s could end up being larger than N_v. Since our simulations do not account for such logic, situations like this cannot be reflected in our version of TDE scores.

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candidates, candidates' routes of access to the ballot, and the number of candidates that run. Most importantly, each of these scenarios embodies a specific mix, out of myriad possible combinations, of the component rules that comprise electoral systems. In this chapter, we have examined the relationships between individual rules and our TDE and AP scores.

Our goal was to assure readers that while our simulation algorithms were ultimately long and complex, the components behaved independently as our own reasoning and the existing literature led us to expect. We are now more confident that the algorithms we employ in our simulated electoral processes depict electoral system-level incentives at the district level that are not only consistent with received wisdom but are also *quantifiable* indicators of how much interparty and intraparty incentives change across electoral systems. Although we were careful to include all the commonly (and some uncommonly) used electoral systems in our simulations, it is impossible to account for every possible component combination; policy-makers can get very creative when designing electoral systems! Obtaining TDE and AP scores for every new system would potentially require generating new code and running a new set of time-consuming simulations. Our goal in the next chapter is to use our completed simulations to predict how different components combine to produce simulated scores to score systems with electoral rule values that we did not simulate, and to score real-existing electoral systems observed around the world from 1945 to 2015.

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6

Placing "Real-World" Electoral Systems in the I–I Space

We closed Chapter 5 with a descriptive overview of how different component rules correlate with Total Duvergerian Effect (TDE) and Average Personalism (AP) scores in the simulated electoral systems we created in Chapter 4. We would like to use our simulations to identify "ideal types" that most resemble real-existing electoral systems; such ideal types could then highlight what kind of inter- and intraparty incentives we should expect in *actual* electoral systems—not just the archetypes of a particular form. The good news is that our simulated worlds include a large number of combinations of component rules that *approximate* the actual configurations of many electoral systems. The bad news is that our simulations require us to make explicit assumptions about several features, such as the rate at which candidates decide to run after receiving information about each party's likely viability. We cannot be certain that the rate of entry we assumed in simulated political systems corresponds to the rate at which actual candidates enter the electoral arena in practice. More importantly, despite our vast catalog of simulations, real electoral systems seldom look exactly like the simulated worlds we conjured in Chapter 4.

Indeed, with the exception of single-member district decided by plurality (SMDP) systems, which work identically wherever they exist, real politicians frequently run under unique configurations of component rules. Mixed-member systems, for example, have varying district magnitudes *across* and *within* electoral tiers. Though our simulations include mixed-member worlds, they only include a limited number of district magnitude options. For instance, none of our simulated worlds captures the exact electoral rules used in Germany's 2013 election: 299 parliamentary representatives were elected in single-member districts (SMDs) and 299 representatives in 16 proportional representation (PR) districts that (mostly) coincide with federal states. Because the German mixed-member electoral is compensatory, parties

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
© Brian F. Crisp, Patrick Cunha Silva, Santiago Olivella, and Guillermo Rosas (2025).
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received an additional 33 leveling (or "overhang") seats, raising the total to 631 seats.

In this chapter we finesse our ability to place real electoral systems on the Interparty–Intraparty map. We employ sophisticated predictive models, based on data from our simulations, that project the component rules of actual electoral systems into TDE and AP scores. In a nutshell, we use gradient-boosting machine (GBM) "machine learning" models that sift through the enormous amount of information contained in our simulated worlds to identify the best set of predictors for TDE and AP scores. We then combine this set with what we know about specific elections—for example, the 2013 German federal election—to produce an educated guess about the incentives generated by their component rules.

We leverage a very comprehensive collection of detailed data on 1,528 real elections held in 140 countries between 1945 and 2015. We record information on each electoral component we used in Chapter 5 to generate TDE and AP scores for different electoral systems—ballot type, the level to which votes pool, the number and level of votes cast (which we abbreviate as number of votes cast), district magnitude, the seat allocation formula, and the legal threshold. We seek to assign TDE and AP scores to electoral systems over time around the world based on the values that these components actually take in the electoral systems used to decide these real elections. The appendix includes technical details about the fit of the GBM models.

6.1 A Tale of Three Electoral Systems

Here we will use three actual contests—France 1986, Bulgaria 2014, and Spain 2015—to illustrate how we think of the incentives created by the component rules that structure all real elections. These three elections were contested under PR systems with ample similarities, but crucial differences in threshold, ballot structure, and seat allocation formulas. The distribution of district magnitudes across the three countries also varies a great deal: they are more homogeneous in Bulgaria and more heterogeneous in Spain. France's legislative elections on March 16, 1986 led to the installation of the Fifth Republic's eighth National Assembly, and were contested in 95 districts of varying magnitude, from $M = 2$ in Corsica to $M = 24$ in Lille.[1] The representatives were elected under a closed ballot using the Hare quota, and parties were required

[1] Some overseas districts elected a single member.

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to clear a 5% national threshold to obtain representation.[2] Bulgaria's 2014 parliamentary elections distributed 240 seats among 25 political parties in 31 districts; *M* ranged from 4 to 16 (eight parties obtained representation). Seats were allocated using the Hare quota as in France. Unlike in France, the national threshold was slightly lower (4%) and the ballot was flexible, rather than closed, which gave Bulgarian voters the opportunity to disturb the party lists. The Spanish 2015 general election returned Mariano Rajoy's incumbent center-right government to power in a contest for 348 seats fought in 50 closed-list districts (*M* varied from 2 in Soria to 36 in Madrid). Seats were allocated using the D'Hondt formula to all parties that cleared a national threshold of just 3%; two additional SMD seats were distributed in each of the overseas circumscriptions of Ceuta and Melilla.

Because these are PR systems, we would naturally expect them to be fairly "permissive" and maybe not all that personalistic—especially the French and Spanish systems, which used a closed ballot type. Beyond these generalities, how can we finesse our expectations about the levels of constraint and personalism in these systems? To more precisely analyze the incentives generated by each of these systems, we produce predicted TDE and AP scores (our "dependent variables") for each district in each of these elections using the GBM models. Our simulations calculated values for each of the six component rules, the distribution of voters' preferences, the number of candidates and parties that enter a race, and the resulting TDE and AP scores. The GBM models use simulations to best "predict" observed TDE and AP scores in three steps:[3]

1. *Grow a tree*. All tree-based models (which comprise GBM models) start by partitioning the space defined by all unique values of the predictors into discrete regions. For example, one region could include all simulated electoral systems with $M > 15$, with one of two electoral formulas (Hare quota and D'Hondt divisor), and with legal thresholds above 3%. Another region could include all systems with district magnitudes lower than 3, with an absolute majority allocation formula, and legal thresholds lower than 2%. After each "tree" is fully grown, the branches partition the "predictor space" into exhaustive and mutually exclusive categories. Tree-based models generate these categories by grouping

[2] This election was exceptional in using this specific system, as France typically employs SMDs with two rounds of voting.

[3] See Montgomery and Olivella (2018) for an accessible introduction to GBM, or ensemble tree-based models more generally.

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electoral systems based on the similarity of their outcome values (in this case, based on the similarity of their outcomes, i.e., TDE or AP scores). For each category, tree-based models output a single predicted value. Thus, in our example, all electoral systems with $M > 15$, a Hare quota or D'Hondt divisor formula, and a threshold above 3% would have the same predicted outcome (TDE or AP scores).

2. *Build a forest*. Unfortunately, partitions of the covariate space are very sensitive to even small perturbations of the cases under analysis. For example, if we mistook $M = 3$ for $M = 4$ in one of our simulated worlds, this could unleash dramatic changes in the model's predictions. To prevent this from happening, GBM models build a "forest" of trees piecemeal. Each tree in the forest is grown by attempting to explain prediction errors created by all predecessor trees.[4] This sequential forest-building process guarantees improved predictions with every new tree. Once the process is complete, the tree-based model typically achieves very high predictive rates.
3. *Avoid overfitting*. The forest-building process could unfold until every outcome is perfectly predicted, which raises concerns about *overfitting*—the very real possibility that a GBM perfectly predicts every observation in our dataset, but fails at predicting entirely new out-of-sample combinations of the component rules. To prevent overfitting, we *cross-validate* all parameters of our GBM models, including the number of trees in the forest and the depth of interactions they allow. This approach randomly splits the data into *folds*—mutually exclusive subsets of data that act as validation sets (i.e., datasets that are not part of the tree-growing process, and which therefore serve as out-of-sample domains to check a model's predictive accuracy)—to assess the model's fit on the remaining observations.

These steps create two fully trained predictive models: one set for TDE (our indicator of "interparty" incentives) and another for AP (our indicator of "intraparty" incentives); each is estimated on simulated *district-level* data.[5] Both of these models are based exclusively on a complete set of six component rules as predictors.[6] Next, we simply plug in the values of M, seat allocation

[4] In this context, an error occurs when the predicted TDE or AP score based on a set of predictor values is different from the actual TDE or AP score.

[5] Again, each of these two predictive models is estimated five times, one time on each of five different samples from the entire set of simulations.

[6] The GBM models "average over" ballot access, the seventh component rule. We omit this rule because it is not often formalized at the system level, and thus potentially affects parties differently.

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formula, threshold, ballot type, number of votes, and level of pooling observed in each district in all three elections into the model, and let the GBM predict these districts' scores. Table 6.1 reports our predictions for a handful of districts across these countries.[7]

As expected, the scores for these districts are broadly homogeneous, which is not surprising given that we chose elections that were run under similar PR rules.[8] However, even within these similar systems we detect variation in

Table 6.1 TDE and AP scores for seven districts in France, Bulgaria, and Spain: Using data from the legislative elections in France (1986), Bulgaria (2014), and Spain (2015), we show predicted TDE and AP scores for seven selected districts with varying district magnitudes (standard errors in parentheses)

National Legislative Election	M	TDE	AP
France 1986			
Alpes-de-Haute-Provence	2	1.295 (0.14)	0.418 (< 0.01)
Bouches-du-Rhône	16	0.963 (0.07)	0.399 (< 0.01)
Bulgaria 2014			
Vidin	4	0.964 (0.13)	0.508 (0.01)
Burgas	14	0.943 (0.09)	0.495 (< 0.01)
Sofia-23	16	0.945 (0.07)	0.496 (< 0.01)
Spain 2015			
Girona	6	1.216 (0.18)	0.403 (< 0.01)
Málaga	11	1.205 (0.13)	0.399 (< 0.01)

[7] Incidentally, as we create AP and TDE scores for real-existing electoral systems, occasionally we have "missing values" in one of the six component rules. Whenever we encounter missing values (i.e., NA), the GBM predictor model looks for an available proxy feature, and makes the prediction based on the value of that proxy. Proxies are predictors that are highly correlated with the original missing predictor.

[8] To generate these scores, we have had to assume that thresholds operate fully at the district level, which is not the case: in most countries that employ thresholds, parties would still win seats in a district where they do not meet the required vote share as long as they clear the national threshold.

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both the inter- and intraparty dimensions. For example, the two districts in France vary in the degree to which they constrain the interparty dimension (1.29–0.96=0.33). In substantial terms, this difference is equivalent to about one-fourth of the standard deviation of the marginal distribution of TDE scores in our simulations, and is almost as large as the distance between the average free-list proportional representation (FR-LPR) and average closed-list proportional representation (CLPR) systems (Table 4.3). Along the intraparty dimension, the difference in AP scores between Bulgaria's Vidin and Burgas districts appears to be slight (0.013), but it is equivalent to about 11% of the standard deviation of the marginal distribution of AP scores in our simulations. These differences occur across districts that share *most* component rules; variation in district magnitude is the only factor producing changes in TDE and AP.

Using our simulation strategy in conjunction with the GBM models, different values of component rules can be plugged in to obtain expected TDE and AP scores (with appropriate uncertainty bounds) for a large number of existing or imagined electoral districts. Yet it is important to be able to aggregate district-level predicted scores into national-level predicted scores: would-be constitutional engineers typically generate electoral rules meant to apply to *entire countries*, that is, to potentially large collections of districts. The most obvious and principled way to do this is simply to average the scores of all districts in the country (weighting districts by their M); we have complete information on electoral rules at the district level for a large majority (over 70%) of elections (including the three we examine in detail in this section), which makes this a relatively straightforward calculation. Yet to increase the accuracy of our predictions, we weight districts based on their relative political importance using the ratio of each district's M to the total size of the legislature (L). These M/L-weighted average TDE and AP scores constitute our "best guess" regarding the incentives built into (country-level) component rules in these elections. The first columns in Table 6.2 report these estimates for our three case studies.

Though we have district-level information for a large number of elections, scholars and analysts are not always able to retrieve district-by-district component rules for electoral systems of interest. Without this information, we are unable to average over district-specific predictions to arrive at national scores. We thus provide an additional solution to the problem of eliciting country-level predictions that does not require fine-grained district-level information.

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This solution depends on obtaining data on the magnitude of the "average district" in the country, then combining this average district with the district-level GBM to produce an estimate of a country's TDE and AP scores. When average M is not publicized on its own, calculating it only requires information about the total number of seats and the total number of districts in the electoral system.[9] Our district projection method works well in most cases because the average of district-level scores is relatively close to the scores of the average district. Columns 4–5 of Table 6.2 indicate that scores elicited in this way are basically indistinguishable from those produced by the *M/L-weighted average* algorithm. Because this second method is less data intensive than the *M/L-weighted average* algorithm, we recommend it as the best alternative for most systems. Yet this algorithm will produce estimated scores that can diverge conspicuously from those of the *M/L-weighted average*, especially in mixed-member systems, because in such systems M is not the only district-level characteristic that varies; seat allocation formulas will differ markedly among tiers, and the "average district" projection will not take this additional information into account.

This highlights a potential problem even with relatively simple electoral systems, such as SMDP. Consider an SMDP system with N districts and a

Table 6.2 TDE and AP scores for three selected legislative electoral contests: For three different systems, we compute country-level AP and TDE scores using three different methods: a weighted average of district-level scores based on a district-level GBM model; a district-level GBM model imagining the country has districts of average magnitude; and using a country-level GBM model

	M/L-weighted average		District GBM projection		Country-based GBM prediction	
Election	**TDE**	**AP**	**TDE**	**AP**	**TDE**	**AP**
France 1986	1.00 (0.09)	0.403 (< 0.01)	0.968 (0.114)	0.401 (< 0.01)	0.618 (0.042)	0.428 (< 0.01)
Bulgaria 2014	0.96 (0.09)	0.500 (< 0.01)	0.966 (0.104)	0.501 (< 0.01)	0.503 (0.071)	0.476 (< 0.01)
Spain 2015	1.25 (0.15)	0.404 (< 0.01)	1.219 (0.154)	0.404 (< 0.01)	0.670 (0.09)	0.422 (< 0.01)

[9] We calculate average magnitude by dividing the total number of seats in a chamber (L) by the total number of districts in the country (D). For independent mixed-member systems, the average magnitude is $\frac{\sum L_t}{\sum D_t}$, where t indexes tiers.

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population that is about evenly divided among districts. Assume that parties *A* and *B*, which are competitive in every district, each win *N*/2 seats in the most recent election. At the country level, this election will have generated a relatively proportional result, since each of these parties will hold 50% of seats in the legislature, corresponding more or less to 50% of first-preference votes for each of them. At the district level, however, the results will be completely disproportional: with almost 50% of the district vote, one of these two parties will have failed to capture the district's seat. Country-level TDE scores will therefore be far more constraining than is likely to be the case! SMDP systems generate strong incentives for bipartisan competition *at the district level* (Duverger's Law applies forcefully there), but seldom create fully bipartisan systems *at the national level*. Several countries rely on first-past-the-post electoral rules to generate multi-party legislative systems: More than 30 parties are currently represented in the Indian Lok Sabha, which has an Effective Number of Legislative Parties (N_s) of 3.04; in the Canadian House of Commons it is 2.76, and 2.50 in the UK's House of Commons.[10] In short, using district-level predictive models provides us with a good sense of district-level incentives. It is perhaps a stretch to suggest that such incentives will be equally restrictive at the national level.

We have a straightforward solution to this problem. We discussed in Chapter 5 that we can calculate quantities of interest like TDE and AP at the country level. Therefore, we can directly estimate country-level GBM models and use them to directly predict TDE and AP scores for real electoral systems. When we use a country-based GBM predictor, our TDE and AP scores for France 1986, Bulgaria 2014, and Spain 2015 change dramatically (two rightmost columns of Table 6.2). On the interparty dimension, the country-based GBM predicted scores are much lower, suggesting that these systems are even less constraining when we inspect them as a whole than when we consider average "district" behavior. This means that we would expect, among other things, more parties at the national level and closer ideological congruence between representatives and voters. On the intraparty dimension, the country-based GBM predicted scores are much higher, suggesting that these systems might produce more personalistic behavior, such as more constituency service and more pork-barrel projects in the legislature.

Because neither the district projection nor the country-based GBM prediction algorithms require disaggregated information at the district level, we are able to produce TDE and AP scores from these two methods for upwards of

[10] Information current as of October 10, 2023.

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1,500 electoral systems. Figure 6.1 plots the average locations of electoral systems on the Interparty–Intraparty (I–I) space based on both district- (left) and country-based projections (right). The ellipses in Figure 6.1 are centered on within-system average TDE and AP scores. The size of the ellipses captures one system-specific standard deviation of TDE and AP scores around the mean (we lack dispersion scores for systems like SMDP; assigned values are all identical for these systems given that they all share identical scores on our six component rule predictors). The figure also distinguishes between pluralitarian/majoritarian systems (uppercase acronyms), PR systems (lowercase acronyms), and mixed systems (gray uppercase acronyms). Unsurprisingly, pluralitarian/majoritarian systems have higher TDE scores, meaning they are much more constraining than PR systems.

When electoral systems are located on the Interparty–Intraparty (I–I) space based on country-level predictions, somewhat substantial changes are evident, particularly on the interparty dimension. As explained above, these changes are expected, since incentives aggregated at the country level will produce relatively fewer constraints than district-level incentives. Despite such changes, both the district projection and country-based GBM prediction methods essentially tell the same story: the correlation between district- and country-based GBM TDE scores is 0.94, and between district- and country-based GBM AP scores it is 0.89.

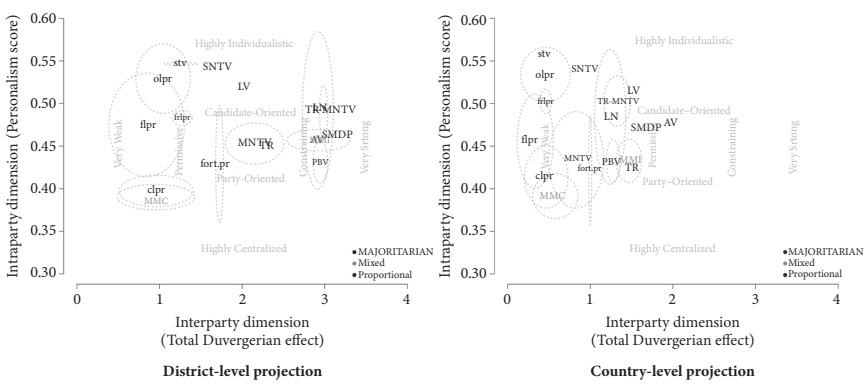


Figure 6.1 Model-based predicted TDE and AP values The plots project the I–I positions of real majoritarian, proportional, and mixed electoral systems based on GBM models trained on district- (left) or country-level (right) simulations (the dashed ellipses around each system capture a standard deviation in predicted scores of AP and TDE)

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6.2 Electoral Systems on the I–I Space

In this section, we accomplish two goals. First, we place electoral systems—used in only plausibly democratic elections—on the I–I plot, giving a visual sense of their relative positions on two dimensions. Second, we examine countries that have undergone changes in their electoral systems to consider how changes in the component rules used are reflected in their TDE and AP scores.

6.2.1 Mapping Democracies

Figure 6.1 locates electoral systems based on every electoral contest in our database, including in several countries that can best be described as competitive-authoritarian regimes, hybrid regimes, or anocracies. Such regimes combine institutional features of democracies—most importantly, periodic elections—with elements that are characteristic of authoritarian societies, such as harsh procedural limits on the ability to compete in elections or limited checks on executive behavior. We follow common practice and consider countries to be democratic if they score 6 or more on the Polity scale (–10 = fully dictatorial regimes, 10 = fully democratic regimes). Of the 1,510 elections that we analyze, 886 occur under democratic conditions.

The main concern with mixing anocracies and democracies is that electoral systems in the former combine components in peculiar ways. For example, in Sri Lanka, elections were held using an open-list proportional representation (OLPR) system between 1989 and 2015. Seats were allocated using the Hare quota with largest remainders. Unlike in other OLPR systems, however, the party that received the plurality of the votes at the constituency level automatically received a bonus seat, making it less permissive (having higher TDE). Along these lines, Nepal in 2013 (constitutional assembly) had a mixed-member independent (MMI) system with a CLPR tier; after the electoral count was in, party leaders got to choose which of their copartisans would obtain the party's seats. Another peculiar system was used in Burundi in 1965: candidates competed in an SMDP system but parties fielded four candidates, generating intraparty competition, presumably increasing AP. The candidate who received the most votes from the party that obtained the largest number of votes was the winner. In principle, there is nothing wrong with peculiar electoral systems. Yet odd electoral "Frankensystems" may be much more likely in anocracies than in democracies, which would mean our mappings

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and conclusions would be based on systems that are often designed to prevent, rather than promote, electoral competition; electoral incentives encoded in such systems may be inoperative.

Figure 6.2 suggests that electoral systems used in anocracies do not produce incentives that are dramatically different than the incentives imposed by systems used in democracies. It reproduces the I–I plot using only democratic elections. A few differences are evident in the placements of limited nomination (LN), limited vote (LV), and multiple non-transferable vote (MNTV) systems in the right-hand plot of Figure 6.1 vs. Figure 6.2; we do not count any party block vote (PBV) systems within democracies. These differences, however, are not extremely large, which suggests that anocratic electoral systems do not systematically thwart interparty and/or intraparty incentives.

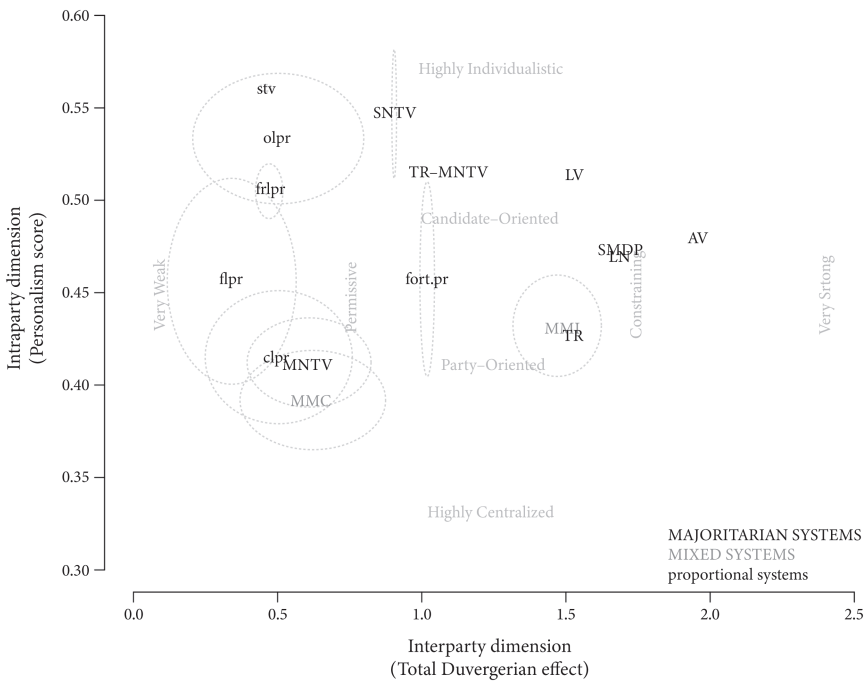


Figure 6.2 Placing democracies on the I–I space Placement of democratic systems (Polity V scores above 5) on the I–I space based on a GBM model trained on country-level simulations (the dashed ellipses around each system capture a standard deviation in predicted scores of AP and TDE)

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6.2.2 Mapping Archetypal Cases

Figures 6.1 and 6.2 still provide a slightly unrealistic view of how real-existing systems promote coordination on the interparty dimension and the election of candidates with distinguishing personal reputations on the intraparty dimension. This lack of realism comes from the use of averages and relatively circumscribed dispersion around systems (as indicated by the dashed lines surrounding each system), which suggest that all existing systems fall neatly into discrete regions of the I–I space. To correct this potentially misleading view, Figure 6.3 depicts a small number of electoral systems to illustrate the ample variation in inter- and intraparty incentives that they promote. In Figures 6.3–6.5, the bold italicized letters indicate systems placed using the *country*-based GBM predictor.[11] In regular font, we also locate the same electoral systems based on the *district*-level projection to demonstrate that the distribution of electoral systems *relative* to each other remains similar regardless of which level of aggregation we use, though we expect changes between district- and country-level coordinates.

Majoritarian/Pluralitarian Electoral Systems

Figure 6.3 presents data from 11 elections held in countries with majoritarian systems. We chose these elections to reflect real-existing variation in TDE and AP scores within and across systems in the majoritarian family. Even though SMDP systems are always assigned the exact same TDE and AP scores, this does not mean that *all* majoritarian-family systems produce the same inter- and intraparty incentives. The figure clearly indicates that majoritarian systems vary in the degree of constraints they impose on the interparty dimension—as seen, for example, in the late 1940s elections in Argentina or Japan in the top-left corner of the graph.[12] When TDE scores hover around 1, majoritarian systems are still much more constraining than almost all proportional systems. SMDP systems always generate a relatively strong TDE score of 1.69. The SMDP electoral systems that appear in the plot—New Zealand 1993 and South Africa 1989—indicate that this is a fairly constraining system. In an effort to decrease the constraints placed on electoral competition, both countries abandoned their SMDP systems (in 1996 and 1994, respectively). New Zealand adopted a mixed-member compensatory (MMC) system and South Africa a CLPR system. These reforms decreased TDE scores to 0.47 and 0.18,

[11] We use ISO 3166-1 alpha-2 codes to identify countries, and the last two digits of the year in which elections were held; numbers between 00 and 15 correspond to elections in the twenty-first century.

[12] Argentina used LN in 1946, 1948, 1958, 1960, and 1962. Japan used LV in 1946.

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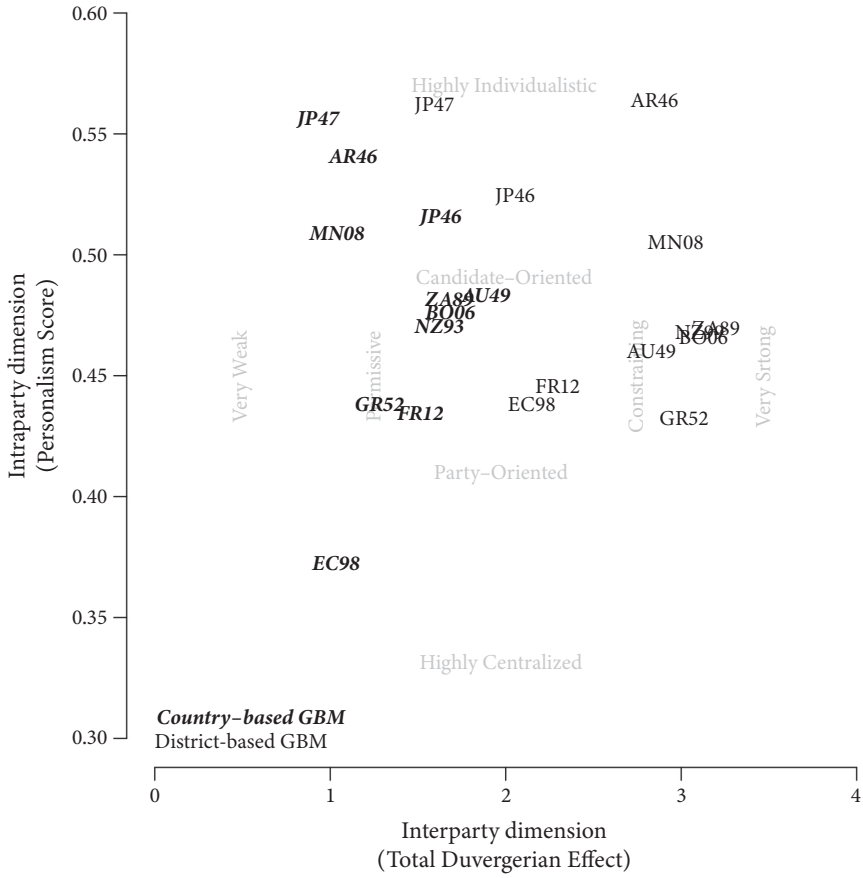


Figure 6.3 Select majoritarian electoral systems Placement of select majoritarian electoral systems on the I–I space based on GBM models trained on district- and country-level simulations (I–I coordinates are randomly jittered by a small amount)

respectively, in the elections held immediately afterwards. (AP scores dropped as well, from 0.47 to around 0.37–0.40.)

Alternative vote (AV) systems appear to the right of SMDP in the right plot of Figure 6.1, indicating that they are more constraining. Australia is the only country in our dataset that uses AV for its legislative elections, though it is also used in Fiji and was previously used in Papua New Guinea. AV systems produce slightly higher AP scores (0.48 vs. 0.47) and higher TDE scores than their SMDP counterparts. Australia's 1949 legislative election receives a TDE score of 1.96—the largest TDE score based on the country-level algorithm displayed

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in Figure 6.3. As explained in Chapter 4, our AV simulations are the only ones for which we omit the possibility of strategic voting among majoritarian systems. Though this decision is easy to justify because voters would need to have an inordinately large amount of information in order to behave strategically, the end result is a very high level of electoral constraint.

Figure 6.3 includes two systems that use two electoral rounds—France 2012 and Mongolia 2008. Such systems vary in how constraining they can be. France's TDE score in 2012 is almost as high (1.52) as it would have been if its election had been run under an SMDP system (like NZ93). Mongolia, however, combines its two-round (TR) system with a multiple non-transferable vote that dramatically increases permissiveness: its TDE score is 1.1. Mongolia 2008 is a fairly typical example of two-round multiple non-transferable vote (TR-MNTV) systems; their TDE scores vary considerably (see Figure 6.1.) In practice, TR-MNTV systems produce such large variation in predicted TDE scores because they employ multiple district magnitudes (in Mongolia 2008, the average magnitude is 2.9), they differ in the number of votes citizens can cast (as many votes as seats are available in each district, in the case of Mongolia), and they can be conducted with either open or closed lists (open, in Mongolia). These are all predictors that alone (and in interaction with each other) affect the incentives that parties and voters have to coordinate. We know of no theory that can help us determine how these varying component rules would incentivize politicians and voters to behave; our simulation approach at least gives us a sense of the kind of behaviors we should expect in a unique and complicated system like the one in place in Mongolia 2008.

We include the Argentina 1946 congressional and Bolivia 2006 Constitutional Assembly elections as examples of LN (their TDE scores are 1.07 and 1.69, respectively).[13] LN systems are rather uncommon; they appear only 13 times in our dataset. Under this system, parties nominate $M - x$ candidates (x is usually 1) and individuals cast a single vote at the party level. The party with the largest vote share receives the lion's share of the seats, but the runner-up party is guaranteed to obtain at least x seats. In Argentina, an open list gave candidates greater incentives to cultivate a personal reputation.

LV systems follow a similar logic. Unlike under LN, parties can nominate up to M candidates, but voters (usually) have $M - 1$ votes that are pooled at the candidate level. If voters were able to coordinate perfectly, the electoral results from LV systems would be exactly the same as those produced by

[13] LN was employed to elect the Argentine lower chamber between 1946 and 1962 except for 1951 and 1954 when the SMDP system was used. It is also used to select the Mexican and Argentine Senates (not in our dataset).

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LN: the largest party would win $M - 1$ seats and the runner-up would receive the remaining seat. However, since voters cannot coordinate perfectly, more parties could win seats under LV than LN. LV was employed in Japan's first post-war election (in 1946) and is currently used in Gibraltar and Spain (not in our dataset) to select members of the Senate. The TDE score for Japan's 1946 election is 1.53 (vs. 1.07 for Argentina's LV election the same year).

Greece's 1952 election was held under a PBV system.[14] PBV systems are roughly as constraining as LN or LV systems, but are discernibly less personalistic than SMDP systems—even though *most of* the component rules are identical in PBV and SMDP systems. The exception is *district magnitude*: $M > 1$ in PBV systems (average magnitude was only 3.03 in Greece's 1952 electoral system) and there tends to be a negative relationship between M and AP scores in pluralitarian/majoritarian systems.

The MNTV system is even farther from the constraining end of the interparty dimension (e.g., the 1998 Ecuadorean election). It is relatively uncommon, but has been used in a handful of countries including Cyprus, Ecuador, El Salvador, Lebanon, the Philippines, Syria, and Turkey; our dataset includes 63 observations using this system. Figure 6.1 shows that, among members of the majoritarian family, the single non-transferable vote (SNTV) is as permissive as MNTV.

SNTV was historically employed in Afghanistan, Japan, Jordan, South Korea, and Taiwan; we include the first Japanese election run under this system (in 1947) as our example in Figure 6.3. This system is also the most personalistic of the majoritarian systems—a consequence of the single vote cast at the candidate level that does not pool at the party level, and district magnitudes oscillating between 3 and 5 (the average district magnitude in 1947 Japan was 3.98). The Japanese electoral reform between the 1946 and 1947 elections—which reduced the number of votes that voters could cast from multiple (under LV) to one (under SNTV)— radically changed its TDE scores (from 1.53 to 0.91), and increased levels of personalism (from 0.51 to 0.56) (Figure 6.3). However, the country's adoption of an MMI system for the 1996 elections made its electoral system more constraining and less personalistic: its TDE score rose from 0.91 to 1.41, and its AP score fell from 0.56 to 0.42.

Proportional Representation Electoral Systems

In this section we evaluate the six electoral systems in the PR family. Figure 6.1 illustrates that they all tend to produce extremely low TDE scores, meaning that they encourage voters to express their sincere preferences. The TDE

[14] Greece's Polity score in 1952 was 4, so we would not consider this a plausibly democratic electoral system.

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scores vary mildly, but overall the main distinction appears to be between fortified proportional representation (F-PR) (TDE≈1) and the rest of the PR systems, whose average TDE scores hover below 0.6. This is almost certainly what the proponents of fortification (in F-PR systems) intended—preventing the fragmentation of the party system.

However, the average scores for the various forms of PR systems mask tremendous variation within *specific* electoral systems. For example, the 1978 Senegalese and 2002 Austrian elections were both run under list systems that employed the Hare quota, yet the former is the least restrictive proportional system in our dataset (TDE = 0.01). The latter (TDE = 0.6) is more constraining (Figure 6.4), though still much less constraining than some of the majoritarian elections portrayed in Figure 6.3. This variability in TDE scores can be attributed to the widely varying configurations of component rules in PR systems—particularly average district magnitude. Senegal 1978, for example, had a closed list and a single, nationwide-district with a magnitude of 100, while Austria 2002 had a flexible list and an average magnitude of 2.44.

In addition to having different average district magnitudes, the Austrian and Senegalese elections also employed different ballot types, which explains the chasm we observe in their AP scores (0.48 and 0.36, respectively). Among the systems portrayed in Figure 6.4, Senegal 1978, South Africa 1999 (ZA99), and Argentina 2015 all used CLPR systems. In 2015 Greece ran two elections under a fortified PR system, first with an open and then with a closed list. Figure 6.4 establishes that the incentives to cultivate a personal vote in Greece decreased when it moved from an open list (AP = 0.49, GR15b) to a closed (AP = 0.44, GR15a).

The most dramatic variation within proportional systems is along the intra-party dimension. As suggested by the copious literature on incentives to cultivate a personal vote, and as Figure 6.1 confirms, CLPR produces the lowest average AP scores, while OLPR (and single transferable vote (STV), discussed below) produce the highest average scores among proportional systems. Elections held in Argentina in 2015 (AP = 0.41) and Brazil in 2014 (AP = 0.55) illustrate the differences between these types of lists. These scores indicate that 41% of representatives in Argentina (and 55% in Brazil) would have a notable personal characteristic or "valence." Both countries use list PR to elect their lower chambers and the D'Hondt highest-average method to allocate seats.[15] Brazil has a larger *average* magnitude (19) than Argentina (10.71), which

[15] Brazil uses the Hare quota combined with D'Hondt to distribute the remainders; this combination is effectively equal to the D'Hondt method.

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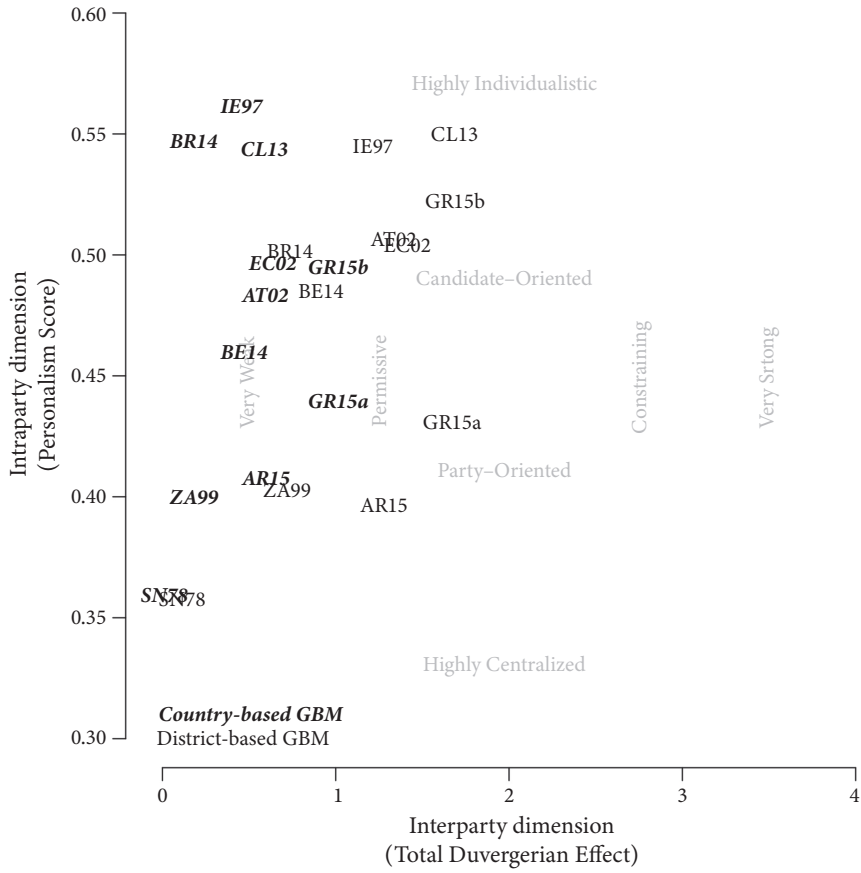


Figure 6.4 Select proportional electoral systems Placement of select proportional electoral systems on the I–I space based on GBM models trained on district- and country-level simulations (I–I coordinates are randomly jittered by a small amount)

explains Brazil's lower TDE score.[16] Though these countries are identical in all component rules but one, they are located at almost opposite positions on the *y*-axis of Figure 6.4 due to the different types of lists. While Brazil uses OLPR, Argentina employs CLPR, which is more likely to discourage politicians from trying to cultivate a personal vote.

We add to Figure 6.4 a few examples of flexible-list proportional representation (FLPR), FR-LPR, and F-PR. Under F-PR, the top vote-getting party receives a premium that should slightly offset the permissiveness implied by

[16] Argentina also has a 3% threshold, while Brazil has no threshold for seat distribution.

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the use of lists combined with relatively high district magnitudes; above we discussed the case of Greece, and noted that the type of list employed strongly affects the character of incentives to cultivate personal votes. Both the 2015 Greek elections in Figure 6.4 and the average placement of F-PR systems in Figure 6.1 suggests that this offsetting effect is large. In fact, TDE scores for F-PR systems in our dataset average 1.02, making these systems the most constraining among proportional systems, and even more constraining than some majoritarian systems like SNTV (average TDE = 0.92) or MNTV (average TDE = 0.84).

Ecuador 2002 constitutes a first example of FR-LPR. Such systems tend to be extremely permissive. In terms of intraparty politics, FLPR promotes almost as large an incentive to cultivate a personal vote as OLPR: Belgium 2014 and Austria 2002 (both FLPR) clearly exemplify this trend. There is also very little difference in the placement of these two elections on the interparty dimension; as we observed before, the position of Austria 2002 is almost entirely driven by its rather small average district magnitude ($M = 2.44$), but somewhat surprisingly Belgium's larger average district magnitude in 2014 ($M = 13.64$) does not push this system all that far into a region of "very weak" incentives.

STV is the only PR system that does not use lists to fill seats. The 1997 Irish election provides our example of STV in Figure 6.4. The same system type was used in all twenty-one elections to the Irish Parliament (from 1948 to 2011) included in our dataset. STV has been employed in elections for the Australian Senate and for city councils in a number of American cities, but Ireland and Malta are the only countries to have employed it systematically in lower- or only-chamber legislative elections. TDE and AP scores for all of these elections are extremely similar, but we observe that Irish elections between 1969 and 1973 had slightly higher TDE scores (0.52, vs. 0.45 at other times). This difference in scores is produced by slight changes in average district magnitude, which was 3.42 between 1969 and 1973, and 3.7–4.05 at other times. Ireland's STV system therefore produces personal vote-seeking incentives that are even higher than those generated by OLPR systems.

Mixed-Member Electoral Systems

Figure 6.5 contains a few examples of mixed-member electoral systems. The main characteristic of MMI and MMC systems is that they tend to behave in accordance with the set of incentives produced by their *dominant* tiers. Thus, MMC systems like those employed in New Zealand 1996 or Venezuela 1993 have scores that are extremely similar to those produced by CLPR. However,

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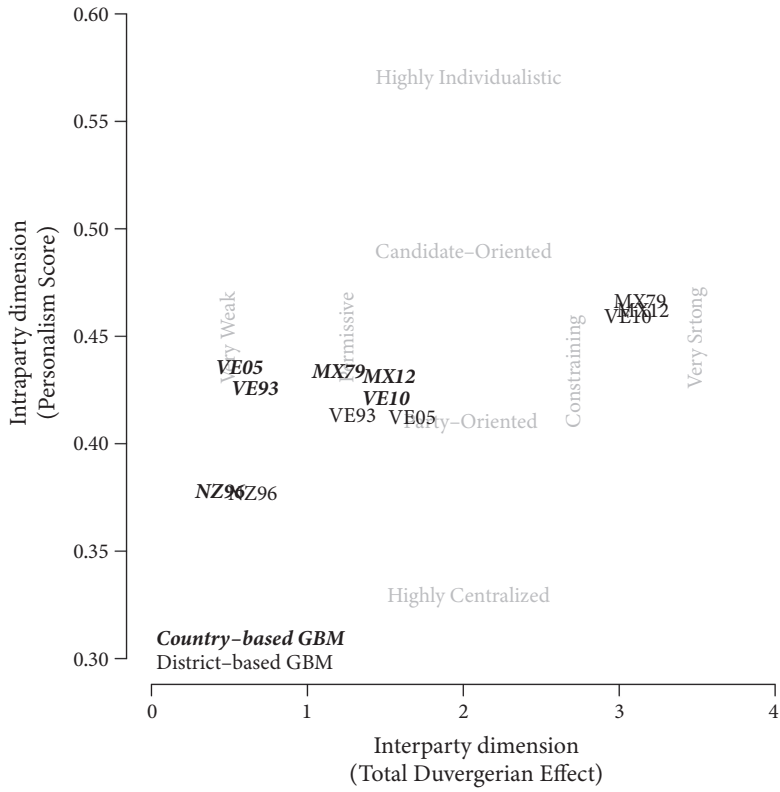


Figure 6.5 Select mixed-member electoral systems Placement of select mixed-member electoral systems on the I–I space based on GBM models trained on district- and country-level simulations (I–I coordinates are randomly jittered by a small amount)

Venezuela 2005 is also an MMC system with a TDE score that makes it appear slightly more restrictive (discussed in more detail below).

By contrast, MMI systems tend to be more restrictive, which is consistent with the fact that their lower SMD tier tends to drastically reduce the effective number of legislative parties. Some MMI systems (e.g., Venezuela 2010, Mexico 1979) produce low TDE scores because they have large-*M* upper tiers. Between 1993 and 2005, Venezuela used an MMC system. During this period, the number of seats in the PR tier fell from 101 to 65, which decreased average district magnitude from 4.39 to 2.71 but barely dented the TDE score, which remained around 0.61. In 2010, the system became even more constraining after a reform that meant only 52 of 165 Members of Parliament came from the second (PR) tier, in effect turning the system into an MMI. The reform

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made the system much more restrictive in practice (TDE increased to 1.48) and boosted incentives to cultivate a personal vote at the district level: under MMI, the plurality rule used to allocate tier-1 seats became more dominant than the D'Hondt method used to allocate tier-2 seats, illustrated by the placement of the VE93, VE05, and VE10 labels (in normal font—be aware that district-based VE10 appears in the top-right section of the plot). The bold-font labels indicate that AP barely changed at the aggregate "country" level—and was lower in 2010 than in 2005 or 1993.

Mexico used the SMDP system between 1946 and 1976, which generated TDE scores around 1.69 and AP scores around 0.47. Since 1979, the country has run elections under an MMI system that has been reformed a few times (the 1979 election is plotted in Figure 6.5). Under this system, Mexicans have a single vote that determines the plurality winner of the SMD in which they live; SMDP votes are then pooled to determine seat shares in five at-large PR districts. The 1979 system included this PR tier, which made incentives on the interparty dimension much more permissive (TDE = 1.28). Subsequent electoral reforms have slightly further constrained interparty competition, as illustrated by the placement of the 2012 Mexican election in Figure 6.5 (TDE = 1.5). In between these two elections, the "tightening" is the result of an increase in the threshold that parties need to clear in order to obtain representation, which moved from 1.5 in 1979 to 2 in 1997 (and to 3 in 2015).

6.3 Introducing the I^3 dashboard

As a companion to this text, we include a Shiny dashboard that displays (in real time) how inter- and intraparty incentives react to changes in these component rules. The dashboard, available at https://i3dataset.com can be opened in any browser and allows users to exploit the powerful features of GBM models. Figure 6.6 displays a screenshot of the Interparty & Intraparty Electoral Systems Incentives Dataset (I^3) Shiny dashboard. Upon opening the dashboard, the user is invited to introduce different values for each of six electoral rules: ballot type, vote pool level, district magnitude, number of votes, electoral threshold, and seat allocation formula. The dashboard allows any combination of rules, even if the ensuing electoral system is unreasonable. Upon inputting the data, clicking on the `[Find similar systems]` button will combine these inputs with our GBM model in order to generate expected TDE and AP scores for the user's desired system. The user has the

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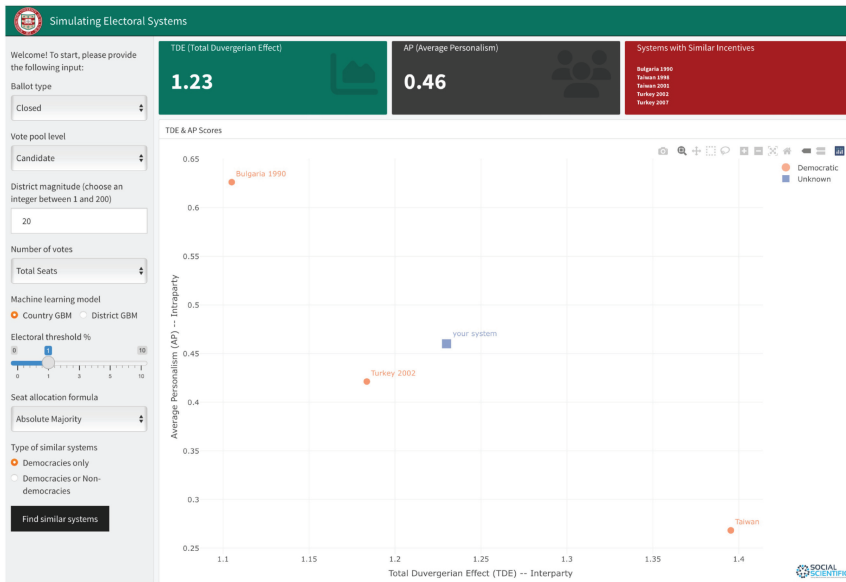


Figure 6.6 Screenshot of the I³ dashboard The screenshot displays a view of the Shiny dashboard where the user has inputted desired values for six electoral rules; the dashboard reports the approximate location of the inputted electoral system on the I–I space, along with a handful of real-existing systems that produce similar incentives, even if they do not share similar electoral rule values

chance to select either a predictive GBM calibrated on district-level simulations or a predictive GBM calibrated on country-level simulations. Aside from the I–I incentives produced by the user's desired system, the dashboard will also present a few examples of electoral systems in the I³ database that produce I–I incentives that most resemble the user's own system.

6.4 Conclusion

In Part I of the book we first laid out our case for understanding electoral systems as aggregations of multiple components. We defined seven foundational components and explained how each can be regulated. Second, we clarified how, despite the potential for endless combinations of component rules, we can categorize every existing or imaginable electoral system into one of three families. Yet it was still difficult to understand the incentives created by specific electoral systems. Therefore, in Part II we conjured a large number of simulated political worlds that we subjected to different electoral systems.

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Our goal was to measure how electoral systems incentivize politicians and voters to coordinate or compete, and to emphasize or de-emphasize personal characteristics such as valence or charisma, while controlling for the fact that citizens' political preferences usually vary. The simulation exercise delivered two crucial outputs—TDE and AP scores—which are summary measures of electoral system incentives for inter- and intraparty competition.

Finally, in this chapter we assessed a number of real-existing systems in all three electoral families to emphasize that our predictive model based on the simulations provides useful, succinct information about the incentives that electoral systems provide for both inter- and intraparty competition. The TDE and AP scores for the 1,528 real-existing electoral systems in our I^3 dataset are available at https://i3dataset.com; a brief example including a few observations from I^3 appears in Table 6.3. As you can see, the I^3 dataset includes information on the values of the six electoral rules that determine the character of an electoral system, along with the system's electoral family, and the TDE and AP scores expected to be generated by each system. These scores can be employed as outcome or predictor variables to carry out original research. In fact, in the remainder of the book we will use the predicted TDE and AP scores of real systems to illustrate a number of propositions stemming from the copious literature on electoral institutions and representation, both in interparty and intraparty terms. We often use these scores as independent variables to demonstrate how the incentives encoded in various electoral rules produce consequential changes in politicians' behavior. The next chapter begins Part III of the book, which concentrates on propositions concerning interparty competition; Part IV explores intraparty competition.

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Table 6.3 Selected observations from the I^3 electoral systems dataset: The entries below are observations typical of the I^3 dataset, with entries for seven electoral rules and expected TDE and AP values for each system. The full dataset contains 1,510 entries

Country	Year	Ballot Type	Pool Level	Family	$\bar{M}$	# Votes	Formula	Threshold	TDE	AP
Afghanistan	2005	Closed	Candidate	Majoritarian	7.11	One	Plurality	0.00	1.04	0.47
Afghanistan	2010	Closed	Candidate	Majoritarian	7.11	One	Plurality	0.00	1.04	0.47
Albania	1991	Closed	Party	Majoritarian	1.00	One	Absolute majority	0.00	1.52	0.43
Albania	1992	Closed	Party	Mixed	40.00	One	Hare	0.04	0.50	0.38
Albania	2001	Closed	Party	Mixed	40.00	One	Hare	0.03	0.34	0.38
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Kazakhstan	2012	Closed	Party	Proportional	107.00	One	Hare	0.07	0.26	0.35
Kenya	1992	Closed	Party	Majoritarian	1.00	One	Plurality	0.00	1.69	0.47
Kenya	1997	Closed	Party	Majoritarian	1.00	One	Plurality	0.00	1.69	0.47
Kenya	2002	Closed	Party	Majoritarian	1.00	One	Plurality	0.00	1.69	0.47
Kenya	2007	Closed	Party	Majoritarian	1.00	One	Plurality	0.00	1.69	0.47
Kenya	2013	Closed	Party	Majoritarian	1.00	One	Plurality	0.00	1.69	0.47
Kyrgyzstan	1995	Closed	Party	Majoritarian	1.00	One	Absolute majority	0.00	1.52	0.43
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Portugal	1980	Closed	Party	Proportional	11.36	One	D'Hondt	0.00	0.45	0.41
Portugal	1983	Closed	Party	Proportional	11.36	One	D'Hondt	0.00	0.45	0.41
Portugal	1985	Closed	Party	Proportional	11.36	One	D'Hondt	0.00	0.45	0.41
Portugal	1987	Closed	Party	Proportional	11.36	One	D'Hondt	0.00	0.45	0.41
Portugal	1991	Closed	Party	Proportional	10.45	One	D'Hondt	0.00	0.44	0.42
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
Ukraine	2014	Closed	Party	Mixed	1.00	One	Plurality	0.05	1.62	0.42
Venezuela	2010	Closed	Party	Mixed	1.30	One	Plurality	0.00	1.48	0.41
Venezuela	2015	Closed	Party	Mixed	1.33	One	Plurality	0.00	1.46	0.41
Zimbabwe	2013	Closed	Party	Mixed	1.00	One	Plurality	0.00	1.50	0.42

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PART III
INTERPARTY POLITICS

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7

The Size of the Party System

In this chapter we will revisit the longstanding question of whether there is a relationship between electoral systems incentives and party system size. We have characterized electoral systems as having interparty incentives ranging from weak or permissive to strong or constraining (Sartori, 1968). Our simulations supported previous reasoning about the factors that contribute to the relative strength of systems, but they gave more precision to our understanding of the relative variation in strength across a wide array of systems. They revealed that low district magnitude, electoral formulas that excessively reward large parties, and high legal thresholds all "strengthen" electoral systems, making them more constraining. They are strong in that they severely punish excess entry by elites and a lack of voter coordination. In other words, their Total Duvergerian Effect (TDE) is relatively large. High district magnitude, relatively proportional formulas, and low or absent legal thresholds "weaken" electoral systems, making them more permissive. Under permissive rules, if several competitors enter and voters apportion their votes across many of them, their preferences will be relatively faithfully translated into seats. Weak systems are thus characterized by a relatively small TDE.

The rationale for a relationship between electoral system incentives and electoral rules goes as follows. Political elites and voters anticipate the mechanical effects of electoral rules as votes are translated into seats. The second-order effects of this anticipation comprise what Duverger referred to as the psychological component of electoral incentives. When faced with constraining rules, parties that believe they have no chance of winning seats may decline to enter. Similarly, voters who sincerely prefer a party that they think is not viable may strategically vote for the nearest option that looks like a possible winner. If entrants and voters properly coordinate in the context of the electoral system, few votes should be cast for losing parties or candidates.[1]

[1] Of course, this reasoning assumes that entrants care exclusively about winning their race, and that citizens vote with the intention to influence seat allocation in that race. Yet if candidates or voters have other goals, such as registering a preference for an alternative program, votes "wasted" on non-viable choices may not actually signal a coordination failure. Cox (1997) identified a number of assumptions that must hold in order to produce coordination around an "appropriate" number of entrants.

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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While Duverger (1954) suggested that voters needed to be strategic in single-member district decided by plurality (SMDP) systems, and be willing to defect from their most preferred option to their most preferred *viable* option, he did not consider such calculations coming into play in weaker proportional representation (PR) systems. Leys (1959) and Sartori (1968) argued that the same sort of calculations were necessary under PR but, given the increased proportionality of the votes-to-seat translation, that they would come into play for fewer candidates or parties and fewer voters—and therefore not reduce the size of the party system by as much as SMDP rules would. Cox (1997) refers to this as the Leys-Sartori conjecture; he combines the reasoning of Duverger, Leys, and Sartori into a simple, elegant statement—the *M + 1 Rule* (*M* refers to district magnitude, the number of seats to be allocated). This rule states that no more than $M + 1$ candidates or lists (depending on the level to which votes are pooled) can be viable in a district of size M (Cox, 1987, 99). When $M = 1$, the rule is basically Duverger's "Law" and captures the idea that SMDP electoral systems tend to be associated with two-party systems. The $M + 1$ rule generalizes to cover systems with any district magnitude. In all its forms, this line of thinking creates an upper bound (but no lower bound) to the number of viable parties.

In recent years, scholars have exploited institutional rules, exogenous variations in such rules, and a multitude of causal inference methods to evaluate Duverger's "Law." For example, Lucardi (2019) leverages the staggered legislative elections in Argentina that modify district magnitude every two years to test whether parties and voters react to it. He finds that an increase in district magnitude generates an increase in the support for small parties. Exploiting a similar institutional design, Crisp and Demirkaya (2020) demonstrate that parties nominate fewer candidates and that voters coalesce around fewer candidates in the Brazilian senatorial elections when $M = 1$ (SMDP) than when $M = 2$ (multiple non-transferable vote (MNTV)). Cunha Silva (2023) uses an exogenously imposed change in district magnitude in Brazilian local elections and finds that, even in highly permissive PR systems, voters are able to coordinate, voting for fewer lists when district magnitude decreases. Using a synthetic control approach, Riera (2020) demonstrates that the 1993 New Zealand electoral reform that replaced SMDP with mixed-member compensatory (MMC) led to an increase in the party system size, though this effect quickly faded.

In summary, an electoral system becomes weaker or less constraining (1) when M increases, (2) when the seat allocation formula becomes more proportional, and (3) when legal thresholds are lowered or eliminated. We expect that weak electoral systems translate the preferences of a fragmented or heterogeneous electorate into a fragmented parliament as voters spread

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their support across a large number of parties. Conversely, a system becomes stronger or more constraining (1) when *M* decreases, (2) when disproportional formulas are used, and (3) when legal thresholds increase. Strong electoral systems, we think, will prevent the preferences of a fragmented or heterogeneous electorate from being translated into a fragmented parliament. Instead, elites and voters must strategically coordinate behind the limited set of viable candidates to avoid wasting their votes (Ordeshook and Shvetsova, 1994; Amorim Neto and Cox, 1997). Where the voters in a constituency are relatively homogeneous, electoral rules should not have much effect on party system size.

In this chapter we test whether TDE explains the size of party systems. In the next section we discuss the most widely used measure of party system size—the effective number of parties (*N*). With an understanding of our dependent variable in hand, we then test whether TDE influences *N*. We not only look at the simple effects of electoral rules on party system size, but also how those rules operate across constituencies where voters are more-or-less diverse. We find that increasing TDE is associated with smaller party systems. What is more, we also find that as voters grow more diverse high TDE electoral systems discourage them from supporting as many parties as equally diverse constituencies do under low TDE systems. In the conclusion to the chapter we discuss the relationship of our findings to the existing literature on the topic.

7.1 The Effective Number of Parties

In many ways, the *raw* number of parties that run and win is not very telling because parties frequently vary a great deal in terms of size. For most questions of interest, we care not just about the existence of a party but also its level of support or its electoral size. Laakso and Taagepera (1979) developed a statistic that captures the size of the party system conceived of as the number of parties weighted by their size. Using either votes (in which case we refer to "the effective number of electoral parties") or seats (in which case we talk about "the effective number of parliamentary or legislative parties"), the effective number of parties, *N*, is:

$$N = \frac{1}{\sum_{i=1}^{n} p_i^2},$$

where N is the total number of parties with at least one vote or seat and p_i is party i's proportion of all votes or seats.

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For example, imagine a system like the one depicted in Table 7.1 with two parties of equal size (measured in votes received or seats obtained). To calculate the effective number of parties (N), we square each party's proportion of votes or seats (0.50^2), add up those values ($0.25 + 0.25 = 0.50$), and then compute the inverse of that sum ($1/0.50 = 2$). This process indicates a total of two effective parties—an intuitive result given our starting point.

Now imagine a much less competitive electoral environment with two parties, as in Table 7.2: the dominant party obtains 90% of the votes and/or seats, while the minor party receives only 10%. N is calculated by squaring each party's proportion of votes or seats ($.90^2$, $.10^2$), adding those values (0.82), and computing the inverse of that sum (1/0.82). This process generates a quantity of 1.22—again, an intuitive result given our hypothetical system dominated by a single party. Both hypothetical settings feature two competing parties, but in the latter scenario one party is dominant; it therefore operates, in many ways, effectively like a one-party (or 1.22 party) system.

The calculus works for more complex systems as well. Our third and final example is a very fragmented electoral environment (Table 7.3). Six parties obtain votes/seats, but none of them has a majority. Taking the same steps as above, the Laakso and Taagepera (1979) algorithm generates $N = 3.64$. If we were to create further hypothetical party systems (e.g., eliminating Parties D, E, and F and distributing their votes among the remaining parties), the effective number of parties would decrease. Conversely, if we redistributed votes and seats from Parties A and B to Parties C–F (without making them larger than A and B), the effective number of parties would increase.

N has at least three very desirable characteristics given its intended use. First, if all the competitors in a system are the same size, N reports the raw number

Table 7.1 Effective number of parties, two-party system: A hypothetical scenario in which two parties receive an equal percentage of votes/seats, and in which the *effective* number of parties is, unsurprisingly, equal to 2

	Proportion of Votes/Seats p_i	**Proportion Squared p_i^2**
Party A	0.50	0.25
Party B	0.50	0.25
$\sum p_i^2$		0.50
N		2

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Table 7.2 Effective number of parties, one-party system: A new hypothetical scenario in which two parties receive a percentage of votes/seats, but in which the *effective* number of parties is closer to 1

	Proportion of Votes/Seats p_i	**Proportion Squared p_i^2**
Party A	0.90	0.81
Party B	0.10	0.01
$\sum p_i^2$		0.82
N		1.22

Table 7.3 Effective number of parties, multi-party system: Yet another hypothetical scenario in which now six parties receive some percentage of votes/seats, and in which the *effective* number of parties is now closer to four

	Proportion of Votes/Seats p_i	**Proportion Squared p_i^2**
Party A	0.40	0.1600
Party B	0.30	0.0900
Party C	0.10	0.0100
Party D	0.10	0.0100
Party E	0.05	0.0025
Party F	0.05	0.0025
$\sum p_i^2$		0.275
N		3.64

of competitors. Second, if the competitors are of different sizes, N is always smaller than the raw number of entrants. Finally, if any competitor gets smaller and an additional competitor picks up that slack, N always rises (Golosov, 2010).

7.2 TDE and N

In this section we use TDE, our measure of interparty incentives, to explain party system size captured as N, our outcome. The Duvergerian logic behind our hypothesis operates at the level at which seats are allocated—usually the district. National averages may (usually implicitly)mask possible cross-district

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variation. Reasons for why our expectations about electoral rules and party system size might vary from district to district can stem from differences in electoral rules (like districts of varying magnitudes (M)) or differences in the degree of homogeneity or heterogeneity among voters in a constituency. Fortunately, our simulations of the impact of electoral system incentives were carried out at the district level. So, in this chapter can we conduct our analysis at that level.

We begin with replication data from Potter (2018). These data were gathered at the district level, where the logic of seat allocation based incentives applies best. We also appreciate that the author calculated a unique measure of constituency heterogeneity, which is vital because, like Ordeshook and Shvetsova (1994) and Amorim Neto and Cox (1997) we reason that electoral incentives interact with voters' homogeneity/heterogeneity to explain party system size. In other words, two districts with equal TDE, or electoral incentives, may yield party systems of different sizes depending on the political cleavages available to exploit. For example, the United States and Canada use the same electoral system (SMDP) to select the members of their lower houses but have varying levels of diversity (with the United States being more homogeneous). The combination of the same rules but different levels of cross- and within-district diversity has led to unique party systems. Whereas the United States has been the textbook case of a two-party system, Canada has seen the emergence of more than two viable parties.[2]

Using data on ethnicity, language, religion, rural–urban residency, income, and support for democracy from the Comparative Study of Electoral Systems (CSES), a collection of surveys with voters, Potter (2018) measured constituency homogeneity/heterogeneity using Krippendorff's α, a measure of intercoder reliability usually employed to assess how closely decisions made by multiple coders match. To calculate α, Potter treated each voter in a given district as a "coder" and then compared their characteristics to each other. As the similarity among voters from the same district increases, α takes values closer to 1; when voters are different from each other, α approaches 0. Because Potter was interested in *Constituency Diversity*, he rescaled α so that values close to 1 represent high diversity and those close to 0 represent low diversity.

[2] Though scholars have studied party system fragmentation and its connection with social cleavages, Dalton (2008) argues that researchers should pay more attention to quality instead of quantity when evaluating party systems. Specifically, Dalton submits that researchers should pay more attention to party locations to understand the choices available to voters. We analyze the relationship between TDE and party locations in Chapter 8.

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We combined Potter's *Constituency Diversity* measure with our Interparty & Intraparty Electoral Systems Incentives Dataset (I^3). We added information about the six electoral rules (*M*, seat allocation formula, threshold, ballot type, pooling, and vote) to compute the estimated values for TDE and Average Personalism (AP) at the district level in the cases covered by Potter. Combining both datasets gave us data for 879 districts from 32 unique elections in 12 countries.[3] Because Potter's dataset only covered PR systems, less constraining systems in terms of TDE, we supplement his data by adding information from Canada (SMDP, 2004 and 2008) and France (two-round (TR), 2002 and 2007). To include these countries, we replicated Potter's strategy, collecting data from CSES to create *Constituency Diversity*.[4] After adding these two countries, our sample grew to 1522 districts.[5]

Figure 7.1 displays the estimated values for TDE at the district and national levels for the countries in our sample. They were generated using the simulations and models explained in Chapters 4 and 5. We observe considerable within-country variation across districts. For example, in Switzerland TDE ranges from 0.588 to 3.109 (national-level TDE = 0.488). In our sample of cases, TDE varies little over time. We only observe variation over time in Poland and Slovenia, both of which engaged in system strengthening reforms. Poland changed its seat allocation formula (Modified Saint-Laguë to D'Hondt). Slovenia first changed its seat allocation formula (Hare to Droop quota), then adopted a legal threshold (4% nationwide) in an effort to reduce partisan fragmentation in its National Council.

Except for Canada (SMDP) and France (TR), all countries displayed in Figure 7.1 are some variation of PR system. Croatia (average $M = 14$), Portugal (average $M = 12$), Romania (average $M = 8$), and Spain (average $M = 7.1$) use closed-list proportional representation (CLPR). Austria (average $M = 4.6$), Norway (average $M = 8.7$), and Sweden (average $M = 10.7$) employ

[3] These countries are: Austria, Croatia, Finland, Ireland, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, and Switzerland.

[4] Potter's dataset only includes countries with at least a minimum of 20 respondents per district. This is not the case for either France or Canada. Though we cannot follow this coding decision, we used his other criteria to remove districts with few respondents. Specifically, we dropped all districts where the number of respondents divided by the number of voters was below the first percentile of this variable. We employed the first percentile used by Potter, before including France and Canada. Then, we removed all Canadian and French districts with the number of respondents below the lowest number of respondents in Potter's data (7 respondents). Regarding the dependent variable, Potter uses the Global Election Database (Brancati, n.d.) to calculate *N*. We used the same source for France, but the Global Election Database does not cover Canada after the 2000 election. So, for Canada, we employed data from the Constituency-Level Elections Archive (Kollman et al., 2019).

[5] Though CSES includes data from other majoritarian systems, only Canada and France did not have redistricting processes in the period.

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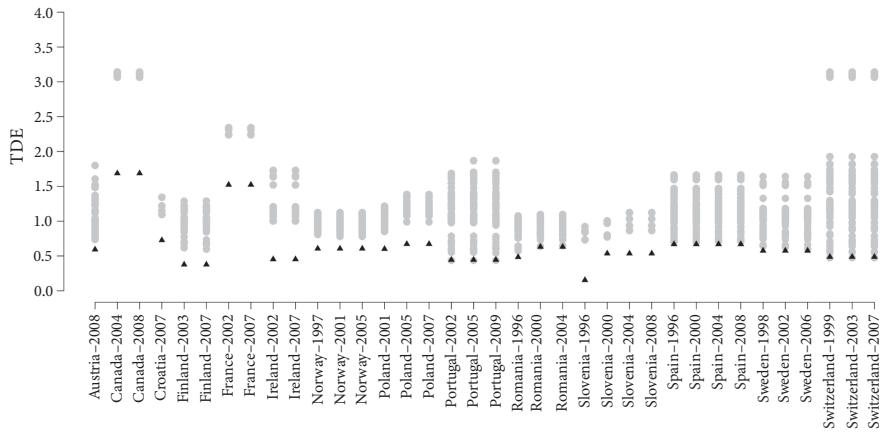


Figure 7.1 Estimated TDE at the district and national levels The plot displays TDE scores for 36 elections in 14 countries (gray circles represent district-level scores, black triangles represent country-level scores)

flexible-list proportional representation (FLPR). Finland (average M = 14.4), Poland (average M = 11.2), and Slovenia (average M = 11) use open-list proportional representation (OLPR). Switzerland (average M = 7.8) utilizes freelist proportional representation (FR-LPR). Ireland (average M = 4) uses the single transferable vote (STV).

We use estimated district-level TDE values from Figure 7.1 as the key explanatory variable for *N*. Although we have no theoretical reason to expect AP to be related to *N*, we also include our personalism measure in some models. To test our thinking, we estimate two sets of four different models. First, we include only TDE as our explanatory variable. Second, we add AP to our model. Then, we include Potter's measure of *Constituency Diversity*. Finally, we add an interaction between TDE and *Constituency Diversity*. We utilize an ordinary least squares estimator without fixed effects and with fixed effects by country-election. We estimate these two different sets of models because Canada and France do not have variation in TDE. Table 7.4 presents the results.

All models reveal a statistically significant association between TDE and *N*. In line with our theoretical expectations, when TDE increases (the system's incentives are more constraining), the effective number of parties in the district decreases. Surprisingly, the estimates for AP are positive and statistically significant in all three models without fixed effects in which it is included. However, the coefficients for AP are negative and statistically insignificant in

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Table 7.4 Association between TDE, AP, and the effective number of electoral parties: Data are at the electoral district level. Point estimates are unstandardized regression coefficients from linear regression models of the effective number of parties (computed using vote shares) as a function of TDE, AP, and additional controls.

	Dependent Variable							
	Effective Number of Parties							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
TDE	−0.604***	−1.232***	−0.571***	−1.241***	−0.620***	−1.208***	−0.313**	−0.564***
	(0.057)	(0.134)	(0.040)	(0.140)	(0.046)	(0.140)	(0.130)	(0.192)
AP			8.581***	−0.772	8.575***	−0.753	8.567***	−0.581
			(0.829)	(4.179)	(0.839)		(0.816)	(3.997)
Constituency Diversity					0.745***	0.547***	1.759***	2.956***
					(0.183)	(0.156)	(0.490)	(0.565)
TDE x Constituency Diversity							−0.471**	−0.976***
							(0.183)	(0.198)
Intercept	4.680***		0.615		0.229		−0.401	
	(0.134)		(0.456)		(0.445)		(0.532)	
Fixed Effects by Country-Election	No	Yes	No	Yes	No	Yes	No	Yes
R^2	0.245	0.663	0.380	0.663	0.387	0.666	0.39	0.672
Adj. R^2	0.244	0.655	0.379	0.655	0.386	0.657	0.388	0.663
Observations	1522	1522	1522	1522	1522	1522	1522	1522

Note: *p<0.1; **p<0.05; ***p<0.01

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the models with fixed effects. Regarding the effects of *Constituency Diversity*, the estimates are positive and significant, which suggests that more diverse citizenries lead to larger party systems (as captured by *N*). In models 5 and 6, the coefficient for the interaction term is negative and statistically significant. Given that interpreting these coefficients is not straightforward due to the inclusion of an interaction term, we employ intuitive graphical representations of our results.

To facilitate the substantive interpretation of our results and explain the interaction between TDE and *Constituency Diversity*, we use expected values. Figure 7.2 displays the expected effective number of parties (*N*) based on model 8. To calculate these quantities, we fix TDE at its minimum and maximum values, and vary *Constituency Diversity* from its minimum to maximum values. We keep AP and the fixed effects at their observed values in our dataset. Finally, we average over all the expected values. The quantities in Figure 7.2 are thus the *average* expected *N* conditional on varying levels of electoral permissiveness.

In panel (a) of Figure 7.2, when the electoral rules are most permissive, increasing diversity leads to an increase in party system size, varying *Constituency Diversity* from its minimum to maximum value is associated with a growth of 2.25 parties. In panel (b), when the rules are the most constraining, increasing diversity has no effect on party system size. The slope is slightly

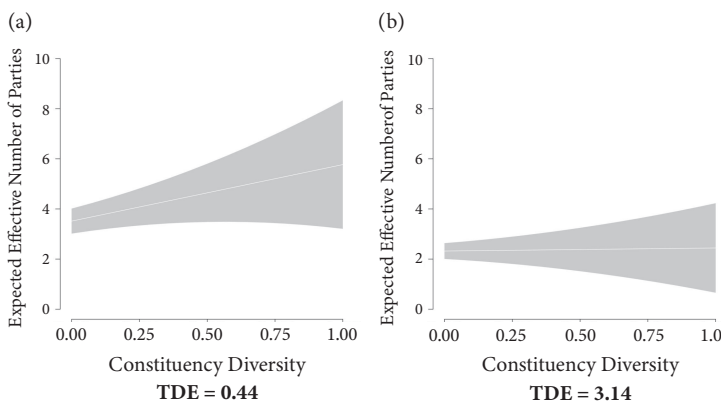


Figure 7.2 Expected effective number of parties (*N*) conditional on diversity
Panels (a) and (b) display expected *N* conditional on *Constituency Diversity* based on model 8 from Table 7.4 with TDE at its minimum and maximum values (AP and country-election effects fixed at observed values; 95% bootstrapped confidence intervals)

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positive, but there is no statistically significant difference in the expected *N* for the entire range of *Constituency Diversity*. The party system remains small regardless of diversity.

In addition to the expected values presented in Figure 7.2, to provide a substantive interpretation based on real-world scenarios, we calculate the expected number of parties in Switzerland in 2007, the case with the greatest within country-election variation in *Constituency Diversity* (min = 0.534, max = 0.759) and TDE (min = 0.588, max = 3.109). We set TDE and AP at their average observed values in Switzerland (1.640 and 0.481, respectively) and estimate the expected effective number of parties in the least and most diverse districts: the expected *N* increases from 4.07 to 4.40.

Figure 7.3 evaluates the same relationships in a different way: it displays expected *N* while allowing TDE to take on continuous values over the minimum and maximum values of *Constituency Diversity*. The panels tell a story similar to the one above. As electoral rules become more constraining (i.e., as TDE increases), the party system shrinks. The effect is most dramatic in heterogeneous constituencies (panel (b)). However, even in extremely homogeneous constituencies (panel (a)), increasingly constraining rules still seem to encourage voters to coalesce around fewer parties.

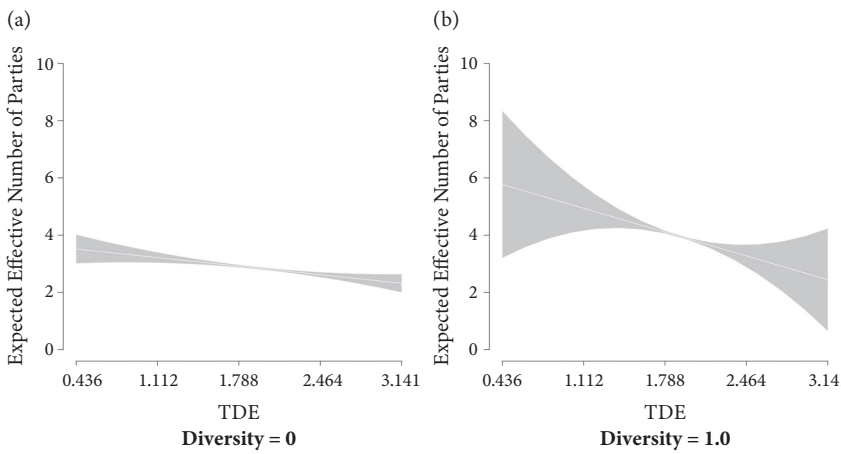


Figure 7.3 Expected *N* conditional on diversity—district level Panels (a) and (b) display expected *N* conditional on *Constituency Diversity* based on model 8 from Table 7.4 with TDE at its minimum and maximum values (AP and country-election effects fixed at observed values; 95% bootstrapped confidence intervals)

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Again, we calculated the expected *Effective Number of Parties* using a real-world scenario (Switzerland in 2007). As we did in the previous analysis, we hold *Constituency Diversity* and AP at their mean values (0.664 and 0.481, respectively). Utilizing this specification, the expected *N* decreases from 5.285 to 2.852 when TDE increases from its minimum to maximum values, which indicates that a Swiss canton would lose almost 2.43 parties if the rules shifted from the least to the most constraining.

It is most often the case that previous work has focused on district magnitude as the sole indicator of permissiveness. Our newly created measure of interparty incentives, TDE, takes more electoral rules into account, but our results seem to jibe quite well with existing literature. Using district-level data, as we have, Singer and Stephenson (2009) conclude that magnitude plays a key role in whether social cleavages find expression in votes. Systems with low district magnitudes (high TDE) appear to prevent such expressions from happening while systems with large magnitudes (low TDE) encourage it. Stoll (2011), using country-level data, found that under permissive electoral rules, increasing dimensionality of the political space was associated with an increasing party-system size. The same added sources of potential division did not have an effect under restrictive rules. Likewise, again using country-level data, Clark and Golder (2006) reach the same conclusion. Heterogeneity leads to a larger party system but only when the electoral rules are sufficiently permissive.

7.3 Conclusion

In this chapter, we laid out the theoretical rationale for why electoral system incentives should influence the size of the party system. We described a widely used measure of party system size, *N*, and illustrated its utility using hypothetical examples. We then returned to our simulations results from Chapter 4 to remind readers of our expectations regarding how weak/permissive (low TDE) or strong/constraining (high TDE) each type of system should be. We then developed district-level TDE scores for the countries studied by Potter (2018). We used the resulting dataset to demonstrate that permissive electoral rules, constituency heterogeneity, and the interaction between the two are all associated with larger party systems.

In the next chapter we examine whether TDE helps us understand not just the number of parties in a system but also where they choose to locate themselves on an ideological spectrum. However, before moving on we want

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to conclude by reflecting a little further on why party system size is such an important outcome to understand and the role electoral rules play in determining it. Several prior studies have questioned whether the party system gives voters an appropriate choice set from which to make a selection. Party systems size can be thought of as constituting a trade-off between accountability and representativeness. Two-party systems are often criticized, implicitly or explicitly, for providing too few options. They can allow a single party with only a plurality of support to control the levers of government. That government is accountable but not representative. A related literature focuses on legislative productivity, and the idea that a legislature with too many parties can prove unwieldy due to a lack of consensus. That government is representative but not accountable.

Carey and Hix (2011) focus on electoral systems that fall into what they call the "sweet spot." They find that low magnitude PR systems (those with three- to eight-seat districts)—produce an effective number of parties that is only moderately higher than systems with lower district magnitudes. Yet these systems rival those in systems with higher district magnitudes in terms of being representative, measured by the level of proportionality between votes and seats. In other words, their apparently ideal balance of accountability and representation allows them to deliver the positive political outcomes noted above. According to our simulations, "sweet spot" systems have TDE scores between 1.21 (M = 8) and 1.56 (M = 3).

Based on the analysis provided in this chapter we can add nuance to the Carey and Hix (2011) argument by accounting more precisely for how the interaction between electoral rules and social heterogeneity influences party system size. We used the data described in our empirical analysis to determine that "sweet spot" systems are likely to generate party systems that range in size (captured by N) from 3.10 to 4.60 parties—depending on constituency diversity—see Figure 7.4. Systems on the low magnitude/high TDE (strong, constraining) side of the "sweet spot," those with TDE scores at 1.56, generate party systems of N = 3.02 to N = 4.39, depending on constituency diversity. On the high magnitude/low TDE (weak, permissive) (TDE = 1.21) side of the "sweet spot," electoral systems generated party systems of N = 3.17 to N = 4.82, depending on constituency diversity.

Note the overlap in the range of party system sizes created by TDE scores of systems that are stronger than those in the "sweet spot," those in the "sweet spot," and those with TDE scores that are weaker than those in the "sweet spot." Our analysis suggests that if, through institutional engineering, founders

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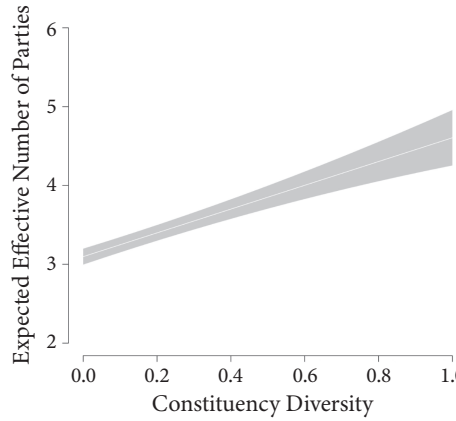


Figure 7.4 Expected *N* conditional on diversity—select systems Based on model 8 from Table 7.4, the panel shows expected *N* conditional on *Constituency Diversity* and TDE fixed at the average value across systems with CLPR, the D'Hondt seat allocation formula, a threshold of 2.5%, party-level pooling, and one vote with $M = 3$ or $M = 8$, which is the average system in Potter (2018) (95% bootstrapped confidence intervals)

and reformers wish to manipulate the size of the party system to reach some optimal balance between accountability and representativeness, being mindful of the homogeneity/heterogeneity of the population governed by these institutions is critical. Electoral systems matter, but the outcomes they produce are very much contingent on the social context in which they are being employed.

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8

The Distribution of Partisan Ideological Locations

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Existing theory suggests that many of the features of electoral systems that influence the effective number of parties also influence *where* those parties locate in terms of the policy programs or platforms they promise. We typically try to distill the myriad positions that parties take (or the multiple promises they make) into a location in some ideological space, which is usually characterized as a single continuum or dimension. Observers of politics can typically employ the most used labels—Left v. Right, liberal v. conservative, state oriented v. market oriented—without having to spend too much time defining what underlies those broad ideas.[1]

Political scientists typically assume that parties are motivated to present platforms that will earn them enough votes to capture as many seats as possible. Each party seeks to maximize its own chances of winning, and party leaders decide which policies to support based on how many votes they expect those policy positions to earn them. All the parties in a given system have to take account of one another's positions while staking out their own. Under some electoral rules, parties may want to get as close as possible to one another in the ideological space to maximize votes. For example, the well-known *median voter theorem* suggests that under majority voting with $M = 1$, two parties will converge toward the center of the ideological space to maximize their chances of winning an election. As Cox (1990) has theorized, other rules—that lower the threshold of exclusion (i.e., low Total Duvergerian Effect (TDE))—may encourage parties to space themselves fairly evenly from the far Left to the far Right.

In this chapter, we focus on the dispersion of party platforms along the Left–Right ideological continuum. As the existing literature argues, we will explore

[1] Of course, other dimensions are easily imaginable, and common sense suggests that characterizing all political postures as reducible to a single dimension is probably an incredible oversimplification. Multiple dimensions would likely be necessary to come close to comprehensively discussing all of the things on which politicians and citizens agree and disagree. Still, theory is meant to be as simple or elegant as possible while still helping us understand the truly complex and messy "real world."

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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whether strong systems, those with high TDE scores, tend to result in parties taking up a limited number of positions on the ideological spectrum while weak systems, those with low TDE scores, lead to parties arraying themselves across the spectrum. Our measure of dispersion is based on the earth mover's distance (EMD) algorithm (much more on this later) that considers how far, in a mathematical sense, the distribution of political party locations in a given system is from being "uniform" (i.e., "fairly even").[2] Note that our interest is in the array of parties or their presence across some length of the system. To be more clear, we are not arguing that low TDE scores should be associated with political "polarization"—the presence of major parties only at each extreme of the ideological continuum. We will return to the incentives for being evenly dispersed or "clumped"—at the median voter or at the ideological extremes below.

Next we will discuss the existing theory on how parties' locations relative to one another should be a function of electoral incentives. Following that, we will describe the data we employ to locate individual parties on an ideological spectrum. We then explain how we will use a comparison of observed party locations with the uniform distribution to measure dispersion in a given system—EMD. We make brief asides to clarify that our measure of dispersion is neither a measure of polarization nor a measure of congruence. We then employ our measure of dispersion in a large-*n* examination of whether political systems characterized by high TDE values tend to produce lower dispersion among political parties than those with low TDE scores. Our results suggest they do. We conclude by comparing our measures and our results to the received wisdom from the existing literature.

8.1 Party Dispersion and Electoral Systems

As we summarized in Chapter 2, Duverger (1954) argued that single-member district decided by plurality (SMDP) electoral systems are likely to generate two-party systems, while proportional representation (PR) systems are mostly likely to be associated with multiple parties. For instance, in the United States, Canada, Great Britain, India, and many other countries, in elections to the lower house of Parliament or Congress, each district elects one representative

[2] In this particular chapter, we are not interested in capturing the dispersion of political parties with respect to, say, the dispersion of ideological preferences among voters, which corresponds to the notion of congruence. We take up this question in Chapter 9.

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($M = 1$) and that one seat is allocated by plurality (SMDP).[3] A party must win a majority of the votes to win this seat. A plurality would be sufficient, but 50%+1 or higher assures the party of a seat. The (mechanical) effect of this seat allocation formula is that strategically entering parties and strategically voting citizens have incentives to coalesce into two large parties or pre-electoral coalitions (what is known as Duverger's psychological effect). The existence of a third party with any positive level of support would prevent either of the two main parties from obtaining 50%+1 of the vote. Instead of supporting a third party, citizens would be better served by voting for the viable party nearest to them to prevent their least preferred option from winning.

If two parties contest a plurality election with $M = 1$, voters are distributed along a single dimension of contention, and their preferences are *single peaked*—that is, they have one most-preferred position, and their preference for other positions decays as they consider alternatives located on either side of that preferred choice—then having the support of the *median voter*—that is, the voter whose most-preferred position splits the preferences of all voters in half—is sufficient to accumulate a majority of votes. Downs (1957) therefore reasoned that the positions of the two parties that emerged in SMDP systems should converge on that median voter. In other words, their political positions should reflect the median voter's preferences as closely as possible while making some, perhaps relatively marginal, distinctions among themselves.

The significance of the median voter is reduced dramatically if multiple seats ($M>1$) are awarded in a district that uses a proportional seat allocation formula. As in any other system, we still assume that parties want to win as many votes and seats as possible, but politicians and voters have no incentive to merge into two big groups. However, this does not mean that they will not behave strategically. Some locations on the ideological spectrum relative to where other parties sit will still net more votes than others, and supporting one's most preferred party might still yield less maximum utility in terms of eventually moving the policy status quo in the desired direction. Depending on district magnitude and the distribution of voters' preferences, parties finishing second, third, fourth, and even beyond could still obtain seats in the assembly; some politicians and their supporters may prefer this over being absorbed into a larger party that does not reflect their interests as closely. For example, in 2009, Lisboa in Portugal had a TDE score of only 0.556 (Portugal uses a closed-list proportional representation (CLPR) electoral system).

[3] Recall from Chapter 4 that the average SMDP system received a TDE score of 3.64, meaning it is one of the most constraining electoral systems.

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Five parties won seats, the largest received nineteen seats, while the smallest (seat getting) party won five. In 2007, Zürich (TDE = 0.588) in Switzerland (free-list proportional representation (FR-LPR)), seven parties won seats. The largest (seat-getting) party won twelve, while the smallest (seat-getting) party won one. In most PR systems, we should expect to see sizeable parties arrayed along the ideological continuum—and, as a result, a parliament with multiple parties representing heterogeneous sets of preferences.

Cox (1990) argued that some types of electoral rules would create *centripetal* incentives (encouraging parties to cluster or congregate near a single the space) whereas others would create *centrifugal* incentives (encouraging parties to disperse more evenly across the ideological space). Ever since, the term "centrifugal" has been widely used in the literature, but many scholars have confused an incentive for "dispersion" for an incentive for "extremism" or "polarization" (much as a lab centrifuge pushes denser molecules outwards). We are more accurately following the argument in Cox (1990) when we characterize centrifugal competition as meaning dispersion throughout the ideological space, rather than polarization. As Cox would argue, "[e]quilibria in multiparty PR systems are expected to be such that (1) each party has a fairly well-defined and narrow ideological appeal, and (2) parties are dispersed fairly widely over the ideological spectrum. [...] Appeals would be relatively narrow because many competitors, each seeking to carve out a niche, end up with narrow niches. Appeals could be relatively well focused simply because they would be narrow" (Cox, 1990, 922).[4]

In addition to the main electoral rules—ballot structure,[5] seat allocation formula, and district magnitude—the number of competitors is key to Cox's reasoning. In the previous chapter we treated entry as a function of electoral rules rather than as an exogenous factor unto itself. In contrast, Cox takes a given set of rules (i.e., an electoral system) and asks what happens to incentives as the number of competitors changes exogenously. Cox anticipates that the incentives under SMDP are similar to those discussed by Downs, as summarized above. However, again treating competitors as exogenous, Cox points out that centripetal incentives will not apply if more than two candidates maintain

[4] Calvo and Hellwig (2011) show that centripetal/centrifugal incentives can operate at the party-level. In their analysis, a potential switch from a proportional (permissive) to a majoritarian (constraining) setting leads in the short term, with a fixed number of parties, to scenarios where large parties "move towards the center" while small parties "move towards the extremes." Here, we compare the degree of dispersion of parties across electoral systems with varying TDE scores, rather than assessing claims about party-specific movements.

[5] Cox uses "ballot structure" to refer to the number of votes to which each voter is entitled, whether they can engage in partial abstention (not use all those votes), and whether they can cast multiple votes for the same competitor if they have more than one vote. Ballot structure, as used by Cox, is not synonymous with our "ballot type."

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some modicum of support. Under the multiple non-transferable vote (MNTV) (a majoritarian system where voters have as many votes as there are seats, and seats are awarded to candidates by plurality) Cox explains that centripetal incentives hold with a relatively small number of competitors. Yet the balance shifts to centrifugal incentives as the number of competitors rises.

If individuals can cast multiple votes for the same candidate under MNTV, incentives are centrifugal regardless of the number of competitors relative to votes (recall from Chapter 4 that the average MNTV system received a fairly constraining TDE score of 1.21). For example, if a candidate takes a position to the right of all other options, which are all grouped at the position of the median voter, she will become the preferred candidate for all the voters to her right *and* for voters with preferences located less than halfway between her and the median. With *cumulation*, she receives all of these votes, making this a viable location in the policy space.

Individuals typically only have one vote in PR systems. The number of competitors will thus always exceed the number of votes—but may not be higher than the district magnitude. Taking our simple reasoning above a bit further, Cox predicts that in most PR systems (with few votes per voter and high district magnitudes), each party will have a well-defined and focused ideological pull; parties will therefore disperse themselves more evenly over the ideological spectrum.

Cox's logic regarding how various component rules can be expected to interact to produce centripetal or centrifugal incentives can be mapped back to our fundamental notion of TDE, which distills many of these complexities into a simple, easy-to-understand quantity. When TDE is high, Cox's logic would lead us to expect *strong centripetal forces* to drive parties' locations, resulting in more concentrated distributions of party positions. Conversely, when TDE is low, Cox's work would suggest *centrifugal forces* would incentivize parties to disperse across the ideological space. Accordingly, we use our new TDE measure to explain the general degree of dispersion of party locations, rather than the exact location of parties within a system. In this way, we evaluate the empirical accuracy of Cox's (and, by extension, Downs's) logic.

8.2 Identifying Party Locations

It is not easy to measure parties' locations across countries on a common ideological continuum. Characterizing a party as "left of center" or "right of center," for instance, is relative: it depends on where its direct competitors are located. Thus, while the Democratic Party in the United States is considered left of

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center in that country, many of its policy positions are much more centrist compared to, say, the Left Party in Germany (*Die Linke*). Thus, relying on each party's statements about where it falls on the ideological spectrum would not allow us to accurately map party ideologies across countries. For this, we need a common measurement tool that can account for cross-country variation in political contexts.

We will make use of a dataset that derives party locations from *expert surveys* that ask various country experts to scale parties on the Left–Right dimension.[6] The Varieties of Party Identity and Organization (V-PARTY) Project (Lindberg et al., 2022) has a wide-ranging scope and takes a methodologically rigorous approach. V-PARTY spans almost 50 years (from 1970 to 2019), and includes information on over 3,000 parties in 178 countries. The project represents one of the largest efforts to date to leverage expert knowledge about parties: over 700 experts collected the data. Experts answer bridging questions about party locations across countries and over time to reduce the chances of having non-overlapping ratings, which can affect comparability scores over such a long period of time and across so many countries (Saiegh, 2015). In addition, they rate the location of *vignette* parties—hypothetical parties with known locations on the ideological spectrum—to help anchor the ratings of all experts onto a common scale (e.g., King and Wand, 2007). This exercise is particularly important, as it helps reduce *differential item functioning*—a problem that arises when the stated positions on the survey scales carry different meanings for raters with different backgrounds—that can also affect comparability.

The research team at V-PARTY feeds these responses into a psychometric statistical model designed to work with bridging and anchoring party ratings (as well as other intricacies that can muddle measures based on surveys, such as guessing on the part of experts), to generate high-quality estimates of party locations that they validate using well-established measures of party ideology available for a subset of cases (Lührmann et al., 2020). We use V-PARTY estimates to study the relationship between TDE and the dispersion or concentration of party locations.

[6] The Comparative Manifestos Project (Volkens et al., 2021) is a widely used source of party locations. It has collected and codified the text of thousands of manifestos and used this information to place parties on a common ideological space. Unfortunately, not all parties issue manifestos, and those that do may not accurately represent their policy intentions. Measures of party system dispersion based on manifestos may therefore suffer from substantial validity issues (Benoit et al., 2009; Gemenis, 2013; Rovny, 2013). Unlike manifestos, expert surveys are not subject to the kinds of strategic calculations that may skew the way in which party positions are presented, and they can incorporate a variety of non-electoral sources of information on a party's general stance—including the party's history, enacted policies, schisms, and the context in which all of these unfold.

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8.3 Measuring Dispersion and Concentration

Having high-quality, comparable estimates of party locations set on an identical scale across countries is only the first step in our analysis, as we are primarily interested in the extent to which parties tend to locate near rather than far from each other, or disperse more or less uniformly on an ideological continuum. Since there is no standard measure of dispersion/concentration on the ideological spectrum—which is surprising, given the relevance of related notions such as polarization (Dalton, 2008; Bramson et al., 2017)—we measure this phenomenon using the party location data obtained from V-PARTY.

Ideally, our measure of dispersion/concentration would satisfy two important conditions. First, it should be able to distinguish between (1) "concentrated convergence" (all parties occupy roughly the same ideological position), (2) "uniform spread" (all parties are evenly dispersed along the left–right continuum), and (3) "polarization" (all parties concentrate on opposite poles of the same continuum). The first and third scenarios represent lower dispersion compared to the second. Second, the measure should be able to take into account parties' location as well as their relative importance in the party system, giving less weight to parties that play smaller roles in the system.

We employ an algorithm known as the earth mover's distance (EMD), which is designed to measure the distance between two arbitrary frequency distributions or densities. Its name comes from the notion that one distribution could be made to resemble a second distribution by moving some of its mass (conceptualized here as earth, or dirt) from where it is relatively abundant to where it is relatively scarce, or vice versa. The driving intuition of this metaphor is that if the two piles of dirt are similar to each other, one needs only a small number of steps to carry small amounts of dirt to make both piles identical.[7]

Figure 8.1 presents four hypothetical party location distributions. In each plot, we lay a stylized distribution of party locations (in grey) over an alternative uniform distribution for 11 potential positions in an ideological space. We chose these positions (–5 to 5) to coincide with the observed range of the V-PARTY ideological scale.[8] This uniform distribution becomes the yardstick against which we measure a party system's relative degree of dispersion.

[7] For a more detailed explanation and an introduction to EMD in political science, see Lupu et al. (2017).

[8] Party positions in the V-PARTY scale are not constrained to integers; any value between –5 and 5 is in principle possible.

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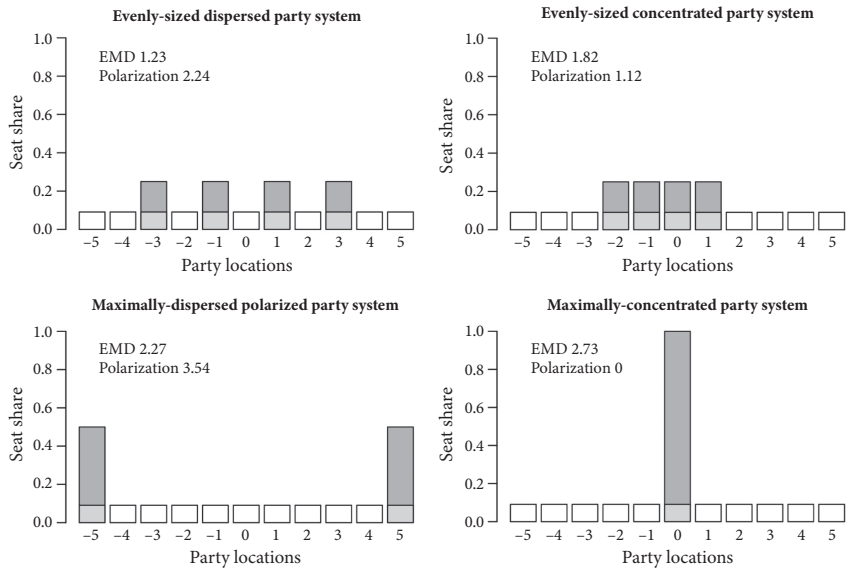


Figure 8.1 Hypothetical party location distributions The figure shows four hypothetical party location distributions in a system with multiple parties (in gray), in increasing order of distance from a uniform distribution (in white); the corresponding EMD measure for each distribution appears in the top-left corner of each graph

If a party system contained exactly 11 parties, each occupying a different integer position between –5 and 5, the EMD would be 0: one would need to walk zero "steps" carrying zero "dirt" to make the distribution identical to itself.

How do the four stylized party location distributions compare to the maximally dispersed uniform distribution? The top plots in Figure 8.1 correspond to party systems with four evenly sized parties—or more than four parties that occupy four discrete positions on the ideological continuum—each capturing 25% of the legislature's seat share. The top-left plot is presumably closest to the maximally dispersed uniform distribution, since parties cover a broader range of the continuum. Consistent with this observation, the EMD score for the "evenly sized dispersed party system" is 1.23, which is lower than that of the "evenly sized concentrated party system" in the top right (1.82). Both systems are much more dispersed (i.e., have a much lower EMD score) than the "maximally dispersed polarized party system" in the bottom right (EMD = 2.27) and the "maximally concentrated party system" in the bottom left (EMD = 2.73). The EMD score tends to be lower (1) if the seat shares of different parties are more even and (2) if parties are located further apart from each other.

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We calculate EMD scores for all polities in our dataset of electoral systems except those in which a single party contests an "election." We score each country's legislative party system using *seat shares* (rather than vote shares) to construct the distribution of weighted party locations. In this way, our EMD scores take an electoral system's *psychological* and *mechanical* effects into consideration. We obtain scores for 1,053 electoral systems in 132 countries. The mean EMD score is 2.12 (median = 2.06, range 1.05 (Chile 1973) to 3.37 (Venezuela 2005)).

8.3.1 Dispersion and Polarization

We mentioned before that scholars often employ the concept of centrifugal competition to explain the increase in polarization of party platforms observed over the past couple of decades in a number of party systems. Dalton (2008) develops a measure of party system polarization based on party ideological positions and vote shares. Dalton's polarization measure takes into consideration each party's ideological distance from the center of the distribution of all political parties, and weighs these distances based on each party's electoral importance. Weighted distances are squared (so that a party on the distant left appears as polarized as a party on the distant right) and averaged; the square root of average squared weighted distances then communicates the degree to which political parties in a system locate close to the extremes of the ideological spectrum.

We have used his approach to calculate the polarization scores of the systems that appear in Figure 8.1. As one would intuitively expect, the maximally concentrated party system in the bottom-right plot of Figure 8.1 obtains the lowest polarization score, while the highest polarization score in this figure goes to the maximally dispersed polarized party system in the bottom left. Consistent with our argument that "dispersion" and "polarization" are not synonyms, both the maximally concentrated and maximally polarized systems have the highest EMD scores in Figure 8.1.

This is not to say that polarization and dispersion are completely unrelated. We have also calculated Dalton polarization scores for the 1,053 electoral systems for which we calculated EMD scores. The left plot in Figure 8.2 shows the bivariate distribution of EMD and polarization scores. The plot suggests that systems with low polarization scores have, pretty much by construction, high EMD scores, suggesting that party positions are concentrated. Moreover, as party systems become more polarized their degrees of concentration also

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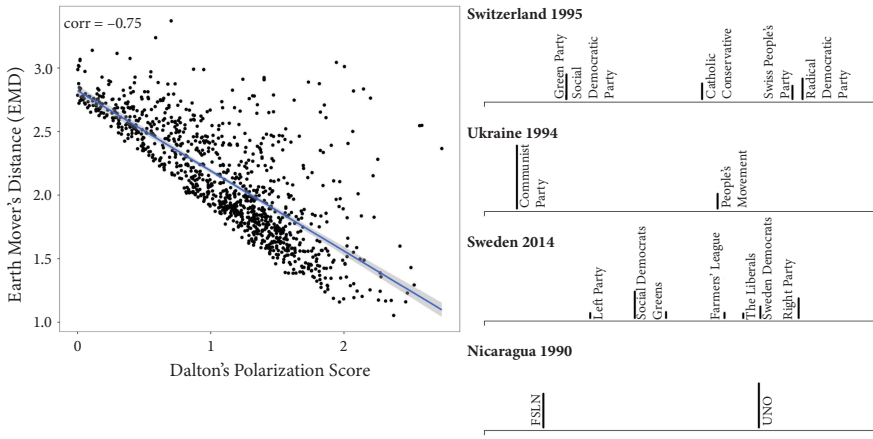


Figure 8.2 Correlation between EMD and polarization Bivariate distribution of the EMD centripetal-centrifugal competition score and Dalton's polarization score

tend to diminish (i.e., they obtain lower EMD scores), a fact captured by the downward-sloping line of best fit in Figure 8.2.

Note, however, that there are a number of systems that are highly polarized but not very dispersed (this is the situation depicted in the bottom-left plot of Figure 8.1). For example, among countries with high polarization scores around 2, Switzerland (1995) has a very dispersed system (EMD = 1.19), while Ukraine (1994) has a very concentrated system (EMD = 3.01). Conversely, among countries with low dispersion scores around 1.5, we see countries with middling polarization (1.47) like Sweden (2014), and countries with high polarization (2.15) like Nicaragua (1990). The right plot in Figure 8.2 displays the locations and vote share (the vertical spikes) of each political party in each of these four party systems.

8.3.2 Dispersion and Social Heterogeneity

Even if we have convinced you that polarization and dispersion are different, a potential criticism of our approach remains, namely, that we should not construct EMD scores using a uniform distribution as a yardstick. The concentration/dispersion of party locations is typically conceived of in comparison to the underlying distribution of citizen preferences.[9] As we argued

[9] Cox (1990) clearly defines dispersion as relative to percentiles of voter distribution (fn. 13, p. 916).

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in Chapter 8, even the weakest system would not generate dispersed party location distributions if voters' preferences were all concentrated. In other words, TDE could have a heterogeneous impact on EMD depending on how concentrated voter preferences are. Unfortunately, we lack assessments of the distribution of voters' preferences over the number of cases we are studying in this chapter. Therefore, and to avoid the difficulties associated with having to obtain exogenous measures of voter preferences, here we estimate TDE's impact on party location concentration, averaging over different types of voter preference dispersion. We obtain a measure of *absolute concentration* (i.e., the extent to which party position distributions differ from the uniform distribution over the range of possible locations of voter preferences) rather than a measure of party concentration relative to the concentration of voters. While this quantity of interest may mask potential heterogeneous effects of TDE, we can still evaluate whether, on average, this measure of electoral system strength operates in the way we described above.[10]

8.4 TDE and Party System Dispersion

Having defined a quantifiable measure of dispersion that captures the kinds of characteristics in which we are interested, we now evaluate the patterns of empirical association between an electoral system's TDE and the extent to which parties tend to concentrate or disperse along the ideological spectrum. Figure 8.3 displays a scatterplot of all the electoral systems in our dataset, which confirms our expectation of a positive correlation between TDE and EMD—i.e., that systems with high TDE values (constraining systems) will have parties that are more concentrated than those in which TDE is lower (permissive systems).

Figure 8.3 indicates that EMD tends to be high for electoral systems that induce high TDE values—particularly in plurality/majority and mixed systems—while systems with low TDE scores tend to cluster near the lower end of the EMD range. The correlation between EMD and TDE is 0.31, which is consistent with the idea that TDE produces centrifugal incentives that result in party dispersion.

However, there is ample dispersion around a line of best fit in Figure 8.3. This is consistent with our findings in Chapter 7 that the effective number of

[10] In the next chapter we explore heterogeneous effects.

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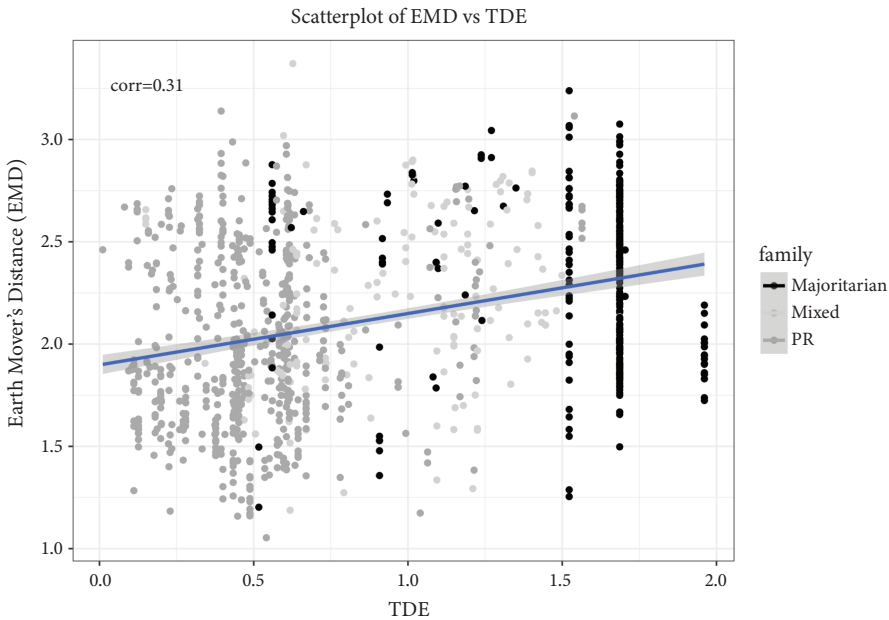


Figure 8.3 TDE vs. EMD scores The figure shows, for all electoral systems in our database, the predicted TDE score and the value of the party location dispersion measure (EMD); electoral systems are identified as PR (left), mixed (center), and plurality/majority systems (right)

parties could remain unusually high despite the incentives induced by strong systems with high TDE scores. It is also consistent with findings in Moser and Scheiner (2012) that SMDP constituencies in mixed-member systems have a higher than expected effective number of parties. Thus, it is not only the *number* of parties that can remain high; the distribution of parties' *positions* can be surprisingly varied as well.

Next, we ascertain whether the bivariate pattern of correlation between TDE and EMD persists after including other potential predictors. We use *countries* as the unit of analysis because this is the level at which we calculated EMD scores, based on parties that achieve national representation, which tend to present consistent ideological positions across constituencies.[11] We include a small battery of controls—a country's level of electoral democracy (*democracy*), the degree to which elected regional governments exist that can operate untrammeled by unelected bodies (*regionalism*), and whether the country's

[11] The degree to which parties in a system tend to have similar levels of support, or support dynamics, across constituencies is known as *party system nationalization* (e.g., Jones and Mainwaring, 2003).

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head of state is directly elected (*presidentialism*).[12] More democratic countries, and those with higher regionalism indices, presumably create additional incentives for party dispersion over and above those generated by the system's TDE. By contrast, presidential regimes arguably provide incentives to concentrate party positions—even though they have often been associated with increases in Effective Number of Electoral Parties (N_v) and Effective Number of Legislative Parties (N_s) (Golder, 2006; Shugart and Taagepera, 2017*a;* Borges and Turgeon, 2019). After all, competition for executive power is always under some form of strong plurality–majoritarian rule, regardless of the TDE incentives created by legislative electoral rules.

Since we study how TDE affects EMD at the country level, we cannot rely on the rich measure of demographic voter heterogeneity that we leveraged in Chapter 7—*district-level* data on societal cleavages that drive constituency diversity based on ethnicity, language, religion, rural–urban residency, income, and support for democracy from Potter (2018). Although there are national-level alternatives to this measure, they tend to be far more restrictive in the scope of features used to measure heterogeneity. For instance, the most prominent of these national-level measures, the degree of ethnolinguistic fractionalization (Easterly and Levine, 1997; Dražanová, 2020), only focuses on ethnic and linguistic diversity among groups in a country.[13] Electoral contention, however, can occur over a number of dimensions that do not always align with ethnicity and language—such as income, education, religion, or concerns about the environment. Thus, to control for unmeasured societal diversity at the country level, we include country fixed effects in alternative models. Though this is a principled way to proceed, measures like Average Personalism (AP) and TDE are very sticky over time; including country fixed effects, which parcel out the effects of any within-country time-invariant characteristics, thus effectively eliminates information from countries in which electoral rules rarely, if ever, change. To account for potential shocks that affect all countries that hold elections in the same year, alternative models also include year fixed effects.

[12] These indicators are all part of the Varieties of Democracy (V-DEM) project. *Democracy* (`v2x_polyarchy`) is a composite interval measure scored from 0 to 1 that purports to approximate Dahl's (1971) conception of polyarchy, based on answers to the question: "To what extent is the ideal of electoral democracy in its fullest sense achieved?" *Regionalism* (`v2xel_regelec`), also measured on the unit range, awards higher values to countries with elected regional governments that operate with more autonomy. *Presidentialism* (`v2ex_elechos`) takes a value of 1 if the country's head of state is directly elected; in this regard, presidentialism is a misnomer and should be "non-parliamentarism" instead, as the set of indicated countries also includes premier-presidential regimes.

[13] Attempts to explore richer representations of diversity have only gone as far as disaggregating the ethnic and linguistic dimensions, and adding religion to the national measure of fractionalization (Alesina et al., 2003).

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All models also include measures of AP. The coefficients associated with TDE in each of our models can thus be interpreted as the average difference in party concentration (EMD) between two hypothetical systems that have equal electoral incentives to cultivate personal reputations, but have one-unit differences in TDE scores. For models with country fixed effects, the coefficient associated with TDE can be interpreted as the average difference in dispersion as TDE changes over time within a given country. Table 8.1 reports coefficient estimates for all of these models.

The first two columns of Table 8.1 formalize the patterns we identified in Figure 8.3, but holding AP constant. Model 2 adds year and country fixed effects to the basic specification of model 1. As we found before, we corroborate that highly constraining systems (i.e., those with high TDE scores) do tend to have parties that are more concentrated along the ideological spectrum (i.e., higher EMD scores), as indicated by the positive and statistically significant coefficients associated with TDE. The effects appear strongest when we omit year and country fixed effects: TDE's estimated effect on EMD more than doubles.

Table 8.1 Models of party location concentration/dispersion: Based on country-level data. Point estimates are unstandardized regression coefficients from OLS regression models of EMD as a function of TDE plus confounders.

	Outcome: Earth Mover's Distance (EMD)			
	(1)	(2)	(3)	(4)
TDE	0.244***	0.108***	0.140***	0.073**
	(0.030)	(0.039)	(0.024)	(0.037)
AP	−1.410***	−0.148	−0.500**	0.037
	(0.308)	(0.367)	(0.241)	(0.348)
Democracy			−0.848***	−0.614***
			(0.054)	(0.081)
Regionalism			−0.013	0.066
			(0.030)	(0.057)
Presidentialism			0.102***	0.070*
			(0.022)	(0.037)
Constant	2.540***	2.200***	2.680***	2.310***
	(0.140)	(0.182)	(0.109)	(0.174)
Year FE	No	Yes	No	Yes
Country FE	No	Yes	No	Yes
Observations	1,053	1,053	1,052	1,052
R^2	0.136	0.713	0.362	0.732
Adjusted R^2	0.135	0.655	0.359	0.676

Note: *p<0.1; **p<0.05; ***p<0.01

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Models 3 and 4 then add three controls, while omitting (model 3) and including (model 4) year and country fixed effects. Both models suggest that TDE is positively correlated with EMD, as expected, though in the full specification with all controls (model 4), the estimated substantive effect is less than a third of the magnitude of the effect estimated in model 1. Consistent with our expectations regarding the partial effects of confounders, the electoral systems that best approximate electoral democracy tend to produce more dispersed (or, to keep with the coding of EMD, less concentrated) party locations, while those that directly elect the head of state tend to produce more concentrated party locations. We detect no evidence that systems in which regional authorities are unconstrained by unelected bodies produce (more or) less dispersed party locations. We also find scant empirical evidence that AP correlates with EMD. With the exception of model 1, where the estimated coefficient on AP is negative, including fixed effects and/or controls eliminates any association between AP and EMD.

To more directly assess how party system dispersion changes as we consider hypothetical systems with varying levels of TDE, Figure 8.4 presents expected values of concentration/dispersion as a function of TDE scores, spanning the full observed range of this variable. These values are based on model 3 of Table 8.1, and correspond to hypothetical systems with identical AP scores and confounder values, all of which are set to mean sample values.

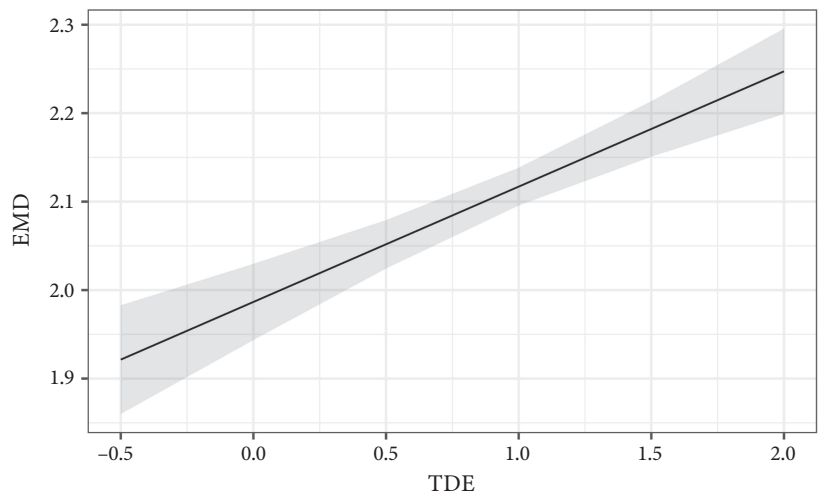


Figure 8.4 Expected party dispersion as a function of TDE The figure shows the predicted values of party location dispersion as TDE spans its observed range, for measures of dispersion based on party vote shares

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Overall, we find that changing the underlying electoral rules that determine how constraining a system is can noticeably affect party dispersion. For example, changing TDE from the value that captures Switzerland's electoral incentives (0.49) to those of Mexico in 2006 (1.15) would increase EMD from 2.06 (95% CI 2.03:2.09) to 2.15 (95% CI 2.13:2.18). This magnitude corresponds to about a fifth of the standard deviation of the marginal distribution of EMD in our sample. A more dramatic change from the minimum to maximum sample values of TDE would produce a shift of 0.27, which is equivalent to 62.3% of the marginal standard deviation of EMD (0.44). This noticeable effect is consistent with the received wisdom about the "centrifugal" (dispersing) incentives in electoral systems with low TDE.

8.5 Conclusion

In this chapter, we explored the dispersion of parties' ideological positions in a variety of electoral systems. We investigated how TDE induces *centrifugal* or *centripetal* forces that incentivize parties to disperse or concentrate, respectively, along the Left–Right dimension. After discussing some of the theoretical expectations derived from the work of Duverger, Downs, and Cox (among others), we defined our expectations with respect to the relationship between party concentration/dispersion—a more precise set of labels than centripetal/centrifugal—and the interparty dimension of politics, as captured by TDE. We measured "concentration" using the EMD algorithm. More specifically, we measured the degree of dissimilarity between a system's observed distribution of seat-weighted political party locations and a uniform distribution over a common range. We found, as expected based on the existing literature and our own reasoning, that in stronger, more constraining electoral systems (i.e., those with higher TDE scores) political parties are more concentrated on the ideological spectrum than under more permissive electoral institutions.

However, the substantive effect we uncovered leaves the impression that it is weaker than the relationship we found between TDE and the *number of parties* in the previous chapter. There are at least two possible explanations for this—perhaps erroneous—impression related to the level at which our analysis was conducted. First, Duverger's logic applies at the district level. If we try to apply this logic at the national level—that is, by averaging the effects across districts—we lose, by definition, the ability to account for variation across districts within the same system.

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Second, when we aggregate at the national level, we are proceeding as if we should see the same parties in every district. However, if a country has multiple $M = 1$ districts, one district could have two major parties concentrated on the left and another two major parties concentrated on the right. Outcomes in both districts would conform with our expectations based on Duvergerian logic. Yet, when the winners of both districts gain seats in the national legislature, that legislature will have much greater party system spread than its TDE score would suggest. While investigating this issue is beyond the scope of this book, future work could examine party system dispersion/concentration using district-level data—ideally with an indicator of voter heterogeneity like we had in Chapter 7!

In sum, our findings support much of the existing literature in regards to the conclusion that high TDE (strong or constraining) electoral systems will be associated with party systems that are relatively concentrated in the positions they cover on an ideological continuum. Low TDE (weak or permissive) systems are associated with party systems where entrants are more evenly spread across a broader range of the space (but not with systems where parties appear primarily at the extremes). In the next chapter we trade-in the breadth of the data we were able to bring to bear here for the ability to compare parties' positions with voters' positions. We will look at connection between incentives for the interparty dimension of politics and the extent to which parties can accurately represent voters' changing preferences—the issue of *congruence*.

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9

Congruence

In the previous two chapters we discussed how electoral systems affect the number and relative sizes of parties as well as the locations they stake out on an ideological continuum. In this chapter, we take the next step and examine whether electoral systems similarly affect the degree of correspondence between citizens' preferences (weighted by their number) and parties' positions (weighted by their size). We seek to determine whether a system's Total Duvergerian Effect (TDE) is related to *ideological congruence* between citizens and politicians.

There is a long-standing theoretical debate in the literature on democratic representation about whether we should conceive of elections as instruments for selecting good agents to represent voters in the future or as instruments for punishing bad performance from politicians who represented them in the past (Barro, 1973; Fearon, 1999; Mansbridge, 2003; Besley, 2007).[1] Voters likely use elections both proactively and retroactively; the main point in this debate is that using a single instrument (elections) to achieve two different outcomes (selecting good types, sanctioning poor performance) may produce incentives for politicians to misbehave. Some individuals may be making their vote choice to select a future representative, whereas others may be seeking to remove an incumbent they believe has performed poorly. The balance between the two may vary over time. For example, retroactive punishment might be dominant after a corruption scandal, while forward-looking efforts to select like-minded representatives may prevail when an incumbent is term limited or decides not to seek re-election. Our model treats democratic elections as instruments used to select representatives who share voters' preferences, that is, representatives that are *congruent* with the policy views of their constituents.[2]

[1] According to another line of reasoning, representatives should be chosen to make decisions they deem wise, ignoring what voters say they want (Mansbridge, 2003). In this view, representatives should act like *trustees*, rather than as *delegates* following a mandate to carry out constituents' preferred policies.

[2] Constituent preferences may not be exogenous in practice, but in fact shaped by politicians. If so, then congruence might be achieved with the causal arrow reversed, that is, because voters change their policy views to reflect the policies chosen by incumbents with whom they are simpatico. For the sake of simplicity, we ignore this potential "feedback" mechanism in what follows. On the endogeneity of

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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Based on this assumption, we expect different electoral systems to vary in the degree to which they allow congruence. In particular, we expect electoral systems with high TDE—that is, very constraining electoral systems—to impede ideological congruence to a greater extent than systems with low TDE. However, we explain in Section 9.1 that even this statement is conditional on the definition of ideological congruence that we adopt. Then, in the rest of the chapter, we discuss our strategy for measuring the ideological preferences (the "ideal points") of citizens and representatives. We base our analysis on data from Latin American political systems. We conclude that TDE could in fact be inversely related to *many-to-many* congruence, though evidence of this effect is not overwhelming.

9.1 Ideological Congruence in Theory and Practice

Ideological congruence can be defined in multiple ways, but the contemporary understanding of this concept focuses on two potential empirical characterizations (Achen, 1978; Golder and Stramski, 2010). *Many-to-many* ideological congruence is approximated when the *distribution* of ideological preferences among representatives more or less resembles the *distribution* of ideological preferences among citizens. Figure 9.1 depicts the distribution of ideological preferences of legislators and citizens in an imaginary polity. The stylized densities in the graph suggest that there are ample differences in these distributions. The most obvious difference is that legislators appear to be concentrated toward the left of the ideological spectrum, while most citizens appear to be centrist. Figure 9.1 therefore displays a low level of many-to-many congruence between citizens and legislators.

One-to-one congruence indicates that the ideological preference of a specific legislator (usually the *median* legislator in terms of ideological position or ideal point) is identical to the ideological preference of a specific citizen (usually the *median* citizen), regardless of whether the entire distribution of legislator preferences resembles the entire distribution of citizen preferences. Figure 9.1 denotes the ideal points of the median legislator and the median citizen with black dots. The horizontal distance between these dots corresponds to one-to-one (in this case, median-to-median) congruence.

Many-to-many congruence and one-to-one congruence need not be simultaneously satisfied. For example, the median citizen may hold a centrist

citizen views to party cues see, among others, Carmines and Stimson (n.d.), Gilens and Marukawa (2002), or Gabel and Scheve (2007).

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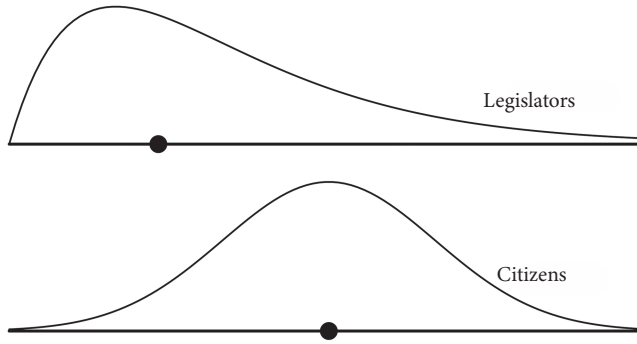


Figure 9.1 Two types of congruence Many-to-many congruence requires comparison of the full distribution of legislators' and citizens' preferences, whereas one-to-one congruence only requires comparison of the ideal points of one legislator and one citizen (typically the median legislator and citizen)

position on the Left–Right scale, but many other citizens could hold very extreme positions on both ends of the ideological spectrum. If the legislature is comprised of one centrist party, with only a handful of seats assigned to extremist parties, such a system will not achieve many-to-many congruence (the distribution of legislators will be very "narrow" compared to the distribution of voters), but it will certainly guarantee one-to-one congruence.

The standard Downsian argument is that constraining (high-TDE) electoral systems will elect representatives with ideal points close to those of their median constituents. However, Powell Jr. (2000) suggests that democracies based on a "proportional" vision (which typically depend on electoral systems with proportional representation (PR) formulas and large district magnitudes, and consequently have low TDE scores) are more likely to systematically produce one-to-one (i.e., median-to-median) representation.

Basically in agreement with both arguments, we have reasoned elsewhere that electoral systems should be more or less equally capable of providing one-to-one congruence between the median citizen and the median legislator (Crisp, Olivella, and Rosas, 2020). Our rationale is that in high-TDE systems, politicians have incentives to crowd around the median voter (regardless of the distribution of citizens' preferences), which makes it likely that any winner will be relatively close to the median voter's preferences; this is, of course, the standard Duvergerian/Downsian logic. In low-TDE systems, politicians have incentives to stake out more diverse positions, but the median voter, and the voters clustered around her, are likely to find a viable party nearby; in the

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high-proportionality environment of a low-TDE system, this is likely to be the median party. Again, the median voter is likely to end up with a median legislator who is not too distant in ideological terms. In short, this argument would lead us to expect TDE to have a null effect on one-to-one congruence.

Our expectations change dramatically for many-to-many congruence. We expect systems with low TDE to be much better at producing many-to-many congruence, especially where citizen preferences are diverse or heterogeneous. Our reasoning is straightforward. High-TDE systems incentivize voters to abandon their sincerely preferred politicians in favor of viable (but ideologically more distant) choices; therefore, they generate lower levels of many-to-many congruence. Low-TDE systems encourage citizens to select the most ideologically proximate politician because their choice is more likely to end up winning a seat. Based on our reasoning in the last two chapters, there are also likely to be entrants nearer many citizens in low-TDE systems. Thus, the ideological distance between citizens and electorally viable parties or candidates is likely to be lower. Again, this will enhance many-to-many congruence between citizens and (elected) politicians.

9.2 Measuring Citizens' and Politicians' Preferences

Political scientists use the term *revealed preference* to indicate a voter's actual choice of a candidate or party, which reflects their strategic behavior (Duverger, 1954; Leys, 1959; Sartori, 1968; Cox, 1997). Vote choices ought to be understood as the best options available to voters given how they think others will vote and how their votes will get translated into seats. In other words, observed vote choices incorporate the anticipated impact of electoral systems, which is the effect we seek to measure. To assess the effect of electoral systems, we must have an indicator of *sincere preference* that precedes the vote choice. We rely on survey responses to quantify citizens' ideological preferences *independently of how they vote*.

Likewise, political scientists frequently use roll-call votes to calculate many quantities of interest, including legislators' ideal points. But legislators' vote choices are influenced by many factors other than their sincere preferences. For example, chamber leaders may keep certain items off the agenda, or insist that some items be voted on by voice vote rather than roll call. In either instance, the roll-call vote sample is biased, which prevents us from ascertaining how legislators would have voted on issues that are potentially quite

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different from those for which we observe their votes. In addition, party leaders frequently have tools to "whip" their members into voting in a certain way, regardless of how they would personally prefer to vote. Thus using legislators' vote choices as indicators of their ideological preferences would combine their sincere preferences with extraneous influences. So, as with voters, we employ survey responses to gauge legislators' preferences.

To ascertain how TDE affects congruence between citizens and politicians, we need better measures of the ideological stances or policy preferences of both sets of actors. In Crisp, Olivella, and Rosas (2020) we assembled estimates of citizens' and politicians' preferences in 18 Latin American countries from 1996 to 2014.[3] To gauge citizens' ideological placements, we used the Latin American Public Opinion Project (LAPOP) and Latin Barometer surveys. These include a wealth of information on Latin American citizens' attitudes and beliefs about issues such as the privatization of state-owned companies, free trade, regulation, and government policies to soften inequality. To assess politicians' preferences, we used legislators' responses to surveys carried out by the Parliamentary Elites of Latin America (PELA) project at the University of Salamanca. In these surveys, members of Congress express their views on economic policy areas such as taxation and tariffs, privatization, and the regulation of public utilities. Both survey instruments ask respondents (citizens and politicians) about their views on sundry economic policies.

We think of these distinct policy views as manifestations of individuals' underlying "feelings" about appropriate economic governance. These "feelings" are potentially quantifiable stances that can be arranged along a state-to-market (or Left–Right) continuum. Underlying these views is a rationalistic interpretation of ideology. Under this interpretation, individuals adopt general ideological views that inform their more specific policy positions—partly to minimize the time they spend obtaining information about the pros and cons of individual policies (Arrow, 1951; Hinich and Munger, 1992). We can use this interpretation to turn the ideology–positions relationship on its head and infer positions on a general state-to-market continuum from individual responses to specific policy items.

With measures of ideological positions in hand, we can more easily describe the notion of congruence as the distance between the ideal points (i.e., preferred positions) of two actors on an ideological continuum. For example,

[3] The countries we include are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela.

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Panel A in Figure 9.2 depicts the ideological position of a hypothetical citizen that we *infer* from her responses to three policy position questions (items A, B, and C). The same panel displays the *inferred* ideological position of a politician, drawn from his responses to items X and Y. In this example, the sets of policies we use to infer the ideal points of the citizen and politician do not overlap (i.e., the sets {A, B, C} and {X, Y} contain no common elements). The apparent similarity of their ideal points (the dots on their respective state–market continua) is therefore an artifact and should not be construed as indicating perfect congruence. Without a common question to serve as an anchor, the two scales are simply not commensurate.

Panel B of Figure 9.2 adds policy item K, a question posed to both the citizen and politician. If we assume that both actors interpret this common question similarly, we can render their underlying ideological dimensions commensurate, even if there is no further overlap among the rest of the questions (A, B, and C for the citizen; X and Y for the politician). Panel B illustrates that there is now some distance between the citizen's and politician's ideal points, but we can now be certain that the locations of these ideal points are no longer simply an artifact. With inferred ideal points placed on commensurable scales, we can be confident that a value of 2.5 for a citizen on the state-to-market scale represents more or less the same thing as a value of 2.5 for a politician, that is, tight congruence between the policy preferences of citizens and policy-makers.

This explanation simplifies the technical process we use to place politicians and citizens on a common space (for details, see Crisp, Olivella, and Rosas (2020), especially Chapter 6). Most importantly, the surveys we employ have enough common questions—item K in our example—that we can "bridge" the positions of citizens and politicians to place them on the same state-to-market dimension.

9.3 One-to-One and Many-to-Many Congruence in Latin America

Once we have solved the "bridging problem," it is relatively straightforward to build measures of one-to-one and many-to-many congruence at the country/congressional term level. As long as we are comfortable with the "bridging" assumptions needed to place legislators and citizens on a common scale, we have estimates of ideal points for every survey respondent—that is, citizens in LAPOP and legislators in PELA surveys. We then simply summarize these responses in the aggregate for citizens and legislators, calculating scores like

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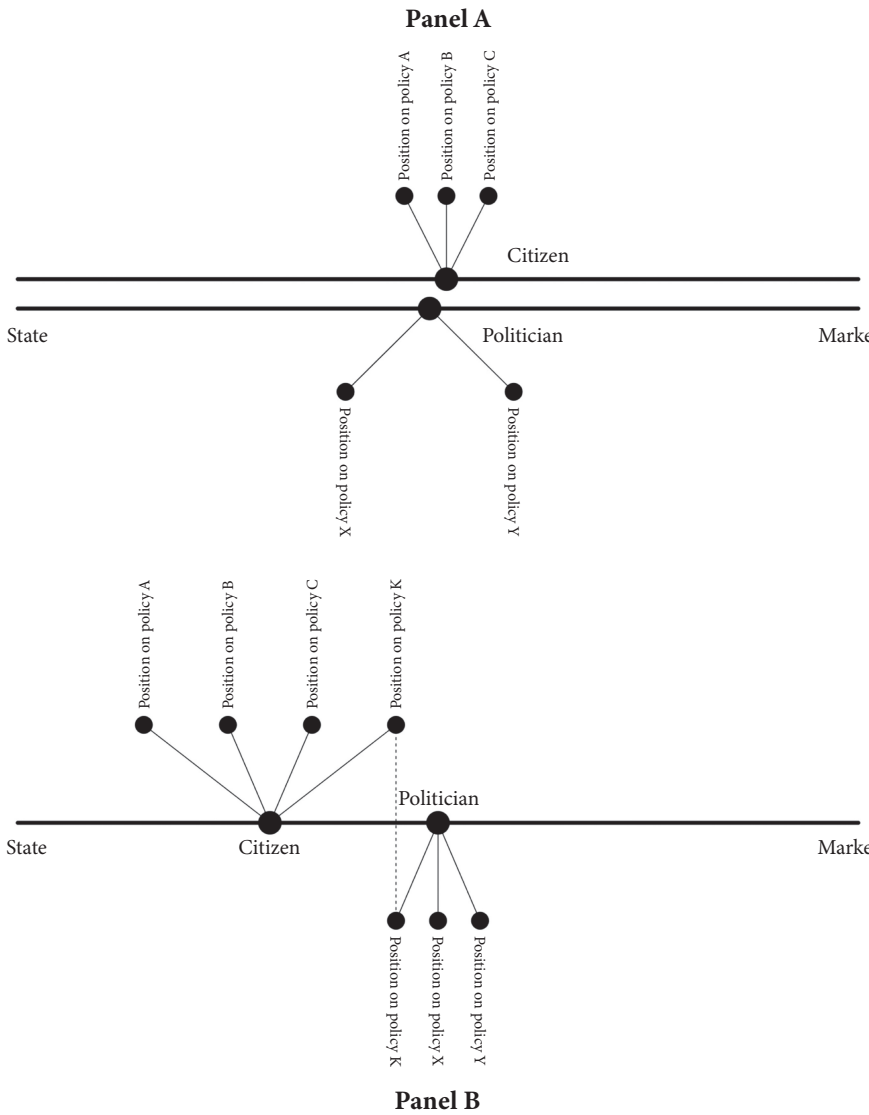


Figure 9.2 A representation of "bridging" responses In panel (a), the politician and citizen have the same "ideal point" based on responses to two disjoint sets of policies; it would seem as if "congruence" is perfect, but this is an artifact of the method used to elicit ideal points. In panel (b), the fact that the politician and citizen respond to a common policy item *K* allows us to "bridge" their inferred ideal points to place them on a common scale, even if both actors respond to otherwise different policy questions

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the "median ideal point" (the ideal point of the respondent who occupies the 50th percentile of the distribution of responses) and "ideal point heterogeneity" (the standard deviation of the distribution of ideal points).

Armed with these quantities, we define one-to-one congruence as:

$$\text{Congruence}_t^{\text{one}} = \frac{1}{1 + |\text{Median citizen}_t - \text{Median legislator}_t|},$$

which is a measure that peaks at 1 to signal perfect congruence when the positions of the median citizen and legislator coincide (in principle, the minimum possible value that Congruence$^{\text{one}}$ can take is 0; the minimum value in our sample is 0.3).

Our definition of many-to-many congruence might look somewhat terse because we need to capture, in a single statistic, the similarity between two distributions that can differ in terms of central location and spread.[4] The canonical way of comparing distributions is to calculate their Kolmogorov–Smirnov distance, which is the complement of the maximum distance between the cumulative distributions of ideal points, that is:

$$\text{Congruence}^{\text{many}} = 1 - \sup_x |F_{\text{citizen}}(x) - F_{\text{legislator}}(x)|,$$

where $F(x) \equiv \Sigma_i \mathbf{1}(\text{ideal point}_i \leq x)/N$ is the empirical distribution function of the ideal points of citizens or legislators. The Kolmogorov–Smirnov statistic measures the probability that two different samples of values (e.g., a sample of citizen ideal points and a sample of legislator ideal points) are drawn from the same underlying distribution; it varies between 0 and 1. If they are, and the Kolmogorov–Smirnov statistic takes a value close to 1, we infer that the distributions are maximally congruent. Thus, to calculate Kolmogorov–Smirnov statistics for every country/congressional term in our sample, we start by drawing 1,000 simulated ideal points for each group based on our estimates of median ideal point and ideal point heterogeneity and assuming that the underlying distributions are normal. These simulations become the empirical distribution functions ($F(\cdot)$) that we employ in the formula above.

[4] In principle, the symmetry and number of modes of the distributions could also vary. The procedure we use to build distributions of ideal points guarantees that the distributions we compare are symmetrical and unimodal.

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For both Congruence^{one} and Congruence^{many} we employ the subscript *t* to indicate that we consider the distance between the ideal points of the median citizen and median legislator in the same year. We also calculate "lagged" versions of our congruence scores that use citizen ideal points from the previous year (i.e., *t* – 1). The legislator surveys were only conducted when a new Congress is inaugurated. This limits the amount of information we can leverage to understand how TDE affects congruence to 73 observations. Figure 9.3 displays the bivariate distribution of our measures of congruence for all country/congressional terms in our comparison set. One-to-one and many-to-many congruence are positively correlated, which suggests that electoral systems may cluster in "good representation" (high one-to-one and many-to-many congruence) and "bad representation" (low one-to-one and many-to-many congruence) categories. TDE is a continuous rather than dichotomous measure. Average within-system TDE scores in our data range from 0.34 to 1.96. The average TDE score in the Latin American sample is 0.68 (SD = 0.41); scores range from to 0.12 (Peru) to 1.63 (Bolivia). None of the countries in our sample had an electoral system composed exclusively of single-member districts. Though this is unfortunate, we still have a good deal of variation in the interparty incentives that Latin American electoral systems institutionalized from 1996 to 2014. Recall that these are TDE scores averaged at the

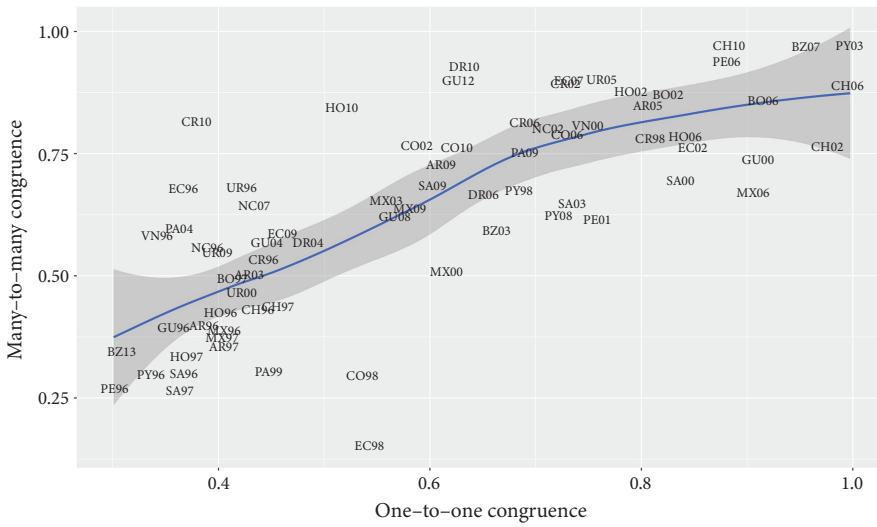


Figure 9.3 Correlation among two types of congruence Observed correlation between one-to-one and many-to-many congruence in the universe of Latin American country/congressional terms

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national level, which tend to suggest less of a constraining effect compared with scores at the *district* level. For example, single-member district decided by plurality (SMDP) systems produce district-level TDE scores of 3.16 but, at the country level, the TDE score of a system comprising many single-member districts drops to 1.74 (see Table 4.3). Though Bolivia's score, the sample maximum, is 1.63, it should be obvious that we are capturing a great deal of variation in TDE scores in the "convenience" Latin American sample that we analyze.

Variation comes from both *across* within *within* countries. The latter is a function of the frequency with which countries have adopted electoral reforms. Ordinarily, we would include country fixed effects in our estimates of how TDE influences congruence to control for immutable country-level characteristics that affect both TDE and congruence. For example, countries with high levels of cultural and social homogeneity could produce electoral systems with high TDE values *and* be naturally predisposed to generate high levels of congruence. However, most countries in our sample (10) do not change their electoral systems during the period under study (1996 to 2014), and five additional countries change their electoral systems (and therefore their TDE scores) only once. Including fixed effects would eliminate between-country variation, forcing us to forgo precious information that we need in order to estimate the degree of association between TDE and congruence. We have consequently chosen to omit country fixed effects in our models. We caution the reader that in the absence of country fixed effects there is a chance that immutable country characteristics could confound the effect of TDE on congruence.

While we can do little about this potential concern, we can at least control for region-wide characteristics that may change annually. For example, international economic shocks like the great recession of 2007–2008 are unlikely to affect electoral systems (or TDE values), but they could have strong effects on congruence if citizens or legislators (or both) drastically shifted their policy views. Rather than speculate about which potential time-varying exogenous shocks might affect congruence, we include year fixed effects in our models. As further predictors of congruence (but not TDE), we include annual rates of inflation and growth of per capita gross domestic product (GDP). We anticipate that good economic outcomes will correlate with congruence, perhaps because policy-makers will not be forced to advocate policies that directly contradict their constituents' desires in order to improve the economic situation. Thus, growth and inflation should be positively and negatively correlated with congruence, respectively.

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9.4 Results

Tables 9.1 and 9.2 report our estimates of the effect of TDE on one-to-one and many-to-many congruence, respectively. We present six different specifications for each type of congruence.[5] The first three models of each table consider the contemporaneous effects of TDE on *present* congruence, whereas the latter three present TDE's effects on *future* congruence. Within each set of three models, the first includes the rate of growth of per capita GDP and inflation along with TDE, the second model adds year fixed effects, and the third adds AP.

Consistent with our intuitions about the correlation between economic outcomes and congruence, we ascertain that the rate of per capita GDP growth is positively associated with increases in one-to-one congruence in models 1 and 4 (Table 9.1); similarly, higher rates of inflation are negatively associated with

Table 9.1 TDE as predictor of one-to-one congruence: Ordinary Least Squares (OLS) regression coefficients of one-to-one ideological congruence as a function of TDE, Average Personalism (AP), and covariates

	Congruence_t[1]			Congruence_{t+1}[1]		
	(1)	(2)	(3)	(4)	(5)	(6)
TDE	−0.004	−0.019	−0.023	−0.042	−0.056	−0.047
	(0.053)	(0.036)	(0.037)	(0.057)	(0.046)	(0.047)
AP			0.726			−0.499
			(0.444)			(0.558)
ΔGDP per capita	1.365***	0.565	0.402	1.136***	−0.328	−0.135
	(0.354)	(0.526)	(0.518)	(0.384)	(0.591)	(0.651)
Inflation Rate	−0.321***	−0.056	−0.055	−0.599*	0.196	0.086
	(0.101)	(0.069)	(0.067)	(0.299)	(0.303)	(0.321)
Constant	0.606***			0.646***		
	(0.045)			(0.055)		
Fixed Effects by Year	No	Yes	Yes	No	Yes	Yes
R2	0.220	0.641	0.661	0.147	0.626	0.635
Adj. R2	0.173	0.517	0.534	0.076	0.46	0.458
Observations	71	71	71	53	53	53

Note: *p<0.1; **p<0.05; ***p<0.01

[5] All models include heteroscedasticity-consistent standard errors.

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Table 9.2 TDE as predictor of many-to-many congruence: Ordinary Least Squares (OLS) regression coefficients of many-to-many (i.e., distribution to distribution) ideological congruence as a function of TDE, AP, and covariates

	$\text{Congruence}_t^{\text{many}}$			$\text{Congruence}_{t+1}^{\text{many}}$		
	(1)	(2)	(3)	(4)	(5)	(6)
TDE	−0.099*	−0.071*	−0.071*	−0.069	−0.096**	−0.089*
	(0.056)	(0.041)	(0.042)	(0.048)	(0.045)	(0.046)
AP			−0.023			−0.35
			(0.407)			(0.425)
ΔGDP per capita	1.109***	0.326	0.334	0.646	0.123	0.259
	(0.382)	(0.473)	(0.499)	(0.452)	(0.508)	(0.559)
Inflation Rate	−0.188	0.026	0.026	−1.153***	−0.128	−0.206
	(0.147)	(0.095)	(0.096)	(0.325)	(0.283)	(0.298)
Constant	0.705***			0.78***		
	(0.048)			(0.048)		
Fixed Effects by Year	No	Yes	Yes	No	Yes	Yes
R2	0.189	0.638	0.638	0.261	0.77	0.775
Adj. R2	0.14	0.512	0.503	0.199	0.668	0.666
Observations	71	71	71	53	53	53

Note: *p<0.1; **p<0.05; ***p<0.01

congruence in these models. We do not find a similar association in many-to-many congruence models, except for per capita GDP growth in model 1 in Table 9.2. Including year fixed effects appears to make these economic predictors statistically insignificant. This is not surprising: we expect growth and inflation rates to move together across countries in the region. By accounting for common annual shocks to Latin American polities, year fixed effects "soak up" part of the effect of domestic economic outcomes on congruence.

We make two predictions about how inter- and intraparty political competition affect patterns of congruence. The first prediction is that AP, our indicator of intraparty competition, should have no effect at all on congruence. It is however possible to imagine that incentives for personalism could affect congruence. For example, an individual voter may face a choice between two politicians—one who is ideologically proximal but lacking in name recognition, and one who is extremely well known but ideologically far from their preferences. They might choose the recognizable ideologue, but there is no reason to believe that, even if everyone did so, the ideological location of representatives elected by the aggregate population of citizens would be

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different than the one generated by electoral systems with low personalizing incentives. Consistent with this view, the coefficient estimates for AP are inconsistently signed across both models. The coefficient on AP is positive and statistically insignificant in model 3 (Table 9.1), but negative and statistically insignificant elsewhere.

The second prediction is more relevant. We speculate that TDE could have a negative effect on one-to-one congruence, but we also suggest reasons why TDE may not be correlated with one-to-one congruence. Table 9.1 returns models with TDE coefficients that are all signed negatively, but are statistically insignificant throughout. We are more sanguine about the possibility that TDE would drive many-to-many congruence downward; models 1, 2, 3, 5 and 6 (Table 9.2) generate more precisely estimated negative coefficients for TDE. In model 4, the TDE coefficient remains negatively signed but is statistically insignificant.

Though the estimated effects of TDE on many-to-many congruence are negative and statistically different from 0 in two of the models, they are not substantively large. The plots in Figure 9.4 depict the strongest possible case we can make about the size of TDE's partial effect on many-to-many congruence based on models 1 and 5 of Table 9.2, which correspond, respectively, to contemporaneous and future congruence. To gauge the magnitude of these effects, consider that the sample standard deviation of our measure of many-to-many congruence is 0.199. The coefficient estimate in model 1 (–0.09) implies that a one-unit change in TDE accounts for 45% of the standard deviation of many-to-many congruence. Peru in 1996 had the lowest TDE (0.16). Our model

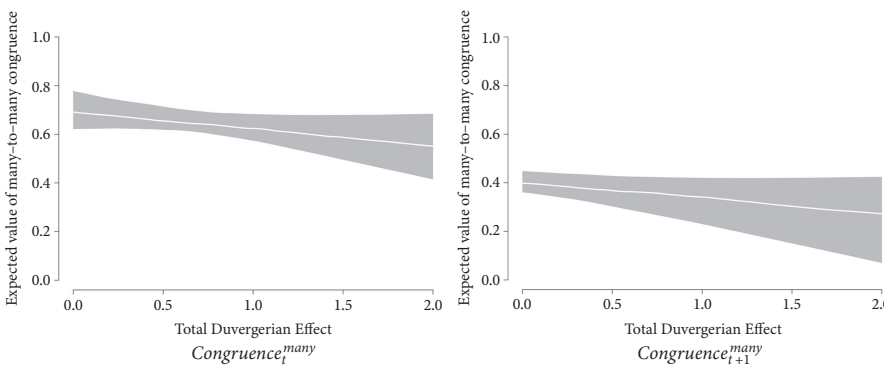


Figure 9.4 TDE effect on many-to-many congruence The plots display TDE's partial effect on many-to-many congruence while holding other predictors constant, based on models 1 and 5 in Table 9.2

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suggests that if Peru switched its electoral institutions with those of Bolivia, which in 2006 had the highest TDE in our sample (1.69), its level of contemporaneous many-to-many congruence would decrease from 0.71 (95% CI:0.63:0.78) to 0.58 (95% CI:0.46:0.69).

Building on this strongest possible case, we would conclude that TDE affects the possibility of congruence between citizens and their representatives. Specifically, electoral systems that are very constraining reduce markedly the possibility of many-to-many congruence, which is arguably an undesirable outcome from the normative standpoint that holds that legislatures ought to be "microcosms" of society. This, however, is not the only desideratum that reasonable electoral engineers may seek to fulfill. Electoral systems that produce hyper-congruent legislative bodies may end up producing inferior policy outputs if, for example, they are mired in gridlock and dysfunction. Whether this is an appropriate characterization for the most congruence-producing electoral systems in our sample is an issue that we cannot make a judgment on here. Our results show that fairly dramatic changes in TDE are required to produce large differences in congruence. Marginal changes in electoral systems are unlikely to radically affect levels of congruence between constituents and representatives.

9.5 Conclusion

In this chapter we have explored the extent to which citizens' preferences over policy outcomes are reflected in politicians' preferences over those same policies, and the role that electoral systems play in aiding or hindering that reflection. While this is a critical aspect of democratic representation, citizen–legislator congruence is only one link in a chain of responsiveness (Powell Jr., 2004).

Two recent studies have investigated the challenges associated with attempting to address the broader question of congruence between citizens' preferences and the policies that govern them. Our analysis is to some extent a subset of the project undertaken by Crisp, Olivella, and Rosas (2020). They did not have TDE (or AP) scores, but, using cases from Latin America, they analyzed whether weak or strong electoral systems could better achieve congruence between citizens' and politicians' preferences. Going beyond our focus here, they examined a second link in the chain of representation—the degree to which politicians' preferences were reflected in the policies that were ultimately enacted. Because they were looking at separation of powers

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(presidential) systems, they reasoned that it was important to account for the preferences of members of both branches of government and their policy-making powers. What they found was that legislators were more likely to share the preferences of citizens than executives were. Relatively strong (though there are no SMDP systems in Latin America) and relatively weak systems for choosing legislators were both associated with high congruence between citizens and representative. A decline in congruence was associated with "in between" systems that might be sending muddled signals about whether voters need to defect from their most preferred option or not. Unfortunately, policy was more likely to reflect the position of the president than the position of legislators, and constitutionally allocated presidential powers help explain when policy is most responsive to changes in politicians' preferences.

Powell Jr. (2019) took a somewhat different approach—in part because he focused on parliamentary cases in Europe, not cases of presidentialism in Latin America. He too focused on whether weak or strong electoral systems can better achieve congruence between citizens' and politicians' preferences (as captured by expert placement of political parties on a Left–Right continuum). He first looked at the connection between citizens' preferences as expressed in survey responses and the locations of the parties for which they voted. This would seem to capture the psychological effect of electoral systems as defined by Duverger (1954). His focus at this point is not primarily on electoral rules directly but instead on whether voters see a party option that reflects their positions. Strategic voting, voters abandoning a close-by party for a larger not quite as close-by party, does occur but it is not a large determinant of any disjuncture between citizens and politicians. Powell Jr. (2019) then looks at the level of congruence between the locations of the parties that received votes and the party that received seats. This is the mechanical effect of the vote/seat translation—with votes being expressed or strategic preferences, not sincere ones (like the ones expressed by the simulated voters we created here). He found that strong electoral rules, ones we would say had relatively high TDE scores, were more likely than more permissive systems to make a party the median party in terms of seats that was not the median party in terms of votes. The third link he analyzed was not policy-making powers, but government formation—the extent to which the ideological positions of parties with cabinet portfolios reflected citizens' ideological positions. He found that when the largest party in terms of seats was also the median party, it was able to dominate government formation and the making of policy. When the largest party and the median party were not the same, it was the location of the median party that best predicted the distance between the government and the

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median citizen. Because he was evaluating parliamentary systems (where the executive and legislative branches are not really separate), and since governments can largely enact their preferred policies without negotiating with the legislature, he did not measure the locations of the policies themselves. Powell argued that there was room for slippage or declining congruence at each stage in the democratic process but that the overall extent to which ideological representation went "astray" was a function of the institutional factors noted above.

We showed that there is a connection between electoral system incentives for interparty politics and the extent to which citizens' preferences are reflected in the preferences of the politicians they elect and in the policy those politicians craft. We provide these quick summaries of Powell Jr. (2019) and Crisp, Olivella, and Rosas (2020) to put the role of electoral systems into the larger context of explaining congruence. Governments are made up of many formal institutions, of which electoral systems are just one. The study of congruence (and responsiveness) is a rich field. Here we have investigated only one aspect of it, albeit one that we would argue is critical to the larger puzzle of representation in liberal democratic regimes.

With this effort to look at the relationship between TDE and congruence, we have completed our analysis of the implications of interparty incentives. In the next part of the book, we turn our attention to the implications of intraparty incentives.

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PART IV
INTRAPARTY POLITICS

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10
Campaigns for Office

Campaigns for office are an opportunity for candidates and parties to make appeals to potential voters, endorsers, and donors. They are primarily about the intraparty relationship between aspirants to office and those who can help put them there. Thus while the campaign of a given candidate or party may talk about another candidate or party, the primary target of the message is not other aspirants but potential supporters.

As a refresher, in Chapter 2 we discussed how types of ballots, the extent of vote pooling, the number and level at which votes are cast, and district magnitude create incentives on the intraparty dimension of politics (Carey and Shugart, 1995). We used these component rules to simulate voting across all types of electoral systems to create our Average Personalism (AP) scores. AP captures the extent to which voters could (or would) seek out individual candidates characterized by "valence"—desirable character traits, attributes, or accomplishments that make them appealing—rather than making a vote choice based on a party's policy positions. At one extreme, an electoral system can be designed to encourage all candidates and/or elected representatives to think about themselves solely as lone individuals trying to keep and do their jobs. We expect efforts to respond to these incentives to be on display during campaign season.

Intraparty incentives imposed by electoral systems have been associated with several features of campaigns, including what candidates and/or parties choose to talk about (or place in their campaign materials), the amount of time aspirants spend campaigning, the types of tools they use to reach potential supporters, and how campaign funds are raised and spent. In general, electoral systems that encourage candidates and representatives to behave first and foremost as individuals rather than party members will encourage them to spend lots of time, money, and resources cultivating personal reputations.

First, we will briefly discuss what the literature says about the relationship between vote-seeking incentives and campaigns, captured with multiple indicators. We will then use data from a large, ongoing project—the Comparative Candidate Survey (CCS)—that surveys candidates for office in Europe to examine whether what respondents say about the focus of their campaigns

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
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is related to the intraparty incentives they face from the electoral systems in which they are competing. As we expected, and much of the existing literature supports, candidates who face strong personal vote-seeking incentives—systems where AP is high—say they put a greater emphasis on themselves as individuals, not their parties as collectives when campaigning to earn votes. We conclude by offering a brief suggestion about a direction we hope future research takes.

10.1 Intensity, Complexity, Cash, and Focus

Some scholars maintain that personal vote-seeking incentives are associated with more hours spent campaigning, and the number of hours spent on the campaign trail is sometimes referred to as "campaign intensity." Sudulich and Trumm (2019) examine how vote-seeking incentives influence the amount of time that politicians spend campaigning in nineteen countries. Based on responses from about 5,000 candidates, they conclude that candidates who have greater personal vote-seeking incentives spend more time campaigning.[1] Not all studies have been supportive of our reasoning. Giebler and Wüst (2011) use the 2009 European Election Candidate Survey conducted in twenty-seven countries to test similar ideas on candidates for the European Parliament. They include an indicator for voters' ability to cast a preference vote(s) in their models, but this indicator yields no statistically discernible impact on the time spent campaigning.

Several studies investigate the tools campaigns use to communicate with potential voters, endorsers, and donors, such as canvassing, direct mail, online campaigning, and newspaper and TV interviews. Both Trumm (2018) and Sudulich and Trumm (2019) focus on "campaign complexity," which they define as the simultaneous use of multiple tools (using an index that includes canvassing, leafleting, engaging with media, debating in public, and social networking). They determine that candidates who have personal vote-seeking incentives because they compete in systems that allow individuals to cast a vote at the candidate level (including SMDP systems) engaged in more complex campaign efforts. Giebler and Wüst (2011) use responses to the 2009 European Election Candidate Survey conducted in twenty-seven countries to test for the use of "classic" and/or "post-modern" tools by candidates for the European Parliament. Post-modern tools include many online options, including

[1] They find that simply distinguishing single-member district decided by plurality (SMDP) from proportional representation (PR) explains the bulk of the difference in time spent campaigning.

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some that encourage interaction with the campaign. They find that where voters can cast a preference vote for an individual candidate, candidates were likely to employ a wider array of post-modern options to disseminate their messages.[2]

Personal vote-seeking incentives have been associated with candidates' desire to spend aggressively. Samuels (2001), with data from Brazil which uses an open-list proportional representation (OLPR) system (AP = 0.52 at the country level), finds that facing intraparty competition from *strong* copartisan candidates led to higher levels of spending. Selb and Lutz (2015) examine candidate campaign spending in Switzerland's free-list proportional representation (FR-LPR) system (AP=0.53 at the country level) and also find that intraparty competition drives spending levels. Somewhat oddly, they use the vote gap between a candidate and the first losing candidate on his or her list to capture the level of competition: the smaller the (positive) gap, the tougher the competition. Of course, those votes were cast *after* the campaign and would have been very much the product of, rather than the explanation for, relative spending levels; in short, Selb and Lutz's findings are severely biased by reverse causation.

The two tiers of most mixed-member systems provide a clear opportunity to compare the relatively strong *personal* vote-seeking incentives that characterize SMDP (AP = 0.47) with the relatively strong *party* vote-seeking incentives that characterize closed-list proportional representation (CLPR) (AP = 0.38). Fox (2018), examining 12,114 campaign posters displayed in Thailand, found that posters campaigning for the list-PR vote had more space dedicated to images of leaders, the party label, a party slogan, or a policy.

Prior to adopting a mixed-member system, Japan used single nontransferable vote (SNTV) to elect the House. With its multi-member districts, the potential for intraparty competition, and voters who have a single vote, SNTV strongly encourages personal vote-seeking (AP = 0.55 at the country level). Catalinac (2016) coded the content of nearly 7,500 candidate manifestos as either promises of pork barrel (particularistic goods) or support for programmatic policy positions. She found that pork-barrel promises dominated manifestos written by candidates running under SNTV rules prior to the reform, while after the reform, policy featured more heavily in manifestos written by candidates running under SMDP. Crisp et al. (2021) scoured Japanese candidate manifestos for evidence of *personal* and *party* vote-seeking

[2] Obholzer and Daniel (2016) find that candidates who face intraparty competition tweeted more as district magnitude increased, while those who did not used Twitter less frequently as the magnitude increased.

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by counting the number of first-person pronouns in each manifesto and the number of times a political party's name appeared in each manifesto, respectively. They assessed intraparty competition as the number of co-partisans faced by each candidate as both a proportion of the seats in the district and as a proportion of the seats that the candidate's party was likely to win. As hypothesized, increases in intraparty competition led candidates to be self-referential much more often and to refer to their parties less often.

We like the idea of directly observing campaigns. However, as our brief review makes clear, so far this approach has been most suitable to a single country. Observing campaigns directly would typically be very time-consuming. It would also be challenging to identify aspects of campaigns that would "travel" or be comparable across time and space (cultures, languages, etc.). Since we are investigating the effects of intraparty incentives (i.e., AP scores) across electoral systems (which vary primarily cross-nationally), we will use self-reported behaviors by candidates responding to survey to examine campaign focus.

The PARTIREP project included a question in its survey of Members of Parliament (MPs) in fifteeen national legislatures and regional or state-level MPs in nine countries that uses a five-point scale that was anchored by "personal campaign" on one end and "party campaign" on the other. André, Depauw, and Beyens (2015), using PARTIREP data, examine characteristics of electoral systems such as whether candidates were selected via primaries or a more centralized process, district magnitude, and the level (individual or party) at which individuals can cast their votes. As hypothesized, MPs selected in primaries, those who ran in single-member districts, and MPs who ran in systems that allow preference votes for individual candidates were more likely to give responses closer to the "personal campaign" end of the scale.

We will use candidates' responses to a question from another large project to analyze whether AP is associated with candidates' campaign focus.

10.2 Campaigns and AP

As we noted, data on campaign strategies is rare, especially at the cross-national level. Fortunately, since the early 2000s, a group of political scientists has organized and fielded two waves of cross-national surveys of candidates for national parliaments around the globe: the CCS has been administered in twenty-seven countries across Europe, Oceania, South America, and North America and fifty elections. Among many other things, the surveys asked

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"What was your primary aim during the campaign? Where would you place yourself on a scale from 0 to 10, where 0 means to attract as much attention as possible for me as a candidate and 10 means to attract as much attention as possible for my party." We use data from this question to create our dependent variable, *Attention to Candidate*. Because we expect candidates to focus more on their own reputation in systems with high levels of AP, we reverse the original coding so that large values indicate a greater focus on the candidate's personal reputation.

Figure 10.1 displays the distribution of *Attention to Candidate* across the twenty-six countries in our sample.[3] We organize the data by the average values of *Attention to Candidate* and *Ballot Type*. The size of the box represents the interquartile range (IQR), and the black line denotes the median value of the distribution. The two whiskers are the upper and lower bounds of the distribution (Q1 – 1.5 IQR and Q3 + 1.5 IQR), and the dots represent outliers. This simple bivariate examination corroborates our theoretical expectation that campaigns are more party (candidate) centered when politicians compete under a closed (open) ballot.

In line with Sudulich and Trumm's (2019) findings, we find that campaign strategies in Canada (SMDP), Hungary (mixed-member compensatory

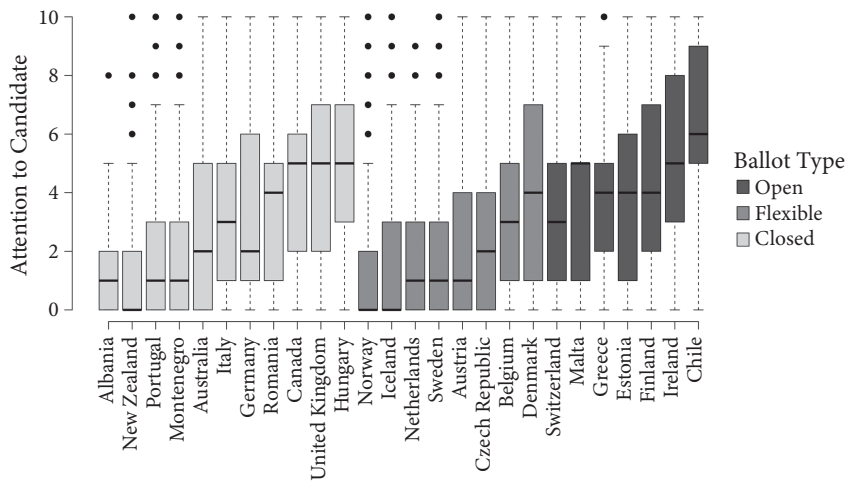


Figure 10.1 Attention to candidate Candidate responses to "What was your primary aim during the campaign?" from CCS waves 1 and 2 (0 = attract attention to the party, 10 = attract attention to own candidacy)

[3] The figure does not include Luxembourg because the CCS version (published on 11/25/2020) we originally downloaded did not include it.

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(MMC)), and the United Kingdom (SMDP) are on average similar to the campaign focus of candidates competing in open-ballot systems. The figure also displays large variation among countries that use a flexible ballot. Austria, Iceland, the Netherlands, Norway, and Sweden have scores similar to the average score for closed-ballot systems; the remaining countries are closer to values observed in open-ballot systems. This variation within flexible-ballot systems is likely a product of rules that define how hard it is to climb up the electoral list. For example, in Belgium, a candidate must win a proportion of the preference votes cast for members of his or her party,[4] but in Norway candidates must be selected by at least half of the voters who voted for their parties in order to climb up the party list. Because of this high preference-vote threshold for list movement, an MP has never won office based on preferential votes in Norway (OSCE/ODIHR, 2013).[5]

We examine the relationship between AP and *Attention to Candidate* using two distinct strategies. First, we calculate the average *Attention to Candidate* at the country-election level.[6] We use this country-election-level variable to regress *Attention to Candidate* on AP. Then we estimate another model, also at the country-election level, using Total Duvergerian Effect (TDE) as a covariate to discern whether the rules we identified in Chapter 5 as contributing to AP levels are more influential than those we identified as helping us sort out TDE.

In a second strategy, we model *Attention to Candidate* at the candidate level. We use AP measured at the district level to explain variations in individual candidates' responses. The first wave of the CCS codes the magnitude of the district in which the respondent was elected.[7] We dropped observations from

[4] Belgium utilizes a Droop quota at the party level.

[5] Sweden also has a high preference-vote threshold: a candidate must win a proportion of preference votes cast for members of *all* parties competing in the district to move up the list. In 2010 and 2014, candidates who received 8% and 5%, respectively, of all preference votes cast in their constituencies were able to climb up the list.

[6] For countries with mixed-member independent (MMI) and MMC systems, the CCS interviewed candidates from the proportional and majoritarian tiers. For these cases, we employ the average of the respondents in each tier, weighted by the percentage of seats allotted in the tier. Our sample does not include Germany (2005, 2009), Hungary (2010), and New Zealand (2011) because either CCS did not include information about the tier in which the candidates were running or CCS only included candidates from one of the tiers. We also excluded Romania (2012) because the system operated as a single-member district (SMD) system with inter-district competition. Specifically, multi-seat districts were subdivided into uninominal "colleges." In each of these colleges, candidates competed under a SMD system. Votes across all uninominal colleges were pooled at the district level, and a Hare quota was applied to define how many seats each party was awarded. Candidates who secured the absolute majority of the votes in their college were awarded one of their party's seats. The remaining seats were allocated to candidates following a rank based on the number of votes they received (Marian and King, 2010).

[7] CCS codes district magnitude as "missing data" if a country used a single at-large district or if all the districts in a country had the same magnitude. We added the values for district magnitude in these cases.

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countries in which the CCS did not ask which district a respondent was competing in.[8] This district-level analysis provides a more precise measure of the incentives faced by individual candidates during an election.

We use these strategies to estimate five models (results in Table 10.1). We start with models at the country level. First, we estimate a model using only AP as an explanatory variable. Then, we introduce TDE as a control variable.

Table 10.1 Association between AP and campaign focus: Data at the country and candidate levels. Point estimates are unstandardized regression coefficients from linear regression models of attention to candidate as a function of AP, TDE, and additional controls.

	Dependent Variable				
	Attention to Candidate				
	Country-Level		Individual-Level		
	(1)	(2)	(3)	(4)	(5)
AP	10.769***	9.962***	8.316***	8.515***	7.548***
	(2.994)	(3.213)	(1.617)	(1.660)	(1.384)
TDE		0.690		0.126**	0.531***
		(0.525)		(0.056)	(0.077)
Likelihood of Success					0.599***
					(0.036)
Ideological Distance					0.242***
					(0.039)
Constituency					0.420***
					(0.121)
Past MP					−0.252*
					(0.129)
Party Hierarchy					0.030
					(0.083)
Fixed Effects by Election	Yes	Yes	Yes	Yes	Yes
R^2	0.600	0.653	0.099	0.100	0.165
Adj. R^2	0.415	0.472	0.098	0.099	0.163
Observations	42	42	11744	11744	4999

Note: *p<0.1; **p<0.05; ***p<0.01

[8] Our sample includes Australia (2007, 2013), Austria (2008), Belgium (2007, 2010), Canada (2015), Czech Republic (2006), Denmark (2011), Estonia (2011), Finland (2007, 2011), Greece (2007), Iceland (2009), Ireland (2007), Italy (2013), Malta (2013), Montenegro (2012, 2016), Norway (2009), Portugal (2009, 2011), Switzerland (2007, 2011), the Netherlands (2006), and the United Kingdom (2010).

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In our third and fourth models, we fit the same two models but using individual-level data and measuring AP and TDE at the district level. Following Sudulich and Trumm (2019), our fifth model includes candidate-level control variables—the perception of likely success before the campaign, perceived ideological distance from the party, whether the candidate was previously an MP, whether the candidate held a national party office, and whether the candidate lived in the constituency.[9] All five models include year fixed effects to account for changes in technology and campaign techniques that may affect candidates' strategies. As in Chapter 9, we are unable to use country fixed effects because most of the variation in AP comes from cross-country comparisons. Thus including these effects would force us to drop AP from models 1 and 2, which measure *Attention to Candidate* at the country level, and we would lose information from countries where *M* is a constant for all candidate respondents in an election, such as those held under SMDP.[10]

The coefficient for AP is positive and statistically significant in all five models (see Table 10.1). In line with our expectations based on theory, candidates focus more on themselves as individuals when competing under rules that increase personal vote-seeking incentives. In model 2, a one-standard-deviation change in AP (0.062)—approximately the difference in AP scores between Portugal (CLPR) and Australia (alternative vote (AV))—is associated with a 0.614 increase in *Attention to Candidate* (equivalent to 51% of the standard deviation of the dependent variable, 1.20). The estimated coefficient for AP has a similar magnitude in the two individual-level models in which we do not add individual-level controls (models 3 and 4). Model 5 accounts for all variables included in Sudulich and Trumm's analysis. We find that a one-standard-deviation increase in AP (0.046) leads to a growth of 0.350 in *Attention to Candidate*—12% of the standard deviation of *Attention to Candidate* in the sample (*sd* = 2.91).

To provide a more intuitive view of the results, we calculate expected values of *Attention to Candidate*, varying AP from 0.357 to 0.561—roughly the minimum (Hungary) and maximum (Ireland) values in each of the samples

[9] Because the CCS did not ask some of the questions used to create these covariates in all country-election surveys, we lose roughly 57% of the observations when we use them.

[10] We do not interact AP with ballot type or *M* because these electoral rules are used to compute the score. We also do not interact AP with TDE because we do not have a theoretical reason to believe that the association between personalism and campaign strategy is conditional upon the permissiveness of the system.

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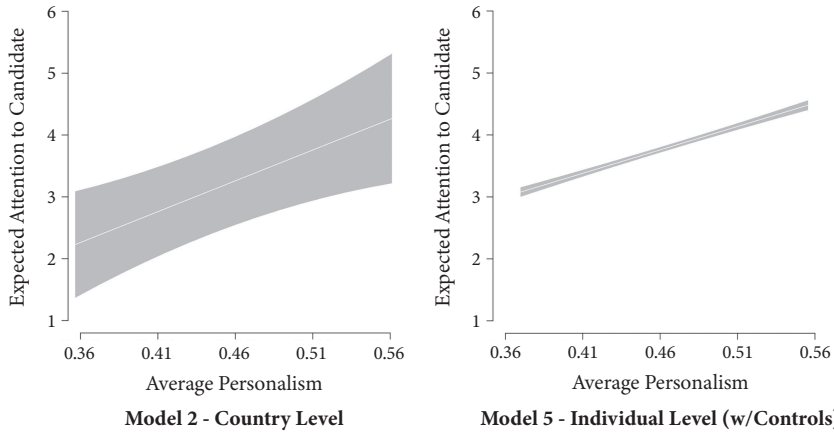


Figure 10.2 Expected attention to candidate The plots display expected values of attention to candidate conditional on AP based on models 2 and 5 (all remaining covariates are held constant at the sample median levels; 95% bootstrapped confidence intervals)

(Figure 10.2), holding all remaining covariates at their medians. In panel (a), moving AP from its minimum value to its maximum value yields an expected increase in *Attention to Candidate* of 2.04. In panel (b) we use the coefficients and sample from model 5 to calculate the expected *Attention to Candidate*. The dependent variable increases by 1.40 when we vary AP from its minimum (Montenegro, nationwide district, AP = 0.370) to its maximum value (Greece, Attiki, AP = 0.556).[11]

To further clarify the relationship between our findings and much of the received wisdom, we encourage readers to revisit the discussion surrounding Figure 5.7. Based on our simulations, we concluded that no differential effect of district magnitude on personal vote-seeking incentives obtains as a function of intraparty competition. Instead, personal vote-seeking incentives decline as magnitude increases across *all* proportional representation system types, including OLPR. In Figure 10.3, we show the implications of this finding for campaign focus. Under both CLPR and OLPR rules, the empirical models in this chapter support the conclusion that campaign focus shifts away from

[11] We use the same range for the x-axis in all three panels to facilitate comparisons across expectations.

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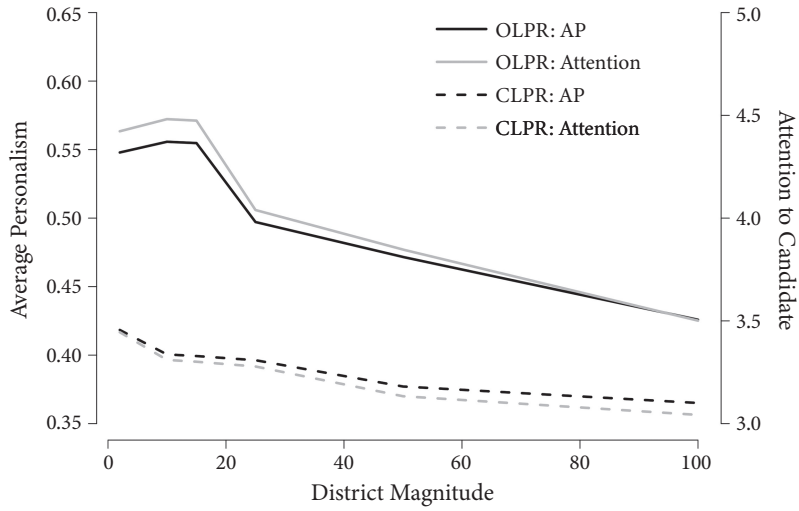


Figure 10.3 Expected attention to candidate, AP, and district magnitude. AP scores are calculated for systems with the following rules: one vote, party-level pooling, no threshold, and Hare quota, with ballot type equal to open or closed, and M equal to 2, 10, 15, 25, 50, and 100. AP scores were used to generate expected values for *Attention to Candidate* using the results from model 5 from Table 10.1

the individual candidate—and toward the party—as district magnitude grows (and AP scores decrease).[12]

10.3 Conclusion

After reviewing some of the ways in which past work has tried to capture campaign content, we tested whether electoral systems that incentivize voters to elect noteworthy individual representatives—those with high average AP scores—are associated with campaigns that focus on individual candidates' attributes and accomplishments at the expense of concentrating on parties' collective reputations. We found consistent support for our reasoning. Where the magnitude, ballot type, level of vote pooling, and the number and level

[12] As an alternative check on Carey and Shugart's (1995) conjecture, we fit linear models of Attention to Candidate on an interaction between M and ballot type (plus constituent effects), with fixed effects by election-year. We find no support for their argument in the country-level model. Regarding the individual level models, we find partial support in the model without controls; Attention to Candidate decreases with M when the ballot is closed, but remains constant when ballot is either flexible or open ballots.

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of votes cast led to low AP scores, candidate respondents indicated that their primary aim during the campaign was to attract as much attention as possible for their *parties*. As the ability to signal a preference for a high-valence individual representatives rose, respondents increasingly indicated that their primary campaign aim was to attract as much attention as possible for *themselves*.

Future work should test the association between AP and a directly observed indicator of campaign content, which would allow us to avoid relying on the recollections of survey respondents who could be answering in self-serving ways. As we noted above, most studies that use an indicator of campaign content that is *not* based on self-reporting by the candidates are only able to collect this type of data in individual countries. Thus, at most, they have been able to evaluate the observable implications of two electoral systems—a single country before and after an electoral reform. Politicians' widespread use of social media may provide a way to directly observe their campaigns. Text posted to Facebook and Twitter is being treated as data, and efforts are underway to scrape the posts of politicians from a wide range of countries. Data collection efforts like these may lead to the ability to construct direct measures of campaign focus across a wide array of systems with varying levels of AP.

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11

Constituency Service

Elected officials engage in constituency service when they address the non-policy grievances and interests of citizens in their district (Crisp and Simoneau, 2018). Such engagement often involves aiding constituents in their interactions with civil servants or with politicians at other levels of government. Scholars distinguish between "casework" (providing a service that directly benefits an individual constituent) and "project assistance" (helping a non-trivial number of constituents achieve a common goal) (Fenno, 1978). Casework is often conducted in "surgeries": constituents line up in a legislator's constituency office to be seen one at a time to get help resolving their individual grievances. Project assistance might entail convincing local officials to allocate resources toward a local public good such as refurbishing a public park (Searing, 1994).

Two classic books on constituency service—Fenno's *Home Style: House Members in Their Districts* (1978) and Cain, Ferejohn, and Fiorina's *The Personal Vote: Constituency Service and Electoral Independence* (1987)—illustrate two characteristics of the literature on the topic that still more or less hold true. First, they reveal two quite different approaches to quantifying representatives' engagement in constituency service. Fenno (1978) accompanied several US Members of Congress (MCs) to their districts (for extended periods, over the course of years) and observed the types and frequency of constituency-oriented activities they carried out. He also counted how many trips each MC made to their district and how much they spent to maintain a staff presence there. While traveling with legislators to carry out participant observation is rare, scholars often use "objective" indicators of rendered constituency service such as the number of constituency-specific questions a representative asks during question time. Cain, Ferejohn, and Fiorina (1987) employ a more commonly used method to capture constituency focus: they interviewed MCs and British Members of Parliament (MPs) and asked them to self-report their constituency service activities.[1] More recent studies have fielded surveys of

[1] Fenno (1978) copiously quotes the MCs he studied, so his work is far from devoid of self-reporting or self-interpreting.

Electoral System Incentives for Interparty and Intraparty Politics. Brian F. Crisp et al., Oxford University Press.
© Brian F. Crisp, Patrick Cunha Silva, Santiago Olivella, and Guillermo Rosas (2025).
DOI: 10.1093/9780198956587.003.0011

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MPs (more on these below), allowing them to cover more than two countries efficiently. We will make use of one of these projects in the empirical portion of this chapter where we will examine whether there is a positive association between Average Personalism (AP) and the provision of constituency service.

The second aspect of the literature that Fenno (1978) and Cain et al. (1987) foretold was the use of electoral systems less as a factor driving constituency service and more as a decision rule for case selection. Data from low-magnitude (M) majoritarian systems (mostly single-member district decided by plurality (SMDP)) dominates prior work on constituency service. Fenno (1978) and Cain et al. (1987) both focused only on legislators elected via SMDP. Studies in this area often point out that high levels of constituency service provision should be expected in such systems because a legislator can credibly claim credit for providing such services as the sole representative of the district and because voters can reward that legislator for such service in the next election. As we summarize below, until recently very few studies have examined the provision of constituency service by legislators facing different electoral incentives across cases.

In this chapter we leverage variation across systems in incentives for intra-party politics as captured by our AP measure to look at the extent to which elected officials report providing constituency service. In the following section, we first reflect on the advantages and disadvantages of different indicators of constituency service. In Section 11.2 we introduce the PARTIREP dataset and explain how we construct a set of legislators' constituency service scores. Our empirical tests will show that as AP rises, legislators are more likely to devote time to providing constituency service. We conclude by offering a suggestion for those interested in future research on this topic.

11.1 Directly Observed v. Self-Reported Indicators of Constituency Service

Direct observation of representatives as they deliver constituency service has at least three advantages over self-reporting (Martin, 2011). First, counting activities or behaviors may more precisely capture how MPs choose to use their limited time; in contrast, the accuracy of responses to a survey question about time spent on constituency service depends on the MP's recollection and his or her perception of the importance of this role. Second, unlike other forms of parliamentary behavior, like casting a roll-call vote, party leaders are less likely to govern individual legislators' casework. Therefore, directly observed

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casework is likely to be a better indicator of individual MP's priorities. Finally, for many activities (and the way in which they are observed) no bias is induced by MPs deciding to opt in or out of the study.

Parliamentary systems commonly schedule periods when MPs can pose questions to the government. At least two studies make clever use of these "question times" to measure the level of engagement in constituency-oriented activities. Martin (2011) coded 123,762 questions posed by members of the Irish lower house (the Dáil), 54,606 of which were focused on district concerns. The Dáil is elected using the single transferable vote (STV) system in multi-member districts. Such systems yield high AP scores, which indicate voters' ability to reward individual candidates for behaviors such as constituency service (AP = 0.56) (see Chapters 4 and 6). Martin finds that even members facing the same electoral incentives vary a great deal in the extent to which they focus on their districts. Sozzi (2016) coded 5,343 questions posed by French and Italian Members of the European Parliament (MEPs) between 2004 and 2009 as having a constituency, national, European, or extra-European orientation. French MEPs are elected in a closed-list proportional representation (CLPR) system in which AP is particularly low, while Italian MEPs are elected via a form of open-list proportional representation (OLPR) system that has particularly high AP scores (see Figure 4.5). As one might expect, Italian MEPs posed far more questions related to their districts than French MEPs. We are aware of only one study, Siefken (2016), which took a Fenno-like approach to gauging constituency service by accompanying MPs to their districts and recording their activities—albeit using multiple coders for brief stays of a few days (observing 618 events over 969 hours). Siefken's associates accompanied sixty-four members of the Bundestag, the German lower house, to their districts. The Bundestag is elected via a mixed-member compensatory (MMC) system, but this study revealed no association between electoral tier and indicators of a district focus.

As this very brief review of the literature makes clear, finding an "objective" indicator of levels of constituency service delivered by legislators across time and space is no easy task. Several scholars have developed useful indicators, but it would be difficult (if not impossible) to collect them across countries, especially for a historical time series. Consequently, scholars have also relied on self-reported measures of constituency service. Self-reporting of constituency service activities has many positive characteristics, as long as elected representatives can be trusted to respond to surveys or interviews. Most

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importantly, it is easy to capture self-reports for a large number of MPs, within and across countries. Several studies use politicians' self-reported constituency service and treat electoral rules as a potential cause (or at least the justification for selecting the case), including research on Australia (Halligan et al. (1988), Heitshusen, Young, and Wood (2005)); Bolivia (Corral, Sanchez, and Rivas Perez (SPR 2016)); Canada (Halligan et al. (1988), Heitshusen, Young, and Wood (2005); Koop (2012)); Ireland (Wood and Young (1997); Heitshusen, Young, and Wood (2005); New Zealand (Heitshusen, Young, and Wood (2005)); the United Kingdom (Wood and Young (1997), Heitshusen, Young, and Wood (2005); the European Parliament (Farrell and Scully (2010)); Canadian municipalities (Koop and Kraemer (2016)); and various American states (Richardson and Freeman (1995), Ellickson and Whistler (2001)).

Ongoing efforts to survey elected officials in several countries about the provision of constituency service, among many other topics, include the Parliamentary Elites of Latin America (PELA) project at the University of Salamanca (Universidad de Salamanca, 2024) and the "Participation and Representation: A Comparative Study of Linkage Mechanisms between Citizens and the Political System in Contemporary Democracies (PARTIREP)" project (Deschouwer and Depauw, 2014; Deschouwer, Depauw, and André, 2014)—which provides the empirical basis for this chapter. Self-reporting of district work remains by far the most common way to capture how representatives carry out their roles, but with some notable exceptions—André and Depauw (2013), André, Depauw, and Deschouwer (2014), and André, Bradbury, and Depauw (2015), for example—we think these large cross-national surveys of elected representatives are underutilized.[2]

11.2 Empirical Analysis

In this section, we analyze data from the most expansive project using constituency service self-reporting—PARTIREP—which allows us to study an array of electoral systems, including cases where we might expect the provision of constituency service to be very limited (Deschouwer and Depauw, 2014).

[2] A third way to capture constituency service is exemplified by Lockerbie (1999), who uses citizens' responses to the American National Election Studies surveys (from 1978 to 1994) to determine whether MCs differ by party in terms of satisfying the demand for constituency service (or a district focus more generally). Lockerbie employs questions about whether the respondent had contacted his or her representative, their satisfaction with the response to their query, and whether the respondent thought the member would be helpful with a problem in the future.

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Table 11.1 PARTIREP items related to constituency service: Indicator names and codes in the PARTIREP instrument, along with their descriptions. The questionnaire asks respondents how frequently they engage in these activities outside of campaign periods

Indicator	Description
`events` (V015_1)	Attending (or sending out letters on the occasion of) weddings, wedding anniversaries, and funerals in your local area
`meetings` (V015_2)	Meeting with (small parties of) constituents in their homes to talk about their wants and needs
`lectures` (V015_3)	Giving lectures and speaking at debate nights
`newsletter` (V015_4)	Sending out a personal newsletter and direct mailing
`surgeries` (V015_5)	Holding surgeries
`advertise` (V015_6)	Advertising your constituency work services (e.g., in newspaper ads or by visiting neighbourhoods)
`publicize` (V015_7)	Publicizing your successes in attracting business and obtaining government grants for the local area
`meetgreet` (V015_8)	Meeting local businesses and action groups
`localmedia` (V015_9)	Featuring in the local media

PARTIREP contains data from seventy-three national and regional assemblies in fifteen countries; it asks MPs a set of nine questions about how frequently they engage in constituency service activities.[3] The relevant question asks: "Mentioned below are some of the many different things that Members of Parliament do to keep in touch with constituents. For each one, do you actually do it outside election campaign periods, might you do it, or would you never?" ("Actually do it at least once a week," "Actually do it at least once a fortnight," "Actually do it at least once a month," "Actually do it at least every three months," "might do it," or "would never"); higher numbers indicate less frequent engagement. Table 11.1 describes the nine items.

We assume MPs interpret all of these questions, even those that sound like flagrant credit claiming, as referring to constituency service. When we pool all responses and consider their correlations, plot (a) of Figure 11.1 indicates that all items are positively correlated. While some correlations are higher than others, there is no obvious pattern between credit claiming and face-to-face activities.

[3] The PARTIREP MP Survey research team collected the data used in this section. The project was funded by the Belgian Federal Science Policy (BELSPO—grant # P6/37). Neither the research team nor the sponsors bear any responsibility for our analyses or interpretation of the results published here.

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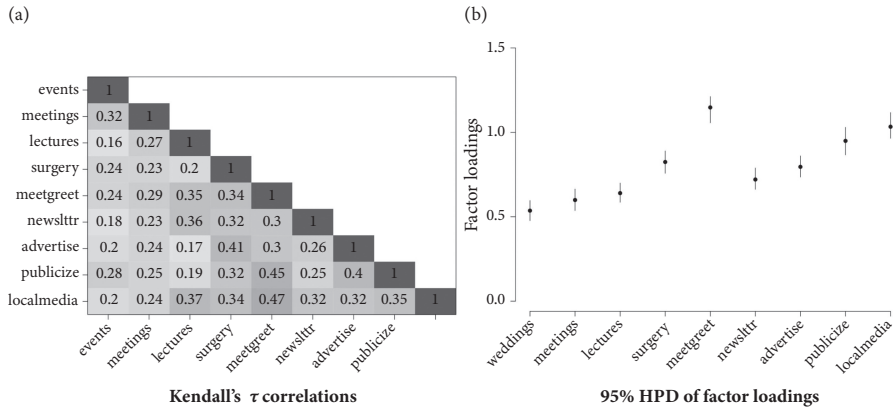


Figure 11.1 Constituency service factor loadings Plot (a) provides Kendall's τ rank correlations among constituency service activities, while plot (b) displays 95% highest posterior density of factor loading parameters from an ordinal factor analysis model

11.2.1 Building a Constituency Service Score

We leverage the high correlation among these nine items to produce constituency service scores for each MP in the PARTIREP sample. Each item contains a set of ordered categories (labeled 1–6). Given the ordinal structure of the data, we use an ordered factor analysis model.[4] We aim to build a score of constituency service, which is a theoretical construct that we cannot measure directly. Though we cannot measure this *latent dimension* directly, we have access to nine *observable indicators* of constituency service. Factor analysis extracts information from these nine indicators to produce a single score. We employ a one-dimensional factor analysis model appropriate for ordinal data to create our constituency service score (Quinn, 2004).[5]

We first consider whether this score is highly correlated with the nine manifest indicators from Table 11.1. We do this by inspecting the distribution of factor loadings for these items. Plot (b) of Figure 11.1 maps our inferences regarding factor loadings. Those corresponding to *weddings*, *meetings*,

[4] Factor analysis and principal component analysis are data scaling techniques that aim to preserve, in as few dimensions as possible, the largest feasible amount of information contained in a large number of covariates.

[5] In principle, factor analysis can project information from K indicators into as many latent factors. Very often, far fewer than K latent factors are sufficient to capture the bulk of information contained in the K indicators. Here, we only consider a single factor, after ascertaining that it captures ample information from the original indicators.

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and *lectures* are slightly smaller than the rest, but still above 0.5, which is commonly used as a threshold to determine whether a manifest indicator provides information about the latent factor. Other indicators—*meetgreet*, *localmedia*, and *publicize*—have factor loadings hovering around 1, which indicates that they play an even larger role in determining constituency service scores. The figure illustrates that the estimated factor scores credibly capture variation in the nine manifest indicators of Table 11.1; we believe this variation is generated by MPs' underlying proclivities to engage in constituency service.

Figure 11.2 displays the distribution of constituency service scores within parliament tiers. Breaking the scores down in this way allows us to separate national/federal from regional parliaments, and to split mixed-member parliaments, like those employed in Germany or Hungary, so they each yield two (or more) sets of observations, one set per tier. Figure 11.2 identifies

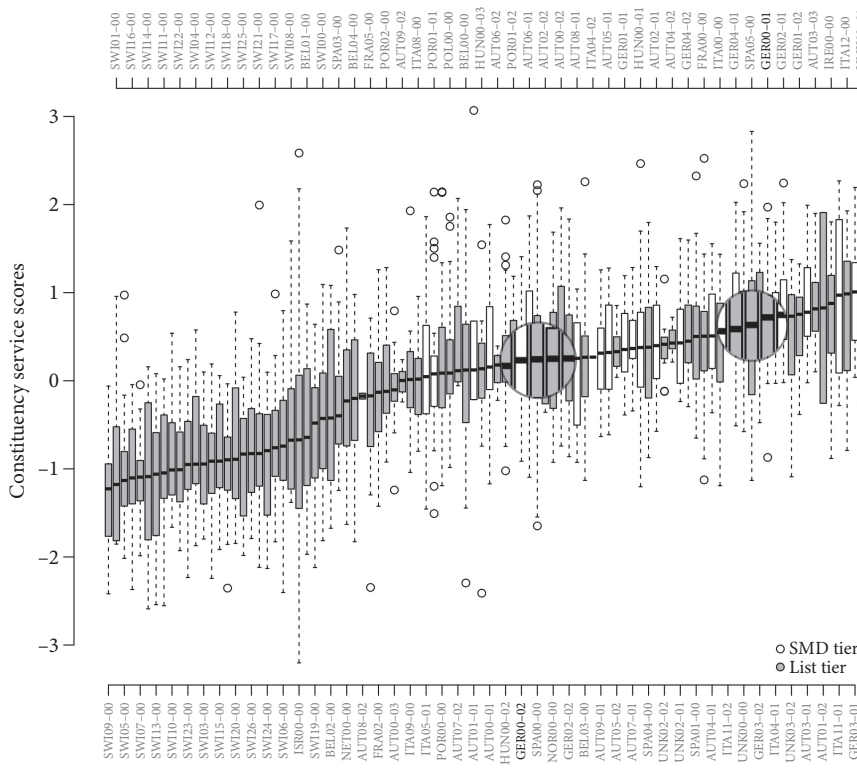


Figure 11.2 Constituency service factor scores Box plots of the distribution of factor (constituency service) scores within parliament tiers

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national/federal parliament tiers with the suffix "00" immediately next to the country's abbreviation. The average constituency service score within national/federal parliaments (0.24) is larger than within regional parliaments (–0.18), which may seem surprising given that the latter cover smaller geographic areas and are concerned with decidedly local topics that should theoretically make MPs closer to their constituents. However, the electoral rules have a greater impact than the level of government at which MPs serve in determining their level of constituency engagement.

The nominal tiers ($M = 1$) of all parliaments appear in light gray, whereas list tiers ($M > 1$) appear in dark gray. In general, nominal tiers have higher constituency service scores than list tiers, as one would expect. Black labels indicate the two boxes (zoomed-in) that capture German Bundestag MPs elected in single-member districts ("GER00-01") and in multi-member list tiers ("GER00-02"). Comparing these two box plots provides the most dramatic evidence that electoral rules matter: MPs elected in the nominal tier have an average constituency service score of 0.7, whereas those elected in the proportional representation (PR)-list tier have average scores of 0.26.

11.2.2 Results

We seek to determine whether the personal vote-seeking incentives provided by electoral systems (i.e., their AP scores) influence the legislator-level measures of *constituency service* that capture a politician's home style. The PARTIREP dataset provides plentiful information about the electoral environment in which legislators compete, including the rules we use in the predictive models of Chapters 5 and 6—*ballot type*,[6] *the level to which votes pool*,[7] *the number and level of votes cast*,[8] *district magnitude*,[9] *seat allocation formula*,[10]

[6] PARTIREP distinguishes four *ballot type* categories: "closed," "open," "flexible but rather closed," and "flexible but rather open;" we combine the latter two into a single "flexible" category.

[7] In coding *pool level*, we convert the PARTIREP categories of "no pooling," "across the party list," and "below the party level" into our own categories of "candidate," "party," and "sub-party list."

[8] PARTIREP codes votes based on preferential votes. In systems without panachage, we recode votes into "one."

[9] For legislators who compete in plurality–majoritarian systems, and for those who compete in single-member districts in mixed-member electoral systems, we code M as 1. For MPs in other national parliaments, we employ the average district magnitude we calculated for our own dataset, since PARTIREP does not provide information about the magnitude of the districts in which legislators compete. For MPs in regional parliaments that use PR or mixed-member systems, we calculate average district magnitudes based on the electoral rules used at the time of their election.

[10] PARTIREP omits "Hagenbach–Bischoff" as a separate *seat allocation formula*, and instead includes an "other" category that we lack; we therefore reclassify "other" as "Hagenbach–Bischoff."

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Table 11.2 Association between AP and constituency service: Legislator-level data across countries. Point estimates are unstandardized regression coefficients from linear regression models of constituency service factor scores as a function of AP, TDE, and additional controls, with country fixed effects.

	Dependent variable: Constituency service			
	(1)	(2)	(3)	(4)
AP	1.831**	1.926**	1.511*	3.595*
	(0.865)	(0.906)	(0.893)	(1.957)
TDE		–0.028	–0.026	0.048
		(0.052)	(0.055)	(0.184)
Sex = Male			0.189***	0.136**
			(0.04)	(0.061)
Rookie			0.033	0.018
			(0.033)	(0.05)
Leader			0.093*	0.109
			(0.049)	(0.077)
Gov. Party Member			0.097**	0.073
			(0.042)	(0.06)
Regional MP			–0.042	
			(0.089)	
Fixed Effects by Country	Yes	Yes	Yes	Yes
Regional Parliaments Included	Yes	Yes	Yes	No
R2	0.384	0.385	0.385	0.177
Adj. R2	0.38	0.38	0.379	0.159
Observations	2286	2286	2240	983

Note: *p<0.1; **p<0.05; ***p<0.01

and legal threshold. The values that PARTIREP electoral variables take also exist in our simulation exercises, so matching legislators to their exact electoral environment is relatively straightforward.

Table 11.2 presents our models of constituency service. *Constituency service* scores vary from –3.12 to 3.04, and have a standard deviation of 0.9. Model 1 is our most parsimonious specification; it includes AP as the sole predictor of *constituency service*, along with country fixed effects. The estimated coefficient for AP is positive and statistically significant; its large magnitude (1.83) implies that shifting from the sample minimum value of AP (0.35) to its sample maximum value (0.57) shifts the *constituency service* score by $0.22 \times 1.83 \approx 0.40$

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points (almost 50% of the full standard deviation of the constituency service score), which is a sizeable impact.

Starting with model 2, we add MPs' Total Duvergerian Effect (TDE) values, which capture induced strategic constraints on the behaviors of voters and politicians. We lack a solid theoretical rationale for expecting TDE to affect constituency service, but we detect a positive correlation between TDE and AP scores (0.09).[11] This correlation is induced by the relative abundance of SMDP and CLPR systems in our sample. We include TDE as a control to preclude the possibility that it might be a confounder of the effect of AP, even when we lack a sound theoretical reason to expect this to be the case. However, the coefficient estimate for AP in model 2 only increases; TDE is not significantly associated with constituency scores in this specification.

Model 3 adds a number of predictors of constituency service: the legislator's sex, first-term status, leadership position, membership in a party in the governing coalition, and service in a regional parliament. We believe these predictors are unrelated to the electoral incentives that drive AP, though candidate-centered systems could have some effect on the incidence of female politicians and of legislators serving their first terms—in which case we would avoid including such variables in our analysis, as they would constitute "post-treatment" factors. Among these potential predictors, the coefficients for the indicator for *male*, *leader*, and *government party member* reach statistical significance. Once these predictors are included, the coefficient estimate for AP is reduced (1.51), but remains statistically significant.

Finally, model 4 is based exclusively on data from national parliaments, which leads to the loss of more than half of the respondents in the PARTIREP sample. In other words, this model excludes information furnished by regional MPs. On the one hand, regional MPs may be less ambitious in their political goals, less attuned to the incentive structure within which they compete, and therefore less likely to behave in ways that maximize their political survival. On the other hand, regional MPs may be closer to their constituents, and because of this reason may in fact be extremely conscious of the need to provide for them in certain electoral environments. In short, we can think of multiple reasons why regional MPs may be different from national MPs, which explains our interest in fitting a model that looks exclusively at the latter.

[11] The bivariate sample correlation between TDE and constituency service scores is 0.12.

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Based exclusively on information from national MPs, we uncover an effect of AP on constituency service that is positive, significant, and fairly large (3.59).

We can only speculate about why the association between AP and constituency service is larger in national parliaments. As suggested above, one possibility is that national parliaments may comprise more ambitious politicians interested in cultivating a long political career, and therefore more attuned to the incentives generated by their electoral milieu. If this were the case, the proportion of national MPs ready to stand for reelection would likely be much higher than the proportion of regional MPs that make the same consideration. Evidence is somewhat consistent with this proposition, as 62.5% of national MPs report an intention to stand in the next election, while only 57.8% of regional MPs report the same. This difference is, however, small. An alternative explanation is that the observed range of variation in AP scores is more limited among regional than national MPs. However, we observe both regional and national MPs throughout the entire range of AP (from 0.36 to above 0.55 in both cases), and both distributions have similar mean and standard deviation. We leave for future research the puzzle of why personalist electoral rules might provide stronger incentives for personal vote-seeking behavior in national than in regional parliaments.

Plot (a) of Figure 11.3 portrays AP's marginal effect on constituency service based on model 4, holding all other variables constant, to indicate the

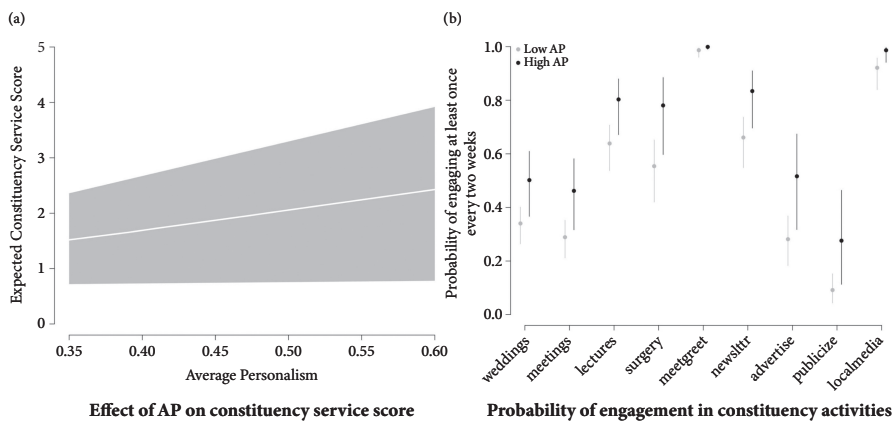


Figure 11.3 AP and constituency service Plot (a) displays the effect of AP on constituency service based on national parliaments (model 4), keeping other predictors constant at their median values (95% confidence intervals); plot (b) shows the probability of engaging in various constituency service activities at least once every 2 weeks based on minimum and maximum AP scores (bars are 50% confidence intervals)

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magnitude of these effects. As AP increases, the expected MPs' constituency service score also rises. Of course, the constituency service score is a measure that summarizes behavior along nine different areas. How does an MP's engagement in these activities change as the various incentives to cultivate a personal vote change? Plot (b) of Figure 11.3 combines our inferences from model 4 with the auxiliary parameters from the ordered factor analysis of Section 11.2.1 to chart the probability that an experienced male backbencher from a government party in a system with median levels of TDE would engage in any of the nine constituency service activities at least once every two weeks. We compare these probabilities in scenarios in which electoral rules produce very low (gray bars) and very high (black bars) incentives to cultivate a personal vote, that is, we fix AP at minimum and maximum sample levels. On average, high AP incentives increase the probability that MPs will engage in these activities from about 0.52 to about 0.68. In short, the effects we uncover are far from trivial.

We make one final point concerning the lack of a differential effect of district magnitude on personal vote-seeking incentives as a function of intraparty competition, a discussion we started in Chapter 5. Recall that our AP score already captures *all* possible information from the electoral rules that structure a political system, including district magnitude. It is worth considering, however, what our predictions regarding constituency service would be like under closed vs. open rules as we vary M. Figure 11.4 displays expected constituency service scores based on model 5 where we vary AP scores while holding other predictors constant. The values of AP scores correspond to scenarios that combine ballot type (closed vs open) and different district magnitudes (we use the district-level gradient-boosting machine (GBM) predictor model). As expected, Figure 11.4 confirms that OLPR systems generate higher constituency service scores than CLPR at all values of M. We see, however, that Carey and Shugart's (1995) conjecture about *increasing* incentives to engage in more constituency service as M increases is not borne out by our simulation-based predictive model. Instead, we see non-decreasing constituency service scores as M increases to about 15 under OLPR; if anything, constituency service scores only decrease (rather than increase) after $M = 25$.[12]

[12] As a further check on Carey and Shugart's (1995) conjecture, we fit a barebones linear regression model of constituency service scores on an interaction between M and ballot type (plus constituent effects) and country-level fixed effects. Coefficients estimated from this regression are not consistent with Carey and Shugart's conjecture.

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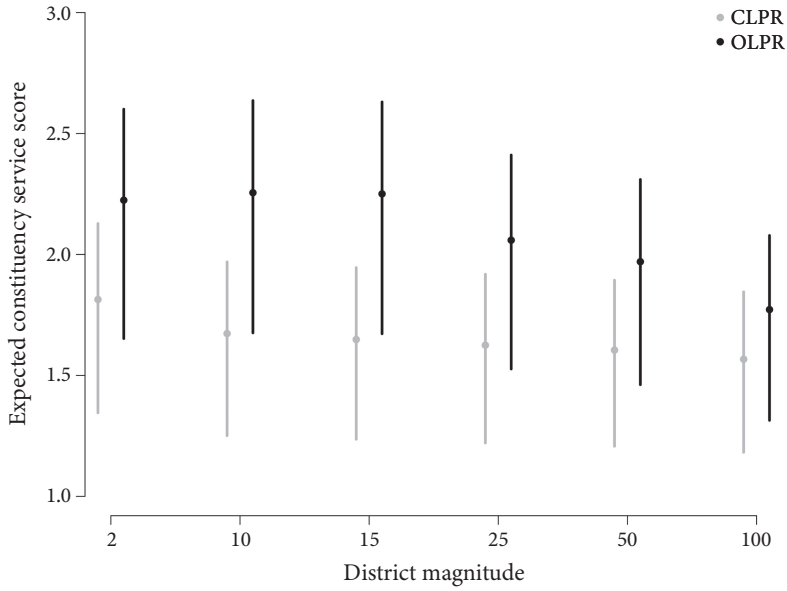


Figure 11.4 Constituency service, district magnitude, and ballot type We plot expected constituency service scores (with 50% confidence intervals) for scenarios with different AP scores. AP scores are calculated for systems with the following rules: one vote, party-level pooling, no threshold, Hare quota, ballot type equal to either open or closed, and *M* equal to 10, 15, 25, 50, and 100. Expected constituency scores are then calculated based on model 5, with AP varying across ballot type–*M* scenarios and holding all other predictors constant

11.3 Conclusion

In this chapter we employed survey responses collected from MPs in European parliaments about their constituency service practices to build a series of models that distill a single constituency service score from nine indicators. We use these scores as an output affected by the degree to which an electoral system provides incentives to cultivate a personal reputation. Our analysis establishes that, as expected, MPs in electoral systems with high AP scores are more likely to declare an interest in engaging in constituency service activities more often and, correspondingly, have higher constituency service scores. This association between AP and constituency service scores holds after controlling for a number of individual-level (sex, rookie status, leadership status), party-level (governing or opposition), and parliament-level (regional or national) variables, and after including country fixed effects. The effect of AP is not trivial; we estimate that MPs in the most candidate-centered systems will on

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average double their propensity to participate in constituency service activities at least once every two weeks.

Future work should try to extend the geographic scope of these findings beyond Western Europe, for example using the PELA surveys mentioned above. For countries that use provinces/states as electoral districts, it might be possible to leverage some of the questions that PELA includes considering the basic orientation of legislators toward their national party or toward their local constituency. Collecting actual behavioral evidence of what MPs do, as Fenno (1978) did (rather than what they *tell* us they do) would provide more complete evidence of how the personalizing effects of electoral rules shape constituency service.

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12

Committee Systems and Assignments

In this chapter we explore a third consequence of personalistic electoral systems. It stands to reason that if an electoral system allows voters to elevate the prospects of notable candidates, leading to a high Average Personalism (AP) score for the chamber, the winning representatives will design an institution that allows them to showcase and further enhance their own reputations. To do this, they will adopt cameral rules, often called Standing Orders, that secure individual rights for themselves. These rights will give rank-and-file party members independence from bloc leaders who might prefer to cultivate a *shared* party reputation.

For example, Standing Orders often dictate things like who can introduce (private member) bills and how the agenda specifying which bills will be discussed gets determined. Showing responsiveness to constituents is limited where these rights are proscribed. They can also define who gets to speak on behalf of or in opposition to a bill and for how long. Virtually every legislature in the world has rules about how votes will be tallied, including when the positions taken by individual members will be recorded for posterity. The bulwark that plays a key role in the process of crafting legislation in many elected chambers is a set of specialized committees. It is on this infrastructure that we focus here. Next, in Section 12.1 we review some of the literature that explores the effects of electoral systems on cameral rules and legislative procedures, focusing primarily on the relationship between electoral systems incentives and the number of standing committees in a legislature and between electoral systems incentives and the assignment of legislators to standing committees of different sorts.

In terms of empirics, first, we investigate in Section 12.2 the relationship between AP and the construction of legislative committee systems. We anticipate that where MPs are elected by systems with high AP scores, legislative chambers are likely to have a relatively large number of committees; we argue that a larger number of committees makes it easier for MPs to cater to their constituencies. In a second empirical section, we examine in Section 12.3 which legislators get assigned to which types of committees. Where AP scores vary across districts within a system, we expect that MPs chosen in districts

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with higher AP scores will be more likely to be assigned to "pork barrel" or distributive committees. As we underscore in the conclusion to this chapter, we find evidence consistent with both conjectures, but leave open the unresolved question of whether decisions to increase the number of committees and of selecting into different types of committees are indeed made by rank-and-file MPs, or whether they are made by party leaders interested in providing their backbenchers with tools that will allow them to help the party be electorally successful by promoting their own personal reputations.

12.1 Intraparty Incentives and Committees

A strong committee system is typically considered an important institutional tool for individual representatives wishing to exert their authority. Such systems can be designed to assure that any legislation relevant to a member's constituents passes through the committee, which would allow the member to tailor all relevant legislation—and to claim credit for having done so. Committee systems can be designed such that some committees primarily focus on broad policy concerns while others become ideal vehicles to craft bills with geographically targeted spending (distributive or "pork-barrel" committees). A committee that deals with all spending bills related to infrastructure, for example, could place projects in particular members' districts.

Based on data from twenty-four American states over a period of more than forty years, Bagashka and Clark (2014) conclude that candidate selection procedures (ballot access) that provide incentives to cultivate a personal vote lead to more autonomous committees in the legislature. Borges (2017) examine debates over free trade policy in the United States, Chile, Costa Rica, and Peru, and finds that legislators in chambers with more extensive institutional capabilities, including strong committees, are more proactive in proposing policy. Analyzing data from Argentina, Costa Rica, and Venezuela, Crisp et al. (2009) conclude that if the ballot access stage incentivizes party vote seeking, committee tenures are short and members can be rotated at the will of bloc leaders. Fleming (2019) argues that committees were strengthened in the UK House of Commons when personal vote-seeking incentives increased (which he links to partisan dealignment among voters rather than electoral institutions). Finally, with data from 39 legislatures, Martin (2011) finds that committees are strong where personal vote-seeking members can supply fiscal legislative particularism (pork barrel), but not where they earn votes by engaging in extra-legislative constituency service. In our first empirical section

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below, we will used data from VanDusky-Allen and Touchton (2020) to examine whether high AP are associated with more developed (bigger) committee systems.

Several studies have examined the process of assigning members to particular committees—particularly whether members end up on the committees best suited to their electoral needs. Riera and Cantú (2018) examine committee assignments for almost 10,000 legislators in Finland, Luxembourg, Norway, Portugal, and Spain, and find that when personal vote-seeking incentives are high, electorally vulnerable MPs are assigned to committees that grant them access to particularistic rewards for their constituencies.[1] In Japan, back when the House of Representatives was elected by single non-transferable vote (SNTV), which encourages personal vote-seeking (recall from Figures 4.5 and 4.6 that SNTV has one of the highest AP scores possible), Fujimura (2012) found that parties put MPs on committees that handled particularistic rewards to allow them cater to their constituencies, but that MPs who demonstrated ideological congruence with the party were more likely to be assigned to committees that handle broad policies. In Germany, Stratmann and Baur (2002) find evidence of tier-based incentives. They determine that MPs elected in the single-member district decided by plurality (SMDP) tier were much more likely to be assigned to committees that handled legislation with targetable rewards than those elected in the proportional representation (PR) tier.[2] Using data from and Shugart et al. (2021), in the second empirical section of this chapter we will examine whether MPs elected under systems with intraparty incentives to cultivate a personal vote—those with high AP scores—are likely to receive committee assignments that give them the ability to direct resources to their constituents.

12.2 The Size of the Committee System

Legislative committee systems can vary along a number of factors, and some of these factors can be tweaked to empower individual MPs. Perhaps the most foundational design feature is whether there are enough committees to allow members to respond to their constituencies. If electoral systems

[1] They do not find support for an argument regarding the differential effect of district magnitude.

[2] Pekkanen et al. (2006) find that after Japan's adoption of a mixed-member independent system, MPs elected in the single-member district tier (where personal vote-seeking is high) *and* those elected in the PR tier (where personal vote-seeking is low) were assigned to particularistic committees. They reason that this is because MPs are nominated in both tiers and parties reward SMDP losers who ran strong campaigns, thus muddling tier-based incentives.

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reward candidates for their personal reputations, we expect elected politicians to increase the number of committees in the legislature. The number of committees in an assembly should thus correlate with AP scores.

VanDusky-Allen and Touchton collected data on committee organization in seventy-seven legislatures (we have AP scores for seventy of these legislatures). They explored connections between clientelistic parties and the size of the committee system, arguing that clientelistic exchanges require many committees to distribute specific goods to constituencies. When the term "clientelism" is used to characterize relations between individual Members of Congress (MCs) and constituents (rather than between parties and constituents), it is easy to link the concept to personal vote-seeking behavior. We see important differences between clientelism and personal vote-seeking, and for this reason are careful that our empirical tests do not simply treat AP as a proxy for clientelism. In what follows, we stick to VanDusky-Allen and Touchton's empirical strategy, including controls for a number of confounders, specifically an indicator of whether an MC's political party is programmatic or not.

The left plot of Figure 12.1 charts the distribution of the *number of committees* in VanDusky-Allen and Touchton's (2020) dataset. The average legislature in the sample contains twenty-two committees, but some have more than fifty (Mexico, Nigeria, and Philippines); even if we discount these as outliers, the distribution of the *number of committees* appears to have a long tail, which raises the possibility of "overdispersion," which we explore in more detail below. The right plot of Figure 12.1 displays distributions of the *number of committees* by AP level—an initial look at whether legislatures create more

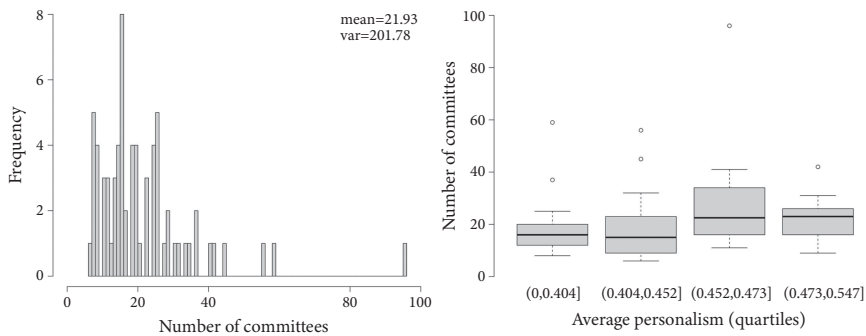


Figure 12.1 Distribution of number of committees Marginal and conditional (on AP) distributions of the *number of committees* in a sample of seventy legislatures observed in 2015 (data from VanDusky-Allen and Touchton (2020))

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standing committees as the incentives for intraparty competition increase. The horizontal lines in the gray boxes indicate the median number of committees, and each box displays the minimum, maximum, potential outliers, as well as the first and third quartiles of the distribution of *number of committees* for four levels defined by quartiles of the sample distribution of AP scores. The plot provides some prima facie evidence of an association between AP and the number of committees in a legislature. Among systems with the highest AP scores (0.53 to 0.56), the median number of committees is twenty-four, whereas it is only nineteen in systems with the lowest scores (below 0.34). We investigate whether this association, which may seem a bit tenuous, holds if we ungroup AP scores, control for potential confounders, and specify a model that correctly captures the fact that the outcome, *number of committees*, is a potentially overdispersed count variable.

Our model of the *number of committees* controls first and foremost for the *type* of linkages between parties and constituents. VanDusky-Allen and Touchton include an indicator of party linkages from the Varieties of Democracy (V-DEM) project (Coppedge et al., 2022). The index (`v2psprlnks_osp` in V-DEM, which we relabel *programmatic parties*) is a continuous measure scored from low or 1 (major political parties in the system tend to reward constituents with private goods) to high or 11 (parties relate to constituents by presenting broad policy programs). One could be concerned that party linkages are a post-treatment phenomenon shaped by a system's personal vote-seeking incentive structure. However, we do not see it that way because politicians can bolster their personal reputations and recognizability in myriad ways that do not involve delivering private transfers or club goods. Likewise, clientelism can thrive in party-centered electoral systems. We also control for the *number of legislators*, since the sheer size of a legislative chamber drives the need for more seats on committees. *Parliamentary regime* distinguishes fusion of powers systems from the separation of powers arrangements that characterize presidential regimes. The latter incentivizes the legislature to create committees to craft its own legislation or to alter legislation proposed by the executive. Similarly, in *bicameral* legislatures, one chamber may propose legislation that is not preferred by members of the other chamber, thus requiring review and revision. We code *constitutional constraints* as 1 if the country's constitution contains provisions regulating the creation of legislative committees. We expect constitutional constraints to restrict the size of the legislature's committee system.

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We exclude controls for two confounders in VanDusky-Allen and Touchton (2020). First, they control for a legislature's *effective number of parties* and predict that more parties result in more bargaining and coalition-building opportunities. Coalition government likely adds issues to the government's agenda, which leads to the need for more committees to handle these additional issues. However, we perceive the effective number of parties as a post-treatment variable with respect to electoral incentives, in the sense that the relative sizes of parties are a function of AP and the Total Duvergerian Effect (TDE) scores and we seek to assess these scores' association with committee system size. Second, we drop their indicator for *electoral rules*, which they operationalize using electoral system families (majoritarian, mixed, and proportional). As we established in Chapters 3–6, incentives imposed by electoral systems often vary as much *within* families as they do across them, making this operationalization too simplistic. We instead include our novel, nuanced, and carefully constructed indicators of electoral system incentives (AP and TDE) in our models.

Table 12.1 displays estimates from three models. Models 1 and 2 are Poisson regressions, which are specifically tailored to capture variation in count variables such as the number of committees in a legislature. Model 1 only includes our summary measures of the inter- and intraparty incentives generated by electoral systems. The coefficient estimate in this model (1.56, SE: 0.51) indicates that legislatures in systems with higher AP scores are likely to have more committees. Higher TDE scores are also associated with more committees in a legislature. Though we cannot think of an obvious reason why stronger, more constraining electoral systems should do so, this estimate is consistent with VanDusky-Allen and Touchton's finding that the effective number of parties in a system, and the proportionality of its electoral rules, correlate negatively with the number of committees. In our case, systems with higher TDE scores tend to be majoritarian and tend to have a lower effective number of parties, which explains the positive coefficient estimate on this variable.

The magnitude of the estimated coefficients is harder to gauge in non-linear specifications such as the Poisson regression model. Plot (a) of Figure 12.2 displays our expectations about the number of committees a typical legislature would have as the AP scores increase from their minimum to maximum values in the sample, along with confidence intervals. As AP increases from 0.3 to 0.6, the expected number of committees increases from 16.95 (95% CI 14.6:19.7) to 27.04 (95% CI 23.5:31.1), a net increase of 11.

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Table 12.1 Predictors of number of legislative committees: Data at the country level, with units corresponding to seventy legislatures observed around 2015. Columns 1 and 2 present unstandardized regression coefficients from Poisson regression models of the number of standing legislative committees as a function of AP, TDE, and additional controls. Column 3 presents coefficients from a negative binomial model of the same outcome using *number of legislators* (log scale) as an offset

	***Outcome*: Number of committees**		
	(1)	**(2)**	**(3)**
AP	1.556***	0.769	1.089**
	(0.512)	(0.509)	(0.450)
TDE	0.290***	0.161***	0.189***
	(0.048)	(0.057)	(0.052)
Programmatic parties		−0.190***	−0.183***
		(0.035)	(0.032)
Number of legislators		0.001***	
		(0.0002)	
Parliamentary regime		−0.271***	−0.251***
		(0.066)	(0.059)
Bicameral legislature		0.304***	0.401***
		(0.072)	(0.053)
Constitutional constraints		−0.178**	−0.122**
		(0.071)	(0.059)
GDP per capita (log)		0.047	0.093**
		(0.042)	(0.038)
Constant	2.126***	2.476***	1.981***
	(0.235)	(0.417)	(0.383)
Observations	70	70	70
Log Likelihood	−392.9	−307.3	−1,317.6
$\widehat{\theta}$			7.27***
se($\widehat{\theta}$)			(0.69)
Akaike Inf. Crit.	791.8	632.5	2,651.3

Note: *p<0.1; **p<0.05; ***p<0.01

Model 2 includes controls for the various confounders discussed above. As in model 1, the point predictors for both AP and TDE are positive, but the coefficient on AP is no longer statistically distinguishable from 0. Coefficient estimates on all controls are consistent with those reported in VanDusky-Allen and Touchton (2020). Consistent with VanDusky-Allen and Touchton's argument, systems with programmatic (rather than personalistic) parties tend

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to have fewer committees, as do parliamentary regimes and countries with constitutional constraints. By contrast, the number of lower house committees increases in bicameral systems. Crucially, the number of legislators in the lower house is also positively associated with the number of committees in lower or only chambers.

We mentioned above that the distribution of the *number of committees* could be over-dispersed—that is, the variance of the distribution of the outcome conditional on predictors could be larger than its mean, which violates the Poisson distribution's assumption of equal mean and variance. To account for this possibility, model 3 in Table 12.1 provides estimates of a negative binomial regression model. This model adds a parameter (θ) that captures potential overdispersion; we can estimate its magnitude. The model uses the system's *number of legislators* as an offset because large legislatures have more members to fill seats in additional standing committees. The estimate of θ (7.27) confirms the presence of overdispersion.[3] Once we correctly account for overdispersion by using a negative binomial model, our estimate of the effect of AP increases in size and recovers statistical significance. Plot (b) of Figure 12.2 displays the expected number of committees as AP increases based on model 3. Our substantive conclusions remain basically unchanged: the expected number of committees increases from 17.9 (95% CI 15.7:20.3) to 24.8 (95% CI 21.8:28.1).

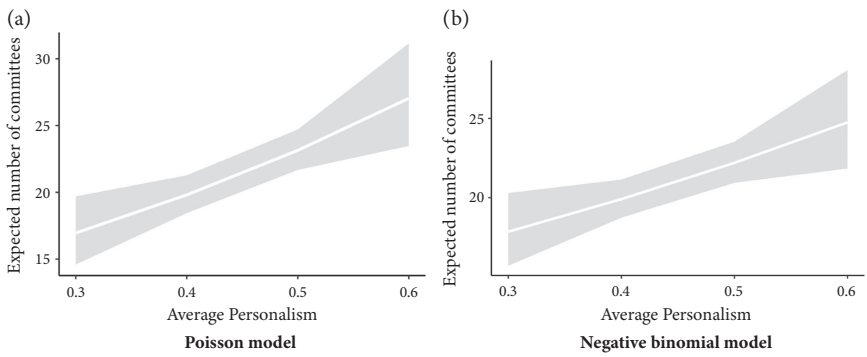


Figure 12.2 Effect of AP on number of committees The plots display the expected number of committees in a typical legislature (defined as one with mean or median values of predictors) as we increase the level of personalism from low to high sample values of AP (plot (a) is based on model 1 (Table 12.1), and plot (b) on model 3)

[3] We use the log of number of legislators as an offset, but the model yields similar results if we avoid the log scale and/or if we include the number of legislators as a predictor, rather than as an offset.

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12.3 Assignment of MPs and MCs to Committees

Shugart et al. (2021) focus on how parties in parliamentary systems decide how to assign their members to committees. They argue that parties are likely driven by two motivations. First, they want to match members to committees that best suit their attributes, including pre-legislative occupational experience, prior local-level electoral positions, and gender. Having committee members with "expertise" allows the party to draft better policies. Second, they reason that an MP's committee assignment should be a function of their "electoral constituency" situation. Parties should ensure members obtain committee assignments that allow them to serve the interests of their constituents, especially when they are elected in very competitive races—that is, in a swing district that could very plausibly be won by the party's opponent in the next election. More relevant to our study, they argue that parties should also be particularly attuned to making committee assignments that allow MPs to claim credit for projects that benefit the district when voters are given a "complex vote"—one that can be cast to favor one or more candidates nominated by a party over other co-partisans.

Some legislative committees concentrate on high policy—management of the economy, foreign affairs, the legal/constitutional system, etc. Others may focus on policies related to public goods that offer diffuse benefits to large groups of citizens, such as healthcare, education, public utilities, and environmental protection. Neither type permits individual MPs to claim responsibility for delivering tangible goods or benefits to their constituents. To maximize legislators' chances of re-election, Shugart et al.'s Electoral-Constituency Model of committee assignments maintains they should be assigned to *distributive committees* where voters can signal a preference for specific candidates *within* a party. Distributive committees deliberate over policy benefits which tend to include projects that can be targeted at a particular electoral district, such as agricultural subsidies, road and bridge projects, and the location of rail lines and stations (Shugart et al., 2021). The key characteristic of such policies is their "geographic disaggregation." The ability to target government spending projects allows MPs to cultivate their personal reputations—and be rewarded in systems with high AP levels. Based on their reading of committee jurisdictions and a survey of country experts, Shugart et al. (2021) code committees that focus on agriculture, construction, fisheries, public works, and transport as primarily distributive.[4]

[4] For more detail on how they classify committees, see Chapter 2 of Shugart et al. (2021).

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Shugart et al.'s "complex vote" concept is closely related to some of the electoral rules used to determine our AP scores (e.g., ballot type, vote pooling, and the number and level of votes cast). We therefore similarly hypothesize that candidates competing in districts characterized by relatively high AP scores will be more likely to be placed on distributive committees. Since low-AP electoral systems do not permit voters to reward individual MPs or MCs for notable attributes or accomplishments like securing a government spending project for the district, it is less important for them to be assigned to a distributive committee. Yet in high-AP systems, being able to claim credit for delivering a targeted project to one's district is an efficient way to cultivate a personal vote.

We assess this hypothesis using data from Shugart et al. (2021), who collect information on candidates running for legislative positions, and the committees to which successful candidates are assigned. The sample includes electoral systems for which individual AP scores vary *within* systems—Bolivia post-1996 (mixed-member compensatory (MMC)), Bolivia pre-1990 (*closed-list proportional representation (CLPR)*, Hare), Bolivia 1993 (CLPR, Sainte-Laguë), Germany (MMC), New Zealand post-1995 (MMC), Portugal (CLPR), pre-1996 Japan (SNTV), and post-1996 Japan mixed-member independent (MMI). Thus, MPs and MCs, within and across these cases, face varying incentives to cultivate a personal reputation—leading them to be assigned individual-level AP scores. In forty legislative elections across these six countries, we observe 130+ values of AP ranging from 0.36 to 0.57. Consistent with our hypothesis, the frequency of assignment to a distributive committee is about 21% among MPs/MCs with AP scores below median sample values, and 32% for those with above-median AP scores.

To further explore this correlation, we build a logistic regression model in which the outcome, *distributive committee*, is an indicator that takes a value of 1 if an MP/MC is assigned to at least one distributive committee. Table 12.2 displays estimates of three such models. As in Chapters 9 and 10, we start with models that omit system fixed effects because the lion's share of variation in AP comes from between-systems information. The (baseline) model 1 includes AP and TDE scores to capture electoral incentives to seek membership on a distributive committee. This model establishes that AP is positively correlated with distributive committee membership.[5]

[5] Though we would prefer to account appropriately for the multilevel nature of the data by estimating standard errors clustered at the system level, we only have eight "grouping" units. The paucity of grouping units makes it impossible to estimate a multilevel model while maintaining stability of our estimates (Cameron and Miller, 2015; Hazlett and Wainstein, 2022).

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Table 12.2 Predictors of legislator membership in distributive committees: Legislator level data from Germany, pre-reform Japan, post-reform Japan, New Zealand, three Bolivian electoral regimes, and Portugal. Point estimates are coefficients from logistic regression models of whether a legislator is a member of a distributive committee as a function of AP, TDE, and additional controls.

	Outcome: Distributive committee		
	(1)	(2)	(3)
AP	3.120***	3.140***	1.700
	(0.341)	(0.366)	(3.000)
TDE	0.046*	0.042*	−0.092
	(0.024)	(0.024)	(0.117)
Female		−0.265***	−0.312***
		(0.071)	(0.075)
Incumbent		−0.103**	−0.369***
		(0.046)	(0.049)
Minister		−0.657***	−0.596***
		(0.123)	(0.143)
Local assembly		0.296***	0.391***
		(0.051)	(0.057)
Constant	−2.600***	−2.550***	−3.330***
	(0.158)	(0.168)	(1.030)
Observations	11,331	11,243	11,243
Country-electoral regime fixed effects	No	No	Yes
Log Likelihood	−6,313	−6,238	−5,937

Note: *p<0.1; **p<0.05; ***p<0.01

Model 2 adds a number of individual-level predictors. Supporting the additional logic put forward by Shugart et al. (2021), we learn that female legislators, incumbents, and cabinet ministers are less likely to be members of distributive committees, while those with previous experience in a local assembly are more likely to serve on such committees. Finally, model 3 includes country-electoral regime fixed effects to control for the possibility that different countries may have different baseline propensities to staff distributive committees. It needs to be stressed however, that the inclusion of fixed effects means that we in practice ignore cross-system information in our estimation of the AP coefficient. When we do this, the association between AP and membership in a distributive committee is no longer statistically different from 0. Again, this is not particularly surprising given that we are ignoring the fact that

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some systems have incentives that stress the need to get cultivating a personal reputation right while others place no importance on such dynamics.

Figure 12.3 illustrates the substantive importance of our findings by showing how the probability of membership on a distributive committee changes as an MP's/MC's AP score increases from minimum to maximum sample values (based on estimates from model 2, which omit country fixed effects). In these predictions, we consider the baseline case of an average incumbent female legislator with no previous cabinet portfolio and no previous local assembly experience. At minimal values of AP (=0.36), this legislator has a probability of about 0.149 (95% CI 0.13:0.17) of being assigned to a distributive committee; her probability of inclusion would improve to 0.254 (95% CI 0.22:0.29) if she competed in a system with a maximal AP score. This is a discernible effect of relatively large magnitude. To think about it differently, imagine that each year an MP faces a probability x of being assigned to a distributive committee. In a system with the lowest observed AP values, she would have to wait an average of 6.7 years to obtain her first distributive committee assignment; in a system with the highest observed AP values, she would only wait 3.9 years.[6]

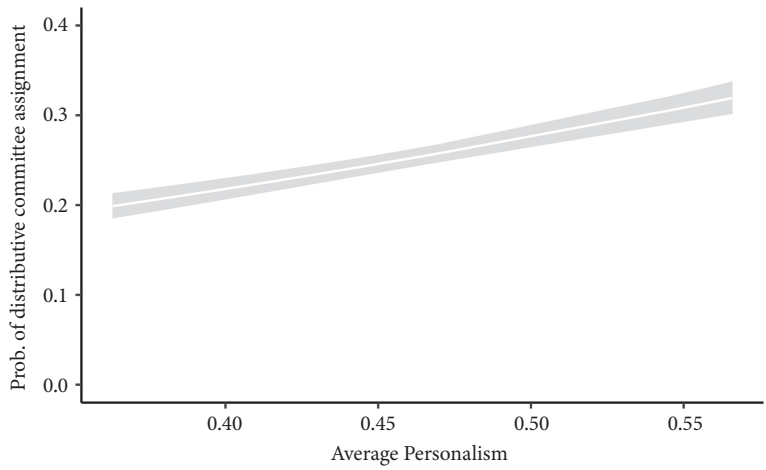


Figure 12.3 AP effect on distributive committee membership The figure plots the probability that an average legislator will be assigned to a distributive committee conditional on the level of personalism, from low to high sample values of AP (based on model 2, Table 12.2)

[6] As we have done in other chapters, we also estimated a logit model of distributive committee assignment as a function of *M*, ballot type, and their interaction in an effort to ascertain whether our data are consistent with the intuition in Carey and Shugart (1995) about incentives to cultivate a personal vote in open-ballot systems. We did not find this to be the case.

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12.4 Conclusion

Political scientists have long known that electoral systems create incentives that motivate politicians to either promote their own personal reputations or bolster their party's image. In previous chapters, we have shown how high-AP systems engender personalizing campaigns and involve home styles that lead representatives to connect closely with their constituents. This chapter draws on a survey of the committee structures of seventy legislatures (VanDusky-Allen and Touchton, 2020) as well as data on legislators' committee membership in twenty-eight legislative sessions across six electoral systems (Shugart et al., 2021). It presents further evidence that electoral systems affect the behavior of politicians in representative assemblies. For instance, electoral regimes that institute strong personal vote-seeking incentives promote the creation of larger committee systems and foster opportunities for representatives to serve on "pork-barrel" committees.

The chapter establishes that our AP scores, which distill a wealth of information about the myriad interparty incentives generated by electoral systems, are sufficient to account for variation in both legislatures' committee structures and individual attempts to serve on distributive committees. Regarding the party personnel data on which we base our second analysis, Shugart et al. (2021) sought to quantify factors such as electoral vulnerability in their assessments of legislators' behaviors, but without a truly comparative measure that can transcend cross-national and longitudinal differences (like AP scores) they can only estimate party-specific models of outcomes of interest. This restriction makes it difficult to ascertain whether testable implications of their theoretical arguments truly apply across time and space, or whether they are idiosyncratic findings linked to specific countries and time periods.

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13
Party Unity

The previous chapters have established that electoral systems—and the Average Personalism (AP) scores they generate—can affect how politicians conduct their campaigns, whether they prioritize constituency work, and even the kinds of legislative institutions, including committee systems, under which they choose to operate. These effects can in turn shape the extent to which *parties*—a fundamental organizational unit of modern democracies—can operate as cohesive units: campaigns that emphasize distinctions between co-partisans can damage party reputations among voters, time devoted to constituency work reduces the time available for policy work, and pork-barrel committees can exhaust the funds needed to pursue the party's policy goals.

Despite claims to the contrary (e.g., Krehbiel, 2000), parties *do* matter. In many of the most (in)famous episodes in recent political history, the cohesive, monolithic facades of parties that we often take for granted cracked—revealing important tensions between co-partisans. During the Brexit votes of 2019, for instance, the UK Conservative Party experienced significant dissent among its ranks, resulting in the expulsion (and later readmission) of several party members. In the US House of Representatives, a dramatic sequence of failed votes in 2023 evidenced deep fractures within the Republican Party. After members of a populist faction within the party ousted Speaker Kevin McCarthy, the House had no permanent leader (and thus could not conduct any meaningful business) for more than three weeks. The newsworthiness of these exceptional episodes prove the rule. Party unity seems to have played a key role in defining these and other politically salient events. It is therefore important to understand the relationship between electoral system incentives and *party unity*, which goes beyond merely toeing the party line during legislative votes and involves many aspects of party members' public-facing activities.

This chapter explores whether electoral rules that incentivize party members to distinguish themselves from their co-partisans (i.e., their induced AP scores) affect the observed levels of party unity. First we will describe the sources of party unity, making a distinction between having copartisans with shared preferences and the ability to enforce discipline where it might not otherwise occur. Then we will point out how various measures designed to

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capture levels of party unity are related to homogeneity and/or discipline, making the case for why connections through social media are particularly suitable for our purposes. We will then present an empirical analysis of data from a context in which it is easy to argue that Members of Parliament (MPs) are freely expressing homogeneity (or lack thereof): We look at decisions to amplify in-party/out-party messages by retweeting (or rebroadcasting) them on Twitter (currently known as X). We conclude by reminding readers that electoral rules that encourage the selection of homogeneous representatives are just one source of the unity or disunity we observe among copartisans as they go about their jobs as representatives.

13.1 Sources of Unity

Party leaders typically seek to maintain the integrity of the party label and ensure its survival as an institution; both goals require party members to behave more or less as a cohesive bloc. Levels of unity—the extent to which party members share like positions and behaviors across their public-facing activities—can vary across parties for a variety of reasons. For instance, members of the same party can behave similarly to one another because they share sincere preferences. Just like voters, legislators have private preferences over which policies should be enacted, and particular visions of what government ought (and ought not) to encourage or enforce. Parties can thus present cohesive fronts precisely because legislators who have similar individual preferences select into membership.[1] Parties then give like-minded or homogeneous politicians the coordination tools needed to translate their preferences into policies—which can then manifest as party members who vote the same way on bills, who prioritize similar issues in their public discourse (both on the campaign trail and in office), and who agree on the organizational fate of their party (Aldrich, 1995, 2011).

Despite the prospect of "naturally occurring" homogeneous preferences and fealty to a purpose, elected officials might find reasons to disagree among themselves, even with their co-partisans. Some parties have very clear ideological programs, sometimes even extreme ones, while others might espouse vague statements of principle on a limited number of topics. In the latter party type, copartisans elected to the same representative body may have somewhat dissimilar priorities. Regardless of the clarity of a party's priorities, members

[1] Krehbiel (2010) maintains that parties are theoretically irrelevant after accounting for individual preferences.

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of the same party might represent very different constituencies, such as rural vs. urban districts. It is easy to see how two such copartisans might disagree on adopting a grain embargo. In a federal system, some representatives from the president's party might come from states with powerful governors from an opposition party, while others represent states led by friends, protégés, and copartisans of the president. Across a variety of institutional contexts, legislators might feel cross-pressured when it comes time to vote on a piece of legislation, as they answer to multiple *principals*, or actors who have a bearing on their political fortunes (Carey, 2007). Yet even where such sources of dissension are present, party elites may have tools at their disposal to generate party unity.

For instance, party leaders can manipulate endorsements, fundraising, and (in some systems) ballot access to incentivize members to toe the party line. If the electoral system is characterized by closed ballots, voters are prevented from undoing the efforts of leaders to promote one candidate over another. Mechanisms beyond the electoral arena may be available to achieve similar displays of party unity. Cameral rules that give party leaders control over valuable resources—such as the legislative agenda and committee assignments—which can supply the necessary carrots and sticks to induce discipline and cohesion among rank-and-file members.[2] The right committee assignment, for example, can be key to a representative's prospects for re-election.

We want to distinguish between unity that comes from electoral rules that lead to homogeneous partisan blocs and unity that comes from sources like the tools leaders build into cameral procedures. To avoid the kind of bias that would result from studying the connection between AP and party unity in contexts where disciplining plays a substantial role (thereby inflating unity, for instance), we analyze data from a context in which we would not expect party leaders to be enforcing a high level of unity above what comes from seemingly agreeing with one another. We are willing to assume that Members of Parliament (MPs) are freely expressing homogeneity (or the lack thereof) when they make decisions to amplify in-party/out-party messages by retweeting (or rebroadcasting) them on Twitter. In the next section we discuss more frequently examined measures of party unity, highlighting the extent to which they can distinguish between homogeneity and discipline.

[2] The role of such rules forms the core tenet of the influential *procedural cartel* theory developed by Cox and McCubbins (2002, 2005) to explain outcomes in the US House of Representatives. The theory has since been found to apply in other contexts as well (e.g. Jones and Hwang, 2005).

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13.2 Observing Party Unity

The most commonly used empirical indicator of party unity is voting as a bloc on matters related to adopting legislation. Legislators vote on the final passage of bills, individual articles of bills, amendments to bills, what to put on/leave off the agenda, what procedures to adopt for conducting their business, as well as more trivial matters such as when to convene a session, when to go to lunch, and when to end a session. When such votes are recorded through a "roll call," individual decisions can be used to measure a number of concepts of interest—including party bloc unity. The literature is full of alternative measures of legislative voting unity, including Rice scores (Rice, 1928), roll rates (Cox and McCubbins, 2002), defection rates (Tavits, 2011), and various weighted variants (e.g., Carey, 2003).[3]

Such measures can certainly reflect heterogeneity in legislators' preferences; indeed, a large body of literature uses roll-call votes to measure preferences and ideology (e.g., Clinton, Jackman, and Rivers, 2004; Poole and Rosenthal, 2011). However, the sample of votes taken via roll call may not be representative of all votes. In most legislatures, calling the roll is just one of many possible voting procedures, which also include voting by voice, show of hands, sitting/standing, etc. And since many legislatures allow their members to vote on the procedure that will be used to take a vote, strategic use of the roll-call option (to avoid outcomes that would be embarrassing to the party, for instance) can potentially bias any measures derived from these types of votes (Carrubba et al., 2006; Ainsley et al., 2020). As a result, it is difficult to use roll-call vote results (and the measures of unity based on them) to distinguish between rational responses to the incentives imposed by electoral rules and other tools available to party bloc leaders.

Alternative empirical indicators of unity can help us isolate individual members' responses to the unique incentives they may face. It is possible to identify measures obtained from contexts in which party leaders probably do not care as much about behaviors reflecting unity or disunity and over which they have little control; measures that are more likely free of party leaders' overt exercising of rewards and punishments allow us to study the direct relationship between electoral rules and unity.

[3] The list of applications of these measures includes Haspel et al. (1998); Herron (2002); Faas (2003); Thames (2005); Desposato (2006); Carey (2007); Kunicova and Remington (2008); Shomer (2009, 2016, 2017); Kerevel (2010); Sieberer (2010); Stecker (2011); Batto (2012); Coman (2012); Bagashka (2014); Gherghina and Chiru (2014); Martin (2014); Olivella and Tavits (2014); Rich (2014); Stoffel (2014); Cordero and Coller (2015); Stegmaier et al. (2016); Pinto (2017); Rombi and Seddone (2017); Shin and Lee (2017).

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A few studies have attempted to pinpoint elected representatives' preferences by surveying MPs/Members of Congress (MCs). For instance, André, Depauw, and Beyens (2015) use a question from the multi-country, multi-wave PARTIREP project that asked respondents how they would vote if constituents in their districts and leaders of their party bloc held opposing preferences. Itzkovitch-Malka and Hazan (2017) examine answers to a question from the same survey about how frequently a respondent found his or her preferences varied from those of his or her party to construct a measure of "party agreement." Finally, Di Virgilio, Gianetti, and Pedrazzani (2015) surveyed Italian parliamentary candidates on their own and their party's placement on an ideological continuum to construct an indicator of party bloc homogeneity.

Yet surveys of elected representatives are rare, and they are subject to other important problems (some of which we discussed in Chapter 8). For example, they often present legislators with hypothetical scenarios to which they are expected to react in the same way as they would in real circumstances where the stakes are much higher. The risk that social desirability (i.e., a source of bias in which perceived norms make respondents more likely to offer a socially desirable answer, rather than an honest one) and interpersonal comparability (i.e., the possibility that people interpret questions differently) affect respondents' answers compounds this lack of realism and makes it hard to argue that the available instruments offer access to the kind of non-strategic displays of unity we seek to analyze.

An alternative strategy focuses on what legislators say in their real interactions with peers and voters. For instance, Becher and Sieberer (2008) use speech data converted to text and Sieberer and Mueller (2015) employ text-as-data models to evaluate how members of the German Bundestag justify their voting behavior; both studies seek to compute measures of homogeneity and party bloc unity. Similarly, Ceron (2015) constructs measures of bloc homogeneity based on the text of debates at party congresses in Italy where parties define their policy stances with relatively little public scrutiny.

These text-based measures offer substantial advantages over roll-call votes and closed-ended response surveys. For one, politicians have a lot to say! This has the potential to generate a substantial amount of data that could be leveraged to learn whether politicians behave similarly to their co-partisans—if we could easily process the variety of formats in which this data can come. Unfortunately, such data does not come in easy-to-access, standard sources across countries, which is where most of our variation in electoral rules occur.

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Yet as Ceron (2015) points out, text-based approaches can have the advantage of moving the empirical measurement of homogeneity/heterogeneity away from the parliamentary environment. While party whips loom large during public legislative proceedings, they have a more limited reach outside the confines of parliament, and their interest in controlling MPs' actions decreases when the stakes of the behavior in question are less dramatic and explicit (Motolinía, n.d.). Speeches and other forms of communication are typically less obviously impactful than legislators' actual votes, perhaps making control of such behaviors less pressing. In forms of communication that are less regulated by party elites, we can thus more clearly observe how electoral rules affect MPs' behavior.

Party leaders typically demonstrate minimal concern about (and have limited ability to exert control over) politicians' use of social media platforms such as Facebook and Twitter (now X). MPs can use social media platforms to create posts containing text and images that indicate the extent to which they agree or disagree with the party line. They can also engage in even lower-cost, lower-stakes behaviors (e.g., retweeting content or following a fellow politician's account) that are unlikely to be subject to strong party discipline; we will examine such non-strategic, preference-driven actions as a signal of party unity/disunity.

Social media platforms generate plentiful data that is far easier to collect across countries than speeches and other documents generated by legislators. Relatively simple commands issued to platforms' application programming interfaces (or APIs) can make obtaining data on relevant behaviors relatively easy. And even if companies can now choose to remove access to their APIs, data collected when this was not an option can still be used to study legislator behaviors. We rely on data collected by Van Vliet (2020) on the Twitter activity of legislators in 24 countries from January to December 2019.[4] We focus on the act of *retweeting*—the choice to share and re-broadcast content generated by other legislators—which can be understood as an endorsement of the original message. The dataset contains over 400,000 retweets between MPs—far more data points than we could have generated with surveys or text collection efforts.

Social media data can suffer from at least two potential drawbacks. First, some legislators do not tweet or retweet any messages—or ignore social media entirely. If they refrain from engaging on such platforms because they seek

[4] We use data from Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Luxembourg, Malta, Netherlands, New Zealand, Norway, Poland, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United States.

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to maintain a unified party image, this could result in selection bias. Yet this is unlikely to be a concern in the sample we analyze, because an average of two-thirds of legislators are on Twitter (Van Vliet, Törnberg, and Uitermark, 2020). In fact, and in our data, the correlation between average AP score in a country and the proportion of the country's legislators who are active on Twitter is *negative* (if small), suggesting legislators in contexts that generate more incentives to cultivate personal reputations are not more inclined to be on the social media platform than legislators where such incentives do not exist.

A second possible concern is that we assume party elites care less about retweets than they do about other forms of public behavior. If this is *not* the case, then such elite attention would exacerbate the same kinds of issues we identified with measures of unity that rely on roll-call votes, for example. However, while it is possible that elites monitor ordinary party members' behavior on social media, it seems likely that this kind of attention would be reserved for original tweets and relatively extended comments that garner public attention, rather than *all* social media activities (including liking and retweeting). Thus, overall, we are convinced these data are more useful for our purposes than other available sources of information on party unity.

Social Media Networks as Windows into Unity

Every retweet requires a pair of legislators—the original content creator and an individual who chooses to rebroadcast their message. Such behavior is thus best understood as forming *networks* among legislators in a country—to which a variety of well-established analytical techniques can be applied to shed light on how electoral system incentives impact whether party members present a unified front. Figure 13.1 depicts three such networks for MPs in the Netherlands, France, and Slovenia.[5] We use the information contained in this relational data to evaluate how much legislators choose to engage with content generated by members of their own party or with content created by members of other parties. For example, the "clumps" of nodes in the first two panels of Figure 13.1 suggest that party members in the Netherlands and France present relatively cohesive, unified party fronts. The last panel suggests that in Slovenia party members are less likely to form unified, party networks.

[5] For visual clarity, these figures depict *binary*, *undirected* networks—that is, networks in which edges (or connections between legislators) are either present or not, depending on whether a legislator ever retweeted content by another, regardless of who created the original content. Our data contains information on the direction and frequency of these connections, which we use in subsequent analyses.

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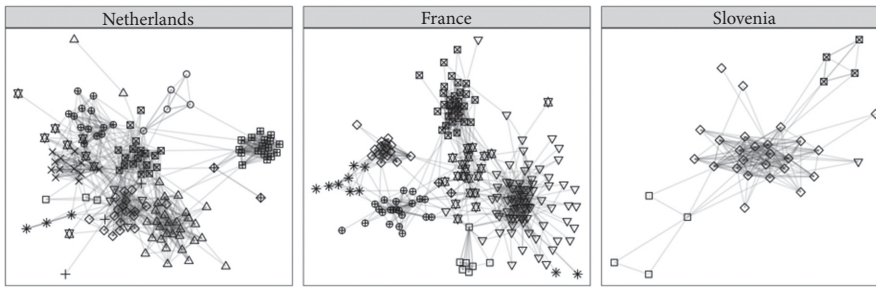


Figure 13.1 Retweet networks in The Netherlands, France, and Slovenia Each node in the network is an MP/MC, with their country-specific parties indicated by different shapes (e.g., squares, triangles, etc.). An edge between them indicates a decision to retweet their content at any point in 2019.

Decisions to retweet messages from co-partisans can help us understand how electoral incentives shape the extent to which parties present a cohesive, unified front to the general public. But how do we measure parties' cohesiveness using the ties that are formed through decisions to retweet? In particular, how can we evaluate whether the incentives generated by the formal rules used to elect a legislator affect whether she curates a Twitter presence that emphasizes a cohesive public image of her party?

We first consider the extent to which legislators in countries across the AP spectrum tend to form connections within and across their own parties. Since we expect legislators facing stronger incentives to cultivate personal reputations to try to differentiate themselves from their co-partisans, we would expect them to be more willing to signal those differences by being more open to connecting with out-party members. Legislators from countries with low average AP scores are not subject to the same pressures to distance themselves from co-partisans; we should therefore observe that they form fewer/weaker connections with members outside their own parties.

Using data from three countries spanning the range of typical AP values, Figure 13.2 displays the frequency of connections (i.e., the edge weights) in the legislators' retweeting network within and between parties. For each country, the light gray box plot on the left depicts the distribution of edge weights for connections between members of the *same* party, while the darker plot on the right shows the distribution of weights for connections among members of *different* parties. While within-party connections are typically stronger than those that cross party lines, as expected, the distributions of the latter shift upwards (i.e., the lighter boxplots move up) as we move from a country on

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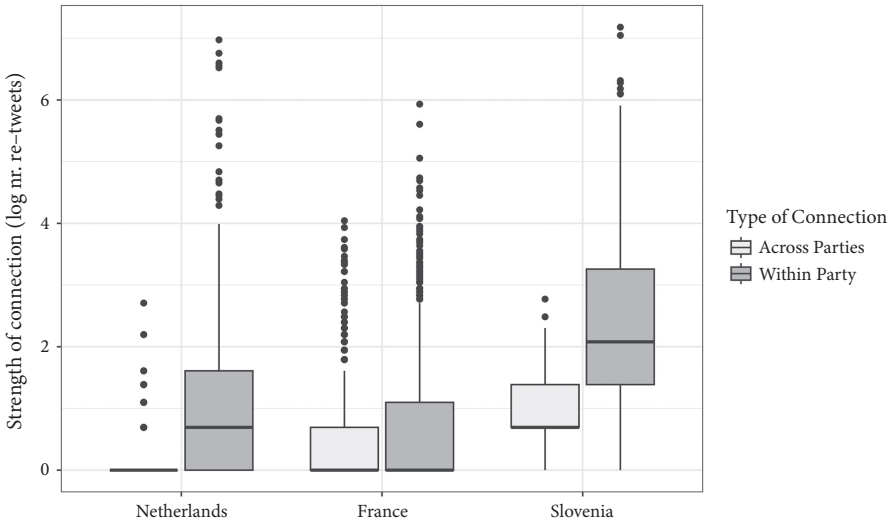


Figure 13.2 Within and across party retweet connections The boxplots display the distribution of connections (i.e., edge weights) within each country

the low end of the typical set of AP scores (the Netherlands) to one in which legislators face some of the strongest AP incentives (Slovenia): systems tend to have stronger across-party ties where AP incentives are strongest. The results also suggest that public-facing social media activity is more desirable in high-AP countries, which have a higher total volume of connections.[6]

Examining the relative frequencies of within-vs.-between party connections in this way helps visualize whether most legislators are at the "core" of their party (their connections are mostly among co-partisans) or on the "periphery" (they connect with several members of other parties). Some of the most common algorithms for locating the positions of vertices in two dimensions are designed to highlight this network-based notion of community cohesion. For example, Figure 13.3 depicts the network created by the retweets of legislators from the three largest German parties in 2019. Bundestag members who are likely to form connections exclusively with co-partisans tend to be placed at the center of their own party "clouds," while those who are more open to

[6] Our focus is on legislator-level variation, but future work could explore these patterns at the country (or chamber-wide) level by treating parties as observed *communities* in the retweeting networks, and using readily available graph-theoretic measures to quantify their distinctness (e.g., Waugh et al., 2009). Two popular examples are modularity (i.e., the difference between the observed fraction of connections among co-partisans minus the expected fraction of such connections under a randomly generated graph) and the global clustering coefficient (i.e., the fraction of all legislator triples that form closed triangles) (Kolaczyk, 2009).

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Figure 13.3 Network of largest parties in Germany The figure maps the directed retweeting networks among members of the three largest parties in Germany in 2019. The three groups tend to form separate communities in the network, indicating substantial unity. Yet some legislators appear closer to other parties than to their own, indicating that the strength of their connections to other co-partisans is weaker than it is for legislators located at the "core" of their parties.

disseminating content generated by members of other parties (or who share little content) are depicted at the edges of their party clusters.[7]

While the relative frequency with which legislators tend to connect with co-partisans (and thus their location within their own party's "clouds") is informative, it relies too heavily on information about their immediate neighbors. Networked data, however, reveals rich information about the nature of higher-order relationships—the characteristics of each node's neighbors, their neighbors' neighbors, the neighbors of those neighbors, etc. We leverage this richer information to construct more sophisticated measures of the extent to which legislators' connectivity patterns influence a party's cohesiveness, and whether they are in their parties' "cores" (or their party-specific *centrality*).[8]

For example, consider two hypothetical parties—one that is almost perfectly cohesive (all members retweeting messages from every other co-partisan except for one lone member, top left plot of Figure 13.4) and another in which members are only minimally connected to others in their party, and any choice not to retweet would result in two disconnected communities (top right plot of Figure 13.4). We compute the disunity contributed by members of both parties, and display their scores using *target plots* at the bottom of the figure:

[7] We used the *Früchterman-Reingold* layout algorithm to generate this spatial arrangement of legislator nodes.

[8] Appendix D contains technical details on how to construct a measure of the extent to which a legislator contributes to her party's disunity using information about connections of connections in network data.

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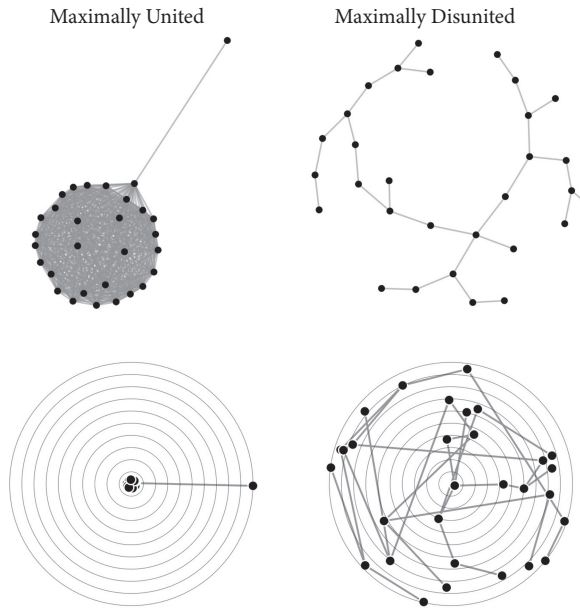


Figure 13.4 Disunity induced by legislators in two hypothetical parties The figure visualizes the networks of two hypothetical parties, along with measures of disunity contributed by their members. The party on the left is almost perfectly united. The one on the right is maximally disunited: removing any connection between its members would fully split the party network in two. The target plots along the bottom place party members with low disunity values near the bullseye, and locate increasingly peripheral members further away from that center.

more (less) central members appear near the center (periphery). As we would expect, the more cohesive party on the left has all but one of its members near the bullseye (or core), while the more loosely connected party on the right pushes all but the most central legislator away from the plot's core, and towards the periphery.

To further illustrate the approach, we compute our network-based measure of disunity using real data from Germany.[9] Figure 13.5 presents target plots like those from Figure 13.4, depicting the disunity scores of Bundestag members by party; nodes sizes are scaled to reflect the AP scores under which they were elected.

[9] We compute this measure by fitting an Additive and Multiplicative Effects (AME) model to each of our country-level retweet networks using the `amen` package in R (see this chapter's Appendix for more information on the AME model). We take 500 samples from the posterior distribution of all models' parameters and latent variables after discarding the first 2,000 iterations of a Markov Chain with stationary distribution equal to this posterior.

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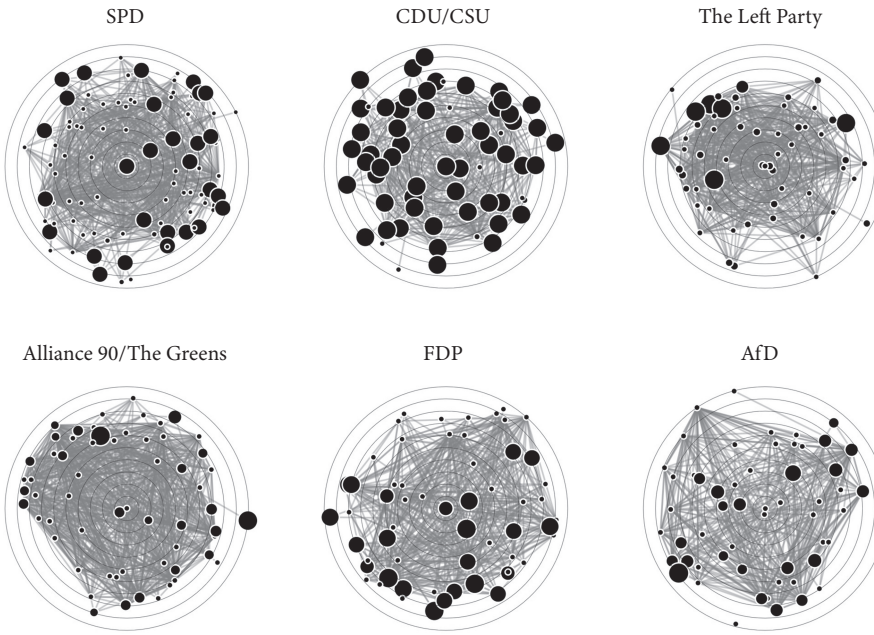


Figure 13.5 Party-specific disunity of German legislators Plots place party members with low disunity values near the bullseye; the dots are proportional to AP scores, suggesting that legislators represented by larger dots were elected in more personalizing environments (networks estimated on retweets from 2019)

Across parties, more central vertices tend to include young party leaders—such as Steffen Bilger (CDU/CSU), Katrin Göring-Eckardt (Alliance 90/The Greens), and Nicola Beer (FDP). These core legislators are also often elected under rules that generate fewer incentives to cultivate personal (rather than partisan) reputations: larger nodes (i.e., those with higher AP scores) tend to be located on the periphery of their parties.[10] The relationship is clearly not perfect, however: many legislators with relatively large AP scores in the CDU/CSU are also part of the party's core, and many legislators with low AP scores in the Alliance 90/The Greens coalition are located in the periphery of their party. There is also substantial variation across parties within the same polity, and even across legislators within the same party—suggesting the importance of considering low-levels of data aggregation when evaluating the determinants of unity.

[10] In the German case, this is primarily the result of differences in magnitude across districts and electoral tiers. Elsewhere, other components of the electoral rules offer enough variation to generate differences in legislators' incentives to cultivate reputations that are distinct from those of their co-partisans.

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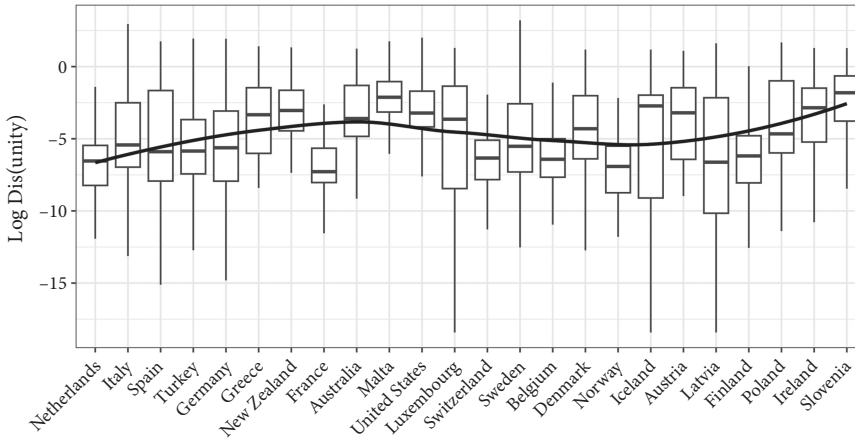


Figure 13.6 Disunity scores across countries The plot presents the distribution of legislator-level (log) disunity across countries in our sample, computed using 2019 retweet networks. Countries are sorted based on average AP score, with lowest average scoring country Netherlands appearing first from the left. The line presents a smooth interpolator of the relationship between average AP score and average disunity, which is non-linear and generally positive.

The same patterns are apparent when we consider legislators across all countries in our dataset. Figure 13.6 shows the distribution of our network-based measures of disunity (in the log scale) for each of the 24 countries in our sample, sorted by average AP score from least personalistic (i.e., Netherlands) to most personalistic (i.e., Slovenia). Two things are apparent from this descriptive exercise: first, the relationship between personalistic electoral incentives and party unity appears to be positive, as expected, though the strength of the relationship is not large (and even appears to be somewhat non-linear). Second, the variation in unity *within* countries far outstrips the variation in unity across them, again highlighting the importance of considering low levels of aggregation when trying to explain partisan unity. We now explore these relationships more systematically with the help of regression models.

13.3 Party Disunity and Electoral System Incentives

Evidence is mixed when it comes to the empirical study of the determinants of party unity—particularly with respect to the effect of incentives generated by electoral rules (Cheibub and Nalepa, 2020). While some theoretical and

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empirical work suggests a connection between personalism induced by electoral rules and lower unity (e.g., Carey and Shugart, 1995; Carey, 2008), others have found weak or no support for a relationship between electoral systems and levels of party unity (e.g., Sieberer, 2006; Folke and Rickne, 2020).

In addition to the measurement issues we discussed above, the empirical study of party unity is complicated by data availability and sample selection issues as well as by the many levels of aggregation at which theorized predictors are expected to operate. For instance, while electoral incentives (such as those captured by our AP score) can vary at the level of the individual legislator, many other theorized predictors are defined at higher levels of aggregation, such as the party (e.g., whether a party is belongs to the government coalition or not) or the system (e.g., whether the system is unitary or federalist). Because these complications can be responsible for the mixed empirical record on the hypothesized relationship between electoral system incentives and party unity, it is important for us to account for as many of these potential issues as possible.

Our own analyses are based on the wide variety of parties and systems represented in the twenty-four countries (and almost 4,000 legislators) we use to build the retweet networks that form the basis of our unity measure. We investigate whether individual behaviors that help parties present a unified front are systematically related to electoral rules, and particularly to the AP scores they induce. To assess whether electoral system incentives are systematically related to party unity—as captured by patterns in the use of social media—we fit a series of linear regression models and linear mixed-effects models of the logarithm[11] of our disunity measure as a function of AP, Total Duvergerian Effect (TDE), and the customary predictors of party unity varying at the individual, party, and system levels. At the system level, we include indicators of whether countries have strong regionally autonomous governments and whether they have presidential regimes.[12] At the party level, we include predictors for whether a legislator's party is in government, its manifesto-based ideology, and its legislative size (in percentage of seats).[13] Finally, and following Carey (2008), we include a cross-level interaction between government status and presidential system. Using the size of all legislatures included in

[11] We use the natural logarithm transformation because our measure exhibits a substantial amount of right-skew. The transformed outcome is much more symmetrical, which increases the plausibility of the conditional normality assumption of our regression models.

[12] We obtained these predictors from the Varieties of Democracy (V-DEM) project data (see Chapter 8 for details).

[13] We obtained these predictors from the combined data table in the PPEG database (Krause and Stelzle, 2024).

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Table 13.1 Models of party (dis)unity: Based on legislator-level data. Point estimates are unstandardized regression coefficients from linear and mixed-linear regression models of legislator disunity as a function of AP and controls

	Outcome: Log of Network Disunity		
	(1)	(2)	(3)
AP	5.79***	59.94	62.84*
	(1.12)	(52.09)	(31.12)
AP^2		−73.14	−70.45*
		(55.24)	(33.12)
TDE	0.29***	0.15	−0.15
	(0.07)	(0.24)	(0.16)
Regionalism			−1.06
			(0.63)
Presidentialism			0.03
			(0.58)
Party In Government?			−0.65
			(0.57)
Pres. × In Government?			−0.10
			(0.95)
Party Ideology			−0.02
			(0.01)
Party Legislative Size			8.08***
			(1.37)
Constant	−8.13***	−16.88	−22.51**
	(0.50)	(11.96)	(7.32)
Country RI	No	Yes	Yes
Party RI	No	No	Yes
Observations	3935	3935	3920
R^2	0.03	0.13	0.65

Note: *p<0.1; **p<0.05; ***p<0.01

our sample, we weight observations by the inverse probability that a legislator in a given country was active on Twitter during 2019 to account for potential selection issues (Hernán, Hernández-Díaz, and Robins, 2004). The estimated coefficients for all models are reported in Table 13.1.

Our first and simplest model fits a linear regression model of the log of disunity to both AP and TDE scores using weighted OLS, in effect modeling the descriptive patterns we identified in the previous section. A positive and significant (if small) effect of increasing AP suggests that, without controlling for any other factors, a legislator faced with higher electoral incentives to cultivate personal reputations is predicted to be further toward the periphery of her

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party than a similar legislator facing weaker electoral incentives to distinguish herself from her co-partisans.

Despite corresponding with long-standing intuitions about the relationship between personalism and party unity, this simple model does a poor job of explaining individual-level variation in unity, accounting for roughly 3% of observed variation in our network-based measure. Model 2 in Table 13.1 improves on our ability to explain observed variation by incorporating country-level random intercepts and the possibility of capturing some of the non-linearities we described in the previous section. This comes at the expense of statistical precision in the estimate of the effect of AP on unity. A fully-specified Model 3, which includes all predictors of unity, increases precision enough to identify a statistically discernible, non-linear effect of increasing AP on unity—an estimated relationship that we illustrate in Figure 13.7.

Contrary to previous studies on the association between personalizing incentives and unity, we find evidence of a non-linear relationship between them. As the literature anticipates (and some literature supports), increases in AP are associated with increases in disunity—*but only up to a certain point*. Unexpectedly, the relationship is reversed after personalizing incentives pass a certain level. While this may explain some of the mixed empirical results

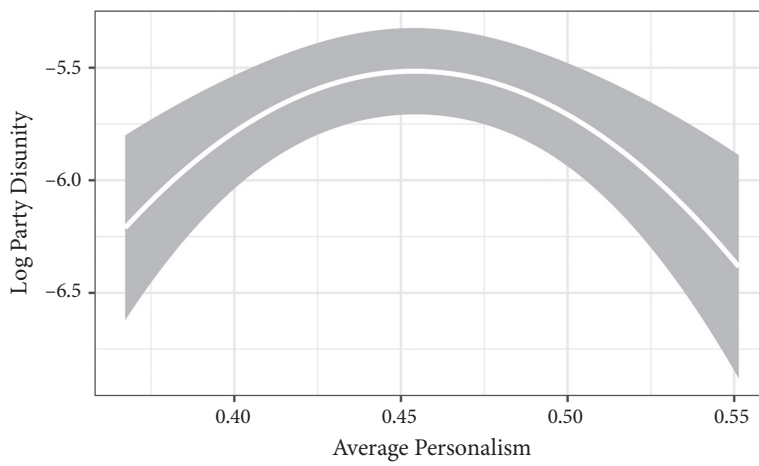


Figure 13.7 Predicted disunity as a function of AP The plot presents the predicted effect of increasing AP on the log of disunity, measured using the network of retweets among legislators, holding all other predictors constant at their observed typical values. Predictions are based on the coefficients estimated using Model 3 in Table 13.1, with 1 s.d. error bars that incorporate variation in random intercepts.

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obtained by prior studies of this relationship, it is also possible that the pattern is unique to the particular measure of unity we propose and use. Indeed, it is possible that brief, virtually no-cost posts to social media are unique. For example, at low levels of AP, it is possible that copartisans are retweeting shared policy positions while at high levels of AP they are engaging in a frenzy of retweeting self-aggrandizing claims about the individual uniqueness of members of that party—perhaps claiming that only they can make 'insert your country name here' great again.

The fully specified model also offers insights into the level at which most variation in unity is observed, as the inclusion of a party-level random intercept dramatically increases the amount of explained variation in (dis)unity to about 65%. While cross-country variation in unity (as captured by the estimated standard deviation in country random intercepts) is around 0.13, party-level variation is estimated to be roughly equal to the individual level variation in unity, around 2.7. This suggests the above non-linear relationship is likely to be present *within* parties, with individual legislators who face extreme incentives to cultivate personal and partisan reputations doing the most to maintain a unified party front.

It also suggests that most of the variation in non-strategic unity displayed by legislators in our sample is a function of non-electoral considerations. Indeed, the only other predictor with a discernible effect on unity is party size, with parties that hold a larger proportion of seats estimated to be less unified, on average—a result that is consistent with prior studies that highlight the role of party majority status in determining unity (e.g., Kirkland and Slapin, 2017).

In summary, we can say that party unity is a complex phenomenon, driven by a number of different factors—many of which can be hard to disentangle using empirical data that can be easily collected and compared across countries. It is thus not surprising that, while we find some evidence of a relationship between AP and our measure of unity, there remains a substantial amount of unexplained variation in the extent to which legislators choose to behave in unified ways that are unrelated to the intraparty dimension (or the interparty dimension) of electoral system incentives—at least in the context of behaviors taking place on platforms like Twitter (now X). In this, we are not alone: despite the appealing and intuitive theoretical expectations connecting electoral institutions to party unity, empirical evidence of a strong connection remains elusive. That results remain weak even when using a novel measure of unity, however, is informative in its own right.

Finally, and to better situate our findings in the extant literature, we again conclude by exploring the special relationship between district magnitude,

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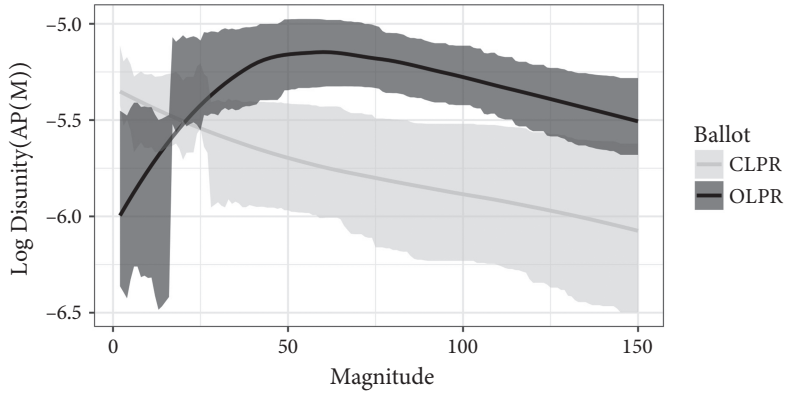


Figure 13.8 Composite prediction of disunity as a function of magnitude The plot presents the predicted level of log of disunity obtained by first generating predicted values of AP as a function of district magnitude and ballot type, and then generating values of disunity as a function of these predicted AP scores. For each value of magnitude, we simulate 100 values of AP and disunity (to allow for propagation of errors), and present smooth prediction lines along with 1 s.d. error bars.

ballot type, and outcomes affected by the intraparty dimension electoral competition. In Figure 13.8, we obtain composite predictions of party disunity by first generating values of AP using unique combinations of magnitude and ballot type, and then using these generated AP values to predict disunity according to the parameters of model 3 in Table 13.1.[14] Here, the non-linear relationship between AP and disunity results in a relationship that is somewhat closer to the sideways 'v' pattern that the literature typically expects—but only in systems that are not particularly common. More specifically, in moderately large-*M* districts (i.e., from about $M = 18$ through $M = 50$), increasing magnitude can be expected to have diverging effects on disunity—increasing it under OLPR systems (dark gray), and decreasing it under CLPR ones (light gray). As magnitude gets very large, however, it appears to have a similar effect regardless of ballot type, reducing the levels of disunity across the board, remaining higher among OLPR systems overall. At lower levels of magnitude, however, the models cannot distinguish, statistically, between levels of disunity predicted under either type of PR system. Given the uncertainty around these predictions, however, we can say precious little about these relationships

[14] A simple model that includes an interaction between component rules *M* and ballot type (instead of the composite prediction through AP) yields a null result.

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other than this: using retweeting patterns on social media as an indicator of unity/disunity, it is safest to say that where intraparty competition exists (i.e., when OLPR ballots are used), efforts to distinguish oneself from copartisans are typically greater than they are when intraparty competition is discouraged.

13.4 Conclusion

Like other chapters in Part IV, this chapter presents evidence connecting electoral system incentives and the intraparty dimension of politics. More specifically, we focused on the extent to which party members present a unified front to voters and other politicians. Using data generated in a context in which party leaders are expected to exert little pressure—MPs' decisions about whether to retweet one another's content—we assessed the extent to which within-party homogeneity can be affected by the ways in which electoral rules incentivize legislators to emphasize their personal qualities over the things they have in common with other members of their party.

For a slice of behavior that can probably be attributed to electoral incentives (and less likely to be beholden to other tools possessed by party leaders for enforcing party discipline), we find a discernible and non-linear effect of personalism: parties composed of legislators who have either very weak or very strong incentives to distinguish themselves electorally can be expected to be more closely tied together than those formed by legislators whose electoral incentives invite them to strike a balance between cultivating partisan or personal reputations.

Based on the existing literature and our own reasoning, we did not anticipate the second part of this pattern, and we think that it opens up an interesting avenue for future research. It suggests that there may be contexts or environments where party members building their own individual reputations can do so collaboratively. In the zero-sum world of voting on the chamber floor, unity might not be strategically wise. But in the world of social media, lauding one another as fellow iconoclasts—for example—might make perfect sense.

In the next chapter, we explore whether these electoral incentives to focus on personal attributes also translate into the kinds of programmatic platforms that help define parties (and their platforms) in more institutionalized party systems.

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14

Programmatic Policy or Pork Barrel

The actions that elected representatives take, including the bills they propose, vary in terms of the populations they are intended to affect most. Some are meant to be universal. For example, lowering speed limits to increase fuel economy and decrease traffic fatalities impacts everyone. Some policies with universal or widespread effects can be thought of as "public goods" because no one can be kept from reaping their benefits (they are non-excludable) and if some citizens reap those benefits, this does not reduce the benefits left for others to enjoy (they are non-rivalrous). Policies that provide for national defense, the rule of law, universal healthcare, clean air, and safe drinking water are classic examples of public goods. Many other policies, without being universal, are meant to provide benefits to ample swaths of the population. Regardless of whether they provide actual public goods or merely benefits enjoyed by large groups, most of the policies we think of as part of a voter's, a candidate's, or a party's ideological position fall into a broad category we typically call "programmatic."

Other policy decisions are much more "particularistic" and may target only a small group. For instance, an elected representative may attempt to push through an action that only benefits his or her constituents (or campaign contributors). Some particularistic policies may have the effect of delivering "private goods": some citizens will be excluded from the benefits they create, and the receipt of a benefit leaves less for others to enjoy. For example, providing for public defense might be a public good, but deciding where a new air force base will be built might have particularistic payoffs because it will employ local construction firms and bring hundreds of new consumers to town. The term "pork-barrel spending" is often used to denigrate the practice of representatives using taxpayer money raised primarily *outside* the district to fund local projects in their constituencies.

Nearly all prior studies on electoral system incentives and legislative targets argue that particularistic bills and pork-barrel spending are likely to be most prevalent where personal vote-seeking incentives are high—that is, where Average Personalism (AP) is greatest. This strand of research attributes differences in legislative outputs largely to representatives' ability to deliver goods

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to their district, to be able to credibly claim credit for having done so, and to be rewarded individually for this ability under some electoral rules but not others. Intense intraparty competition can induce particularistic behavior.

In this chapter, we very quickly review previous efforts to capture whether elected officials are focused on "pork" or policy. We distinguish between expert surveys and direct observations of legislators' efforts and between national-level measures and measures that can be captured at a disaggregated district or legislator level. We prefer direct observations at a disaggregated level. We then use bill initiation data collected by Muñoz-Portillo (2021) before and after an electoral reform in Honduras to test whether an increase in AP is associated with an increase in pork-barrel politics. We conclude by briefly connecting our findings using AP to the existing literature on electoral system incentives and particularistic vs. programmatic representation.

14.1 Efforts to Measure the Balance between Programmatic and Pork Barrel Policies

As with a number of phenomena in party politics (and elsewhere), defining quantities of interest conceptually and measuring them empirically are two distinct challenges. Empirical efforts to capture the balance struck between policy and pork have taken a variety of forms. The Democratic Accountability and Linkages Project (Kitschelt, 2013) and The Varieties of Democracy (V-Dem) Project (Coppedge et al., 2018) rely on surveys of country experts. Both pose at least three questions related to how politicians balance programmatic and particularistic offerings. While such efforts have many merits, they are less than ideal for our purposes. In most countries, the intraparty incentives imposed by electoral rules vary at the level at which seats are allocated (usually the district level). While AP can be aggregated to a national summary statistic, when we can, we prefer to use more nuanced district-level measures.

An alternative to expert surveys is to identify objective (national-level) indicators such as particular categories of government spending that are primarily associated with pursuing a public good (e.g., education). Edwards and Thames (2007) examine seventy-seven democracies between 1970 and 2000 and find that countries with electoral systems that encourage personal vote-seeking spend less on education. Similarly, using pooled time-series and cross-sectional data from advanced democracies from 1980 to 2001, Hieda (2012) establishes that countries with personal-vote-oriented electoral systems struggle to implement generous elder-care programs. These authors do not capture intraparty incentives at the district-level.

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Other work has used indicators that could be disaggregated to the district or even the individual legislator level to examine spending patterns. Rogowski (2017) establishes that multi-member districts are associated with lower levels of particularistic rewards. He cleverly uses the ability to obtain government funding for a US post office as a particularistic benefit or local public good. Looking at legislators elected in Mexico's mixed-member system, Kerevel (2015) codes "municipal" budget amendments as those that sought to obtain funding to build or repair a school, hospital, or other public work in a specified town. He finds that dynamically ambitious legislators elected in single-member districts were much more likely to propose amendments to the national budget than their counterparts elected in the closed-list proportional representation (CLPR) tier of the electoral system.

The balance between providing citizens with programmatic policies or pork-barrel spending has been reflected in some of the observable implications of AP discussed in earlier chapters. Catalinac (2016) capitalizes on an electoral reform and the availability of individual candidate manifestos to examine candidates' campaign promises. Japan used a single non-transferable vote (SNTV) system (which has among the highest levels of AP) for decades but adopted a mixed-member independent (MMI) system in 1994.[1] Coding nearly 7,500 manifestos, she finds that candidates facing greater personal vote-seeking incentives made more promises to deliver particularistic benefits.

Several scholars have examined cameral rules and legislative norms, especially committee assignments (Stratmann and Baur, 2002; Raymond and Holt, 2017; Maaser and Stratmann, 2018). Using data from Germany's Bundestag, Stratmann and Baur (2002) and Maaser and Stratmann (2018) find that MPs who have the greatest personal vote-seeking incentives (i.e., those elected in the SMDP tier) are more frequently assigned to committees that deal with legislation that is most likely to give them the opportunity to attract pork-barrel spending to their district or to provide particularistic rewards.[2] Leveraging the electoral reform in Japan, Fujimura (2015) shows that once elected, politicians who competed under rules that involved lower personal vote-seeking incentives were more likely to be assigned to committees dealing with general interest policy areas.

[1] Under MMI, legislators elected in the single-member district decided by plurality (SMDP) tier face greater personal vote-seeking incentives than those elected in the CLPR tier. As a likely indicator of this difference in incentives, CLPR-tier candidates do not submit individual manifestos.

[2] Raymond and Holt (2017) examine committee assignments in the Northern Ireland Assembly and the Irish Dáil Éireann. Both chambers are elected by single transferable vote (STV), a system high in average AP. They find that party leaders are likely to assign members elected in rural districts to the Agriculture Committee, where they can provide distributive benefits to their constituents.

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Another indicator of policy versus pork that can be disaggregated to the individual legislator level is the content of the (private member) bills they initiate. Prior work has coded the content of proposed legislation (Taylor-Robinson and Diaz, 1999; Crisp and Desposato, 2004; Albanese, Cioffi, and Tommasino, 2019; Muñoz-Portillo, 2021). In their study of expenditure proposals sponsored by Italian senators, Albanese, Cioffi, and Tommasino (2019) found that those elected in first-past-the-post districts are more likely to sponsor pork-barrel bills and put more effort into legislative activity. Their research leverages the 2005 electoral reform that transformed a mainly majoritarian system into a mainly proportional one, finding that the type of electoral system can have a significant impact on legislative activity. Bagashka and Clark (2016) exploit variation in electoral rules across American states to evaluate when legislators are more likely to introduce bills targeting specific areas of their electoral districts. The authors show that these bills are more likely when legislators face intraparty competition due to an increase in district magnitude and/or the use of inclusive versions of primaries, such as blanket and open primaries. In the next section, we use AP to examine bill initiation patterns in Honduras.

14.2 Pork Barrel and AP

We test the relationship between distributive policies and AP in two distinct institutional settings. Muñoz-Portillo (2021) leverages a 2004 electoral reform that modified the Honduran electoral system from CLPR to free-list proportional representation (FR-LPR), without changing *M*, to analyze Carey and Shugart's (1995) argument that the effect of ballot type on politicians' personalistic behavior is conditional upon district magnitude. To do so, Muñoz-Portillo gathered data on 5,803 bills introduced by Honduran legislators between 1990 and 2009 and used Taylor-Robinson and Diaz's (1999) categorization to split the bills into those concerned mostly with local goods and those on other topics.[3] Using the legislator-year as the unit of analysis, Muñoz-Portillo (2021) finds that the increase in personal vote-seeking incentives only led to growth in the number of local goods bills in the largest district, where twenty-three seats were in dispute in every election.

[3] Taylor-Robinson and Diaz (1999) divide bills into five groups: (1) local (affect only part of a constituency); (2) regional (affect a whole constituency or multiple constituencies); (3) individual (provide benefits only to individuals and private organizations); (4) sectoral (target specific groups); and (5) national (policy-oriented bills not targeted to specific sectoral or geographic groups). Muñoz-Portillo (2021) defines local goods bills as those in the first and second categories.

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14.2.1 Bill Targets in Honduras

Before using Muñoz-Portillo's data to evaluate whether AP is associated with legislators' bill initiation, we demonstrate how the 2004 electoral reform modified AP and Total Duvergerian Effect (TDE) scores across the eighteen districts in Honduras. Panel (a) of Figure 14.1 illustrates that before the reform (when legislators were elected using CLPR), the estimated AP monotonically decreased with increases in district magnitude. This finding supports Carey and Shugart's (1995) point that personal vote-seeking incentives in CLPR systems are higher in districts with low magnitude. After the reform, AP increased in all districts with $M > 1$. The fact that AP increased even in low-M districts suggests that, even when district magnitude is low, candidates have incentives to cultivate their personal reputation when there is intraparty competition. While AP varies across the two systems, it does not vary as much across districts *within* systems (either before or after the reform).[4] Personal vote-seeking incentives in a district with $M = 2$ are roughly the same as those in a district with $M = 23$. Only single-member districts stand out, showing higher AP scores than other districts prior to reform (where there was no intraparty competition) and lower AP scores than other districts after reform (where there was intraparty competition).

Panel (b) of Figure 14.1 indicates that between 1990 and 2009, TDE was always larger in districts with low magnitude; thus voters had more incentives to defect from their most sincerely preferred party. TDE also slightly increased in all districts after the reform, perhaps due to the existence of

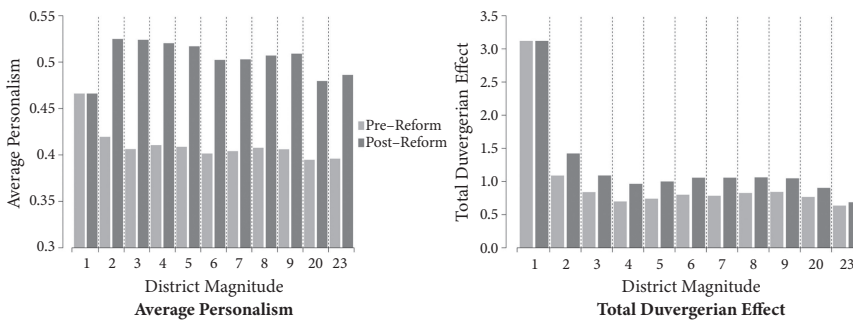


Figure 14.1 Before/after reform scores in Honduras AP and TDE before and after the 2004 reform to the Honduran electoral system

[4] The standard deviation of AP is low and roughly the same before and after the reform (sd_{CLPR} = 0.02, $average_{CLPR}$ = 0.41, sd_{FrLPR} = 0.02, $average_{FrLPR}$ = 0.50).

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panachage: the ability to cast votes across party lines may lead voters to select candidates outside their preferred party who are more aligned with their preferences.

Now that we have shown how the reform changed AP and TDE, we analyze the association between AP and the number of local goods bills initiated by Honduran legislators. Though the first election under FR-LPR was held in 2005 (the new Congress took office in January 2006), we follow Muñoz-Portillo (2021) and treat all years from 2004 onwards as *after* reform years on the basis that the legislators understood the incentives generated by the new rules and modified their behavior in anticipation accordingly. We model the dependent variable using a negative binomial model. We start with a model that employs AP as the sole predictor. The second model includes TDE and the third adds control variables available in Muñoz-Portillo's data. These variables include *Member of Governing Party* (if the legislator belongs to the presidential party), *Seniority* (number of terms the legislator has served), *Board Member* (if the legislator was on the Board of Directors of the Honduran Congress), *Small Party*, *Committee Chair*, and *Sex = Female*.[5] Lastly, we include district fixed effects. We do not introduce year (or term) fixed effects because, as shown in Figure 14.1, most of the variation in AP occurs throughout time.

The estimates reported in Table 14.1 indicate a positive and statistically significant association between AP and the number of local goods bills initiated by legislators each year. The estimated coefficient for AP ranges from 11.63 (model 3) to 15.78 (model 4). Because coefficients from negative binomial models cannot be easily interpreted, we use the estimated coefficients from model 3 to calculate the expected number of local goods bills in each district before and after the reform, holding all variables at their median except for AP. We take the difference between the two quantities ($\widehat{\text{bills}}_{\text{post-reform}} - \widehat{\text{bills}}_{\text{pre-reform}}$) to estimate the increase in bills for each of the 11 district magnitudes used in Honduras. Panel (a) of Figure 14.2 displays our results.

The expected differences suggest that the 2004 reform—and, consequently, the increase in AP—boosted the number of local goods bills in all districts with $M > 1$. For all values of M, we observe an expected increase of at least 0.54 in the number of local good bills introduced. The expected increase in bills ranges from 0.55 ($M = 20$) to 1.09 ($M = 3$), which represent 36.8% and 73.4% of the standard deviation of our dependent variable, respectively. There is no statistically significant difference in expected increases across districts,

[5] The dataset does not include detailed information about legislators' party affiliations.

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Table 14.1 Association between AP and initiated local goods bills: Data from the National Congress of Honduras, 1990–2009. Point estimates are unstandardized regression coefficients from negative binomial regression models. Robust (HC1) standard-errors are in parentheses

	Dependent variable and # of Local Goods Bills			
	(1)	(2)	(3)	(4)
AP	12.198***	12.407***	11.633***	15.781**
	(1.398)	(1.595)	(1.500)	(5.980)
TDE		−0.062	−0.021	−1.684
		(0.154)	(0.148)	(2.049)
Member of party in government			0.946***	0.953***
			(0.102)	(0.102)
Seniority			0.150***	0.166***
			(0.045)	(0.048)
Board member			0.629***	0.569***
			(0.154)	(0.165)
Committee chair			0.394***	0.417***
			(0.092)	(0.089)
Member of small party			0.514**	0.540**
			(0.260)	(0.258)
Sex = Female			0.372***	0.344***
			(0.112)	(0.114)
Constant	−5.942***	−5.972***	−6.804***	
	(0.589)	(0.608)	(0.598)	
θ	0.381***	0.382***	0.524***	0.548***
	(0.034)	(0.034)	(0.049)	(0.053)
Fixed Effects by District	No	No	No	Yes
Adj. Pseudo R^2	0.029	0.029	0.069	0.067
BIC	4802.583	4809.974	4650.429	4759.699
Observations	2560	2560	2560	2560

Note: *p<0.1; **p<0.05; ***p<0.01

which is unsurprising given the low variation in AP scores across districts after the 2004 reform (Figure 14.1). Nevertheless, it is clear that, independent of the district, Honduran politicians' legislative behavior became more particularistic after the growth in personal vote-seeking incentives imposed by the reform.

Panel (b) depicts the percentage change in the expected number of local goods bills after the reform for each value of district magnitude, which ranges from 169 percentage points in districts with $M = 20$ to 295 percentage points in those with $M = 3$ (the average is 209 percentage points). Consequently, even

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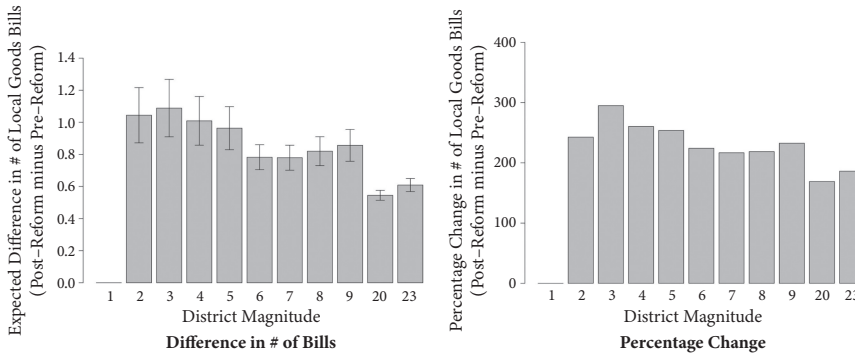


Figure 14.2 Local goods bills distribution across M Panel (a) displays the difference in the expected *number of local goods initiatives* based on model 3 from Table 14.1, with remaining covariates held at their sample median values; panel (b) shows the percentage change in the number of bills based on model 3 from Table 14.1 (95% bootstrapped confidence intervals)

though the expected increases in the number of bills produced by the adoption of FR-LPR displayed in panel (a) may not appear huge, they are substantial, considering the expected legislative behavior under CLPR.[6]

14.3 Conclusion

As an indicator of representatives' efforts to respond to vote-seeking incentives, bill sponsorship is an appropriate indicator of our concept of interest for two important reasons (see, for example, Crisp et al. (2004)). First, it can be attributed to individual legislators. Thus, where vote-seeking incentives vary across districts, where incumbents face varying degrees of competition, and where the demand for particularism is not evenly distributed throughout districts, the targets chosen in initiated bills allow us to make more nuanced but important distinctions. Second, this indicator signals a representative's *intent*, not just what the legislative chamber as a whole can collectively produce. Some might conclude that this renders bill (co)sponsorship less meaningful, but we think signaling intent or priorities, even if it ends up being something of a symbolic gesture, is important in and of itself.

[6] As in previous chapters, we check on Carey and Shugart's (1995) conjecture by fitting negative binomial models of # of local goods bills on an interaction between *M* and ballot type (plus constituent effects) without controls and with the same controls in model 3. We do not include fixed effects by district because of collinearity. We find that more local good bills are introduced under open ballot, compared to closed ballot. However, the difference in bill introduction between open and closed ballots is roughly constant across different values of *M*, indicating no differential effect of magnitude as proposed by Carey and Shugart's conjecture.

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At least one previous paper (Crisp et al., 2004) found support for the argument that there was a differential effect of magnitude on the provision of particularistic bill proposals. Using bill initiation data from six presidential democracies in Latin America, they found that as magnitude increased in systems where rules allowed for intraparty competition, the likelihood of "pork barrel" proposals also grew. Conversely, as magnitude increased where rules prohibited intraparty competition, the likelihood of "pork barrel" proposals declined. Our analysis based on pre- and post-reform observations in a single case is not directly comparable to the one in Crisp et al. (2004) because we cannot interact AP with district magnitude (magnitude is one of the variables that we use to predict AP). However, the results in Figure 14.2 suggest that personalistic incentives captured by AP are similar for all legislators across district magnitudes for the CLPR and FR-LPR used in Honduras. Regardless of magnitude, bills with a particularistic focus are always more prevalent when members of congress face intraparty competition.

Like the works by Taylor-Robinson and Diaz (1999), Bagashka and Clark (2016), Albanese, Ciffi, and Tommasino (2019), and Muñoz-Portillo (2021) cited above, our re-analysis of data from Honduras shows that increased personal vote-seeking incentives, as captured by our measure AP, are associated with greater effort to obtain particularistic rewards for constituents. Each of these works captured a subset of the rules that went into our simulations to produce AP scores. In the case of Honduras as observed here, ballot type changed due to electoral reform, moving from CLPR to FR-LPR, but the seat allocation formula and legal thresholds remained unchanged.[7]

[7] Magnitude varied across districts both before and after reform.

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PART V
CONCLUSION

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15

Electing to Simulate

In Part I of the book we described observable implications of interparty and intraparty politics. We then presented seven electoral rules—district magnitude, seat allocation formula, legal threshold, ballot access, ballot type, vote pooling, and the number and level of votes cast—and discussed the incentives they may generate. We combined these rules to define 17 electoral systems across 3 families—proportional (6), majoritarian (9), and mixed (2).

In Part II we adopted a simulation-based approach to derive quantitative measures of the interparty and intraparty incentives generated by each system type. We then calculated Total Duvergerian Effect (TDE) and Average Personalism (AP) scores for "real-world" systems. Much more on all of this below.

In Part III we evaluated whether our measure of interparty incentives—TDE—performed well as a correlate of several important characteristics of electoral systems including those related to the size of the party system, to the location of parties on an ideological continuum, and to the congruence of those locations with voters' positions. Some caveats are noted in individual chapters, but for the most part TDE worked as expected.

Finally, in Part IV we sought to show that our indicator of *intraparty* incentives—AP—would perform well in efforts to explain several aspects of how elected representatives perform their work. Again, while we acknowledge some caveats, AP helped us understand the focus of campaigns, the amount of constituency service provided, the structure of cameral rules, levels of party unity, and the balance struck between offering programmatic policy and pork-barrel benefits.

We believe there is still plenty of original work to be done on the relationship between electoral system incentives and interparty politics and intraparty politics—especially the latter. We hope our measures of TDE and AP are useful as we and others advance the study of electoral system incentives. Our simulations-based approach gives these scores advantages over other widely used indicators. TDE indicates the degree of strategic *interparty* voting that rules encourage, which is typically very difficult to observe. AP serves as an interval-level indicator of the *intraparty* incentives that result when

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factors that can take multiple ordinal values are combined into a complex system.

We have made our development of these measures very transparent so that others can fine-tune them in directions they find more realistic or, conversely, to allow some parameters to take on a wider range of values, including extreme ones, that we have not considered. Let us elaborate on how we hope this unfolds.

15.1 Our Data

We begin the case for viewing this project as a foundation for future work in the field of electoral system incentives for party politics by reminding readers of "the data" we are providing, which includes the results of our simulations and gradient-boosting machine (GBM) models, as we show for example in Tables 4.3 and 6.3. The simulations provide scholars with measures of "average" electoral systems: within electoral system types, we let the values taken by some rules vary to reflect the variations we observe in real systems. For example, to generate TDE and AP scores for closed-list proportional representation (CLPR) systems, we let district magnitude, seat allocation formulas, and legal thresholds take on a series of different values similar to some of the most common values we observe, and we impose these rules on electoral arenas inhabited by diverse distributions of voters, varying numbers of entering candidates, and fluctuating numbers of political parties that enter into competition in any given district. We then take the average of all the elections conducted using any form of CLPR (a simple way to assign measures of interparty (TDE) or intraparty (AP) incentives to an electoral system type). Readers interested in using and adapting our simulation framework can access it through our `R` package, located at https://i3dataset.com.

For those who wish to explore the fruits of our simulations further without delving into the intricacies of replicating and extending computer code, we offer a more approachable dashboard that requires no technical training. The Interparty & Intraparty Electoral Systems Incentives Dataset (I^3) dashboard (https://i3dataset.com) allows users the possibility of choosing values for each of the seven electoral rules we identify as foundational, in order to mimic existing electoral systems or to create their very own original system. The dashboard then conveys in an easy-to-read interface the expected AP and TDE values that would characterize such electoral system, and even suggests

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real-existing electoral systems that resemble its AP and TDE characteristics. The user can even choose whether to base AP and TDE expected values on either a district- or a national-level predictive model, and can choose to find comparisons within electoral systems in *bona fide* democracies, or in a broader set that also includes electoral authoritarian regimes.

Our data also includes the electoral system incentive scores that we assign to systems as they were used in hundreds of postwar elections; we refer to this as the I^3 dataset.[1] This dataset contains ready-made scores of interparty and intraparty incentives for every electoral system. We believe that these scores are superior to existing measures of electoral incentives. We construct TDE as the difference between (1) the distribution of sincerely expressed preferences (which are inherently difficult to measure anywhere but in a simulated world) and (2) the distribution of seats that follows from strategic voting. AP captures the incentives imposed by electoral rules with a precise, continuous-level measure of voters' ability to reward personal vote-seeking candidates. We assign TDE and AP scores to every electoral system in I^3 based on two different nonparametric GBM models: one that is trained on district-level simulations and a second one that is calibrated on country-level simulations. Furthermore, to provide a better sense of estimation uncertainty, we report five different estimates of TDE and five different estimates of AP (five each using the district and country calibrations) that we derived from bootstrapped samples of our simulated worlds. Users can utilize a single "average" score, or they might employ *all* of the available information, as we do in the applied chapters in this book, so as to let modeling uncertainty propagate through estimated coefficients of regression models.

In the time it has taken to write this book, the world has moved on. Countries that did not previously have competitive elections now do. Some that did, now do not. Countries with a continuous series—short or long—of elections have engaged in all manner of reforms to their systems. As this book went into print, we continued to update the dataset so that it now includes subsequent elections up to 2020 and variables covering the level at which legal thresholds are applied (nationwide, provincial, or district), whether legal thresholds for pre-electoral coalitions and alliances exist, and the distribution of district magnitude within countries. We hope others will continue to keep the dataset up-to-date.

[1] The I^3 dataset can be found online along with all of our replication material (https://i3dataset.com).

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15.2 Addressing Theoretically Motivated Extensions

In Part III and Part IV of the book we tried to touch on some of the most prominent and perhaps most direct political implications of electoral system incentives. That said, we only scratched the surface of how our approach could be used to better understand how extremely important political phenomena might be affected by the electoral systems that govern the interparty and intraparty dimensions of politics.

One way in which our efforts could be extended concerns the assumptions behind our simulations. In order to isolate the effect of electoral rules on interparty and intraparty incentives, we created one "world"—with a set of assumptions about the ideological locations of parties, their leaders, and voters and how they valued ideological proximity relative to attractive individual traits—but future work could offer great insights by intentionally manipulating that world.

We are excited by the prospect that our work can be extended by changing the assumptions we make about the distributions that we employ to generate voters and party leaders. For example, we assume that party leaders and voters are very perceptive in their responses to the results of a "sincere poll," even though one could instead assume that either or both actors are more error-prone or have lower-quality information. Recent democratization, a period of electoral volatility, and exposure to new electoral rules are all contexts where information asymmetries may exist. It is possible that some electoral rules will be much less forgiving than others in terms of decisions taken in a context of uncertainty. For example, systems with a high TDE may more severely diminish the utility obtained by voters who do not have a clear vision of the ideological positions being staked out by parties competing in a given election. Modifications to our simulations could generate a set of expectations about the effects of uncertainty across electoral systems.

Likewise, we set the calculus that voters use to strike a balance between a candidate's ideology and personal qualities. Yet there are plenty of reasons why a different ratio of ideological distance to candidate valence might be more plausible. For example, the rise of populist leaders around the globe suggests that voters might be giving increased weight to the individual attributes of candidates relative to their programmatic policy promises. One might hypothesize that electoral systems with high AP scores will heighten or exaggerate the rate at which such politicians obtain parliamentary majorities. It is easy to change our code to reflect variation in the extent to which voters make their choices based on programmatic or personal appeals—this

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requires a simple recalibration of their assumed utility functions. We might expect that the effects of varying this ratio on the types of candidates and parties that get elected would be greater in some electoral systems than others.

As a final example, an intrepid user could populate districts with voters generated from very lopsided ideological distributions in an effort to simulate how gerrymandering produces dramatic cross-district differences in political preferences. The extent to which the preferences of a lopsided set of voters get translated into a lopsided set of elected representatives likely varies across systems based on their AP and TDE scores. If such gerrymandering in one case favors one party in one district and another party in another district while in another case it favors the same party over and over again, the impact this tweak has on differences in the legislatures across cases will likely be influenced by electoral system incentives. In an era when political polarization seems to be the bane of politics in many countries, understanding how electoral rules mediate variations in the distribution of voters' preferences is a topic of utmost interest.

If new simulations of hypothetical elections were produced under assumptions different than the ones we have employed, the reader would then need to re-estimate the GBM models we summarized in Chapter 6. This step is necessary if the goal is to re-calibrate the models in order to assign new TDE and AP scores to either the real-existing electoral systems studied here and included in our I^3 dataset or to other electoral systems that may exist in the future. It would be interesting to explore whether the relative importance of individual rules changes when the parameters are manipulated in this way. For example, ballot type might become an even more important determinant of AP if individuals were more willing to vote for an ideologically distant candidate who is relatively high in valence.

Even without any changes in the simulated worlds we have designed, the actual GBM models we have already calibrated and employed throughout this volume are available to readers either as an `R` object which can be recovered through the `RMarkdown` code to Chapter 6 or, more simply, through the Shiny dashboard that accompanies our book and that can be consulted at https://i3dataset.com/.

An entirely different way to extend our work would be to think about how to tackle whether there is evidence for "second-order" implications of electoral system incentives. Regime stability, voter turnout and engagement, the way in which parties are organized, the extent to which party politics are nationalized, public trust in government institutions, levels of corruption, and the quality of

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political discourse and rhetoric are just a few examples of outcomes that can be affected by the efforts of candidates, parties, voters, and elected officials to respond to the Interparty–Intraparty (I–I) incentives generated by electoral systems. Future research could investigate whether the effects of electoral system incentives on such outcomes are only indirect—through the interparty and intraparty behaviors we examined in Parts III and IV of the book—or if they can have direct effects of their own. For example, can interparty incentives that encourage the election of a relatively large number of parties directly affect the likelihood of forming coalition governments (even with the effective number of parties held constant)? Or, can intraparty incentives that encourage personal vote-seeking encourage MPs to bring down a government above and beyond any other incentives that might discourage unity?

15.3 A Final Re-Statement of the Benefits of Our Approach (and an Invitation to Take Advantage of Our Groundwork)

The *idea* that electoral systems generate incentives that affect the behavior of a variety of actors—including party leaders, rank-and-file politicians, candidates, and voters—lies at the heart of the study of the political consequences of electoral rules. It is the foundation upon which well-established theories about the interparty and intraparty dimensions of electoral competition have been built since the early days of what came to be known as the "Duvergerian Agenda," and it is the core motivation behind the preceding chapters in this book.

As with any other idea subjected to the scientific process, evaluating the merits of this one requires rigorous *empirical* scrutiny, which in turn requires strategies for quantifying and measuring the extent to which electoral systems can generate nuanced incentives for actors to behave in different ways. Do simple plurality systems incentivize politicians to coalesce under fewer party banners than, say, open-list proportional representation? Are prospective politicians motivated to highlight their personal attributes more often when their candidacies can be launched simply by collecting signatures than when party leaders play a role in selecting them? Answers to these questions (a resounding "yes" for the former, and a more tentative "maybe" in the latter) have depended (and will continue to depend) on our ability to measure the extent to which rules incentivize particular behaviors.

But how does one measure theorized incentives without relying on the very behaviors they generate? Ignoring the fact that *observed* behaviors may mask

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the effects of the institutions we hope to study can result in severely distorted measures of incentives. Consider, as we did in Chapter 4, the (understudied, in our opinion) notion of "Conservation of Disproportionality" introduced by Taagepera and Shugart (1989): Stronger electoral systems incentivize fewer parties to compete as a result of their mechanical bias against smaller parties; yet as voters are incentivized to coordinate on the smaller number of competing parties, the amount of votes wasted on unviable alternatives also drops, thus reducing the observed disproportionality of the system. The result is that we may actually see, contrary to theoretical expectations, much larger disproportionality in weaker systems than we do in stronger ones, simply due to the fact that *observed* patterns can mask true relationships because they are the end-product of the very behaviors incentivized by the institutions being studied.

This is simply another guise of the ubiquitous endogenous selection problem that makes it difficult to make causal attributions with observational data (as Cox, 1997, indicated in his own assessment of the conservation of disproportionality): just as measuring the effectiveness of a policy (say, adopting an unusually high-income tax rate) by considering countries that select into adopting it (say, countries that may be in dire need of an influx of cash) can mask the effects of said policy (say, by making it look like such countries spend less on infrastructure than countries with lower rates), so too can endogenous selection make it difficult to study the incentives generated by electoral institutions, electoral reforms, and the downstream effects of these on other political phenomena.

When measuring the incentives of electoral systems, this selection problem is compounded by the fact that political actors whose fates are affected by electoral rules can (and typically do) adapt to new rules in ways that can prevent substantial change from enduring: power, like disproportionality, may also be the subject of a conservation law. Entrenched power structures—such as clientelistic networks, political dynasties, or party machines—can adapt to political change in ways that can render reforms seemingly ineffective and measurement strategies based on them misleading. In general, the distinction between questions of causal attribution and questions of descriptive measurement is not always as straightforward as we would like to believe; the fundamental problem of causal inference can also be a fundamental problem for the measurement of behaviors that can be adapted for strategic reasons.

All of these considerations prompted us to adopt the simulation strategy that forms the backbone of our book, which allowed us to sidestep the issues of selection and adaptation that can sidetrack the empirical study of the political

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consequences of electoral rules. Having complete control over the ways in which preferences are formed and translated into votes and seats gave us the opportunity to isolate and fully quantify the ways in which electoral systems affect political competition at the interparty and intraparty levels.

This measurement strategy allowed us to define the TDE and AP, to measure interparty and intraparty incentives of electoral rules, respectively. Using the TDE and AP measures, we then located our simulated electoral systems in the two-dimensional I–I space. On the Interparty Dimension we characterized electoral system incentives as ranging from Very Weak—those that award seats to relatively small groups of diverse voters—to Very Strong—those that tend to give a disproportionate number of seats to voters who will form the largest bloc. On the Intraparty Dimension we characterized electoral system incentives as ranging from Highly Individualistic—those that allow voters to single out candidates who possess any traits they, the voters, find appealing—to Highly Centralized—those that allow party leaders to increase the likelihood that the candidates they most prefer will be the ones who get elected.

Perhaps even more importantly, combining this measurement strategy with flexible machine-leaning models to summarize the results of our millions of simulations afforded us the possibility of considering the potential *complexity* through which different component rules operate to generate incentives for interparty and intraparty competition. Using alternative strategies (such as game-theoretic approaches) allowed others before us to gain insight into how single rules (e.g., magnitude) or simple interactions of at most a couple of rules (e.g., magnitude and ballot type) operate to generate incentives. Electoral systems, however, are *bundles* of institutions that can interact in deep and unexpected ways to change those incentives in subtle—but important!—ways. Flexible models like those based on regression trees are useful precisely because they *can* capture these complex interactions *should they be present in the data*. In other words, even if the effects of component rules are, in fact, additive (as we find many to be), the *possibility* of them not being so necessitated the use of models capable of discovering complexity.

Not only that, but these flexible models were useful in interpolating over scenarios that we did not simulate originally, and helped us open the measurement black box connecting rules to incentives. Furthermore, unpacking the TDE and AP scores through our flexible modeling approach also allowed us to calculate TDE and AP scores for "real-world" systems. Accordingly, we provide scores for the electoral systems used in thousands of elections conducted over a nearly seventy-year period. Our goal was to provide scholars, practitioners, and the otherwise curious with precise indicators of electoral system

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incentives for interparty and intraparty politics—and a transparent, replicable, and flexible procedure for how we arrived at them. As we discussed earlier, it is our hope that future researchers will be able to apply these to their questions of interest, or expand on our efforts to explore new questions altogether.

Overall, we are convinced that, moving forward, the study of electoral systems will continue to benefit from combining computational approaches (like our simulation framework) with machine-learning models (such as our gradient-boosting machines) for tackling complex measurement problems. By carefully crafting a transparent set of steps to simulate election processes, codifying the algorithms and procedures implied by the rules that combine to form electoral systems, and using flexible machine learning models to better understand how these measures come to be, we have effectively created a laboratory for the study of the incentives generated by these arrays of formal institutions. It is our hope that others will be able to make use of this laboratory, by using the accompanying online dashboard to visualize how different rules combine to generate incentives along the dimensions of the I–I space, or by using the accompanying `R` package to simulate entirely new electoral systems and elections.

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PART VI
APPENDICES

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APPENDIX A

Examples of Seat Allocation Formulas in Proportional Representation Systems

Quota-based seat allocation formulas utilize a general formula defined as:

$$\frac{total\ votes}{M + k},$$

where *total votes* is the sum of valid votes (not blank, null, or void) in the district, M is the district magnitude, and k is an integer. In the Hare quota, introduced in Chapter 2, k assumes 0. The modifier assumes the values of 1 and 2 in the Hagenbach-Bischoff and Imperiali Methods, respectively. The tables below provide examples of both methods, using the largest remainder to distribute remainder seats.

The Droop Method is a slightly modified version of the Hagenbach-Bischoff Method. As in the Hagenbach-Bischoff Method, *total votes* is divided by $M + 1$. Then, the value of 1 is added to the integer part of the result, and any decimal part is discarded:

$$\texttt{Integer}\left(\frac{total\ votes}{M + k}\right) + 1,$$

In Chapter 2, we introduce the D'Hondt Method as an example of the divisor system. In the D'Hondt Method, party votes are successively divided by d, which assumes the value from 1 to M. Two other common methods are the Sainte-Laguë, in which party votes are successively divided by $2 \times d - 1$, and Modified Sainte-Laguë, which uses the same formula but the first denominator, 1, is replaced by 1.4. The two tables below illustrate these methods. Note there is a tie between parties A and E for the last seat in Table A.5. There is no consensual rule on how to deal with ties. Here, we opt for adding one seat to our fictitious district to accommodate both parties.

Table A.1 Converting votes into seats (Hagenbach-Bischoff Method): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Hagenbach Bischoff Quota with the Largest Remainder were used

Party	Votes	Quota	Votes/Quota	Automatic Seats	Remainder	Remainder Seats	Total Seats
A	100		3.66	3	0.66	0	3
B	80		2.93	2	0.93	1	3
C	60		2.20	2	0.20	0	2
D	40		1.46	1	0.46	0	1
E	20		0.73	0	0.66	1	1
Total	300	27.27		8		2	10

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Table A.2 Converting votes into seats (Imperiali Method): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Imperiali Quota with the Largest Remainder were used

Party	Votes	Quota	Votes/Quota	Automatic Seats	Remainder	Remainder Seats	Total Seats
A	100		4	4	0	0	4
B	80		3.2	3	0.2	0	3
C	60		2.4	2	0.4	0	2
D	40		1.6	1	0.6	0	1
E	20		0.8	0	0.8	0	0
Total	300	25					

Table A.3 Converting votes into seats (Droop Method): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Droop Quota with the Largest Remainder were used

Party	Votes	Quota	Votes/Quota	Automatic Seats	Remainder	Remainder Seats	Total Seats
A	100		3.57	3	0.57	0	3
B	80		2.85	2	0.85	1	3
C	60		2.14	2	0.14	0	2
D	40		1.42	1	0.42	0	1
E	20		0.71	0	0.71	1	1
Total	300	28					

Table A.4 Converting votes into seats (Sainte-Laguë): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Sainte-Laguë were used

Party	Votes	Denominator					Seats
		1	3	5	7	9	
A	100	**100**	**33.3**	**20**	14.28	11.11	3
B	80	**80**	**26.66**	**16**	11.42	8.88	3
C	60	**60**	**20**	12	8.57	6.66	2
D	40	**40**	13.33	8	5.71	4.44	1
E	20	**20**	6.66	4	2.85	2.22	1
Total	300						10

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Table A.5 Converting votes into seats (Modified Sainte-Laguë): For a hypothetical scenario, we document the number of votes received by five parties, as well as the seats they would receive if the Modified Sainte-Laguë were used. Italics indicate a tie between parties for the last seat.

Party	Votes	Denominator					Seats
		1.4	**3**	**5**	**7**	**9**	
A	100	**71.42**	**33.3**	**20**	*14.28*	11.11	4
B	80	**57.14**	**26.66**	**16**	11.42	8.88	3
C	60	**42.85**	**20**	12	8.57	6.66	2
D	40	**28.57**	13.33	8	5.71	4.44	1
E	20	*14.28*	6.66	4	2.85	2.22	1
Total	300						10 (+1)

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APPENDIX B

Alternative Electoral System Names

- alternative vote (AV): instant-runoff voting, ranked-choice voting
- limited vote (LV): partial block voting
- mixed-member compensatory (MMC): mixed-member proportional
- mixed-member independent (MMI): mixed-member majoritarian, mixed-member parallel
- multiple non-transferable vote (MNTV): bloc vote, block voting, plurality-at-large voting, plurality block voting
- party block vote (PBV): general ticket
- single-member district decided by plurality (SMDP): first-past-the-post, relative majority
- single transferable vote (STV): proportional ranked choice voting
- two-round (TR): runoff voting, second ballot, ballotage
- two-round multiple non-transferable vote (TR-MNTV): majority-at-large voting

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APPENDIX C

Gradient-Boosted Machine Models: The Fine Print

In Chapter 6, we leveraged a very large set of simulations and interpolations to predict how different components would combine to produce TDE and AP scores, then used that knowledge to *score new systems*—including real-existing ones—that take on different values on some or all component factors without having to resort to running new simulations. To do so, we used flexible *predictive models* of TDE and AP based on machine-learning techniques. We relied on a specific family of non-parametric techniques known as *ensemble tree-based models*, and, in particular, on so-called *gradient boosting machines*, to build predictive models based on simulated data. The use of black-box models fit to simulated data might suggest that we tread happily into a fantasy land devoid of empirical content, but this is far from what we seek. We submit that simulations are a reasonable strategy to generate observations based on well-defined rules and processes, and machine-learning tools are reasonable contraptions to capture hidden interactions among those rules and processes that will allow us to generate more precise predicted scores.[1]

As we explained in Chapter 6, we unleash non-parametric gradient-boosting machines on the simulated/interpolated electoral systems to build such predictive models. In that chapter, we emphasized the need to avoid overfitting of these predictive models. To provide a sense of how we achieved this goal, we briefly describe here the details of the cross-validation exercise that we engage in:

1. We randomly split the original simulated scenarios into *training* and *test* sets. The training set includes about 90% of observations, and the test set the remaining simulations.
2. We run the gradient boosting machine 4,800 times on the training set.
3. Each of these 4,800 iterations is unique, as we vary the size of the "forest" that we grow (i.e., the number of trees, which goes from 5 to 5,995 in increments of ten) and the "depth" at which trees can combine (1, 3, 5, 9, 11, 13, 15), by which we effectively mean the maximum number of terms allowed to be part of an interaction.[2]
4. We cross-validate each of the 4,800 GBM models on five folds within the training set, and for each cross-validation run we produce a root mean squared error (MSE) statistic. The MSE allows us to measure the goodness of predictive fit of each model; models with *lower* MSE perform better.[3]

[1] Negriu and Piatecki (2012) is a relatively recent example of the use of simulated data—in fact, an agent-based model—to gauge the ability of electoral systems to minimize social disutility derived from voting.

[2] We keep constant two additional parameters in the GBM: tree shrinkage weight (0.02) and the minimum number of observations in a node (10).

[3] MSE is defined as $\sqrt{\frac{\Sigma(\hat{y}_i - y_i)^2}{n}}$, where y_i is observation i's observed outcome, $\hat{y}_i$ is observation i's predicted outcome, and n is the number of observations in the cross-validation set.

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Table C.1 Goodness of fit comparison of GBM and linear regression models of Total Duvergerian Effect: The table shows improved model fit (about 11%) attained by our gradient boosting tree-based model, as compared to a simple linear model, fit to a test set of 10% of data. Cells display estimates of R^2.

	Gradient-boosting machine		Linear regression model	
Outcome	**Train**	**Test**	**Train**	**Test**
District Level	0.322	0.294	0.287	0.265
Country Level	0.275	0.234	0.219	0.211

5. This process is reproduced five times, once on each of the simulation samples that we generated in Chapter 4. Each sample includes 17,000 observations at the country level and 15,000 observations at the district level.[4]

C.1 Predicting TDE

To assess predictive purchase, we compare GBM results against those from the following parametric linear regression model (LRM):

$$\text{TDE}_i = \beta_0 + \beta_1 \text{M}_i + \beta_2 \text{Formula}_i + \beta_3 \text{Threshold}_i + \beta_4 \text{Ballot}_i + \beta_5 \text{Pooling}_i + \beta_6 \text{Votes}_i + \varepsilon_i.$$

Compared to this simpler model, the GBM models increase predictive ability by slightly more than 10%. To show this, we simply regress the values of TDE from the simulated data on predictions of TDE derived from both the GBM and a linear model that includes all component rules as predictors. The coefficients of multiple determination (R^2) from these regressions help us make our case, as can be seen in the first row of Table C.1. Comparing across GBM and LRM, it is noticeable that R^2 is larger for the models based on GBM predictions; looking only at predictive purchase in the test sets, the GBM model outperforms linear regression by a factor of about 1.11 at both the district and country levels. Our predictions in the test set, which includes observations that were not used to fit the original model, are slightly worse than those in the train set, but still superior to predictions we would obtain using a linear regression model.

The two panels in Figure C.1 contain a visual representation of which inputs are most important in predicting TDE values, according to models fit to district- and country-level simulation data. In this graph, relative importance is a measure of the average reduction of squared error in TDE attributable to the use of each variable when growing the trees, scaled to sum to 100%. When growing a tree, GBM chooses a single variable at each branching point to generate groups of electoral systems that have similar outcome values. By doing so, trees ensure that predictions within each resulting branch are more accurate (or at least no less accurate) than predictions made for ungrouped observations. This improvement in

[4] To reduce computing load, we sample 1,000 random observations with replacement from the entire set of simulations for each of seventeen electoral systems (fifteen at the district level).

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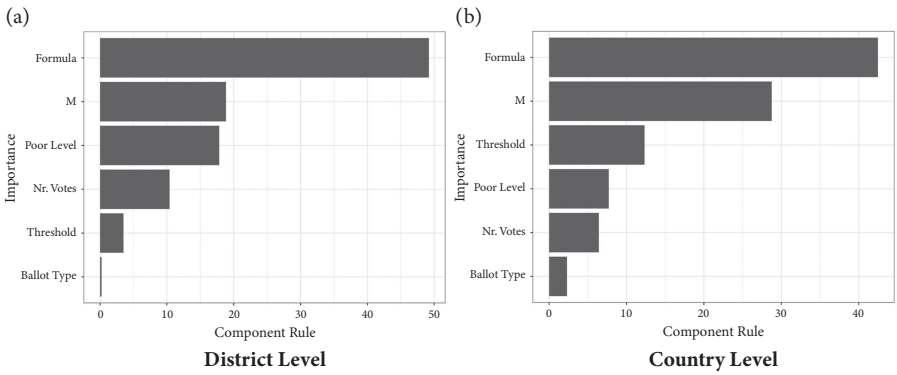


Figure C.1 Most important predictors of the TDE: The plot presents, for district- (left) and country-level (right) data, the relative importance of predictors of the total Duvergerian effect.

prediction accuracy—or, equivalently, the reduction in prediction error—gives us a sense of how important the variable used to generate the split is. Since a variable may be used at multiple points when growing a tree, and across multiple trees in our forest, we compute the average reduction in prediction error across all instances in which a variable is used, and normalize these average values to get a sense of a ranking of relative predictive variable importance. This is what is depicted in Figure C.1. Accordingly, a value of 40% indicates that a variable is responsible for 40% of the total average reduction in error observed when using a variable at the splitting stage of the tree-growing process. In general, both sets of models largely agree on which inputs matter most. Across both levels of aggregation, for instance, seat allocation formula appears to have the largest relative importance in predicting TDE scores, followed closely by district magnitude *M*. The relative importance of seat allocation formula as a predictor appears to be largest for simulations at the district level in plot (a). The remaining predictors—pool level, threshold, number of votes per voter—account for varying levels of average reduction in prediction error between 5% and 10%. Only ballot type appears to have very little predictive power across both district- and country-level models.

GBM models are good at incorporating the impact of interactions among multiple input variables in predicting outcomes, which is a desirable trait and the reason why these non-parametric models perform better than additive linear models. We comment here on possible two-way interactions between component rules.[5] As tree-based models operate differently from more common parametric approaches (such as linear regression models), we cannot simply look at coefficients and their covariances to establish which interactions are relevant. Fortunately, we can use intuitive alternative metrics to evaluate the extent to which

[5] The GBM specifications that we prefer, based on cross-validation, include high-order interactions, even at an interaction depth of order 15. In principle, this flexibility allows GBM to provide superior out-of-sample predictions. In practice, however, we see that the predictive purchase of our GBM specifications increase most at low interaction levels, without further increases in predictive power. For example, for our country-level GBM specification for TDE, root MSE at an interaction depth of 1 is 0.956 on average, and decreases to 0.941 at an interaction depth of 3 before increasing subsequently. The R^2 statistic increases, on average, from 0.206 to 0.230 at interaction depths of 1 and 3, and then decreases subsequently.

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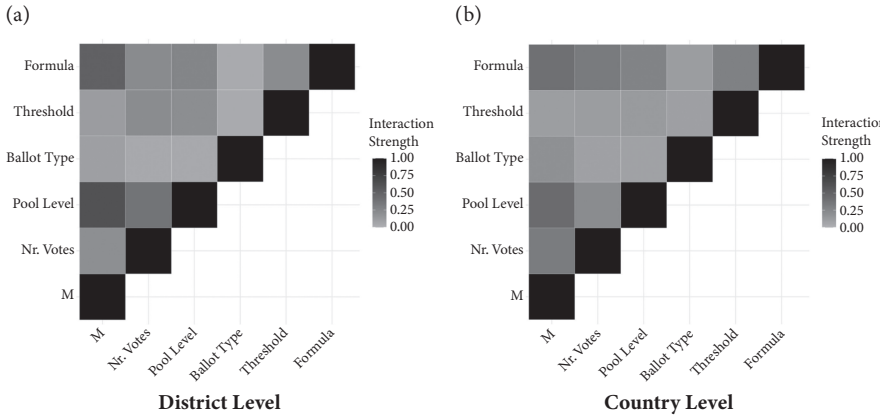


Figure C.2 Most important interactions in TDE predictive model The figure shows, for every pair of predictors in the district- (left panel) and country-level (right panel) models, the importance of the interaction between the corresponding inputs. Values close to 1 indicate stronger interactions.

the explanatory purchase of two inputs combined goes beyond that of each one separately. One such metric, the (pairwise) H-statistic proposed by Friedman and Popescu (2008), is given by:

$$H_{jk} = \sqrt{\frac{\sum_i [\hat{\tilde{y}}(x_{ij}, x_{ik}) - \hat{\tilde{y}}(x_{ij}) - \hat{\tilde{y}}(x_{ik})]^2}{\sum_i \hat{\tilde{y}}^2(x_{ij}, x_{ik})}},$$

which is the proportion of variation in predicted values $\hat{\tilde{y}}$ as we allow any two inputs j and k to vary together (averaging over observed values of all other predictors) that is unexplained by changes in each of the inputs considered on their own. As a proportion, values closer to 1 indicate stronger interaction effects, whereas values closer to 0 would suggest that any explanatory purchase the inputs have is brought about additively.[6]

Figure C.2 presents the pairwise H statistic for all predictor pairs in our model of TDE, for both the district- and country-level data. At the district level (left panel), our model suggests that there are two sets of relevant interactions, both involving M, one with seat electoral formula and a second one with level at which votes pool.

C.2 Predicting AP

We follow the exact same algorithm described in the previous section to predict simulated AP scores. Table C.2 shows GBM improvement in predicting AP data over an additive linear model, both in-sample and based on the held-out 10% of the data we defined as a test-set—particularly at the country level, where we see a 30% improvement in predictive ability

[6] When neither predictor helps explain much variation in the outcome, the measure is ill-defined.

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Table C.2 Goodness of fit comparison of GBM and linear regression models of Average Personalism: The table shows, now for Average Personalism, the improved model fit attained by our gradient boosting tree-based model, as compared to a simple linear model. Cells display estimates of R^2.

	Gradient-boosting machine		Linear regression model	
Outcome	**Train**	**Test**	**Train**	**Test**
District Level	0.322	0.294	0.287	0.265
Country Level	0.673	0.658	0.508	0.507

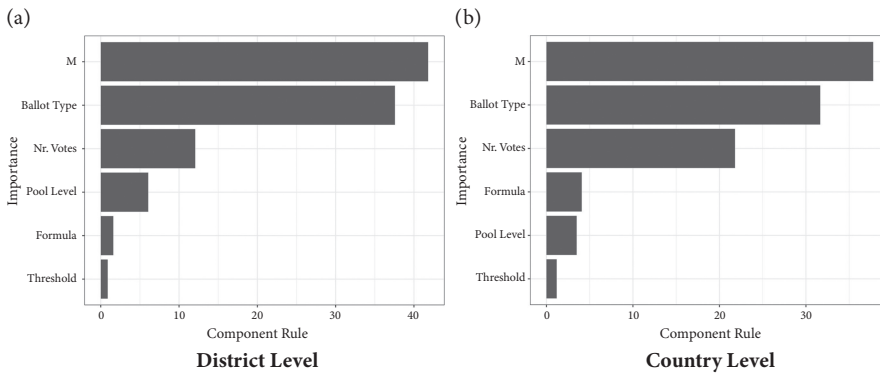


Figure C.3 Most important predictors of the AP score: The plot presents, for district- (left) and country-level (right) data, the relative importance of predictors of the AP score.

when moving from the linear model to the GBM (improvement at the district level is about 10%).[7]

As we did for the case of TDE, we build predictive models of AP based on the set of all electoral component rules. In other words, we will use the same data illustrated in Table 4.3, but now to predict values of AP at the district and country levels.[8]

The two panels of Figure C.3 present the most important predictors of AP for simulations at the district-level (left panel) and simulations aggregated to the country-level (right panel). Across levels of aggregation, district magnitude is the most important predictor of AP scores across simulations, accounting for well over 35% of variation in AP

[7] As we explained in fn. 5, we see the largest jump in predictive purchase as we move from interaction depth 1 to 3, suggesting that interactions between two component rules are enough to account for variation in AP scores. In contrast to our GBM models for TDE, however, we continue to see predictive improvement at interaction depth 5 at the country level. Incidentally, in addition to the linear model against which we compare the predictive purchase of the GBM model, we fit a second linear model with an explicit interaction between *M* and ballot type. This model (not shown) fails to show dramatic predictive improvement over the linear model without interactions. Furthermore, estimated coefficients are not consistent with the notion that *M* increases personalism in open ballot type systems.

[8] You will recall that our simulations allow us to distinguish between strategic and sincere scenarios. In our analysis of personalism, we pool together simulated worlds with both sincere and strategic voters.

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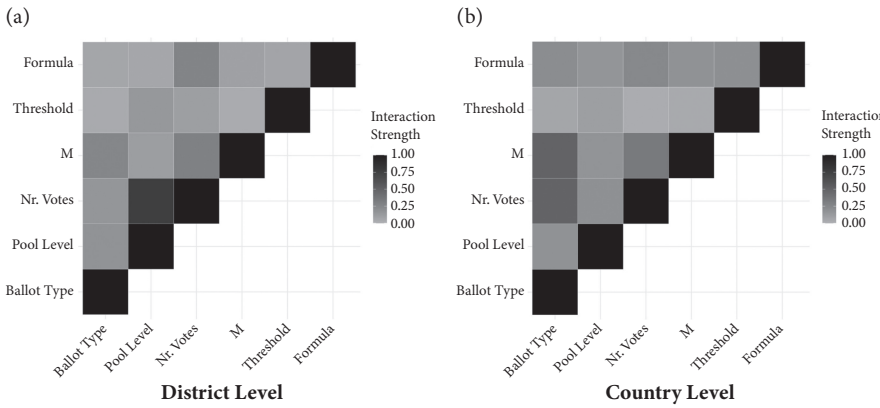


Figure C.4 Most important interactions in AP predictive model The figure shows, for every pair of predictors in the district- (left panel) and country-level (right panel) models, the importance of the interaction between the corresponding inputs in predicting Average Personalism scores. Values close to 1 indicate stronger interactions.

at both the district and country levels. Not far behind in terms of predictive purchase, ballot type has the second largest impact on the average level of personalism induced by the electoral system. This is consistent with the idea that incentives to cultivate personal reputations for electoral gain are highest where candidates have to distinguish themselves from co-partisans, as they do in open and flexible list systems, for example. These two variables—*M* and ballot type—together account for over 75% of AP scores at the district level. Beyond these two variables, only the number of votes plays a further substantive role, especially at the country level, in predictions of AP scores. The level at which votes pool appears to play a very minor role, but we will see below that its interaction with number of votes is extremely important. Finally, and in contrast to their role when considering TDE, electoral thresholds and electoral formulas have relatively little predictive purchase on AP scores.

We once again rely on the *H* statistic of Equation C.1, presented in Figure C.4, to assess the importance of potential interactions among component rules in predicting AP scores. As before, darker shades indicate stronger interactions; important interactions at the district level are depicted on the left panel, and important interactions at the country level are presented on the right panel. In general, our model suggests that interactions appear to be much more important at the country level than at the district level—which explains why the improvement in predictive ability of the GBM model over a simple linear model without interactions (given in Table C.2) was smaller for district-level data than it was for country-level data. At the district level, only one interaction appears to be of particular importance: that between *pool level* and *number of votes per voter*. We find the relatively small average effect of pool level in Figure C.3 to mask some heterogeneity.

C.3 Coding real electoral systems

Table C.3 displays summary statistics of the distribution of the six component rules in the 1500 + electoral systems in our comprehensive elections dataset.

Entries in Table C.3 are self-explanatory, but it is worth looking in more detail at *number of votes*, *threshold*, and *district magnitude*. The *number of votes* a voter can cast in principle

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Table C.3 Summary statistics on electoral system rules: Descriptive statistics and observation frequency of electoral features in our dataset

Feature	Observed values
Ballot Type	Closed (1028), Flexible (141), Open (355)
Level of Pooling	Party (1372), Sub-party (16), Candidate (140)
Number of Votes	1 (1349), number of candidates (48), number of seats (128), less than seats (3)
District Magnitude	Min: 1, Median: 4.44, Mean: 14.68, Max: 450
Allocation Formula	Absolute Majority (129), D'Hondt (292), Droop (31), Hagenbach-Bischoff (70), Hare (357), Imperiali (11), Modified Sainte-Lagüe (58), Plurality (519), Sainte-Lagüe (18), Fortified PR (37)
Legal Threshold	Min: 0, Median: 0, Mean: 0.95, Max: 17

takes five different values: 1, 2, as many votes as there are candidates, as many votes as there are seats (i.e., M), or some quantity less than seats (i.e., $M - x$, where x is a number smaller than M). In practice, most electoral systems award voters a single vote. In such systems, voters can choose one and only one candidate or party list. Voters may have two votes in systems such as MNTV, TR-MNTV, and LV, depending on M. For example, in Egypt 2010, where TR-MNTV was used, voters cast two distinct votes when choosing the members of the *Magles en-Nowwab*, the country's House of Representatives.[9] Some other systems award as many votes as there are seats in the district (this is the case, for example, in MNTV, systems) and a few others grant multiple but fewer votes than the total number of seats being contested ($M - x$, where x is a number smaller than M). For obvious reasons, these systems usually have districts with relatively low values of M. AV and STV electoral systems typically award voters as many votes as there are candidates in the district, and we do observe a few instances of this rule in our dataset—most of these observations come from Australia (AV) and Ireland (STV).

Legal threshold (T) is a particularly thorny characteristic. In our simulations, we created worlds where thresholds took on one of five possible T values: 0 (i.e., no threshold), 1%, 3%, 5%, and 10% (i.e., parties needed to obtain at least T% of the district-level vote in order to qualify to obtain legislative seats). In our simulations, the threshold operates at the district level to eliminate parties with little support. In the real world, thresholds vary from 0.5% to 12.5% for tier 1 seats (i.e., localized districts) and from 0.5% to 17% for tier 2 seats (i.e., regional or national districts). In some systems, different thresholds exist across tiers. It is impossible to capture this enormous range of variation in a single continuous variable. For this component alone, we adopt a simplification and consider the largest of tier 1

[9] Two-tiered mixed-member systems allow voters to cast one vote for a single-member district representative and a second one for representatives in large-M districts that allocate seats using some proportional rule. Because candidates in the majoritarian tier are not competing against contestants in the PR tier and vice versa, the fact that voters have a second vote for an upper tier does not directly affect the intraparty or interparty competition in each of the races. Consequently, to calculate the TDE and AP scores for the actual elections held in mixed-member systems, voters are coded as having only one vote.

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and tier 2 thresholds for multi-tier PR systems and mixed-member systems; naturally, for single-tier systems we simply use the threshold at that level. Admittedly, this will have an effect, of unknown magnitude, on the TDE and AP scores that we calculate for real electoral systems.

Finally, in the district-level projection and country-based GBM prediction algorithms, we simplify district magnitude into a single "average" measure. For countries with systems other than mixed-member, average district magnitude is the ratio of total number of seats (s_1, where subindex 1 is a reminder that we look at tier 1 which in most of these cases is also the only electoral tier in the system) divided by total number of districts (d_1). For mixed-member independent systems (MMI), average district magnitude is similarly simple, $\frac{s_1 + s_2}{d_1 + d_2}$, where subindex 2 reminds us that we are also considering tier 2 seats and districts. For countries using a "dependent" or "compensatory" mixed-member system (MMC), where upper tier seats are meant to achieve close-to-proportional representation, we define average district magnitude simply as s_2/d_2, following (Carey and Hix, 2008).

An additional complication obtains in mixed-member "independent" or "parallel" systems (MMI), where the upper proportional representation tier does not always correct the less proportional distribution of seats typically observed in the lower, single-member district tier. In parallel mixed-member systems, we calculate separate tier-specific average district magnitudes—that is, s_1/d_1 and s_2/d_2. In the country-level GBM prediction, we split these tiers as if they were two independent systems, carry out all relevant calculations, and then present a single, system-specific average prediction weighting the separate results for TDE and AP based on the share of seats that are awarded in each of the two tiers. For example, in the Mexican electoral system—where 300 representatives are elected in single-member districts and 200 representatives are elected in five proportional representation districts of size $M = 40$—we calculate TDE and AP for the single-member districts and proportional representation tiers separately, as if Mexico were comprised of two distinct electoral systems. Then, we compute the weighted average of these indices using the percentage of seats allotted in each of the tiers as weights. In our example, this means that the TDE and AP scores for the single-member tier are multiplied by 0.6 (60% of Mexican legislators are elected in single-member district (SMD)) and by 0.4 in the proportional representation tier. The resulting values are then added up to generate the final TDE and AP for Mexico. This decision is consistent with the common understanding that the tiers of parallel mixed-member systems set up distinct sets of incentives for politicians.

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APPENDIX D

Measures of Unity Based on Network Eigendecomposition

The rich world of graph theory and network analysis is not lacking in measures that make use of higher-order information to establish a node's centrality. A particularly popular alternative is known as the *eigenvector centrality*—the extent to which immediate connections of a legislator are, themselves, central. Formally, and letting $N(i)$ be the set of immediate neighbors of legislator i, the eigenvector centrality of i is defined recursively as the (weighted) sum of the centrality of nodes in $N(i)$, or

$$u_i = \frac{1}{\lambda} \sum_{j \in N(i)} u_j,$$

where the inverse weight λ is a constant corresponding to the largest *eigenvalue* of the adjacency matrix $\mathbf{A}$, making $\mathbf{u}$ the corresponding eigenvector of $\mathbf{A}$, and giving the measure its name.[1,2]

A generalization of this idea that moves beyond the set of immediate connections is the foundation of one of the most powerful statistical models of network formation—the *latent factor model* (e.g., Hoff, 2009; Minhas, Hoff, and Ward, 2019). In the latent factor model, also known as the Additive and Multiplicative Effects (AME) model, the symmetric adjacency matrix $\mathbf{A}$ can be modeled as being generated by a distribution such that

$$\mathbb{E}[\mathbf{A}] = \mathbf{U}\mathbf{\Lambda}\mathbf{U}^{-1} + \mathbf{X}\boldsymbol{\beta},$$

where $\mathbf{\Lambda}$ is a diagonal matrix of (ordered) eigenvalues and $\mathbf{U}$ is the matrix of corresponding latent eigenvectors (i.e., the eigendecomposition of $\mathbf{A}$), $\boldsymbol{\beta}$ is a vector of unknown (potentially random) parameters, and $\mathbf{X}$ is a matrix of constants and observed covariates.[3] The rows of $\mathbf{U}$ can thus be thought of as coordinates in some latent, K-dimensional space, where K is the number of columns of $\mathbf{U}$.[4]

[1] In linear algebra, an eigenvalue is a special number that arises from a type of transformation applied to vectors (which can be thought of as arrows pointing in a certain direction in space). When a vector is transformed, it usually changes direction. However, there are some special vectors (such as the collection of centrality measures across legislators) that only get scaled (made longer or shorter) but do not change their direction when this transformation is applied. The factor by which these special vectors get scaled is called the eigenvalue.

[2] The measure has advantages over alternatives centrality scores, such as *degree centrality* or *betweenness*, in that it naturally reflects the idea that not all connections are made equal (strong connections to more central legislators make a legislator more central herself), and in that it is more robust to differences in network scale and density. These alternative measures can be useful in other contexts, however. For example, the notion of betweenness centrality is deeply connected to classical measures of power-through-pivotality (such as the Banzhaf index) popular in the social choice literature (e.g., Szczepański, Michalak, and Rahwan, 2016).

[3] The model, which is defined and estimated in a Bayesian framework, is much more general—accommodating weighted edges, directed networks, covariances among edges between a pair of nodes, and more. For a great introduction to the model and its applications in Political Science, see Minhas, Hoff, and Ward (2019).

[4] For parsimony, we often truncate the number of columns so that $K << N$, the number of nodes in our network. This effectively embeds these nodes in a lower-dimensional space that in effect tries

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This space can sometimes be understood in terms of *ideology*—as in the work of Barberá (2015), for instance—but it need not be. Generally, we can think of it as the space of unobserved cleavages that helps parties define themselves as such, and distinguish themselves from their competitors. In this abstract space of "partyness," we can thus define the extent to which a legislator i is "central" or "peripheral" in her party by measuring the (squared) distance between her position and the mean position across all her copartisans—a measure of the extent to which the legislator contributes to the disunity of her party:

$$\text{Disunity}_i = \frac{||\mathbf{u}_i - \bar{\mathbf{u}}_{p[i]}||^2}{\text{s.d.}(\mathbf{U})}, \tag{D.1}$$

where $||\mathbf{u}_i - \bar{\mathbf{u}}_{p[i]}|| = \sqrt{\sum_k (u_{i,k} - \bar{u}_{p[i],k})^2}$ is a sum of squared differences with respect to the party mean (i.e., the Euclidean norm of the vector of differences), and $\bar{\mathbf{u}}_{p[i]}$ is the average position of i's party p. We can further scale these squared distances using the estimated standard deviation of all positions within a country, so as to render distances comparable across countries.

We can therefore fit this model (and learn its parameters and latent variables) to the country-specific re-tweet networks, and obtain comparable measures of the extent to which legislators tend to show signs of partisan unity/cohesion (when the contribution to disunity as defined above is low for everyone), disunity (when disunity is high across the board), or some mix between the two that can be attributed, at least partially, to the incentives generated by the electoral rules in place.

to approximate, as accurately as possible, the higher-order endogenous relationships present in the network. In our work, we restrict the space to a single dimension.

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APPENDIX E

Data Sources

To identify an initial sample of elections held (their results and some of the electoral rules they employed) in the post-WWII era, we merged, homogenized, and corrected data from the following three sources:

1. NELDA (National Elections Across Democracy and Autocracy): Hyde, Susan D., and Nikolay Marinov. 2012. "Which Elections Can Be Lost?" *Political Analysis* 20 (2): 191–210.
2. V-Dem (Varieties of Democracy) v8.0: https://www.v-dem.net/en/data/data-version-8/
3. Bormann, Nils-Christian, and Matt Golder. 2013. "Democratic Electoral Systems around the World, 1946–2011." *Electoral Studies* 32(2): 360–369.

Obtaining district-level data on the election rules—district magnitude, seat allocation formula, legal threshold, ballot type, vote pooling, level, and number of votes cast—required us to scour the more than 500 sources listed below. They include nearly twenty datasets compiled by other scholars, approximately fifty primary documents (laws and regulations), between fifty and a hundred election reports, nearly 150 published and unpublished scholarly works, and more than 250 websites of one sort or another.[1]

Aardal, Bernt. 1990. "The Norwegian parliamentary election of 1989." *Electoral Studies* 9(2): 151–158.

Aardal, Bernt. 2011. "The Norwegian electoral system and its political consequences." *World Political Science* 7(1).

ACE Electoral Knowledge Network. n.d. "ACE Electoral Knowledge Network." https://aceproject.org/about-en/.

African Elections Database. n.d. "African Elections Database." https://africanelections.tripod.com/.

Aghrout, Ahmed. 2008. "Parliamentary and presidential elections in Mauritania, 2006 and 2007." *Electoral Studies* 27(2): 385–390.

Al-Sharah, Mohammad Kanoush. 1997. Political liberalisation in Jordan: A study of the democratisation process; 1989-1993 PhD thesis Durham University.

Allison, Lincoln. 1993. "The Georgian Elections of 1992." *Electoral Studies* 12(2): 174–179.

Allison, Lincoln. 1996. "The Georgian Elections of November 1995." *Electoral Studies* 15(2): 275–280.

Anderson, John. 1996. "The Kyrgyz parliamentary and presidential elections of 1995." *Electoral Studies* 15(4): 529–533.

Angell, Alan. 1990. "The Chilean elections of 1989." *Electoral Studies* 9(3): 241–245.

Argentina. N.d. "Código Electoral Nacional (Ley N∘ 19.945, Texto ordenado) y Ley N∘ 26.571 de Democratización de la Representación Política, la Transparencia y la Equidad Electoral (Extracto)."

Arter, David. 1999. "The Swedish general election of 20th September 1998: a victory for values over policies?" *Electoral Studies* 18(2): 296–300.

Asian Network for Free Elections (ANFREL). 2002. "Pakistan Election 2002 Report of International Observation Missions."

Austria. Bundeskanzleramt. 2013. "Bundesgesetzblatt- Für die Republik Österreich."

Bacik, Gokhan. 2004. "The parliamentary election in Turkey, November 2002." *Electoral Studies* 23(4): 821–828.

[1] We restrict our data collection to elections in which at least two parties competed.

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Barberá, Pablo. 2013. "When Duverger Becomes Autocratic: Electoral Systems and Opposition Fragmentation in Non-Democratic Regimes." Unpublished manuscript, New York University.
BBC. 2006. "Q&A: Gabon election." http://news.bbc.co.uk/2/hi/africa/6182345.stm.
Beacháin, Donnacha ó. 2005. "Parliamentary Elections in Kazakhstan, September and October 2004." *Electoral Studies* 24(4): 762–769.
Beck, Kathryn, Nicole Betel, Eleonora Dimitrova, Andrew Hiatt, Lama Mourad, and Adam Tanel. 2010. "From Sectopolitics to a Politics of Diversity: Issues and Options for Deconfessionalising Lebanon."
Belarus. 2000. " Electoral Code of the Republic of Belarus February 11, 2000 N 370–3."
Berg, Linda, and Henrik Oscarsson. 2014. "The Swedish general election 2014." *Electoral Studies* 38: 82–136.
Berhanu, Kassahun. 1995. "Ethiopia Elects a Constituent Assembly." *Review of African Political Economy* 22(63): 129–135.
Birch, Sarah, Frances Millard, Marina Popescu, and Kieran Williams. 2002. "Romania: stability without consensus." In *Embodying Democracy: Electoral System Design in Post-Communist Europe*. pp. 90–108.
Bormann, Nils-Christian, and Matt Golder. 2013. "Democratic electoral systems around the world, 1946–2011." *Electoral Studies* 32(2): 360–369.
Bouandel, Youcef. 2002. "PROFILE-Algeria: A Controversial Election." *Mediterranean Politics* 7(2): 96–104.
Bouandel, Youcef. 2008. "Election of the legislature in Algeria, May 2007." *Electoral Studies* 27(3): 571–574.
Brady, David, and Jongryn Mo. 1992. "Electoral systems and institutional choice: a case study of the 1988 Korean elections." *Comparative Political Studies* 24(4): 405–429.
Brancati, Dawn. n.d. "Global Elections Database." http://www.globalelectionsdatabase.com/.
Brown, Graham. 2008. "Federal and state elections in Malaysia, March 2008." *Electoral Studies* 27: 740–744.
Bulgaria. 2014. "Election Code of Bulgaria adopted on 5 March 2014."
Bulgaria. N.d. "Law on the Election of the Grand National Assembly."
Bundestag, Deutscher. N.d. "Wahlen-in-Deutschland." https://www.bundestag.de/wahltermine.
Burundi. 2005. "Loi N◦ 1/015 du 20 Avril 2005 Portant Code Electoral."
Caramani, Daniele. 2000. "Greece." In *Elections in Western Europe since 1815. The Societies of Europe*. London: Palgrave Macmillan.
Carr, Adam. n.d. "Psephos." http://psephos.adam-carr.net/.
Carraffa, Carlos H. Cordero. 2014. *Elecciones en Bolivia - Del Sistema Liberal Representativo Al Sistema Liberal Comunitario*. Oficina Bolivia: Konrad Adenauer Stiftung.
Central, Biroul Electoral. N.d. http://becparlamentare2012.roaep.ro/ALBA.html.
Centrālās vēlēŠanu komisijas Informācijas nodaļa. 2014. "Centrālās vēlēŠanu komisijas Informācijas nodaļa."
Chen, Chun-fu. 2006. "The legislative election in Taiwan, December 2004." *Electoral Studies* 25(4): 820–825.
Cho, Wonbin. 2005. "The General Election in South Korea, April 2004." *Electoral Studies* 24(3): 525–530.
Clark, William A. 2005. "The Russian election cycle, 2003–2004." *Electoral Studies* 24(3): 511–519.
Colomer, Josep M., ed. 2004. *Handbook of Electoral System Choice*. London: Palgrave-Macmillan.
Commission Electorale Nationale Indépendante. 2015. "Résultats Provisoires de L'Election des Deputes au Niveau National."
Consejo Nacional Electoral, Venezuela. N.d. https://www.cne.gov.co/.
Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Agnes Cornell, Sirianne Dahlum, Haakon Gjerløw, Adam Glynn, Allen Hicken, Joshua Krusell, Anna Lührmann, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Moa Olin, Pamela Paxton, Daniel Pemstein, Josefine Pernes, Johannes Von RÖmer, Brigitte Seim, Rachel Sigman, Jeffrey Staton, Natalia

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Stepanova, Aksel SundstrÖm, Eitan Tzelgov, Yi-Ting Wang, Tore Wig, Steven Wilson, and Daniel Ziblatt. 2018. "V-Dem Country-Year Dataset 2018." https://www.v-dem.net.
Corte Electoral, Uruguay. N.d. https://www.gub.uy/corte-electoral/.
Corte Nacional Electoral (CNE). 2010. *Atlas Electoral de Bolivia—Tomo 1*. La Paz: CNE, PNUDBolivia, and International IDEA.
Crisp, Brian F., and Patrick Cunha Silva. 2020. "Electoral Systems and System Reforms in Latin America." In *Oxford Research Encyclopedia of Politics*. Oxford: Oxford University Press.
Croatia. 2015. "Parliamentary Elections Act (2015, amended 2015)."
Croissant, Aurel. 2002. "Electoral Politics in South Korea." In *Electoral Politics in Southeast and East Asia*, ed. Aurel Croissant, Gabriele Bruns, and Marei John, pp. 233–276.
de Dados Abertos do TSE, Portal. N.d. https://dadosabertos.tse.jus.br/.
de Eleições, Comissão Nacional. N.d. https://www.cne.pt/.
de la República Dominicana (JCE), Junta Central Electoral. N.d. https://jce.gob.do/.
Denmark. 2019. "Folketing (Parliamentary) Elections Act Consolidated Act No. 137 of 7 February 2019."
Desrues, Thierry, and Bernabé López García. 2008. "L'institutionnalisation des élections et la désertion des électeurs: le paradoxe de la monarchie exécutive et citoyenne." *L'Année du Maghreb* IV: 281–307.
Diarrah, Cheick Oumar. 2000. *Le défi démocratique au Mali*. Paris, France: L'HARMATTAN.
Dimitras, Panoyote Elias. 1989. "Greece." *Electoral Studies* 8(3): 270–280.
do Espírito Santo, Paula. 2010. "The 2008 Angolan parliamentary elections." *Electoral Studies* 29(4): 746–749.
Downs, William M. 2009. "The 2008 parliamentary election in Romania." *Electoral Studies* 28: 510–513.
ElectionGuide. N.d.*a*. "Burkinabe National Assembly 2015 General." https://www.electionguide.org/elections/id/2819/.
ElectionGuide. N.d.*b*. "Burundian National Assembly 2010 General." https://www.electionguide.org/elections/id/475/.
ElectionGuide. N.d.*c*. "Congo DRC National Assembly 2006 General." https://www.electionguide.org/elections/id/378/.
ElectionGuide. N.d.*d*. "Congo DRC National Assembly 2011 General." https://www.electionguide.org/elections/id/505/.
ElectionGuide. N.d.*e*. "Gabonese National Assembly 2011 General." https://www.electionguide.org/elections/id/511/.
ElectionGuide. N.d.*f*. "Sudanese National Assembly 2015 General." https://www.electionguide.org/elections/id/2804/.
Electoral, Dirección Nacional. N.d.*a*. "Resultados electorales." https://www.argentina.gob.ar/dine/resultados-electorales.
Electoral, Observatorio. N.d.*b*. "Histórico de resultados electorales." https://observatorio.registraduria.gov.co/historico-resultados.html.
Electoral System Change in Europe since 1945: Luxembourg. N.d.
Electoral System Change in Europe since 1945: Switzerland. N.d.
Estonia. 1992. "Estonian Riigikogu Election Act. 6 April 1992."
Estonia. 1994. "RIIGIKOGU VALIMISE SEADUS. Vastu võetud 07.06.1994."
Estonia. 2002. "RIIGIKOGU VALIMISE SEADUS. Vastu võetud 12.06.2002."
European Union Election Observation Mission. 2002. "Sierra Leone Presidential and Parliamentary Elections 14 May 2002."
European Union Election Observation Mission. 2006. "Uganda Presidential and Parliamentary Elections 23 February 2006."
Ferree, Karen E. 2018. "Electoral Systems in Context: South Africa." In *The Oxford Handbook of Electoral Systems*, ed. Erik S. Herron, Robert J. Pekkanen, and Matthew S. Shugart. Oxford Academic, online edn: Oxford University Press.
Fitzmaurice, John. 1990. "Eastern Germany." *Electoral Studies* 9(4): 327–336.
for Sustainable Democracy in Africa, Electoral Institute. 2008. "Zimbabwe: Electoral system." https://web.archive.org/web/20211223071314/https://www.eisa.org/wep/zim4.htm#fn1.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

for Sustainable Democracy in Africa, Electoral Institute. 2010. "Madagascar: 2007 National Assembly election constituency delimitation and seat allocation." https://web.archive.org/web/20211226170116/https://www.eisa.org/wep/mad2007delimit.htm.
for Sustainable Democracy in Africa, Electoral Institute. 2020. "Tanzania: National Assembly seat allocation." https://web.archive.org/web/20210411041907/https://www.eisa.org/wep/tanseatallocation.htm.
France. 1948. "Loi N° 48–2151."
Gallagher, Michael, and Paul Mitchell, eds. 2005. *The Politics of Electoral Systems.* Oxford: Oxford University Press.
Galvan, Dennis. 2009. "The presidential and parliamentary elections in Senegal, February and June 2007." *Electoral Studies* 28(3): 492–496.
García, Bernabé López. 2003. "Morocco: Elections for Continuity." *IEMed Mediterranean Yearbook* 102: 102–105.
Gasim, Gamal. 2011. "Sudan's 2010 presidential and parliamentary elections." *Electoral Studies* 30(2): 375–378.
German Democratic Republic. 1990. "1990 Berlin Ballot."
Goenaga, Amaia. 2007. "Election Watch TEIM Electoral Profile: Syria/Legislatives April 22nd–23rd, 2007."
Goulart, Pedro, and Francisco José Veiga. 2016. "Portuguese 2015 legislative elections: How economic voting, the median voter and unemployment led to 'the times they are a'changin'?"
Greece. 2000. "Presidential Decree No. 26."
Hardarson, ólafur Th. 2002. "The Icelandic Electoral System 1844–1999." In *The Evolution of Electoral and Party Systems in the Nordic Countries*, ed. Bernard Grofman, and Arend Lijphart. New York: Agathon pp. 101–166.
Hardman, Helen. N.d.*a*. "Electoral System Change in Europe since 1945: Bulgaria."
Hardman, Helen. N.d.*b*. "Electoral System Change in Europe since 1945: Poland."
Hardman, Helen. N.d.*c*. "Electoral System Change in Europe since 1945: Slovenia."
Hardman, Helen, and Alan Renwick. N.d.*a*. "Electoral System Change in Europe since 1945: Latvia."
Hardman, Helen, and Alan Renwick. N.d.*b*. "Electoral System Change in Europe since 1945: Lithuania."
Hardman, Helen, and Alan Renwick. N.d.*c*. "Electoral System Change in Europe since 1945: Slovakia."
Helgason, Thorkell. 2010. *Apportionment of Seats to Althingi, the Icelandic Parliament: Analysis of the Elections on May 10, 2003*, *May 12, 2007 and April 25, 2009*.
Helgason, Thorkell. 2013. *Apportionment of Seats to Althingi, the Icelandic Parliament: Analysis of the Elections on May 10, 2003, May 12, 2007, April 25, 2009 and April 27, 2013*.
Herron, Erik S. 2002. "Mixed electoral rules and party strategies: Responses to incentives by Ukraine's Rukh and Russia's Yabloko." *Party Politics* 8(6): 719–733.
Hicken, Allen, and Yuko Kasuya. 2003. "A guide to the constitutional structures and electoral systems of east, south and southeast Asia." *Electoral Studies* 22(1): 121–151.
Honduras, Consejo Nacional Electoral. N.d. https://www.cne.hn/.
Hooghe, Marc, Bart Maddens, and Jo Noppe. 2006. "Why parties adapt: electoral reform, party finance and party strategy in Belgium." *Electoral Studies* 25(2): 351–368.
Hoyo, Verónica. 2017. "Electoral Systems in Context: France." In *The Oxford Handbook of Electoral Systems*, ed. Erik S. Herron, Robert J. Pekkanen, and Matthew S. Shugart. online edn ed. Oxford: Oxford University Press.
Hyde, Susan D, and Nikolay Marinov. 2012. "Which elections can be lost?" *Political Analysis* 20(2): 191–210.
IDEA. n.d. "Electoral System Design Database." https://www.idea.int/data-tools/data/electoral-system-design-database.
Indépendante, Commission Electorale Nationale. N.d. "Proclamation of the provisional results of the legislative elections of July 23, 2010." https://web.archive.org/web/20200527113544/https://www.ceniburundi.bi/2010/07/28/proclamation-des-resultats/.
Inneres, Bundesministerium Für. N.d. "Nationalratswahlen." https://www.bmi.gv.at/412/Nationalratswahlen/.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Inter-Parliamentary Union. n.d. "Inter-Parliamentary Union." https://www.ipu.org/.
International Foundation for Electoral Systems. 2009*a*. "Electoral Systems and Lebanon."
International Foundation for Electoral Systems. 2009*b*. "Lebanon's 2009 Parliamentary Elections: The Lebanese Electoral System."
International Foundation for Electoral Systems. 2012. "Elections in Libya July 7 General National Congress Elections Frequently Asked Questions."
International Foundation for Electoral Systems. 2013. "Elections in the Hashemite Kingdom of Jordan January 23 Chamber of Deputies Elections."
International Foundation for Electoral Systems. 2014. "Elections in Libya June 25 Council of Representatives Elections Frequently Asked Questions."
International Foundation for Electoral Systems. 2015. "Elections in Egypt 2015 House of Representatives Elections Frequently Asked Questions."
Isaacs, Rico. 2008. "The Parliamentary Elections in Kazakhstan, August 2007." *Electoral Studies* 27(3): 381–385.
Italy. 1948. "Legge 20 gennaio 1948, n. 6 ."
Jankowski, Michael. 2016. "Voting for locals: Voters' information processing strategies in open-list PR systems." *Electoral Studies* 43: 72–84.
Jazeera, Aj. N.d. "High stakes in Myanmar election." https://www.aljazeera.com/news/2012/3/29/high-stakes-in-myanmar-election.
Jurado Nacional de Elecciones. 2015. "Elecciones Parlamentarias en el Perú (2015)."
Jurkynas, Mindaugas. 2014. "The Parliamentary Elections in Lithuania, October 2012." *Electoral Studies* 34: 334–338.
Kazakhstan. 1999. "Constitutional Act of the Republic of Kazakhstan of 06.05.1999 No. 375-I."
Khazen, Farid el. 1993. "Lebanon's First Postwar Parliamentary Election." *Middle East Policy* 2(1): 102–119.
Kim, Youngmi. 2014. "The 2012 parliamentary and presidential elections in South Korea." *Polit. Sci* 40(4): 499–517.
King, Ronald F., and Cosmin Gabriel Marian. 2014. "Antagonism and austerity: The December 2012 Romanian parliamentary elections." *Electoral Studies* 34: 310–315.
Knesset, The. N.d. https://www.knesset.gov.il.
Kollman, Ken, Allen Hicken, Daniele Caramani, and David Backer. 2018. " Constituency-Level Elections Archive (CLEA)." http://www.electiondataarchive.org.
Konitzer, Andrew. 2013. "The parliamentary elections in Serbia, May 2012." *Electoral Studies* 32(2): 380–385.
Konitzer, Andrew. 2014. "The parliamentary election in Serbia, March 2014." *Electoral Studies* 36: 210–239.
Kostadinova, Petia, and Maria Popova. 2014. "The 2013 parliamentary elections in Bulgaria." *Electoral Studies* pp. 365–368.
Kostadinova, Petia, and Maria Popova. 2015. "The 2014 parliamentary elections in Bulgaria." *Electoral Studies* 34: 114–118.
la Marina, and Diario De. N.d. "December 21, 1958, 8B."
Lamprinakou, Chrysa. N.d.*a*. "Electoral System Change in Europe since 1945: Cyprus."
Lamprinakou, Chrysa. N.d.*b*. "Electoral System Change in Europe since 1945: Greece."
Leaño Román, Eduardo. 2005. *Sistemas electorales en Bolivia. La conversión de votos en cargos del Ejecutivo y Legislativo.* La Paz, Bolivia: Corte Nacional Electoral.
Liberia. 2012. "Law Number (4) for the year 2012 For Election of the General National Congress."
Liberia, National Elections Commission. N.d. https://www.necliberia.org.
Lithuania. 2004. "Nr. X-1490."
Lithuania. 2016. "Law on Elections to the Seimas No I-2721 (As last amended on 22 March 2016—No XII-2265)."
Lublin, David. n.d. "Election Passport." http://www.electionpassport.com.
Malawi. 1994. "Parliamentary Elections Results 1994."
Malawi. 1999. "Parliamentary Elections Results 1999."
Malawi. 2004. "Summary Results for 2004 Parliamentary General Elections."

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Malawi. 2009. "Parliamentary Elections Results 2009."
Malawi. 2014. "Parliamentary Elections Results 2014."
Malawi Electoral Support Network. 2014. "Election Report: 20 May 2014 Tripartite Elections in Malawi."
Matakos, Konstantinos, and Dimitrios Xefteris. 2016. "Election note: The September 20, 2015 parliamentary elections in Greece." *Electoral Studies* 43: 169–209.
Mauritius. 1968. "1968 Constitution of Mauritius.".
May, R. J. 1988. "Elections in the Philippines 1986–87." *Electoral Studies Report* 6(2): 52–64.
May, R. J. 2002. "Elections in the Philippines, May 2001." *Electoral Studies* 21(4): 673–680.
May, Roy, and Simon Massey. 2003. "Presidential and legislative elections in Chad, 2001–2002." *Electoral Studies* 22(4): 765–772.
MaŠkarinec, Pavel. 2014. "Parliamentary and presidential elections in Mongolia, 2012 and 2013." *Electoral Studies* 36: 186–191.
Mexico. 1996. Mexico (Amended in 1996)."
Miguel, Juan Ibeas, and Antonia Santos Pérez. 1995. "Elecciones y reforma política en Colombia: (1990–1991)." *Revista de Derecho Político* 40: 341–378.
Moldova. 2014. " Electorala 2014 30 noiembrie 2014 Documente și Cifre cu Privire la Alegerile Parlamentare de legislatura a XX-a."
Montenegro. 2006. "Law on the Election of Councillors and Representatives (as amended through July 2006)."
Moral, Mert, H. Ege Ozen, and Efe Tokdemir. 2015. "Bringing the incumbency advantage into question for proportional representation." *Electoral Studies* 40: 56–65.
Mozaffar, Shaheen, and Richard Vengroff. 2002. "A 'whole system' approach to the choice of electoral rules in democratizing countries: Senegal in comparative perspective." *Electoral Studies* 21(4): 601–616.
Murray, Elizabeth, and Fiona Mangan. 2017. *The 2015-2016 CAR Elections, a Look Back*. United States Institute of Peace.
Na Thalang, Chanintira. 2012. "Parliamentary elections in Thailand, July 2011." *Electoral Studies* 31(3): 633–636.
National Democratic Institute. 2005. "Statement of the NDI Pre-Election Delegation to Afghanistan."
National Democratic Institute. 2011. "Final Report on the Moroccan Legislative Elections November 25, 2011."
National Democratic Institute. 2012. "Final Report on Algeria's Legislative Elections."
National Democratic Institute. 2014. "Final Report on the 2014 Legislative and Presidential Elections in Tunisia."
National Republican Institute. 1989. "The May 7, 1989 Panamanian Elections."
Nicaragua. 1995. "Ley Electoral Ley No. 211, Aprobada el 5 de Diciembre de 1995."
Noh, Abdillah. 2014. "Malaysia 13th General Election: A short note on Malaysia's continuing battle with ethnic politics." *Electoral Studies* 34: 266–269.
Nohlen, Dieter, and Philip Stover, eds. 2010. *Elections in Europe. A Data Handbook*. Baden-Baden: Nomos.
Nohlen, Dieter, ed. 2005*a*. *Elections in the Americas. A Data Handbook, Volume I: North America, Central America, and the Caribbean*. Vol. 1 Oxford: Oxford University Press.
Nohlen, Dieter, ed. 2005*b*. *Elections in the Americas. A Data Handbook, Volume II: South America*. Vol. 2 Oxford: Oxford University Press.
Nohlen, Dieter, Florian Grotz, and Christof Hartmann, eds. 2001*a*. *Elections in Asia and the Pacific. A Data Handbook. Volume I: The Middle East, Central Asia and South Asia*. Vol. 1 Oxford: Oxford University Press.
Nohlen, Dieter, Florian Grotz, and Christof Hartmann, eds. 2001*b*. *Elections in Asia and the Pacific. A Data Handbook. Volume II: South East Asia, East Asia and the South Pacific*. Vol. 2 Oxford: Oxford University Press.
Nohlen, Dieter, Michael Krennerich, and Bernhard Thibaut, eds. 1999. *Elections in Africa. A Data Handbook*. Oxford: Oxford University Press.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Núñez, Lidia. N.d.*a*. "Electoral System Change in Europe since 1945: Italy."
Núñez, Lindia. N.d.*b*. "Electoral System Change in Europe since 1945: Estonia."
Núñez, Lindia. N.d.*c*. "Electoral System Change in Europe since 1945: Portugal."
Núñez, Lindia. N.d.*d*. "Electoral System Change in Europe since 1945: Spain."
Office, Czech Statistical. N.d. "Elections to the Chamber of Deputies of the Parliament of the Czech Republic held on 25.10–26.10.2013." https://www.volby.cz/pls/ps2013/ps53?xjazyk=CZ&xv=1.
Office for Democratic Institutions and Human Rights. 1998. "Republic of Moldova Parliamentary Elections 22 March 1998."
Office for Democratic Institutions and Human Rights. 2001. "Republic of Moldova Parliamentary Elections 25 February 2001."
Office for Democratic Institutions and Human Rights. 2002*a*. "Former Yugoslav Republic of Macedonia Parliamentary Elections 15 September 2002."
Office for Democratic Institutions and Human Rights. 2002*b*. "Republic of Turkey Parliamentary Elections 3 November 2002."
Office for Democratic Institutions and Human Rights. 2003*a*. "Georgia Parliamentary Elections 2 November 2003. OSCE/ODIHR Election Observation Mission Report, Part 1."
Office for Democratic Institutions and Human Rights. 2003*b*. "Republic of Armenia Parliamentary Elections 25 May 2003 Final Report."
Office for Democratic Institutions and Human Rights. 2004. "International Election Observation Mission Repeat Parliamentary Election, Georgia – 28 March 2004."
Office for Democratic Institutions and Human Rights. 2005*a*. "Kyrgyz Republic Parliamentary Elections 27 February and 13 March 2005."
Office for Democratic Institutions and Human Rights. 2005*b*. "Republic of Moldova Parliamentary Elections 6 March 2005."
Office for Democratic Institutions and Human Rights. 2005*c*. "Republic of Tajikistan Parliamentary Elections 27 February and 13 March 2005."
Office for Democratic Institutions and Human Rights. 2006. "Former Yugoslav Republic of Macedonia Parliamentary Elections 5 July 2006."
Office for Democratic Institutions and Human Rights. 2007*a*. "Kyrgyz Republic Pre-term Parliamentary Elections 16 December 2007."
Office for Democratic Institutions and Human Rights. 2007*b*. "Republic of Armenia Parliamentary Elections 12 May 2007."
Office for Democratic Institutions and Human Rights. 2007*c*. "Republic of Turkey Early Parliamentary Elections 22 July 2007."
Office for Democratic Institutions and Human Rights. 2008*a*. "The Former Yugoslav Republic of Macedonia Early Parliamentary Elections 1 June 2008."
Office for Democratic Institutions and Human Rights. 2008*b*. "Georgia Parliamentary Elections 21 May 2008. Final Report."
Office for Democratic Institutions and Human Rights. 2009*a*. "Iceland Early Parliamentary Elections 25 April 2009."
Office for Democratic Institutions and Human Rights. 2009*b*. "Norway Parliamentary Elections 14 September 2009."
Office for Democratic Institutions and Human Rights. 2009*c*. "Republic of Moldova Early Parliamentary Elections 29 July 2009."
Office for Democratic Institutions and Human Rights. 2009*d*. "Republic of Moldova Parliamentary Elections 5 April 2009."
Office for Democratic Institutions and Human Rights. 2010*a*. "Kyrgyz Republic Parliamentary Elections 10 October 2010."
Office for Democratic Institutions and Human Rights. 2010*b*. "The Netherlands Early Parliamentary Elections 9 June 2010."
Office for Democratic Institutions and Human Rights. 2010*c*. "Republic of Moldova Early Parliamentary Elections 28 November 2010."
Office for Democratic Institutions and Human Rights. 2011*a*. "Republic of Slovenia Early Elections of the National Assembly 4 December 2011."

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Office for Democratic Institutions and Human Rights. 2011*b*. "Republic of Turkey Parliamentary Elections 12 June 2011."
Office for Democratic Institutions and Human Rights. 2011*c*. "Russian Federation Elections to the State Duma 4 December 2011."
Office for Democratic Institutions and Human Rights. 2012*a*. "Georgia Parliamentary Elections 1 October 2012. Final Report."
Office for Democratic Institutions and Human Rights. 2012*b*. "Greece Early Parliamentary Elections 6 May 2012."
Office for Democratic Institutions and Human Rights. 2012*c*. "Montenegro Early Parliamentary Elections 14 October 2012."
Office for Democratic Institutions and Human Rights. 2012*d*. "The Netherlands Early Parliamentary Elections 12 September 2012."
Office for Democratic Institutions and Human Rights. 2012*e*. "Republic of Armenia Parliamentary Elections 6 May 2012."
Office for Democratic Institutions and Human Rights. 2012*f*. "Slovak Republic Early Parliamentary Elections 10 March 2012."
Office for Democratic Institutions and Human Rights. 2013*a*. "Grand-Duchy of Luxembourg Early Parliamentary Elections 20 October 2013."
Office for Democratic Institutions and Human Rights. 2013*b*. "Italy Early Parliamentary Elections 24 and 25 February 2013."
Office for Democratic Institutions and Human Rights. 2013*c*. "Norway Parliamentary Elections 9 September 2013."
Office for Democratic Institutions and Human Rights. 2013*d*. "Republic of Austria Parliamentary Elections 29 September 2013."
Office for Democratic Institutions and Human Rights. 2013*e*. "Turkmenistan Parliamentary Elections 15 December 2013."
Office for Democratic Institutions and Human Rights. 2014. "Republic of Moldova Parliamentary Elections 30 November 2014."
Office for Democratic Institutions and Human Rights. 2015*a*. "Kyrgyz Republic Parliamentary Elections 4 October 2015."
Office for Democratic Institutions and Human Rights. 2015*b*. "Republic of Turkey Early Parliamentary Elections 1 November 2015."
Office for Democratic Institutions and Human Rights. 2015*c*. "Republic of Turkey Parliamentary Elections 7 June 2015."
Office for Democratic Institutions and Human Rights. 2015*d*. "Spain Parliamentary Elections 20 December 2015."
Ojeda-García, Raquel. 2018. "Transformations in the political party system in Mauritania: the case of the Union for the Republic." In *Political Parties in the Arab World: Continuity and Change*. Edinburgh: Edinburgh University Press pp. 252–275.
O'Sullivan, Meghan, and Razzaq Al-Saiedi. 2014. "Choosing an electoral system: Iraq's three electoral experiments, their results, and their political implications."
Otero, Laura Wills, and Aníbal Pérez-Liñán. 2005. "La evolución de los sistemas electorales en América: 1900-2004." *Colección* 16: 47–82.
ouverte des données publiques françaises, Plateforme. N.d. https://www.data.gouv.fr/fr/.
Owen, Bernard, and Maria Rodriguez-McKey. 2013. "France during the Fourth Republic (1946–1958)." In *Proportional Western Europe*. New York: Palgrave Macmillan.
Paraguay. 1992. "Constitución de la República del Paraguay of 1992."
Parliament, Hellenic. N.d. https://www.ypes.gr/.
Patriota, El. N.d. "Morazán y los diputados constituyentes." https://web.archive.org/web/20091011023824/http://www.elpatriotahn.com/l/content/morazán-y-los-diputados-constituyentes.
Pettai, Vello. 2004. "The parliamentary elections in Estonia, March 2003." *Electoral Studies* 23(4): 828–834.
Pilet, Jean-Benoit. N.d. "Electoral System Change in Europe since 1945: Belgium."

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Pilet, Jean-Benoit, Alan Renwick, Lidia Núñez, Elwin Reimink, and Pablo Simón. 2016. "Database of Electoral Systems." http://www.electoralsystemchanges.eu.
Poland. 1947. "Monitor Polski 28 January 1947."
Political Database of the Americas. n.d. "Political Database of the Americas." https://pdba.georgetown.edu/.
Prudencio Claure, Alfonso. 1996. *Así fueron las elecciones de 1966.* La Paz, Bolivia: Direccion de Prensa e Informaciones. Presidencia de La Republica.
Pérez, Omar Alejandro. 2013. "Sistema electoral y voto preferencial en República Dominicana." https://www.opd.org.do/index.php/analisis-partidos-politicos/573-sistema-electoral-y-voto-preferencial-en-republica-dominicana.
Rabat, Márcio Nuno. 2014. "Surgimento e evolução do sistema eleitoral proporcional atualmente em vigor no Brasil." *Cadernos Aslegis* 50: 25–35.
Rachwał, Marcin. 2017. "Evolution of the System of Elections to the Polish Sejm–the Matter of Election Formula." *Przegląd Politologiczny* 1: 7–20.
Reformas Políticas. n.d. "Sistema Electoral para la CÁmara Baja en América Latina y sus reformas." https://www.xn–reformaspolticas-jsb.org/inicio.
Reimink, Elwin. N.d.*a*. "Electoral System Change in Europe since 1945: Austria."
Reimink, Elwin. N.d.*b*. "Electoral System Change in Europe since 1945: Finland."
Reimink, Elwin. N.d.*c*. "Electoral System Change in Europe since 1945: Germany."
Reimink, Elwin. N.d.*d*. "Electoral System Change in Europe since 1945: Sweden."
Reimink, Elwin. N.d.*e*. "Electoral System Change in Europe since 1945: The Netherlands."
Renwick, Alan. 2011. "Electoral Reform in Europe since 1945." *West European Politics* 34(3): 456–477.
Renwick, Alan. N.d.*a*. "Electoral System Change in Europe since 1945: Czech Republic."
Renwick, Alan. N.d.*b*. "Electoral System Change in Europe since 1945: Hungary."
Renwick, Alan. N.d.*c*. "Electoral System Change in Europe since 1945: Iceland."
Renwick, Alan. N.d.*d*. "Electoral System Change in Europe since 1945: Ireland."
Renwick, Alan. N.d.*e*. "Electoral System Change in Europe since 1945: United Kingdom."
Renwick, Alan, and Helen Hardman. N.d. "Electoral System Change in Europe since 1945: Romania."
Renwick, Alan, and Lidia Núñez. N.d. "Electoral System Change in Europe since 1945: Denmark."
Republic of Turkey Supreme Election Board. 2002. "Number of Parliamentary Seats Won by Political Parties According to Election Circles (November 3, 2002)."
Republic of Turkey Supreme Election Board. 2007. "Number of Parliamentary Seats Won by Political Parties According to Election Circles (July 22, 2007)."
Republic of Turkey Supreme Election Board. 2015. "Decision No: 115 Decision Date: 02/02/2015."
Rich, Timothy S. 2017. "Reinterpreting Split-Ticket Voting in South Korea's 2004 Legislative Election: Party Identification and Impeachment Perceptions." *Asian Journal of Social Science* 45(4-5): 529–547.
Riera Hernández, M. 1955. *Cuba política 1899–1955.* Havana: Impresora Modelo.
Riera, Pedro. 2013. Changing the Rules of the Game: On the Determinants and Consequences of Electoral Reforms in Contemporary Democracies PhD thesis European University Institute Florence.
Salloukh, Bassel F. 2006. "The limits of electoral engineering in divided societies: Elections in post-war Lebanon." *Canadian Journal of Political Science/Revue canadienne de science politique* 39(3): 635–655.
Schafferer, Christian. 2005. "The great state hural election in Mongolia, June 2004." *Electoral Studies* 24(4): 741–747.
Schafferer, Christian. 2008. "Parliamentary election in Thailand, 23 December 2007." *Electoral Studies* 30: 1–4.
Schmidt, Patrick, and Mary Stegmaier. 2014. "The 2014 presidential and early parliamentary elections in Macedonia." *Electoral Studies* 36: 210–213.
Shields, Vanessa E. 2008. "Political Reform in Lebanon: Has the Cedar Revolution Failed?" *The Journal of Legislative Studies* 14(4): 474–487.
Shugart, Matthew S. 2001. *Mixed-Member Electoral Systems: The Best of Both Worlds?* Oxford University Press.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Siaroff, Alan. 2002. *Comparative European Party Systems: An Analysis of Parliamentary Elections since 1945*. Routledge.
Slovenia. 1992. "Law About the Elections in the National Assembly."
Slovenia. 2006. "Law on Elections to the National Assembly."
Solvak, Mihkel, and Vello Pettai. 2008. "The parliamentary elections in Estonia, March 2007." *Electoral Studies* 27(3): 574–577.
Somalia. 1964. "Somali Republic Political Elections Law - Law No. 4 of 22 January 1964."
Sosa, Jacobo Cruz. 2018. "Experiencias de listas abiertas en El Salvador." *Revista de Derecho Electoral* 25: 7.
Spac, Peter. 2014. "The 2012 parliamentary elections in Slovakia." *Electoral Studies* 33: 343–346.
Spirova, Maria. 2010. "The 2009 parliamentary elections in Bulgaria." *Electoral Studies* 29: 276–278.
Sri Lanka. 1978. "Constitution of the Democratic Socialist Republic of Sri Lanka 1978."
Sri Lanka. 2012. "Local Authorities Elections (Amendment) Act, No. 22 of 2012."
Staar, Richard F. 1958. "Elections in communist Poland." *Midwest Journal of Political Science* 2(2): 200–218.
Storli, Endre. 2015. "Election note on the 2013 Norwegian election." *Electoral Studies* 38: 98–101.
Storm, Lise. 2008. "The parliamentary election in Morocco, September 2007." *Electoral Studies* 27(2): 359–364.
Struthers, Cory, Yuhui Li, and Matthew Shugart. 2018. " National and District Level Party Systems Datasets." https://doi.org/10.7910/DVN/ME2W6U.
Stultz, Newell M., and Jeffrey Butler. 1963. "The South African general election of 1961." *Political Science Quarterly* 78(1): 86–110.
Sudan. 2008. "The National Elections Act 2008."
Szajkowski, Bogdan. 1992. "The Albanian election of 1991." *Electoral Studies* 11(2): 157–161.
Tajikistan. 1999. "The Constitutional Law of the Republic of Tajikistan "On Elections to the Majlisi Oli of the Republic of Tajikistan" (Adopted on December 10, 1999 and amended on June 16, 2004)."
Taylor, Steven L., and Matthew S. Shugart. 2018. "Electoral Systems in Context: Colombia." In *The Oxford Handbook of Electoral Systems*, ed. Erik S. Herron, Robert J. Pekkanen, and Matthew S. Shugart. Oxford: Oxford University Press.
Teehankee, Julio. 2002. "Electoral politics in the Philippines." In *Electoral Politics in Southeast and East Asia*, ed. Aurel Croissant, Gabriele Bruns, and Marei John. Bonn pp. 149–202.
The Carter Center. 1994. "The May 8, 1994 Elections in Panama."
The Carter Center. 2006. "International Election Observation Mission to Democratic Republic of Congo 2006 Presidential and Legislative Elections Final Report."
The Carter Center. 2008. "Observing the 2008 Nepal Constituent Assembly Election."
The Carter Center. 2010. "Observing Sudan's 2010 National Elections April 11–18, 2010 Final Report."
The Carter Center. 2011. "Presidential and Legislative Elections in the Democratic Republic of the Congo November 28, 2011 Final Report."
The Carter Center. 2012. "Final Report of the Carter Center Mission to Witness the 2011–2012 Parliamentary Elections in Egypt."
The Carter Center. 2013. "Observing Nepal's 2013 Constituent Assembly Election Final Report."
The Carter Center. 2014. "The 2014 Constitutional Drafting Assembly Elections in Libya."
The International Republican Institute. 2008. "Mongolia Parliamentary Elections June 29, 2008 Election Observation Mission Final Report."
Tiempo, El. 1991. "LA CÁMARA TENDRá 161 MIEMBROS." https://www.eltiempo.com/archivo/documento/MAM-129284.
Tiempo, El. 1998. "CÁMARA DE REPRESENTANTES." https://www.eltiempo.com/archivo/documento/MAM-801904.
Toplak, Jurij. 2006. "The parliamentary election in Slovenia, October 2004." *Electoral Studies* 25(4): 825–831.
Toubeau, Simon. N.d. "Electoral System Change in Europe since 1945: France."
Tribunal Electoral del Poder Judicial de la Federación. 2014. "2014 Political-Electoral Reform in Mexico."
Tribunal Supremo de Elecciones, República de Costa Rica. N.d. https://www.tse.go.cr/.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Tsai, Tsung-han. 2017. "A balance between candidate-and party-centric representation under mixed-member systems: The evidence from voter behavior in Taiwan." *Electoral Studies* 49: 17–25.
Tunisia. 1999. "1999 Electoral Results."
Tunisia. 2004. "2004 Electoral Results."
Tunisia. 2009. "2009 Electoral Results."
Turkish Statistical Institute. 2012. "Parliamentary General Elections 1923–2011."
Ulloa, Fernando C., and Eduardo P. Carbó. 2003. "The congressional and presidential elections in Colombia, 2002." *Electoral Studies* 22(4): 785–792.
Union, Inter-Parliamentary. N.d.|. "HAITI Parliamentary Chamber: Chambre des Députés ELECTIONS HELD IN 2000." http://archive.ipu.org/parline-e/reports/2137_B.htm.
Union, Inter-Parliamentary. N.d.|. "HAITI Parliamentary Chamber: Chambre des Députés ELECTIONS HELD IN 2006." http://archive.ipu.org/parline-e/reports/arc/2137_00.htm.
Union, Inter-Parliamentary. N.d.|. "HAITI Parliamentary Chamber: Chambre des Députés ELECTIONS IN 2006." http://archive.ipu.org/parline-e/reports/arc/2137_06.htm.
Union, Inter-Parliamentary. N.d. "HAITI Parliamentary Chamber: Chambre des Députés ELECTIONS IN 2010." http://archive.ipu.org/parline-e/reports/arc/2137_10.htm.
Union, Inter-Parliamentary. N.d. "IRAN (ISLAMIC REPUBLIC OF) Majles Shoraye Eslami (Islamic Consultative Assembly)." http://archive.ipu.org/parline-e/reports/2137_B.htm.
Union, Inter-Parliamentary. N.d. "IRAN (ISLAMIC REPUBLIC OF) Majles Shoraye Eslami (Islamic Consultative Assembly) 1967." http://archive.ipu.org/parline-e/reports/arc/IRAN_1967_E.PDF.
Union, Inter-Parliamentary. N.d. "IRAN (ISLAMIC REPUBLIC OF) Majles Shoraye Eslami (Islamic Consultative Assembly) 1971." http://archive.ipu.org/parline-e/reports/arc/IRAN_1971_E.PDF.
Union, Inter-Parliamentary. N.d. "IRAN (ISLAMIC REPUBLIC OF) Majles Shoraye Eslami (Islamic Consultative Assembly) 2000." http://archive.ipu.org/parline-e/reports/arc/2149_00.htm.
Union, Inter-Parliamentary. N.d. "LIBERIA House of Representatives 1985." http://archive.ipu.org/parline-e/reports/arc/LIBERIA_1975_E.PDF.
Union, Inter-Parliamentary. N.d. "MADAGASCAR Antenimierampirenena (National Assembly)." http://archive.ipu.org/parline-e/reports/2193_B.htm.
Union, Inter-Parliamentary. N.d. "MADAGASCAR Antenimierampirenena (National Assembly) 1970." http://archive.ipu.org/parline-e/reports/arc/MADAGASCAR_1970_E.PDF.
Union, Inter-Parliamentary. N.d. "MAURITANIA Al Jamiya-Al-Wataniya (National Assembly)." http://archive.ipu.org/parline-e/reports/2207_B.htm.
Union, Inter-Parliamentary. N.d. "MEXICO CÁmara de Diputados (Chamber of Deputies)." http://archive.ipu.org/parline-e/reports/2211_B.htm.
Union, Inter-Parliamentary. N.d. "MOROCCO Majliss-annouwab (House of Representatives)." http://archive.ipu.org/parline-e/reports/2221_B.htm.
Union, Inter-Parliamentary. N.d. "MYANMAR Pyithu Hluttaw (House of Representatives)." http://archive.ipu.org/parline/reports/2388_E.htm.
Union, Inter-Parliamentary. N.d. "MYANMAR Pyithu Hluttaw (House of Representatives). Election in 2010." http://archive.ipu.org/parline-e/reports/arc/2388_10.htm.
Union, Inter-Parliamentary. N.d. "PHILIPPINES Kapulungan Ng Mga Kinatawan (House of Representatives)." http://archive.ipu.org/parline-e/reports/2253_A.htm.
Union, Inter-Parliamentary. N.d. "PHILIPPINES Kapulungan Ng Mga Kinatawan (House of Representatives) 1987." http://archive.ipu.org/parline-e/reports/arc/PHILIPPINES_1987_E.PDF.
Union, Inter-Parliamentary. N.d. "PHILIPPINES Kapulungan Ng Mga Kinatawan (House of Representatives) 2004." http://archive.ipu.org/parline-e/reports/arc/2253_04.htm.
Union, Inter-Parliamentary. N.d. "REPUBLIC OF KOREA Kuk Hoe (National Assembly) 1971." http://archive.ipu.org/parline-e/reports/arc/REPUBLIC_OF_KOREA_1971_E.PDF.
Union, Inter-Parliamentary. N.d. "REPUBLIC OF KOREA Kuk Hoe (National Assembly) 1981." http://archive.ipu.org/parline-e/reports/arc/REPUBLIC_OF_KOREA_1981_E.PDF.
Union, Inter-Parliamentary. N.d. "REPUBLIC OF KOREA Kuk Hoe (National Assembly) 1985." http://archive.ipu.org/parline-e/reports/arc/REPUBLIC_OF_KOREA_1985_E.PDF.
Union, Inter-Parliamentary. N.d. "REPUBLIC OF KOREA Kuk Hoe (National Assembly) 1988." http://archive.ipu.org/parline-e/reports/arc/REPUBLIC_OF_KOREA_1988_E.PDF.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Union, Inter-Parliamentary. N.d. "RWANDA Chambre des Députés (Chamber of Deputies)." http://archive.ipu.org/parline-e/reports/2265_B.htm.
Union, Inter-Parliamentary. N.d. "SENEGAL Assemblée nationale (National Assembly) 1983." http://archive.ipu.org/parline-e/reports/arc/SENEGAL_1983_E.PDF.
Union, Inter-Parliamentary. N.d. "SOUTH AFRICA National Assembly." http://archive.ipu.org/parline-e/reports/2291_B.htm.
Union, Inter-Parliamentary. N.d. "TAJIKISTAN Majlisi milli (National Assembly)." http://archive.ipu.org/parline-e/reports/2366_A.htm.
Union, Inter-Parliamentary. N.d. "TOGO Assemblée nationale (National Assembly)." http://archive.ipu.org/parline-e/reports/2315_B.htm.
Union, Inter-Parliamentary. N.d. "TUNISIA Majlis Al-Nuwab (Chamber of Deputies) 1981." http://archive.ipu.org/parline-e/reports/arc/TUNISIA_1981_E.PDF.
Union, Inter-Parliamentary. N.d. "TUNISIA Majlis Al-Nuwab (Chamber of Deputies) 1986." http://archive.ipu.org/parline-e/reports/arc/TUNISIA_1986_E.PDF.
Union, Inter-Parliamentary. N.d. "TUNISIA Majlis Al-Nuwab (Chamber of Deputies) 1989." http://archive.ipu.org/parline-e/reports/arc/2321_89.htm.
Union, Inter-Parliamentary. N.d. "TURKMENISTAN Mejlis (Assembly)." http://archive.ipu.org/parline-e/reports/2325_A.htm.
Union, Inter-Parliamentary. N.d. "UGANDA Parliament." http://archive.ipu.org/parline-e/reports/2329_B.htm.
Union, Inter-Parliamentary. N.d. "UGANDA Parliament 1980." http://archive.ipu.org/parline-e/reports/arc/UGANDA_1980_E.PDF.
Union, Inter-Parliamentary. N.d. "UKRAINE Verkhovna Rada (Parliament)." http://archive.ipu.org/parline-e/reports/2331_b.htm.
Union, Inter-Parliamentary. N.d. "UNITED STATES OF AMERICA House of Representatives." http://archive.ipu.org/parline-e/reports/2339_B.htm.
Union, Inter-Parliamentary. N.d. "YEMEN Majlis Annowab (House of Representatives)." http://archive.ipu.org/parline-e/reports/2353_b.htm.
Union, Inter-Parliamentary. N.d. "ZAMBIA National Assembly." http://archive.ipu.org/parline-e/reports/2359_A.htm.
Union, Inter-Parliamentary. N.d. "ZAMBIA National Assembly 1968." http://archive.ipu.org/parline-e/reports/arc/ZAMBIA_1968_E.PDF.
Union, Inter-Parliamentary. N.d. "ZIMBABWE National Assembly." http://archive.ipu.org/parline-e/reports/2361_A.htm.
Union, Inter-Parliamentary. N.d.*a*. "AFGHANISTAN (Wolesi Jirga) ELECTIONS IN 2005." https://archive.ipu.org/parline-e/reports/arc/2381_05.htm.
Union, Inter-Parliamentary. N.d.*b*. "AFGHANISTAN (Wolesi Jirga) ELECTIONS IN 2010." https://archive.ipu.org/parline-e/reports/arc/2381_10.htm.
Union, Inter-Parliamentary. N.d.*c*. "ANGOLA Assembleia nacional (National Assembly)." http://archive.ipu.org/parline-e/reports/arc/2007_12.htm.
Union, Inter-Parliamentary. N.d.*d*. "BELARUS Palata Predstaviteley (House of Representatives)." https://archive.ipu.org/parline-e/reports/2027_B.htm.
Union, Inter-Parliamentary. N.d.*e*. "BELARUS Parliamentary Chamber: Verkhovny - Soviet - Second Round." http://archive.ipu.org/parline-e/reports/arc/2027_95.htm.
Union, Inter-Parliamentary. N.d.*f*. "BELARUS Parliamentary Chamber: Verkhovny Soviet." http://archive.ipu.org/parline-e/reports/arc/2027b_95.htm.
Union, Inter-Parliamentary. N.d.*g*. "CENTRAL AFRICAN REPUBLIC Assemblée Nationale (National Assembly)." http://archive.ipu.org/parline-e/reports/2059_B.htm.
Union, Inter-Parliamentary. N.d.*h*. "CENTRAL AFRICAN REPUBLIC Assemblée Nationale (National Assembly) Election in 2015." http://archive.ipu.org/parline-e/reports/arc/2059_05.htm.
Union, Inter-Parliamentary. N.d.*i*. "CHAD Assemblée Nationale (National Assembly)." http://archive.ipu.org/parline-e/reports/2061_B.htm.
Union, Inter-Parliamentary. N.d.*j*. "CONGO Assemblée nationale (National Assembly)." http://archive.ipu.org/parline-e/reports/2071_B.htm.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Union, Inter-Parliamentary. N.d.*k*. "COTE D'IVOIRE Assemblée nationale (National Assembly)." http://archive.ipu.org/parline-e/reports/2075_B.htm.
Union, Inter-Parliamentary. N.d.*l*. "COTE D'IVOIRE Assemblée nationale (National Assembly) 2000." http://archive.ipu.org/parline-e/reports/arc/2075_00.htm.
Union, Inter-Parliamentary. N.d.*m*. "COTE D'IVOIRE Assemblée nationale (National Assembly) 2011." http://archive.ipu.org/parline-e/reports/arc/2075_11.htm.
Union, Inter-Parliamentary. N.d.*n*. "CZECH REPUBLIC Poslanecka Snemovna (Chamber of Deputies)." http://archive.ipu.org/parline-e/reports/2083_B.htm.
Union, Inter-Parliamentary. N.d.*o*. "ECUADOR Congreso Nacional (National Congress) ELECTIONS HELD IN 2006." http://archive.ipu.org/parline-e/reports/arc/2095_06.htm.
Union, Inter-Parliamentary. N.d.*p*. "EGYPT Majlis Al-Nuwab (House of Representatives)." http://archive.ipu.org/parline-e/reports/2097_B.htm.
Union, Inter-Parliamentary. N.d.*q*. "EGYPT Majlis Al-Nuwab (House of Representatives) 1976." http://archive.ipu.org/parline-e/reports/arc/EGYPT_1976_E.PDF.
Union, Inter-Parliamentary. N.d.*r*. "EGYPT Majlis Al-Nuwab (House of Representatives) 1979." http://archive.ipu.org/parline-e/reports/arc/EGYPT_1979_E.PDF.
Union, Inter-Parliamentary. N.d.*s*. "EGYPT Majlis Al-Nuwab (House of Representatives) 1984." http://archive.ipu.org/parline-e/reports/arc/EGYPT_1984_E.PDF.
Union, Inter-Parliamentary. N.d.*t*. "EGYPT Majlis Al-Nuwab (House of Representatives) 1987." http://archive.ipu.org/parline-e/reports/arc/EGYPT_1987_E.PDF.
Union, Inter-Parliamentary. N.d.*u*. "EGYPT Majlis Al-Nuwab (House of Representatives) 2000." http://archive.ipu.org/parline-e/reports/arc/2107_00.htm.
Union, Inter-Parliamentary. N.d.*v*. "ETHIOPIA Yehizb Tewokayoch Mekir Bete (House of Peoples' Representatives)." http://archive.ipu.org/parline-e/reports/2107_B.htm.
Union, Inter-Parliamentary. N.d.*w*. "ETHIOPIA Yehizb Tewokayoch Mekir Bete (House of Peoples' Representatives) 1995." http://archive.ipu.org/parline-e/reports/arc/2107_95.htm.
Union, Inter-Parliamentary. N.d.*x*. "GABON Parliamentary Chamber: Assemblée nationale 2001." http://archive.ipu.org/parline-e/reports/arc/2115_01.htm.
Union, Inter-Parliamentary. N.d.*y*. "GEORGIA ELECTIONS IN 2004." http://archive.ipu.org/parline-e/reports/arc/2119_04.htm.
Union, Inter-Parliamentary. N.d.*z*. "GUINEA-BISSAU Assembleia Nacional Popular (People's National Assembly)." http://archive.ipu.org/parline-e/reports/2133_B.htm.
Valen, Henry. 2003. "The Storting election in Norway, September 2001." *Electoral Studies* 22(1): 179–185.
Valen, Henry, and Hanne Marthe Narud. 2007. "The Storting Election in Norway, September 2005." *Electoral Studies* 26(1): 219–223.
Valmyndigheten. N.d. https://www.val.se/.
Visser, Reidar. 2009. "Proportional Representation Dispute in Iraq: Parliament Adjourns without Adopting an Election Law for 2010." https://gulfanalysis.wordpress.com/2009/07/28/proportional-representation-dispute-in-iraq-parliament-adjourns-without-adopting-an-election-law-for-2010/.
volilna komisija, Drzcčavna. N.d. https://www.dvk-rs.si/.
von Schoultz, Åsa. 2017. "Electoral Systems in Context: Finland." In *The Oxford Handbook of Electoral Systems*, ed. Erik S. Herron, Robert J. Pekkanen, and Matthew S. Shugart. online edn ed. Oxford: Oxford University Press.
Wahman, Michael, and Daniel Chapman. 2015. "The persistent and increasing problem of unequal representation in Malawi: a statistical argument for redistricting." p. 52.
Wall, Matthew. N.d. "Electoral System Change in Europe since 1945: Croatia.".
Wikipedia. N.d.|. "1998 Ukrainian parliamentary election." https://en.wikipedia.org/wiki/1998_Ukrainian_parliamentary_election.
Wikipedia. N.d.|. "2000 Tanzanian general election." https://en.wikipedia.org/wiki/2000_Tanzanian_general_election.
Wikipedia. N.d. "2000 Zimbabwean parliamentary election." https://en.wikipedia.org/wiki/2000_Zimbabwean_parliamentary_election.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d. "2001 Taiwanese legislative election." https://en.wikipedia.org/wiki/2001_Taiwanese_legislative_election.
Wikipedia. N.d. "2002 Chadian parliamentary election." https://en.wikipedia.org/wiki/2002_Chadian_parliamentary_election.
Wikipedia. N.d. "2002 Lesotho general election." https://en.wikipedia.org/wiki/2002_Lesotho_general_election.
Wikipedia. N.d. "2002 Moroccan general election." https://en.wikipedia.org/wiki/2002_Moroccan_general_election.
Wikipedia. N.d. "2002 Republic of the Congo parliamentary election." https://en.wikipedia.org/wiki/2002_Republic_of_the_Congo_parliamentary_election.
Wikipedia. N.d. "2002 Ukrainian parliamentary election." https://en.wikipedia.org/wiki/2002_Ukrainian_parliamentary_election.
Wikipedia. N.d. "2003 Jordanian general election." https://en.wikipedia.org/wiki/2003_Jordanian_general_election.
Wikipedia. N.d. "2003 Rwandan parliamentary election." https://en.wikipedia.org/wiki/2003_Rwandan_parliamentary_election.
Wikipedia. N.d. "2004 Philippine House of Representatives elections." https://en.wikipedia.org/wiki/2004_Philippine_House_of_Representatives_elections.
Wikipedia. N.d. "2004 Taiwanese legislative election." https://en.wikipedia.org/wiki/2004_Taiwanese_legislative_election.
Wikipedia. N.d. "2005 Afghan Parliamentary Election." https://en.wikipedia.org/wiki/2005_Afghan_parliamentary_election.
Wikipedia. N.d. "2005 Egyptian parliamentary election." https://en.wikipedia.org/wiki/2005_Egyptian_parliamentary_election.
Wikipedia. N.d. "2005 Tanzanian general election." https://en.wikipedia.org/wiki/2005_Tanzanian_general_election.
Wikipedia. N.d. "2007 Jordanian general election." https://en.wikipedia.org/wiki/2007_Jordanian_general_election.
Wikipedia. N.d. "2007 Lesotho general election." https://en.wikipedia.org/wiki/2007_Lesotho_general_election.
Wikipedia. N.d. "2007 Moroccan general election." https://en.wikipedia.org/wiki/2007_Moroccan_general_election.
Wikipedia. N.d. "2007 Philippine House of Representatives elections." https://en.wikipedia.org/wiki/2007_Philippine_House_of_Representatives_elections.
Wikipedia. N.d. "2007 Republic of the Congo parliamentary election." https://en.wikipedia.org/wiki/2007_Republic_of_the_Congo_parliamentary_election.
Wikipedia. N.d. "2007 Syrian parliamentary election." https://en.wikipedia.org/wiki/2007_Syrian_parliamentary_election.
Wikipedia. N.d. "2008 Rwandan parliamentary election." https://en.wikipedia.org/wiki/2008_Rwandan_parliamentary_election.
Wikipedia. N.d. "2008 Taiwanese legislative election." https://en.wikipedia.org/wiki/2008_Taiwanese_legislative_election.
Wikipedia. N.d. "2010 Iraqi parliamentary election." https://en.wikipedia.org/wiki/2010_Iraqi_parliamentary_election.
Wikipedia. N.d. "2010 Jordanian general election." https://en.wikipedia.org/wiki/2010_Jordanian_general_election.
Wikipedia. N.d. "2010 Philippine House of Representatives elections." https://en.wikipedia.org/wiki/2010_Philippine_House_of_Representatives_elections.
Wikipedia. N.d. "2010 Tanzanian general election." https://en.wikipedia.org/wiki/2010_Tanzanian_general_election.
Wikipedia. N.d. "2010–11 Haitian general election." https://en.wikipedia.org/wiki/2010%E2%80%9311_Haitian_general_election.
Wikipedia. N.d. "2011 Chadian parliamentary election." https://en.wikipedia.org/wiki/2011_Chadian_parliamentary_election.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d. "2011 general elections in Turkey." https://tr.wikipedia.org/wiki/2011_T%C3%BCrkiye_genel_se%C3%A7imleri.
Wikipedia. N.d. "2011 Moroccan general election." https://en.wikipedia.org/wiki/2011_Moroccan_general_election.
Wikipedia. N.d. "2011 Tunisian Constituent Assembly election." https://en.wikipedia.org/wiki/2011_Tunisian_Constituent_Assembly_election.
Wikipedia. N.d. "2011 Ugandan general election." https://en.wikipedia.org/wiki/2011_Ugandan_general_election.
Wikipedia. N.d. "2012 Lesotho general election." https://en.wikipedia.org/wiki/2012_Lesotho_general_election.
Wikipedia. N.d. "2012 Republic of the Congo parliamentary election." https://en.wikipedia.org/wiki/2012_Republic_of_the_Congo_parliamentary_election.
Wikipedia. N.d. "2012 Taiwanese legislative election." https://en.wikipedia.org/wiki/2012_Taiwanese_legislative_election.
Wikipedia. N.d. "2012 Ukrainian parliamentary election." https://en.wikipedia.org/wiki/2012_Ukrainian_parliamentary_election.
Wikipedia. N.d. "2013 Kenyan general election." https://en.wikipedia.org/wiki/2013_Kenyan_general_election.
Wikipedia. N.d. "2013 Philippine House of Representatives elections." https://en.wikipedia.org/wiki/2013_Philippine_House_of_Representatives_elections.
Wikipedia. N.d. "2013 Rwandan parliamentary election." https://en.wikipedia.org/wiki/2013_Rwandan_parliamentary_election.
Wikipedia. N.d. "2014 Colombian parliamentary election." https://en.wikipedia.org/wiki/2014_Colombian_parliamentary_election.
Wikipedia. N.d. "2014 Iraqi parliamentary election." https://en.wikipedia.org/wiki/2014_Iraqi_parliamentary_election.
Wikipedia. N.d. "2014 Thai general election." https://en.wikipedia.org/wiki/2014_Thai_general_election.
Wikipedia. N.d. "2014 Thai general election." https://th.wikipedia.org/wiki/%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B9%80%E0%B8%A5%E0%B8%B7%E0%B8%AD%E0%B8%81%E0%B8%95%E0%B8%B1%E0%B9%89%E0%B8%87%E0%B8%AA%E0%B8%A1%E0%B8%B2%E0%B8%8A%E0%B8%B4%E0%B8%81%E0%B8%AA%E0%B8%A0%E0%B8%B2%E0%B8%9C%E0%B8%B9%E0%B9%89%E0%B9%81%E0%B8%97%E0%B8%99%E0%B8%A3%E0%B8%B2%E0%B8%A9%E0%B8%8E%E0%B8%A3%E0%B9%84%E0%B8%97%E0%B8%A2%E0%B9%80%E0%B8%9B%E0%B9%87%E0%B8%99%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B8%97%E0%B8%B1%E0%B9%88%E0%B8%A7%E0%B9%84%E0%B8%9B_%E0%B8%9E.%E0%B8%A8._2557.
Wikipedia. N.d. "2014 Tunisian parliamentary election." https://en.wikipedia.org/wiki/2014_Tunisian_parliamentary_election.
Wikipedia. N.d. "2014 Ukrainian parliamentary election." https://en.wikipedia.org/wiki/2014_Ukrainian_parliamentary_election.
Wikipedia. N.d. "2015 Burundian parliamentary election." https://en.wikipedia.org/wiki/2015_Burundian_parliamentary_election.
Wikipedia. N.d. "2015 Egyptian parliamentary election." https://en.wikipedia.org/wiki/2015_Egyptian_parliamentary_election.
Wikipedia. N.d. "2015 Lesotho general election." https://en.wikipedia.org/wiki/2015_Lesotho_general_election.
Wikipedia. N.d. "2015 Sri Lankan parliamentary election." https://en.wikipedia.org/wiki/2015_Sri_Lankan_parliamentary_election.
Wikipedia. N.d. "2015 Sudanese general election." https://en.wikipedia.org/wiki/2015_Sudanese_general_election.
Wikipedia. N.d. "2015 Tanzanian general election." https://en.wikipedia.org/wiki/2015_Tanzanian_general_election.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d. "2015–16 Haitian general election." https://th.wikipedia.org/wiki/%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B9%80%E0%B8%A5%E0%B8%B7%E0%B8%AD%E0%B8%81%E0%B8%95%E0%B8%B1%E0%B9%89%E0%B8%87%E0%B8%AA%E0%B8%A1%E0%B8%B2%E0%B8%8A%E0%B8%B4%E0%B8%81%E0%B8%AA%E0%B8%A0%E0%B8%B2%E0%B8%9C%E0%B8%B9%E0%B9%89%E0%B9%81%E0%B8%97%E0%B8%99%E0%B8%A3%E0%B8%B2%E0%B8%A9%E0%B8%8E%E0%B8%A3%E0%B9%84%E0%B8%97%E0%B8%A2%E0%B9%80%E0%B8%9B%E0%B9%87%E0%B8%99%E0%B8%81%E0%B8%B2%E0%B8%A3%E0%B8%97%E0%B8%B1%E0%B9%88%E0%B8%A7%E0%B9%84%E0%B8%9B_%E0%B8%9E.%E0%B8%A8._2557.
Wikipedia. N.d. "22nd General Election of the House of Representatives." https://ja.wikipedia.org/wiki/%E7%AC%AC22%E5%9B%9E%E8%A1%86%E8%AD%B0%E9%99%A2%E8%AD%B0%E5%93%A1%E7%B7%8F%E9%81%B8%E6%8C%99#%E9%81%B8%E6%8C%99%E3%83%87%E3%83%BC%E3%82%BF.
Wikipedia. N.d. "6th General Election (Republic of Korea)." https://ja.wikipedia.org/wiki/wiki/%E7%AC%AC6%E4%BB%A3%E7%B7%8F%E9%81%B8%E6%8C%99_(%E5%A4%A7%E9%9F%93%E6%B0%91%E5%9B%BD).
Wikipedia. N.d. "Anexo: Miembros de la Asamblea Nacional Constituyente de Venezuela de 1999." https://es.wikipedia.org/wiki/Anexo:Miembros_de_la_Asamblea_Nacional_Constituyente_de_Venezuela_de_1999.
Wikipedia. N.d. "Chamber of Representatives of Colombia." https://en.wikipedia.org/wiki/Chamber_of_Representatives_of_Colombia.
Wikipedia. N.d. "Elecciones a la Asamblea Constituyente de Ecuador de 1946." https://es.wikipedia.org/wiki/Elecciones_a_la_Asamblea_Constituyente_de_Ecuador_de_1946.
Wikipedia. N.d. "Elecciones a la Asamblea Constituyente de Ecuador de 1966." https://es.wikipedia.org/wiki/Elecciones_a_la_Asamblea_Constituyente_de_Ecuador_de_1966.
Wikipedia. N.d. "Elecciones a la Asamblea Nacional Constituyente de Venezuela de 1999." https://es.wikipedia.org/wiki/Elecciones_a_la_Asamblea_Nacional_Constituyente_de_Venezuela_de_1999.
Wikipedia. N.d. "Elecciones constituyentes de Paraguay de 1991." https://es.wikipedia.org/wiki/Elecciones_constituyentes_de_Paraguay_de_1991.
Wikipedia. N.d. "Elecciones de convencionales constituyentes de Argentina de 1957." https://es.wikipedia.org/wiki/Elecciones_de_convencionales_constituyentes_de_Argentina_de_1957.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1948." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1948.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1954." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1954.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1960." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1960.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1962." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1962.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1963." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1963.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1965." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1965.
Wikipedia. N.d. "Elecciones legislativas de Argentina de 1973." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Argentina_de_1973.
Wikipedia. N.d. "Elecciones legislativas de Colombia de 2006." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Colombia_de_2006.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1984." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1984.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1986." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1986.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1988." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1988.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1990." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1990.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1992." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1992.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1994." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1994.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 1997." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_1997.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 2002." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_2002.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 2006." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_2006.
Wikipedia. N.d. "Elecciones legislativas de Ecuador de 2009." https://es.wikipedia.org/wiki/Elecciones_legislativas_de_Ecuador_de_2009.
Wikipedia. N.d. "Elecciones parlamentarias de Venezuela de 2010." https://es.wikipedia.org/wiki/Elecciones_parlamentarias_de_Venezuela_de_2010.
Wikipedia. N.d. "Election of the 17th National Assembly member of the Republic of Korea." https://ko.wikipedia.org/w/index.php?title=%EB%8C%80%ED%95%9C%EB%AF%BC%EA%B5%AD_%EC%A0%9C17%EB%8C%80_%EA%B5%AD%ED%9A%8C%EC%9D%98%EC%9B%90_%EC%84%A0%EA%B1%B0&oldid= 28719876.
Wikipedia. N.d. "Election of the 18th National Assembly member of the Republic of Korea." https://ko.wikipedia.org/wiki/%EB%8C%80%ED%95%9C%EB%AF%BC%EA%B5%AD_%EC%A0%9C18%EB%8C%80_%EA%B5%AD%ED%9A%8C%EC% 9D%98%EC%9B%90_%EC%84%A0%EA%B1%B0.
Wikipedia. N.d. "Election of the 19th National Assembly member of the Republic of Korea." https://ko.wikipedia.org/wiki/%EB%8C%80%ED%95%9C%EB% AF%BC%EA%B5%AD_%EC%A0%9C19%EB%8C%80_%EA%B5%AD%ED%9A%8C%EC% 9D%98%EC%9B%90_%EC%84%A0%EA%B1%B0.
Wikipedia. N.d. "Elections in South Korea." https://en.wikipedia.org/wiki/Elections_in_South_Korea.
Wikipedia. N.d. "Elections in the Philippines." https://en.wikipedia.org/wiki/Elections_in_the_Philippines#House_of_R.
Wikipedia. N.d. "Legislative Yuan elections." https://en.wikipedia.org/wiki/Legislative_Yuan_elections.
Wikipedia. N.d. "List of Bulgarian constituencies." https://en.wikipedia.org/wiki/List_of_Bulgarian_constituencies#Seat_allocation_by_constituency.
Wikipedia. N.d. "List of members of the Parliament of Syria,1961." https://en.wikipedia.org/wiki/List_of_members_of_the_Parliament_of_Syria,_1961.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1949, 1953, 1957 und 1961." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1949,_1953,_1957_und_1961.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1965 und 1969." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1965_und_1969.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1972." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1972.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1976." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1976.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1980 und 1983." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1980_und_1983.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1987." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1987.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1990." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1990.
Wikipedia. N.d. "Liste der Bundestagswahlkreise 1994." https://de.wikipedia.org/wiki/Liste_der_Bundestagswahlkreise_1994.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d. "National apportionment of MP seats in the Riksdag." https://en.wikipedia.org/wiki/National_apportionment_of_MP_seats_in_the_Riksdag.
Wikipedia. N.d. "National Assembly of Burkina Faso." https://en.wikipedia.org/w/index.php?title=National_Assembly_of_Burkina_Faso&oldid=1012720419.
Wikipedia. N.d. "Results of the 1989 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_1989_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 1994 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_1994_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 2000 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_2000_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 2001 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_2001_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 2004 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_2004_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 2010 Sri Lankan general election by electoral district." https://en.wikipedia.org/wiki/Results_of_the_2010_Sri_Lankan_general_election_by_electoral_district.
Wikipedia. N.d. "Results of the 2011 Tunisian Constituent Assembly election." https://en.wikipedia.org/wiki/Results_of_the_2011_Tunisian_Constituent_Assembly_election.
Wikipedia. N.d. "Stortingsvalget 1949." https://no.wikipedia.org/wiki/Stortingsvalget_1949.
Wikipedia. N.d. "Stortingsvalget 1953." https://no.wikipedia.org/wiki/Stortingsvalget_1953.
Wikipedia. N.d. "Stortingsvalget 1957." https://no.wikipedia.org/wiki/Stortingsvalget_1957.
Wikipedia. N.d. "Stortingsvalget 1961." https://no.wikipedia.org/wiki/Stortingsvalget_1961.
Wikipedia. N.d. "Stortingsvalget 1965." https://no.wikipedia.org/wiki/Stortingsvalget_1965.
Wikipedia. N.d. "Stortingsvalget 1969." https://no.wikipedia.org/wiki/Stortingsvalget_1969.
Wikipedia. N.d. "Stortingsvalget 1973." https://no.wikipedia.org/wiki/Stortingsvalget_1973.
Wikipedia. N.d. "Stortingsvalget 1977." https://no.wikipedia.org/wiki/Stortingsvalget_1977.
Wikipedia. N.d. "Stortingsvalget 1981." https://no.wikipedia.org/wiki/Stortingsvalget_1981.
Wikipedia. N.d. "Stortingsvalget 1985." https://no.wikipedia.org/wiki/Stortingsvalget_1985.
Wikipedia. N.d. "Stortingsvalget 1989." https://no.wikipedia.org/wiki/Stortingsvalget_1989.
Wikipedia. N.d. "Stortingsvalget 1993." https://no.wikipedia.org/wiki/Stortingsvalget_1993.
Wikipedia. N.d. "Stortingsvalget 1997." https://no.wikipedia.org/wiki/Stortingsvalget_1997.
Wikipedia. N.d. "Stortingsvalget 2001." https://no.wikipedia.org/wiki/Stortingsvalget_2001.
Wikipedia. N.d. "Stortingsvalget 2005." https://no.wikipedia.org/wiki/Stortingsvalget_2005.
Wikipedia. N.d. "Stortingsvalget 2009." https://no.wikipedia.org/wiki/Stortingsvalget_2009.
Wikipedia. N.d. "Stortingsvalget 2013." https://no.wikipedia.org/wiki/Stortingsvalget_2013.
Wikipedia. N.d. "Volkskammerwahl 1990." https://de.wikipedia.org/wiki/Volkskammerwahl_1990.
Wikipedia. N.d. "Élections législatives pakistanaises de 2002." https://fr.wikipedia.org/wiki/%C3%89lections_l%C3%A9gislatives_pakistanaises_de_2008.
Wikipedia. N.d. "Élections législatives pakistanaises de 2008." https://fr.wikipedia.org/wiki/%C3%89lections_l%C3%A9gislatives_pakistanaises_de_2008.
Wikipedia. N.d. "Élections législatives pakistanaises de 2013." https://fr.wikipedia.org/wiki/wiki/%C3%89lections_l%C3%A9gislatives_pakistanaises_de_2013.
Wikipedia. N.d.*a*. "11th General Election (Republic of Korea)." https://ja.wikipedia.org/wiki/wiki/%E7%AC%AC11%E4%BB%A3%E7%B7%8F%E9%81%B8%E6%8C%99_(%E5%A4%A7%E9%9F%93%E6%B0%91%E5%9B%BD).
Wikipedia. N.d.*b*. "12th Congress of the Philippines." https://en.wikipedia.org/wiki/12th_Congress_of_the_Philippines.
Wikipedia. N.d.*c*. "1946 Venezuelan Constituent Assembly election." https://en.wikipedia.org/wiki/1946_Venezuelan_Constituent_Assembly_election.
Wikipedia. N.d.*d*. "1947 Nicaraguan Constitutional Assembly election." https://en.wikipedia.org/wiki/1947_Nicaraguan_Constitutional_Assembly_election.
Wikipedia. N.d.*e*. "1947 Nicaraguan general election." https://en.wikipedia.org/wiki/1947_Nicaraguan_general_election.
Wikipedia. N.d.*f*. "1952 Libyan general election." https://en.wikipedia.org/wiki/1952_Libyan_general_election.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Wikipedia. N.d.*g*. "1957 Nicaraguan general election." https://en.wikipedia.org/wiki/1957_Nicaraguan_general_election.
Wikipedia. N.d.*h*. "1963 Nicaraguan general election." https://en.wikipedia.org/wiki/1963_Nicaraguan_general_election.
Wikipedia. N.d.*i*. "1966 South Vietnamese Constitutional Assembly election." https://en.wikipedia.org/wiki/1966_South_Vietnamese_Constitutional_Assembly_election.
Wikipedia. N.d.*j*. "1967 Nicaraguan general election." https://en.wikipedia.org/wiki/1967_Nicaraguan_general_election.
Wikipedia. N.d.*k*. "1970 Philippine Constitutional Convention election." https://en.wikipedia.org/wiki/1970_Philippine_Constitutional_Convention_election.
Wikipedia. N.d.*l*. "1971 South Vietnamese parliamentary election." https://en.wikipedia.org/wiki/1971_South_Vietnamese_parliamentary_election.
Wikipedia. N.d.*m*. "1972 Nicaraguan Constitutional Assembly election." https://en.wikipedia.org/wiki/1972_Nicaraguan_Constitutional_Assembly_election.
Wikipedia. N.d.*n*. "1973 South Korean legislative election." https://en.wikipedia.org/wiki/1973_South_Korean_legislative_election.
Wikipedia. N.d.*o*. "1974 Nicaraguan general election." https://en.wikipedia.org/wiki/1974_Nicaraguan_general_election.
Wikipedia. N.d.*p*. "1978 South Korean legislative election." https://en.wikipedia.org/wiki/1978_South_Korean_legislative_election.
Wikipedia. N.d.*q*. "1984 Philippine parliamentary election." https://en.wikipedia.org/wiki/1984_Philippine_parliamentary_election.
Wikipedia. N.d.*r*. "1985 Liberian general election." https://en.wikipedia.org/wiki/1985_Liberian_general_election.
Wikipedia. N.d.*s*. "1987 Haitian general election." https://en.wikipedia.org/wiki/1987_Haitian_general_election.
Wikipedia. N.d.*t*. "1987 Philippine House of Representatives elections." https://en.wikipedia.org/wiki/1987_Philippine_House_of_Representatives_elections.
Wikipedia. N.d.*u*. "1988 Haitian general election." https://en.wikipedia.org/wiki/1988_Haitian_general_election.
Wikipedia. N.d.*v*. "1991 general elections in Turkey." https://tr.wikipedia.org/wiki/1991_T%C3%BCrkiye_genel_se%C3%A7imleri.
Wikipedia. N.d.*w*. "1993 Republic of the Congo parliamentary election." https://en.wikipedia.org/wiki/1993_Republic_of_the_Congo_parliamentary_election.
Wikipedia. N.d.*x*. "1994 Ethiopian Constituent Assembly election." https://en.wikipedia.org/wiki/1994_Ethiopian_Constituent_Assembly_election.
Wikipedia. N.d.*y*. "1994 Ukrainian parliamentary election." https://en.wikipedia.org/wiki/1994_Ukrainian_parliamentary_election.
Wikipedia. N.d.*z*. "1995 Tanzanian general election." https://en.wikipedia.org/wiki/1995_Tanzanian_general_election.
Wong, Chin-Huat. 2005. "The federal and state elections in Malaysia, March 2004." *Electoral Studies* 24(2): 311–319.
Wong, Chin-Huat. 2011. The Implications of the Electoral System for Party Competition in West Malaysia, 1982-2004 PhD thesis University of Essex.
Ziadeh, Nicola A. 1960. "The Lebanese elections, 1960." *The Middle East Journal* pp. 367–381.
Zimbabwe. 2004. "Electoral Act Act 25/2004."
Zuwiyya, Jalal. 1972. *The Parliamentary Election of Lebanon 1968*. Vol. 2 Brill Archive.
Álvarez-Rivera. n.d. "Election Resources on the Internet/Recursos Electorales en la Internet." http://electionresources.org/.
Çarkoğlu, Ali. 1997. "The Turkish general election of 24 December 1995." *Electoral Studies* 16(1): 86–95.
órgano Electoral Plurinacional Bolivia. 2016. *Atlas Electoral de Bolivia - Tomo 4*. La Paz: CNE, PNUDBolivia.
électoraux Verkiezingsuitslagen Wahlergebnisse, Résultats. N.d. https://electionresults.belgium.be/.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Bibliography

Achen, Christopher. 1978. "Measuring Representation." *American Journal of Political Science* 22(3): 475–510.

Adams, James F., Samuel Merrill III, and Bernard Grofman. 2005. *A Unified Theory of Party Competition: A Cross-national Analysis Integrating Spatial and Behavioral Factors.* Cambridge University Press.

Ainsley, Caitlin, Clifford J. Carrubba, Brian F. Crisp, Betul Demirkaya, Matthew J. Gabel, and Dino Hadzic. 2020. "Roll-call Vote Selection: Implications for the Study of Legislative Politics." *American Political Science Review* 114(3): 691–706.

Albanese, Giuseppe, Marika Cioffi, and Pietro Tommasino. 2019. "Legislators' Behaviour and Electoral Rules: Evidence from an Italian Reform." *European Journal of Political Economy* 59: 423–444.

Aldrich, John H. 1995. *Why Parties?: The Origin and Transformation of Political Parties in America.* University of Chicago Press.

Aldrich, John H. 2011. *Why Parties?: A Second Look.* University of Chicago Press.

Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. "Fractionalization." *Journal of Economic growth* 8: 155–194.

Amorim Neto, Octavio, and Gary W. Cox. 1997. "Electoral Institutions, Cleavage Structures, and the Number of Parties." *American Journal of Political Science* 41(1): 149–174.

André, Audrey, and Sam Depauw. 2013. "District Magnitude and Home Styles of Representation in European Democracies." *West European Politics* 36(5): 986–1006.

André, Audrey, Jonathan Bradbury, and Sam Depauw. 2015. "Explaining Cooperation over Casework between Members of National and Regional Parliaments." *Parliamentary Affairs* 68(4): 665–689.

André, Audrey, Sam Depauw, and Kris Deschouwer. 2014. "Legislators' Local Roots: Disentangling the Effect of District Magnitude." *Party Politics* 20(6): 904–917.

André, Audrey, Sam Depauw, and Stefanie Beyens. 2015. "Party Loyalty and Electoral Dealignment." *Party Politics* 21(6): 970–981.

Arrow, Kenneth J. 1951. *Social Choice and Individual Values.* New York, NY: John Wiley & Sons.

Austen-Smith, David, and Jeffrey S. Banks. 2000. *Positive Political Theory I: Collective Preference.* Vol. 1 University of Michigan Press.

Bagashka, Tanya. 2014. "Representation in Hybrid Regimes: Constituency and Party Influences on Legislative Voting in the Russian Duma 1996–1999." *Social Science Quarterly* 95(2): 486–506.

Bagashka, Tanya, and Jennifer Hayes Clark. 2014. "Electoral Incentives and Legislative Organization: An Examination of Committee Autonomy in US State Legislatures." *State Politics & Policy Quarterly* 14(3): 297–320.

Bagashka, Tanya, and Jennifer Hayes Clark. 2016. "Electoral Rules and Legislative Particularism: Evidence from U.S. State Legislatures." *American Political Science Review* 110(August): 441–456.

Barberá, Pablo. 2015. "Birds of the Same Feather Tweet Together: Bayesian Ideal Point Estimation Using Twitter Data." *Political Analysis* 23(1): 76–91.

Barro, Robert. 1973. "The Control of Politicians: An Economic Model." *Public Choice* 14: 19–42.

Batto, Nathan F. 2012. "Differing Mandates and Party Loyalty in Mixed-Member Systems: Taiwan as a Baseline Case." *Electoral Studies* 31(2): 384–392.

Becher, Michael, and Ulrich Sieberer. 2008. "Discipline, Electoral Rules and Defection in the Bundestag, 198–394." *German Politics* 17(3): 293–304.

Benoit, Kenneth. 2000. "Which Electoral Formula Is the Most Proportional? A New Look with New Evidence." *Political Analysis* 8(4): 381–388.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Benoit, Kenneth, Michael Laver, and Slava Mikhaylov. 2009. "Treating Words as Data with Error: Uncertainty in Text Statements of Policy Positions." *American Journal of Political Science* 53(2): 495–513.

Besley, Timothy. 2007. *Principled Agents? The Political Economy of Good Government.* Oxford, UK: Oxford University Press.

Black, Duncan et al. 1958. "The Theory of Committees and Elections."

Borges, André, and Mathieu Turgeon. 2019. "Presidential Coattails in Coalitional Presidentialism." *Party Politics* 25(2): 192–202.

Borges, Fabian A. 2017. "Debating Trade: The Legislative Politics of Free Trade Agreements in Latin America." *Government and Opposition* 54(2): 1–29.

Bramson, Aaron, Patrick Grim, Daniel J. Singer, William J. Berger, Graham Sack, Steven Fisher, Carissa Flocken, and Bennett Holman. 2017. "Understanding Polarization: Meanings, Measures, and Model Evaluation." *Philosophy of Science* 84(1): 115–159.

Brancati, Dawn. N.d. "Global Elections Database [computer file]."

Buisseret, Peter, and Richard Van Weelden. 2022. "Polarization, Valence, and Policy Competition." *American Economic Review: Insights* 4(3): 341–352.

Cain, Bruce, John Ferejohn, and Morris Fiorina. 1987. *The Personal Vote: Constituency Service and Electoral Independence.* Cambridge, MA: Harvard University Press.

Calvo, Ernesto, and Timothy Hellwig. 2011. "Centripetal and Centrifugal Incentives under Different Electoral Systems." *American Journal of Political Science* 55(January): 27–41.

Calvo, Ernesto, Fernando Guarnieri, and Fernando Limongi. 2015. "Why Coalitions? Party System Fragmentation, Small Party Bias, and Preferential Vote in Brazil." *Electoral Studies* 39(September): 219–229.

Calvo, Ernesto, Kiyoung Chang, and Timothy Hellwig. 2014. "Beyond Assimilation and Contrast: Information Effects, Ideological Magnification, and the Vote." *Electoral Studies* 36(4): 94–106.

Cameron, A Colin, and Douglas L. Miller. 2015. "A Practitioner's Guide to Cluster-Robust Inference." *Journal of human resources* 50(2): 317–372.

Carey, John M. 2003. "Discipline, Accountability, and Legislative Voting in Latin America." *Comparative Politics* 35(2): 191–211.

Carey, John M. 2007. "Competing Principals, Political Institutions, and Party Unity in Legislative Voting." *American Journal of Political Science* 51(1): 92–107.

Carey, John M. 2008. *Explaining Voting Unity*. Cambridge Studies in Comparative Politics. Cambridge University Press p. 125–164.

Carey, John M., and Matthew S. Shugart. 1995. "Incentives to Cultivate a Personal Vote: A Rank Ordering of Electoral Formulas." *Electoral Studies* 14: 417–439.

Carey, John M., and Simon Hix. 2008. "Maximizing Representation and Accountability in the Design of Electoral Systems. Data Codebook, Version 2.0." *unpublished manuscript.*

Carey, John M., and Simon Hix. 2011. "The Electoral Sweet Spot: Low-Magnitude Proportional Electoral Systems." *American Journal of Political Science* 55(2): 383–397.

Carmines, Edward G., and James A. Stimson. 1986 "On the Structure and Sequence of Issue Evolution." *American Political Science Review.* 80(3): 901–920.

Carrubba, Clifford J., Matthew Gabel, Lacey Murrah, Ryan Clough, Elizabeth Montgomery, and Rebecca Schambach. 2006. "Off the Record: Unrecorded Legislative Votes, Selection Bias and Roll-Call Vote Analysis." *British Journal of Political Science* 36(4): 691–704.

Catalinac, Amy. 2016. "From Pork to Policy: The Rise of Programmatic Campaigning in Japanese Elections." *Journal of Politics* 78(1): 1–18.

Catalinac, Amy. 2018. "Positioning under Alternative Electoral Systems: Evidence from Japanese Candidate Election Manifestos." *American Political Science Review* 112(1): 31–48.

Ceron, Andrea. 2015. "Brave Rebels Stay Home: Assessing the Effect of Intra-Party Ideological Heterogeneity and Party Whip on Roll-Call Votes." *Party Politics* 21(2): 246–258.

Cheibub, José Antonio, and Monika Nalepa. 2020. "Revisiting Electoral Personalism." *Journal of Theoretical Politics* 32(1): 3–10.

Cheibub, José Antonio, and Gisela Sin. 2020. "Preference Vote and Intra-party Competition in Open List PR Systems." *Journal of Theoretical Politics* 32(January): 70–95.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Clark, William Roberts, and Matt Golder. 2006. "Rehabilitating Duverger's Theory: Testing the Mechanical and Strategic Modifying Effects of Electoral Laws." *Comparative Political Studies* 39(6): 679–708.

Clinton, Joshua, Simon Jackman, and Douglas Rivers. 2004. "The Statistical Analysis of Roll Call Data." *American Political Science Review* 98(2): 355–370.

Coman, Emanuel E. 2012. "Legislative Behavior in Romania: The Effect of the 2008 Romanian Electoral Reform." *Legislative Studies Quarterly* 37(2): 199–224.

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Agnes Cornell, Sirianne Dahlum, Haakon Gjerløw, Adam Glynn, Allen Hicken, Joshua Krusell, Anna Lührmann, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Moa Olin, Pamela Paxton, Daniel Pemstein, Josefine Pernes, Johannes Von Römer, Brigitte Seim, Rachel Sigman, Jeffrey Staton, Natalia Stepanova, Aksel Sundström, Eitan Tzelgov, Yi-Ting Wang, Tore Wig, Steven Wilson, and Daniel Ziblatt. 2018. "V-Dem Country-Year Dataset 2018."

Coppedge, Michael, John Gerring, Carl Henrik Knutsen, Staffan I. Lindberg, Svend-Erik Skaaning, Jan Teorell, David Altman, Michael Bernhard, M. Steven Fish, Agnes Cornell, Sirianne Dahlum, Haakon Gjerløw, Adam Glynn, Allen Hicken, Joshua Krusell, Anna Lührmann, Kyle L. Marquardt, Kelly McMann, Valeriya Mechkova, Juraj Medzihorsky, Moa Olin, Pamela Paxton, Daniel Pemstein, Josefine Pernes, Johannes Von Römer, Brigitte Seim, Rachel Sigman, Jeffrey Staton, Natalia Stepanova, Aksel Sundström, Eitan Tzelgov, Yi-Ting Wang, Tore Wig, Steven Wilson, and Daniel Ziblatt. 2022. "V-Dem Country-Year Dataset 2022."

Cordero, Guillermo, and Xavier Coller. 2015. "Cohesion and Candidate Selection in Parliamentary Groups." *Parliamentary Affairs* 68(3): 592–615.

Corral, Margarita, Francisco Sanchez, and Cristina Rivas Perez. SPR 2016. "The Impact of Mixed-Member Districts on Legislators' Behavior: The Case of Bolivia." *Latin American Politics & Society* 58(1): 29–48.

Cox, Gary W. 1987. "Electoral Equilibrium under Alternative Voting Institutions." *American Journal of Political Science* 31(1): 82–108.

Cox, Gary W. 1990. "Centripetal and Centrifugal Incentives in Electoral Systems." *American Journal of Political Science* 34(4): 903–935.

Cox, Gary W. 1997. *Making Votes Count: Strategic Coordination in the World's Electoral Systems.* New York: Cambridge University Press.

Cox, Gary W., and Mathew D. McCubbins. 2002. *Agenda Power in the U.S. House Of Representatives, 1877-1986.* Stanford, California: Stanford University Press pp. 107–145.

Cox, Gary W., and Mathew D. McCubbins. 2005. *Setting the Agenda: Responsible Party Government in the US House of Representatives.* Cambridge University Press.

Cox, Gary W., and Matthew S. Shugart. 1995. "In the Absence of Vote Pooling: Nomination and Vote Allocation Errors in Colombia." *Electoral Studies* 14(December): 441–460.

Cox, Gary W., and Michael F. Thies. 1998. "The Cost of Intraparty Competition—The Single, Nontransferable Vote and Money Politics in Japan." *Comparative Political Studies* 31(3): 267–291.

Crisp, Brian F., and Betul Demirkaya. 2020. "Strategic Entry and Strategic Voting in Majoritarian Systems." *The Journal of Politics* 82(1): 57–71.

Crisp, Brian F., and Scott W. Desposato. 2004. "Constituency Building in Multimember Districts: Collusion or Conflict?" *The Journal of Politics* 66(1): 136–156.

Crisp, Brian F., and William M. Simoneau. 2018. "Electoral Systems and Constituency Service." In *The Oxford Handbook of Electoral Systems*, ed. Erik S. Herron, Robert J. Pekkanen, and Matthew S. Shugart. New York, NY: Oxford University Press.

Crisp, Brian F., Benjamin Schneider, Amy Catalinac, and Taishi Muraoka. 2021. "Capturing Vote-Seeking Incentives and the Cultivation of a Personal and Party Vote." *Electoral Studies* 72(3): 1–5.

Crisp, Brian F., Kathryn M. Jensen, and Yael Shomer. 2007. "Magnitude and Vote Seeking." *Electoral Studies* 26(4): 727–734.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Crisp, Brian F., Maria C. Escobar-Lemmon, Bradford S. Jones, Mark P. Jones, and Michelle M. Taylor-Robinson. 2004. "Vote-Seeking Incentives and Legislative Representation in Six Presidential Democracies." *The Journal of Politics* 66(August): 823–846.

Crisp, Brian F., Maria Escobar-Lemmon, Bradford Jones, Mark Jones, and Michelle Taylor-Robinson. 2009. "The Electoral Connection and Legislative Committees." *The Journal of Legislative Studies* 15(1): 35–52.

Crisp, Brian F., Santiago Olivella, and Guillermo Rosas. 2020. *The Chain of Representation. Preferences, Institutions, and Policy Across Presidential Systems.* New York, NY: Cambridge University Press.

Crisp, Brian F., Santiago Olivella, Michael Malecki, and Mindy Sher. 2013. "Vote-Earning Strategies in Flexible List Systems: Seats at the Price of Unity." *Electoral Studies* 32(4): 658–669.

Cunha Silva, Patrick. 2023. "District Magnitude, Electoral Coordination, and Legislative Fragmentation." *Journal of Elections, Public Opinion and Parties* 33(July): 462–478.

Cunha Silva, Patrick, and Brian F. Crisp. 2020. "The Impact of Cuing Candidate Quality on Female Candidates." *Electoral Studies* 64(April): 102127.

Dahl, Robert. 1971. *Polyarchy.* New Haven, CT: Yale University Press.

Dalton, Russell J. 2008. "The Quantity and the Quality of Party Systems: Party System Polarization, Its Measurement, and Its Consequences." *Comparative Political Studies* 41(July): 899–920.

Deschouwer, Kris, and Sam Depauw. 2014. *Representing the People: A Survey Among Members of Statewide and Substate Parliaments.* Oxford, UK: Oxford University Press.

Deschouwer, Kris, Sam Depauw, and Audrey André. 2014. "Representing the People in Parliaments." In *Representing the People: a Survey among Members of Statewide and Substate Parliaments*, ed. Kris Deschouwer, and Sam Depauw. Oxford, UK: Oxford University Press pp. 1–18.

Desposato, Scott W. 2006. "The Impact of Electoral Rules on Legislative Parties: Lessons from the Brazilian Senate and Chamber of Deputies." *Journal of Politics* 68(4): 1018–1030.

Di Virgilio, Aldo, Daniela Gianetti, and Andrea Pedrazzani. 2015. "Candidates in 2013 Italian General Election: Evidence from the Italian Candidate Survey." *Italian Political Science Review* 45(3): 317–342.

Dodeigne, Jeremy, and Jean-Benoit Pilet. 2024. "It's Not Only about the Leader: Oligarchized Personalization and Preference Voting in Belgium." *Party Politics* 30(January): 24–36.

Downs, Anthony. 1957. *An Economic Theory of Democracy.* 1st edition ed. Boston, MA: Harper and Row.

Dražanová, Lenka. 2020. "Introducing the Historical Index of Ethnic Fractionalization (HIEF) Dataset: Accounting for Longitudinal Changes in Ethnic Diversity." *Journal of Open Humanities Data* 6.

Duverger, Maurice. 1954. *Political Parties: Their Organisation and Activity in the Modern State.* New York, NY: John Wiley & Sons.

Easterly, William, and Ross Levine. 1997. "Africa's Growth Tragedy: Policies and Ethnic dDivisions." *The Quarterly Journal of Economics* pp. 1203–1250.

Edwards, Martin S., and Frank C. Thames. 2007. "District Magnitude, Personal Votes, and Government Expenditures." *Electoral Studies* 26: 338–345.

Ellickson, Mark C., and Donald E. Whistler. 2001. "Explaining State Legislators' Casework and Public Resource Allocations." *Political Research Quarterly* 54(3): 553–569.

Faas, T. 2003. "To Defect or Not to Defect? National, Institutional and Party Group Pressures on MEPs and Their Consequences for Party Group Cohesion in the European Parliament." *European Journal of Political Research* 42(6): 841–866.

Farrell, David M., and Roger Scully. 2010. "The European Parliament: One Parliament, Several Modes of Political Representation on the Ground?" *Journal of European Public Policy* 17(1): 36–54.

Fearon, James D. 1999. "Electoral Accountability and the Control of Politicians: Selecting Good Types vs. Sanctioning Poor Performance." In *Democracy, Accountability, and Representation*, ed. Bernard Manin, Adam Przeworski, and Susan C. Stokes. New York, NY: Cambridge University Press.

Fenno, Richard F. 1978. *Home Style: House Members Their Districts.* Saddle River, NJ: Addison-Wesley Longman.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Fleming, Thomas G. 2019. "Partisan Dealignment and Committee Power in Five Westminster Parliaments." *European Journal of Political Research* 58(2): 536–556.

Folke, Olle, and Johanna Rickne. 2020. "Who Wins Preference Votes? An Analysis of Party Loyalty, Ideology, and Accountability to Voters." *Journal of Theoretical Politics* 32(1): 11–35.

Fox, Colm A. 2018. "Is All Politics Local? Determinants of Local and National Election Campaigns." *Comparative Political Studies* 51(14): 1899–1934.

Fraenkel, Jon, and Bernard Grofman. 2006. "Does the Alternative Vote Foster Moderation in Ethnically Divided Societies?" *Comparative Political Studies* 39(5): 623–651.

Friedman, Jerome H., and Bogdan E. Popescu. 2008. "Predictive Learning Via Rule Ensembles." *Annals of Applied Statistics* 2(3): 916–954.

Fujimura, Naofumi. 2012. "Electoral Incentives, Party Discipline, and Legislative Organization: Manipulating Legislative Committees to Win Elections and Maintain Party Unity." *European Political Science Review* 4(2): 147–175.

Fujimura, Naofumi. 2015. "The Influence of Electoral Institutions on Legislative Representation: Evidence from Japan's Single Non-transferable Vote and Single-Member District Systems." *Party Politics* 21(March): 209–221.

Gabel, Matthew, and Kenneth Scheve. 2007. "Estimating the Effect of Elite Communications on Public Opinion Using Instrumental Variables." *American Journal of Political Science* 51(4): 1013–1028.

Gallagher, Michael, and Paul Mitchell, eds. 2005. *The Politics of Electoral Systems*. Oxford, UK: Oxford University Press.

Gemenis, Kostas. 2013. "What to Do (and Not to Do) with the Comparative Manifestos Project Data." *Political Studies* 61: 3–23.

Gherghina, Sergiu, and Mihail Chiru. 2014. "Determinants of Legislative Voting Loyalty under Different Electoral Systems: Evidence from Romania." *International Political Science Review* 35(5): 523–541.

Giebler, Heiko, and Andreas M. Wüst. 2011. "Campaigning on an Upper Level? Individual Campaigning in the 2009 European Parliament Elections in Its Determinants." *Electoral Studies* 30(1): 53–66.

Gilens, Martin, and Naomi Marukawa. 2002. "Elite Cues and Political Attitude Formation." In *Research in Micropolitics: Political Decision Making, Deliberation and Participation*, ed. Michael X. Delli Carpini, Leonie Huddy, and Robert Y. Shapiro. New York, NY: Elsevier Press.

Golder, Matt. 2006. "Presidential Coattails and Legislative Fragmentation." *American Journal of Political Science* 50(1): 34–48.

Golder, Matt, and Gabriella Lloyd. 2014. "Re-Evaluating the Relationship between Electoral Rules and Ideological Congruence." *European Journal of Political Research* 53(1): 200–212.

Golder, Matt, and Jacek Stramski. 2010. "Ideological Congruence and Electoral Institutions." *American Journal of Political Science* 54(1): 90–106.

Golosov, Grigorii V. 2010. "The Effective Number of Parties: A New Approach." *Party Politics* 16(2): 171–192.

Groseclose, Tim. 2001. "A Model of Candidate Location When One Candidate Has a Valence Advantage." *American Journal of Political Science* pp. 862–886.

Halligan, John, Robert Krause, Robert Williams, and Geoffrey Hawker. 1988. "Constituency Service among Sub-National Legislators in Australia and Canada." *Legislative Studies Quarterly* 13(1): 49–63.

Haspel, Moshe, Thomas F. Remington, and Steve S. Smith. 1998. "Electoral Institutions and Party Cohesion in the Russian Duma." *Journal of Politics* 60(2): 417–439.

Hazlett, Chad, and Leonard Wainstein. 2022. "Understanding, Choosing, and Unifying Multilevel and Fixed Effect Approaches." *Political Analysis* 30(1): 46–65.

Heitshusen, Valerie, Gary Young, and David M. Wood. 2005. "Electoral Context and MP Constituency Focus in Australia, Canada, Ireland, New Zealand, and the United Kingdom." *American Journal of Political Science* 49(1): 32–45.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Hernán, Miguel A., Sonia Hernández-Díaz, James M., and Robins. 2004. "A Structural Approach to Selection Bias." *Epidemiology* 15(5): 615–625.

Herron, E. S. 2002. "Electoral Influences on Legislative Behavior in Mixed-Member Systems: Evidence from Ukraine's Verkhovna Rada." *Legislative Studies Quarterly* 27(3): 361–382.

Hieda, Takeshi. 2012. "Comparative Political Economy of Long-Term Care for Elderly People: Political Logic of Universalistic Social Care Policy Development." *Social Policy & Administration* 46(3): 258–279.

Hinich, Melvin, and Michael C. Munger. 1992. "A Spatial Theory of Ideology." *Journal of Theoretical Politics* 4(1): 31–52.

Hinich, Melvin J., and Michael C. Munger. 1997. *Analytical Politics*. Cambridge University Press.

Hinich, Melvin J., and Peter C. Ordeshook. 1969. "Abstentions and Equilibrium in the Electoral Process." *Public Choice* pp. 81–106.

Hoff, Peter D. 2009. "Multiplicative Latent Factor Models for Description and Prediction of Social Networks." *Computational and Mathematical Organization Theory* 15(4): 261–272.

Horowitz, Donald L. 2007. "Where Have All the Parties Gone? Fraenkel and Grofman on the Alternative Vote—yet Again." *Public Choice* 133(1-2): 13–23.

Itzkovitch-Malka, Reut, and Reuven Y. Hazan. 2017. "Unpacking Party Unity: The Combined Effects of Electoral Systems and Candidate Selection Methods on Legislative Attitudes and Behavioural Norms." *Political Studies* 65(2): 452–474.

Jones, Mark P., and Scott Mainwaring. 2003. "The Nationalization of Parties and Party Systems: An Empirical Measure and Application to the Americas." *Party Politics* 9: 139–166.

Jones, Mark P., and Wonjae Hwang. 2005. "Party Government in Presidential Democracies: Extending Cartel Theory beyond the US Congress." *American Journal of Political Science* 49(2): 267–282.

Kerevel, Yann. 2010. "The Legislative Consequences of Mexico's Mixed-Member Electoral System, 2000–2009." *Electoral Studies* 29(4): 691–703.

Kerevel, Yann P. 2015. "Pork-Barreling without Reelection? Evidence from the Mexican Congress." *Legislative Studies Quarterly* 40(1): 137–166.

King, Gary, and Jonathan Wand. 2007. "Comparing Incomparable Survey Responses: Evaluating and Selecting Anchoring Vignettes." *Political Analysis* 15(1): 46–66.

Kirkland, Justin H., and Jonathan B. Slapin. 2017. "Ideology and Strategic Party Disloyalty in the US House of Representatives." *Electoral Studies* 49: 26–37.

Kitschelt, Hebert. 2013. "Democratic Accountability and Linkages Project.".

Kolaczyk, Eric D. 2009. *Statistical Analysis of Network Data: Methods and Models*. Springer Series in Statistics Springer.

Kollman, Ken, Allen Hicken, Daniele Caramani, David Backer, and David Lublin. 2019. "Constituency-Level Elections Archive."

Koop, Royce. 2012. "Party Constituency Associations and the Service, Policy and Symbolic Responsiveness of Canadian Members of Parliament." *Canadian Journal of Political Science* 45(2): 359–378.

Koop, Royce, and John Kraemer. 2016. "Wards, At-Large Systems and the Focus of Representation in Canadian Cities." *Canadian Journal of Political Science* 49(3): 433–448.

Krause, Werner, and Robert Stelzle. 2024. "PPEG - Political Parties, Presidents, Elections and Governments, Version 2024v1."

Krehbiel, Keith. 2000. "Party Discipline and Measures of Partisanship." *American Journal of Political Science* pp. 212–227.

Krehbiel, Keith. 2010. *Pivotal Politics: A Theory of US Lawmaking*. University of Chicago Press.

Kunicova, Jana, and Thomas F. Remington. 2008. "Mandates, Parties and Dissent—Effect of Electoral Rules on Parliamentary Party Cohesion in the Russian State Duma, 1994–2003." *Party Politics* 14(5): 555–574.

Laakso, Markku, and Rein Taagepera. 1979. "The Effective Number of Parties: A Measure with Application to West Europe." *Comparative Political Studies* 12(1): 3–27.

Laver, Michael, and Ernest Sergenti. 2011. *Party Competition: An Agent-Based Model*. Princeton, NJ: Princeton University Press.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Lewis, Jeffrey B., and Gary King. 1999. "No Evidence on Directional vs. Proximity Voting." *Political Analysis* 8(1): 21–33.

Leys, Colin. 1959. "Models, Theories, and the Theory of Political Parties." *Political Studies* 7(2): 127–146.

Lijphart, Arend. 1986. *Degrees of Proportionality of Proportional Representation Formulas*. Algora Publishing.

Little, Roderick J.A., and Donald B. Rubin. 2019. *Statistical Analysis with Missing Data*. Vol. 793 John Wiley & Sons.

Lockerbie, Brad. 1999. "The Partisan Component to the Incumbency Advantage: 1956–1996." *Political Research Quarterly* 52(3): 631–646.

Lucardi, Adrián. 2019. "The Effect of District Magnitude on Electoral Outcomes: Evidence from Two Natural Experiments in Argentina." *British Journal of Political Science* 49(2): 557–577.

Lührmann, Anna, Juraj Medzihorsky, Garry Hindle, and Staffan Lindberg. 2020. "New Global Data on Political parties: V-party." *Briefing Paper* 9.

Lupu, Noam, Lucía Selios, and Zach Warner. 2017. "A New Measure of Congruence: The Earth Mover's Distance." *Political Analysis* 25(1): 95–113.

Maaser, Nicola, and Thomas Stratmann. 2018. "Election Rules, Legislators' Incentives, and Policy Outcomes: Evidence from the Mixed-Member System in Germany." *European Journal of Political Economy* 54: 227–239.

Mainwaring, Scott P. 1999. *Rethinking Party Systems in the Third Wave of Democratization: The Case of Brazil*. Stanford: Stanford University Press.

Mansbridge, Jane. 2003. "Rethinking Representation." *American Political Science Review* 97(4): 515–528.

Marian, Cosmin Gabriel, and Ronald F. King. 2010. "Plus ça change: Electoral Law Reform and the 2008 Romanian Parliamentary Elections." *Communist and Post-Communist Studies* 43(02): 7–18.

Martin, Shane. 2011. "Electoral Institutions, the Personal Vote, and Legislative Organization." *Legislative Studies Quarterly* 36(3): 339–361.

Martin, Shane. 2014. "Why Electoral Systems Don't Always Matter: The Impact of 'mega-Seats' on Legislative Behaviour in Ireland." *Party Politics* 20(3): 467–479.

Mayhew, David R. 1974. *Congress: The Electoral Connection*. New Haven, CT: Yale University Press.

Minhas, Shahryar, Peter D. Hoff, and Michael D. Ward. 2019. "Inferential Approaches for Network Analysis: AMEN for Latent Factor Models." *Political Analysis* 27(2): 208–222.

Montgomery, Jacob M., and Santiago Olivella. 2018. "Tree-Based Models for Political Science Data." *American Journal of Political Science* 62(3): 729–744.

Moraes, Juan Andres. 2010. Party Competition and Political Representation in Uruguay Ph.D. University of Notre Dame United States—Indiana:

Moser, Robert G., and Ethan Scheiner. 2012. *Electoral Systems and Political Context: How the Effects of Rules Vary Across New and Established Democracies*. New York, NY: Cambridge University Press.

Motolinía, Lucía. forthcoming *Unity through Particularism: How Parties Can Respond to Electoral Reforms*. New York, NY: Cambridge University Press.

Muñoz-Portillo, Juan. 2021. "Effects of Ballot Type and District Magnitude on Local Public Goods Bill-Initiation Behavior: Evidence from Honduras." *Political Research Quarterly* 74: 388–402.

Negriu, Anghel, and Cyrille Piatecki. 2012. "On the Performance of Voting Systems in Spatial Voting Simulations." *Journal of Economic Interaction and Coordination* 7(1): 63–77.

Nicolau, Jairo. 2006. "O sistema eleitoral de lista aberta no Brasil." *Dados* 49: 689–720.

Obholzer, Lukas, and William T. Daniel. 2016. "An Online Electoral Connection? How Electoral Systems Condition Representatives' Social Media Use." *European Union Politics* 17(3): 387–407.

Olivella, Santiago, and Margit Tavits. 2014. "Legislative Effects of Electoral Mandates." *British Journal of Political Science* 44(2): 301–321.

Ordeshook, Peter C., and Olga V. Shvetsova. 1994. "Ethnic Heterogeneity, District Magnitude, and the Number of Parties." *American Journal of Political Science* 38(1): 100–123.

OSCE/ODIHR. 2013. "OSCE/ODIHR Election Assessment Mission Final Report—Norway Parliamentary Elections.".

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Pekkanen, Robert, Benjamin Nyblade, and Ellis S. Krauss. 2006. "Electoral Incentives in Mixed-Member Systems: Party, Posts, and Zombie Politicians in Japan." *American Political Science Review* 100(2): 183–193.

Pinto, Luca. 2017. "Candidacy Rules and Party Unity: The Impact of Multiple Candidacies on Legislative Voting Behaviour in Italy." *Acta Politica* 52(1): 43–63.

Poole, Keith T., and Howard L. Rosenthal. 2011. *Ideology and Congress.* Vol. 1 Transaction Publishers.

Potter, Joshua D. 2018. "Constituency Diversity, District Magnitude and Voter Co-Ordination." *British Journal of Political Science* 48(1): 91–113.

Powell Jr., G. Bingham. 2000. *Elections as Instruments of Democracy: Majoritarian and Proportional Visions.* New Haven, CT: Yale University Press.

Powell Jr., G. Bingham. 2004. "The Chain of Responsiveness." *Journal of Democracy* 15(4): 91–105.

Powell Jr., G. Bingham. 2019. *Ideological Representation Achieved and Astray: Elections, Institutions, and the Breakdown of Ideological Congruence in Parliamentary Democracies.* New York, NY: Cambridge University Press.

Put, Gert-Jan, Jef Smulders, and Bart Maddens. 2019. "Party Nomination Strategies in Flexible -List Systems: Do Preference Votes Matter for Realistic List Positions?" *Party Politics* 39(4): 376–382.

Quinn, Kevin M. 2004. "Bayesian Factor Analysis for Mixed Ordinal and Continuous Responses." *Political Analysis* 12(4): 338–353.

Rabinowitz, George, and Stuart Elaine Macdonald. 1989. "A Directional Theory of Issue Voting." *American political science review* 83(1): 93–121.

Rahat, Gideon, and Reuven Y. Hazan. 2001. "Candidate Selection Methods: An Analytical Framework." *Party Politics* 7(3): 297–322.

Raymond, Christopher D., and Jacob Holt. 2017. "Constituency Pressures on Committee Selection: Evidence from the Northern Ireland Assembly and Dail Eireann." *Parliamentary Affairs* 70(4): 740–758.

Renwick, Alan, and Jean-Benoit Pilet. 2016. *Faces on the Ballot: The Personalization of Electoral Systems in Europe.* New York, NY: Oxford University Press.

Reynolds, Andrew, Ben Reilly, and Andrew Ellis. 2005. *Electoral System Design: The New International IDEA Handbook.* Handbook series Stockholm, Sweden: International Institute for Democracy and Electoral Assistance.

Rice, Stuart Arthur. 1928. "Quantitative Methods in Politics."

Rich, Timothy S. 2014. "Party Voting Cohesion in Mixed Member Legislative Systems: Evidence from Korea and Taiwan." *Legislative Studies Quarterly* 39(1): 113–135.

Richardson, Lilliard E., and Patricia. K. Freeman. 1995. "Gender Differences in Constituency Service among State Legislators." *Political Research Quarterly* 48(1): 169–179.

Riera, Pedro. 2020. "Voting after the Change: A Natural Experiment on the Effect of Electoral Reform on Party System Fragmentation." *International Political Science Review* 41(March): 271–286.

Riera, Pedro, and Francisco Cantú. 2018. "Determinants of Legislative Committee Membership in Proportional Representation Systems." *Party Politics* 24(5): 524–535.

Rogowski, Jon C. 2017. "Electoral Institutions and Legislative Particularism." *Legislative Studies Quarterly* 42(3): 355–385.

Rombi, Stefano, and Antonella Seddone. 2017. "Rebel Rebel. Do Primary Elections Affect Legislators' Behaviour? Insights from Italy." *Parliamentary Affairs* 70(3): 569–588.

Rovny, Jan. 2013. "Where Do Radical Right Parties Stand? Position Blurring in Multidimensional Competition." *European Political Science Review* 5(1): 1–26.

Rubin, Donald B. 1987. *Multiple Imputation for Nonresponse in Surveys.* John Wiley &; Sons.

Saiegh, Sebastián M. 2015. "Using Joint Scaling Methods to Sudy Ideology and Representation: Evidence from Latin America." *Political Analysis* 23(3): 363–384.

Samuels, David. 2001. "When Does Every Penny Count? Intra-Party Competition and Campaign Finance in Brazil." *Party Politics* 7(1): 89–102.

Sartori, Giovanni. 1968. "Political Development and Political Engineering." In *Public Policy*, ed. John D. Montgomery, and Albert O. Hirschman. New York, NY: Cambridge University Press pp. 261–298.

Schofield, Norman. 2003. "Valence Competition in the Spatial Stochastic Model." *Journal of Theoretical Politics* 15(4): 371–383.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Schofield, Norman, and Itai Sened. 2006. *Multiparty Democracy: Elections and Legislative Politics.* Cambridge University Press.

Schwindt-Bayer, Leslie A., Michael Malecki, and Brian F. Crisp. 2010. "Candidate Gender and Electoral Success in Single Transferable Vote Systems." *British Journal of Political Science* 40(3): 693–709.

Searing, Donald D. 1994. *Westminster's World: Understanding Political Roles.* Cambridge, UK: Cambridge University Press.

Selb, Peter, and Georg Lutz. 2015. "Lone Fighters: Intraparty Competition, Interparty Competition, and Candidates' Vote Seeking Efforts in Open-Ballot PR Elections." *Electoral Studies* 39(3): 329–337.

Shin, Jae Hyeok, and Hojun Lee. 2017. "Legislative Voting Behaviour in the Regional Party System: An Analysis of Roll-Call Votes in the South Korean National Assembly, 2000-8." *Government and Opposition* 52(3): 437–459.

Shomer, Yael. 2009. "Candidate Selection Procedures, Seniority, and Vote-Seeking Behavior." *Comparative Political Studies* 42(7): 945–970.

Shomer, Yael. 2016. "The Electoral Environment and Legislator Dissent." *Comparative Politics* 48(4): 557–578.

Shomer, Yael. 2017. "The Conditional Effect of Electoral Systems and Intraparty Candidate Selection Processes on Parties' Behavior." *Legislative Studies Quarterly* 42(1): 63–96.

Shugart, Matthew S. 2001*a*. "Electoral 'Efficiency' and the Move to Mixed-Member Systems." *Electoral Studies* 20(2): 173–193.

Shugart, Matthew S. 2001*b*. "'Extreme' Electoral Systems and the Appeal of the Mixed-Member Alternative." In *Mixed-Member Electoral Systems: The Best of Both Worlds?*, ed. Matthew S. Shugart, and Martin P. Wattenberg. New York, NY: Oxford University Press.

Shugart, Matthew S., and Martin P. Wattenberg, eds. 2001. *Mixed-Member Electoral Systems: The Best of Both Worlds?* New York, NY: Oxford University Press.

Shugart, Matthew S., and Rein Taagepera. 2017*a*. "How Election Timing Matters in Presidential Democracy—And How It Does Not." In *Votes from Seats: Logical Models of Electoral Systems.* New York, NY: Oxford University Press.

Shugart, Matthew S., and Rein Taagepera. 2017*b*. *Votes from Seats: Logical Models of Electoral Systems.* New York, NY: Cambridge University Press.

Shugart, Matthew S., Matthew E. Bergman, Cory L. Struthers, Ellis S. Krauss, and Robert J. Pekkanen. 2021. *Party Personnel Strategies: Electoral Systems and Parliamentary Committee Assignments.* New York, NY: Oxford University Press.

Sieberer, Ulrich. 2006. "Party Unity in Parliamentary Democracies: A Comparative Analysis." *The Journal of Legislative Studies* 12(2): 150–178.

Sieberer, Ulrich. 2010. "Behavioral Consequences of Mixed Electoral Systems: Deviating Voting Behavior of District and List MPs in the German Bundestag." *Electoral Studies* 29(3): 484–496.

Sieberer, Ulrich, and Wolfgang C. Mueller. 2015. "Explaining Reforms of Parliamentary Minority Rights: A Theoretical Framework with Case Study Application." *West European Politics* 38(5): 997–1019.

Siefken, Sven T. 2016. "At the Grassroots of Representation: District Work of MPs in Germany." *French Politics* 14(4): 469–485.

Singer, Matthew M., and Laura B. Stephenson. 2009. "The Political Context and Duvergers Theory: Evidence at the District Level." *Electoral Studies* 28(3): 480–491.

Smrek, Michal. 2019. *Incumbent Renomination: Accountability and Gender Bias.* Uppsala: Acta Universitatis Upsaliensis.

Sozzi, Fabio. 2016. "Asking Territories: The Constituency Orientation of Italian and French Members of the European Parliament." *Italian Political Science Review* 46(2): 199–217.

Stecker, Christian. 2011. "Determinants of Party Unity: A Comparative Study of the German State Parliaments." *Politische Vierteljahresschrift* 52(3): 424–447.

Stegmaier, Mary, Kamil Marcinkiewicz, and Michael Jankowski. 2016. "The Effects of Electoral Rules on Parliamentary Behavior: A Comparative Analysis of Poland and the Czech Republic." *Eastern European Politics and Societies* 30(4): 885–906.

Stoffel, Michael F. 2014. "MP Behavior in Mixed-Member Electoral Systems." *Electoral Studies* 35(3): 78–87.

Downloaded from academic.oup.com/book/60057 by University of Notre Dame user on 17 November 2026

Stoll, Heather. 2011. "Dimensionality and the Number of Parties in Legislative Elections." *Party Politics* 17(3): 405–429.

Stratmann, Thomas, and Martin Baur. 2002. "Plurality Rule, Proportional Representation, and the German Bundestag: How Incentives to Pork-Barrel Differ across Electoral Systems." *American Journal of Political Science* 46(3): 506–514.

Sudulich, Laura, and Siim Trumm. 2019. "A Comparative Study of the Effects of Electoral Institutions on Campaigns." *British Journal of Political Science* 49(1): 381–399.

Szczepański, Piotr L, Tomasz P, and Talal Rahwan. 2016. "Efficient Algorithms for Game-Theoretic Betweenness Centrality." *Artificial Intelligence* 231: 39–63.

Söderlund, Peter, and Åsa Von Schoultz. 2024. "Trajectories of the Personal Vote under Open-List Proportional Representation: Evidence from Finland, 1999–2019." *Party Politics* 30(January): 12–23.

Taagepera, Rein, and Matthew S. Shugart. 1991. *Seats and Votes: The Effects and Determinants of Electoral Systems*. New Haven, CT: Yale University Press.

Tavits, Margit. 2011. "Power within Parties: The Strength of the Local Party and MP Independence in Postcommunist Europe." *American Journal of Political Science* 55(4): 923–936.

Taylor-Robinson, Michelle, and Christopher Diaz. 1999. "Who Gets Legislation Passed in a Marginal Legislature and Is the Label Marginal Legislature Still Appropriate?: A Study of the Honduran Congress." *Comparative Political Studies* 32(5): 589–625.

Thames, Frank C. 2005. "A House Divided—Party Strength and the Mandate Divide in Hungary, Russia, and Ukraine." *Comparative Political Studies* 38(3): 282–303.

Ting, Michael M., Jonathan Bendor, Daniel Diermeier, and David A. Siegel. 2011. *A Behavioral Theory of Elections*. Princeton University Press.

Trumm, Siim. 2018. "The Best of Both Worlds? Evaluating the Campaign Behaviour of Dual Candidates." *Electoral Studies* 56(4): 14–22.

Universidad de Salamanca. 2024. "Parliamentary Elites of Latin America." Available at oir.org.es/pela/.

Van Vliet, Livia. 2020. "The Twitter Parliamentarian Database." Available at doi.org/10.6084/m9.figshare.10120685.v3.

Van Vliet, Livia, Petter Törnberg, and Justus Uitermark. 2020. "The Twitter Parliamentarian Database: Analyzing Twitter Politics across 26 Countries." *PLoS one* 15(9): e0237073.

VanDusky-Allen, Julie, and Michael Touchton. 2020. "Clientelism by Committee: The Effect of Legislator-Constituent Relationships on Legislative Organization." *Political Research Quarterly* 73(3): 667–669.

Volkens, Andrea, Tobias Burst, Werner Krause, Pola Lehmann, Theres Matthiess, Nicolas Merz, Sven Regel, Bernhard Wessels, and Lisa Zehnter. 2021. "The Manifesto Data Collection. Manifesto Project (MRG/CMP/MARPOR). Version 2021a."

Waugh, Andrew Scott, Liuyi Pei, James H. Fowler, Peter J. Mucha, and Mason A. Porter. 2009. "Party Polarization in Congress: A Network Science Aproach." *arXiv preprint arXiv:0907.3509*.

Wood, David M., and Gary Young. 1997. "Comparing Constituency Activity by Junior Legislators in Great Britain and Ireland." *Legislative Studies Quarterly* 22(2): 217–232.

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