

# Parties and Policymaking in Multiparty Governments: The Legislative Median, Ministerial Autonomy, and the Coalition Compromise

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*In parliamentary democracies, governments are typically composed of multiple political parties working together in a coalition. Such governments must confront a fundamental challenge in policymaking—the preferences of coalition parties often diverge significantly, but the government can adopt only one common policy on any specific issue. This fact raises a critical question that has far-reaching implications for the quality of democratic representation: Whose preferences are ultimately reflected in coalition policy choices? In this study, we explore three competing answers to this question derived from the theoretical literature on multiparty governance and parliamentary institutions. Our findings, based on an analysis of the legislative history of more than 1,000 government bills from three parliamentary democracies, strongly suggest that coalition policies reflect a compromise between government parties rather than the preferences of the ministers proposing them or the preferences of the median party in the legislature.*

Directly elected legislatures, designed to represent the views of citizens in the political process, are the archetypical institutions of representative democracy. It is not surprising, therefore, that scholars of democratic politics have taken a deep interest in understanding the process of legislative policymaking. In recent years, research in this area has expanded beyond the study of the U.S. Congress to focus more heavily on policymaking in parliamentary systems, which comprise the majority of the world's advanced democracies. In these systems, governments are typically composed of multiple political parties working together in a coalition. Such governments must confront a fundamental challenge in policymaking—the preferences of coalition parties often diverge significantly, but the government can adopt only one common policy on any specific issue. This fact raises a critical question that has far-reaching implications for the quality of democratic representation: Whose preferences are ultimately reflected in coalition policy choices?

Broadly speaking, the intuition of legislative scholars, buttressed by a large theoretical literature on multiparty governance and parliamentary institutions, suggests three competing answers. First, the logic of Black's (1948) median voter theorem implies that—at least in one-dimensional settings—policy outcomes will be located near the ideal point of the median legislative party because it is in a strong position both to bargain for its inclusion in government and to influence voting decisions in the legislative process (Baron 1991; Laver and Schofield 1990; Morelli 1999). A second approach, recognizing the central role played by cabinet ministers in formulating and implementing policy, implies that each coalition party can ensure that government policy reflects its own ideal point on those legislative initiatives that fall within the purview of ministries it controls (Austen-Smith and Banks 1990; Laver and Shepsle 1992, 1996). A final approach—and perhaps the one most in line with “common sense”—suggests that policy choices reflect

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a compromise between the preferences of parties in the coalition (Austen-Smith and Banks 1988; Baron and Diermeier 2001; Straffin and Grofman 1984).<sup>1</sup>

In this study, we attempt to adjudicate between these possibilities. The importance of an answer to the question of whose preferences prevail in policymaking is partly rooted in its implications for the quality of democratic representation. Suppose, for example, that citizens conceive of political issues in a way that can be represented by a single dimension. Then the policy favored by the median voter has a normatively appealing property—it is the only policy that is majority-preferred to all others. Moreover, empirical work suggests that the position of the median voter tends to be most closely approximated by the median legislative party (McDonald, Mendes, and Budge 2004; Powell and Vanberg 2000). Given such congruence, policy outcomes that reflect the position of the median legislative party are more likely to correspond to the views of the median citizen than policy outcomes that represent a compromise among the governing parties or that correspond to the interests of the relevant cabinet ministers (Powell 2006).<sup>2</sup> The answer to the question also matters for assessing the outcomes of government formation. If the median legislative party is ultimately decisive in policymaking, then which government forms is less significant than scholars have commonly assumed. However, if policy reflects a compromise among the coalition parties, or if cabinet ministers are critical in determining policy, then the results of bargaining over government formation are highly relevant for explaining and predicting policy outcomes.

In the next section, we review in more detail existing theoretical and empirical approaches to modeling policymaking in multiparty governments. We then introduce an original data set that tracks the legislative histories of over 1,000 government bills in three parliamentary democracies (Denmark, Germany, and the Netherlands) over roughly a 20-year period. We focus on the manner

in which bills are changed as they wind their way through the legislative process, which allows us to draw inferences about where policies are located, and thus to evaluate the competing accounts of coalition policymaking. We then present our findings, which strongly suggest that policies adopted by coalition governments reflect a compromise between government parties rather than the ideal point of the median legislative party or the policy position of the relevant cabinet minister. We conclude by discussing the implications of these results for our understanding of legislative policymaking more generally, and for broader debates regarding the quality of democratic representation.

## The Legislative Median, Government Parties, and Policy Choices

Coalition governments, which are the norm in parliamentary systems operating under proportional representation electoral rules, must confront a wrinkle in policymaking that is absent under single-party government: Policy is made *jointly* by parties that are *separately* accountable at election time. Given that any particular initiative cannot simultaneously correspond to all parties' most preferred policy, the question of whose preferences are ultimately reflected in policy outcomes under coalition government becomes central. The answer to the question, however, is not immediately clear.

The scholarly literature on coalition governance has overwhelmingly focused on the formation and dissolution of multiparty governments, paying less explicit attention to the ongoing policymaking process between these bookend events. That is not to say that policymaking has not been an important consideration in these accounts. The expectations held by party elites regarding the policies that alternative coalitions will adopt are critical to coalition negotiations, and thus theories of coalition formation have (at least implicitly) taken these expectations into account. For example, early coalition theories focused on policy distance and "connectedness," an emphasis grounded in the assumption that smaller, connected coalitions would be more compatible in their policy goals (Axelrod 1970; De Swaan 1973). One of the most significant developments in the coalition literature over the past two decades has been to move these expectations to the fore by incorporating explicit models of policymaking into theories of government formation. Doing so has allowed scholars to develop more nuanced accounts of how policy expectations affect the formation of multiparty governments. The insights emerging from these models

<sup>1</sup>A closely related debate in the American context focuses on the relative influence of the median legislator (e.g., Krehbiel 1998) and the median member of the majority party (Aldrich 1995; Aldrich and Rohde 2000; Cox and McCubbins 2005; Rohde 1991). The clash between these arguments has resulted in "a vibrant scholarly debate . . . over whether political parties, or the legislative median, are the prime movers in legislative organization and the production of policy" (Wiseman and Wright 2008, 6).

<sup>2</sup>Naturally, by focusing exclusively on the number of citizens who prefer an alternative, the "median congruence" criterion ignores other information that may be normatively relevant, e.g., the intensity of preferences (see Golder and Stramski 2010 for a general discussion of congruence measures and representation). Our point here is not to endorse any particular normative criterion, but merely to illustrate that the distribution of legislative influence has important normative implications.

are broadly consistent with three alternative accounts of coalition policymaking. We label these possibilities the *legislative median model*, the *ministerial autonomy model*, and the *coalition compromise model*.

We begin with the legislative median model. If bargaining is restricted to one dimension, and if actors have single-peaked preferences, then the median actor is in a particularly powerful position (Black 1948). Applying this insight to multiparty governance, scholars have argued that the median legislative party should be privileged in its capacity to bargain for inclusion in the governing coalition and to dominate negotiations over policy. Laver and Schofield (1990, 111) summarize this view succinctly:

The party controlling the median legislator . . . is effectively a dictator on policy . . . It makes no difference if it goes off on holiday to Bermuda and sits on the beach getting a suntan. If we confine ourselves to one-dimensional accounts of coalition bargaining, then the core position of the party controlling the median legislator implies that its policies should be enacted whatever it does.

Several formal models of government formation that incorporate policy considerations are consistent with the expectation that median parties are in the proverbial “driver’s seat.” Baron (1991) develops an alternating-offer framework in which parties bargain over policy until a majority coalition emerges.<sup>3</sup> If the model is restricted to one dimension, government policy is located at the position of the median party; in a multidimensional version, a “centrally located” party remains highly influential. As Baron (1991, 156) concludes, “a centrally located party is highly likely to have government policy located at or near its ideal point, establishing another version of the median voter theorem.” Morelli (1999) reaches the same conclusion with a different setup. He models coalition formation as a process of demand competition, in which parties make sequential demands over portfolios and government policy. If a set of compatible demands is made by a group of parties that comprise a majority, a government forms. Morelli assumes that the formateur who opens bargaining is chosen by a nonpartisan head of state, who prefers government policy to correspond to the position of the median voter. As long as the median voter’s position is best approximated by the median party (see McDonald, Mendes, and Budge 2004; Powell and Vanberg 2000), the head of state chooses the median party as the formateur,

and government policy comes to rest at its ideal point (Morelli 1999, 816).

A second account of policymaking by coalition governments disavows the legislative median model and argues instead that ministers are able to act as “policy dictators” on issues that fall under their jurisdiction. In the ministerial autonomy model, policy will therefore correspond to the (induced) ideal point of the party that controls the relevant ministry. Substantively, this perspective is grounded in the informational and agenda-setting advantages enjoyed by cabinet ministers, which may allow ministers to shape policy initiatives, and to resist attempts by other coalition partners to change them. As Laver and Shepsle (1996, 32) put it in their seminal work:

Given the intense pressure of work and lack of access to civil service specialists in other departments, it seems unlikely that cabinet ministers will be able successfully to poke their noses very deeply into the jurisdictions of their cabinet colleagues. This implies that members of the cabinet will have only very limited ability to shape the substance of policy emanating from the department of a ministerial colleague.

In a model developed around the same time, Austen-Smith and Banks (1990) also assume that ministers are able to act as policy dictators, resulting in government policy that corresponds to the ideal point of the relevant minister on each dimension. The critical purpose of the ministerial autonomy assumption in both of these models is not to provide an accurate description of policymaking, but to serve as a tractable way to incorporate policy expectations into a model of coalition bargaining. However, a number of empirical contributions have argued that ministerial autonomy characterizes real-world coalition policymaking. For example, in an edited volume, Laver and Shepsle (1994, 1996) present a series of country case studies aimed at documenting the dominant influence of cabinet ministers on the formulation and implementation of government policy. More recently, Barnes (2013) employs the ministerial autonomy model to argue that tax and social policy by coalition governments may often be in tension as left-leaning labor ministers pursue generous welfare policies while right-leaning finance ministers implement regressive tax regimes.

A final approach expects that coalition policy will reflect a compromise among the positions of the governing parties. This intuitive expectation serves as a foundational assumption for various studies on coalition politics and parliamentary government. For example, Grofman (1982) assumes that the policy implemented by a coalition will reflect the seat-weighted average of the parties’

<sup>3</sup>For a general critique of alternating-offer bargaining models of government formation, particularly as applied to portfolio distribution, see Laver, de Marchi, and Mutlu (2011).

ideal points, and on this basis, he develops a sequential theory of coalition formation in which proto-coalitions are enlarged until a majority is reached (see also Straffin and Grofman 1984). Similarly, the most common assumption in the empirical literature on representation has been to equate the policy position of a government with the seat-weighted average of the positions of coalition parties (e.g., see McDonald, Mendes, and Budge 2004; Powell 2000, 2006).

A number of formal models of coalition formation that explicitly incorporate policy considerations also suggest that the policy position adopted by coalition governments is a compromise located between the positions of the partners. For example, Austen-Smith and Banks (1988) consider a three-party, sequential-offer game in which parties bargain over portfolios and policy in a one-dimensional policy space. In equilibrium, coalitions are formed by the largest and smallest parties, and policy falls between their positions, that is, it represents a “compromise.”<sup>4</sup> Baron and Diermeier (2001) consider a related model in which three parties bargain over office benefits and policy in a two-dimensional space. While the precise location of government policy depends on a number of factors, including the preferences of the parties and the location of the status quo, the general conclusion emerging from the model is that policy represents a compromise among the ideal points of the parties in government (Baron and Diermeier 2001, 945). Moreover, if parties vary in the intensity of their preferences over the dimensions, the compromise shifts toward the ideal point of the party that has more intense preferences on the relevant dimension (Baron and Diermeier 2001, 950).<sup>5</sup>

Obviously, these accounts differ significantly in their implications for where policy outcomes under coalition government will be located. The legislative median model suggests that policy will consistently reflect the position of the median legislative party. The ministerial autonomy model points to the preferences of the party that controls the relevant cabinet portfolio. Finally, under the coalition compromise model, policy will generally *not*

correspond to the ideal point of the median legislative party or a particular minister.<sup>6</sup> Instead, policy will be located in the interior of the set of ideal points of the governing parties (e.g., see Martin and Vanberg 2011). Put differently, policy outcomes are generally expected to be more “centrist” (relative to the distribution of legislative preferences) under the legislative median model than under the coalition compromise or ministerial autonomy models.

## Assessing Models of Coalition Policymaking

To assess how well each model captures actual policymaking, we would ideally like to adjudicate between them directly. Doing so requires measures of the policy location of adopted bills, as well as corresponding measures of the preferences of legislators (or parties). Unfortunately, such a direct approach is currently out of reach, primarily because of the difficulty of measuring the policy location of bills. We therefore employ an alternative strategy that focuses on the pattern of *changes* that are made to proposed bills as they wind their way through the legislative process.

The logic of our approach is simple. The three sets of models make different predictions about where successful bills (i.e., bills that are adopted by the legislature) are located. Denote this location by  $b^*$ . In the legislative median model,  $b^*$  corresponds to the position of the median legislator on the issue dimension associated with the bill; in the ministerial autonomy model,  $b^*$  is equal to the ideal point of the minister with jurisdiction over the bill. Finally, under the coalition compromise model,  $b^*$  corresponds to the coalition compromise, that is, the appropriately weighted average of the party positions on the relevant dimension. Now consider a bill  $b$  that is introduced in the legislature. If the bill does not correspond to  $b^*$ , if it is to be adopted, it must be amended to  $b^*$ . Moreover, the further  $b$  is from  $b^*$ , the greater the degree of change that is required in order to bring the bill “into line.” Our strategy takes advantage of this fact: We model the *extent of change* to proposed bills before they are adopted, and we use this

<sup>4</sup>Specifically, policy is located either at the position of the median party or at the midpoint between the ideal points of the two coalition partners (Austen-Smith and Banks 1988, 413).

<sup>5</sup>Because Austen-Smith and Banks (1988) and Baron and Diermeier (2001) consider three-party legislatures in which any two parties can form a minimal winning coalition, the bargaining strength of all parties is similar (although some differences are introduced, for example, by the location of the status quo), and policy compromises generally fall halfway between the parties’ ideal points. While this result reflects the relative strength of the parties, the models do not allow us to directly estimate how variation in bargaining strength affects the nature of the compromise.

<sup>6</sup>The coalition compromise will correspond to the preferred policy of the legislative median only in the particular circumstance in which the weighted average of the government parties’ ideal points corresponds to the legislative median’s preferred policy. This outcome is possible only if there are “balanced” government parties arranged around the legislative median.



information to draw inferences about where the bill as adopted is located.<sup>7</sup>

Of course, this strategy requires that we “anchor” proposed bills in ideological space in order to make the number of changes meaningful. To do so, we assume that bills that are introduced by government ministers are located near the ideal point of their party. We believe there is a solid substantive justification for doing so. The introduction of legislation provides an important opportunity for parties to “take a position” vis-à-vis their target audiences. As Martin and Vanberg (2011, 13) point out, “the unveiling of a legislative proposal by a minister is a salient event that usually generates significant media attention and provides an opportunity to hold press conferences and to make statements to party activists.” Consequently, ministers have strong incentives to use the introduction of a bill to send a signal about their preferred policy, even if they suspect that this policy will ultimately be amended. This is especially true under coalition government (the object of our study) because distinguishing one’s own position from that of one’s coalition partners is a critical electoral strategy (Fortunato 2013; Huber 1996; Martin and Vanberg 2008, 2011).

Given this logic, we can derive testable hypotheses regarding the extent of change to proposed bills from the three sets of models. To do so, we assume that bargaining over policy proceeds on a bill-by-bill basis, and that each bill is confined to a particular policy issue (i.e., a one-dimensional policy space).<sup>8</sup> Consider first the legislative median model. What does this model imply for the number of changes to ministerial draft bills? Assume a legislature  $L$  composed of  $n$  parties, with the ideal point of party  $i \in L$  represented by  $p_i \geq 0$ , indexed in such a way that  $p_1 \leq p_2 \leq \dots \leq p_n$ . Denote the ideal point of the median legislative party by  $p_{Med}$  and the ideal point of the party of the minister introducing a draft bill by  $p_{Min}$ . As we pointed out above, we assume that the minister introduces a bill,  $b_{Min}$ , that corresponds to the position preferred by the minister’s party (i.e.,  $b_{Min} = p_{Min}$ ). As a result, the expected distance ( $D$ ) between the minister’s

draft bill and the policy that will ultimately be adopted is given by

$$D = ||p_{Med} - p_{Min}||.$$

As this distance increases (i.e., as the ideological position of the draft bill deviates further from the ideological position of the median legislative party), the draft bill must be changed more extensively in order to draw it toward the policy that will ultimately pass. This implies the following hypothesis:

*H1: If the position of the legislative median is decisive in policymaking, a ministerial draft bill will be changed to a greater extent as the ideological distance between the introducing minister and the median legislative party increases.*

Next, consider the coalition compromise model. In this model, a bill that is adopted reflects the coalition compromise, that is, the appropriately weighted average position of the coalition members. Formally, consider a government  $G$  composed of  $g \leq n$  legislative parties. Let the ideal point of party  $j \in G$  in the one-dimensional policy space be represented by  $p_j \geq 0$ , indexed in such a way that  $p_1 \leq p_2 \leq \dots \leq p_g$ . Party  $j$ ’s intra-coalition bargaining weight is given by  $w_j \in (0, 1)$ , where  $\sum_{j \in G} w_j = 1$ . The coalition compromise,  $CP$ , that corresponds to the relative weights of the parties is then given by

$$CP = \sum_{j \in G} w_j p_j.$$

Once again, suppose that a minister introduces a bill  $b_{Min}$  that corresponds to the position preferred by the minister’s party (i.e.,  $b_{Min} = p_{Min}$ ). The expected distance between the coalition compromise and the minister’s draft bill is given by

$$D = \left\| \sum_{j \in G} w_j p_j - p_{Min} \right\|.$$

Because the distance between the final bill and the bill that is introduced increases as the minister’s party is located further from the coalition compromise, as the minister becomes more extreme relative to the coalition compromise, more change is required to bring the introduced bill in line with the compromise policy that is expected to pass.

To operationalize this expectation in a way that allows us to test it empirically requires a measure of the coalition compromise, which turns crucially on the weights that are attached to each party. There are, of course, a number of alternative ways of doing so. In keeping with other approaches, we assume that the relative bargaining weights of the coalition partners correspond to the proportion of

<sup>7</sup>Importantly, bills in parliamentary systems that are *not* introduced by a minister have virtually no chance of being adopted; in restricting attention to government bills, we thus focus on those bills that are most relevant from a policymaking perspective.

<sup>8</sup>As we discuss in the next section, the data we employ take advantage of ideology scores that place parties in one-dimensional policy spaces in a number of issue areas, and we focus on legislative proposals that map onto these issue areas. The assumption that each bill deals with a single policy dimension appears reasonable given our reading of the content of these bills—that is, bills do not “combine” proposals across different issue areas, nor do they incorporate provisions of targeted goods.

seats that each party contributes to the coalition's total (Grofman 1982; Martin and Vanberg 2011; Powell 2000). This implies that the coalition compromise equals the seat-weighted average position of the coalition's members.<sup>9</sup> The coalition compromise model thus leads to the following hypothesis:

*H2: If the coalition compromise model characterizes coalition policymaking, a ministerial draft bill will be changed to a greater extent as the ideological distance between the introducing minister and the seat-weighted average ideological position of the coalition partners increases.*

Finally, if the ministerial autonomy model captures coalition policymaking, bills should not be changed in ways that are systematically related to ideological divisions between the introducing minister and other legislative parties. Because the minister acts as a policy dictator on bills within her jurisdiction, the bill will not be systematically pulled away from the version that she introduced towards the ideal points of other parties. The following hypothesis summarizes this expectation:

*H3: If the ministerial autonomy model characterizes coalition policymaking, changes made to a ministerial draft bill will not be systematically related to the ideological distance between the party of the proposing minister and any other parties in the legislature.*

## Data and Measures

Because the three models concern the influence of government and legislative actors on the *extent of changes* made to ministerial policy proposals, we confine our empirical analysis to legislatures with institutional features that provide parties with meaningful amendment opportunities, that is, to parliaments that play a significant role in policymaking. Specifically, we restrict our attention to legislatures with institutions that (1) enable parties to gather sufficient technical information about the issues under consideration in a minister's proposal and (2) allow parties to use that information to make significant policy

changes. In practice, such parliaments feature committee systems that mirror the jurisdictions of cabinet ministries, encourage the development of policy expertise, and facilitate information gathering by providing parties with opportunities to hold investigative hearings, meet with outside policy experts, and access information possessed by civil servants. These parliaments also typically have procedural rules in place that make it possible for parties to propose changes to ministerial draft bills and to force consideration of such changes despite ministerial opposition. In this study, we examine changes made to 1,109 government bills, over a period of approximately 20 years, from three parliamentary democracies with legislative chambers that meet these institutional criteria: Denmark (1984–2001), Germany (1983–2002), and the Netherlands (1982–2002).<sup>10</sup>

Our dependent variable must measure the extent to which bills drafted by government ministers are altered in the legislative process. An ideal measure would have two characteristics. First, it would allow us to assess the substantive impact of changes made to a bill. Second, it would be constructed in such a way that it allows other researchers to code it reliably and consistently across countries and issue areas. For obvious reasons, creating the ideal measure is not straightforward. Most legislation is highly technical in nature, and so measuring the substantive content of changes requires extensive policy expertise. Unfortunately, as several prominent studies of coalition policymaking have pointed out, such expertise is extremely hard to come by, even for seasoned legislators and cabinet ministers (see, e.g., Laver and Shepsle 1994, 1996; Martin and Vanberg 2005, 2011). Given this, any measure based on perceptions of substantive impact is bound to be highly unreliable. We confront this issue as follows. Government bills typically contain multiple articles (which are themselves usually divided into multiple subarticles). In general, the articles and subarticles in a bill deal with substantively different components of existing law and can be treated as logical "policy subunits" (see Martin and Vanberg 2011, 72–79). Therefore, the number of such subunits that are amended in a bill constitutes a useful proxy measure of substantive change; it has the added advantage that it can be coded reliably across policy areas and languages. To construct this measure, we simply compare the final version of each bill in our sample (as it emerged from the legislative review process in the lower chamber) to the version introduced

<sup>9</sup>In constructing this weighted average, we also weight party positions by the saliency of the issue under consideration. Doing so takes into account the possibility, as argued by Baron and Diermeier (2001), that the coalition compromise is shifted toward the ideal point of the party that has more intense preferences on the relevant issue dimension. We provide more detail on this weighing scheme in the next section. As we discuss below, our findings do not change if we do not weight divisions by saliency. Similarly, the results are robust to using weights other than relative seat shares, including minimum integer weights. See footnote 26 below for details.

<sup>10</sup>Martin and Vanberg (2011, 44–51) develop an index of policing strength for 16 European legislatures that measures the institutional ability of legislators to scrutinize and amend government bills. The three legislatures in this study are all classified as "strong" by this index.

by the proposing minister. The dependent variable is the total number of (sub-)articles altered in the bill plus the number of (sub)articles added or deleted.<sup>11</sup>

Using this measure, we find that the bills analyzed in this study are subjected to a fair amount of alteration. The typical draft bill has approximately 30% of its articles changed during the legislative review process. There also appears to be significant variation across countries, ranging from Denmark, where roughly 20% of articles in an average bill are changed in the legislative process, to the Netherlands, where approximately 33% of articles are changed, to Germany, where close to 50% of articles are changed.

Of course, our concern is to evaluate whether the extent of these changes is systematically related to policy divisions between particular actors in the government and legislature. To do so, we first need to identify the types of policy issues dealt with in each bill since party positions on different issues, and the importance parties place on them, vary significantly (see, e.g., Benoit and Laver 2006; Laver and Hunt 1992). Each government bill in our sample is classified into one of five conceptually distinct policy areas: tax and welfare policy, industry and markets policy, social policy, regional policy, and environmental policy.<sup>12</sup>

In Figure 1, we provide the breakdown of the bills in our sample by policy area. As the figure shows, tax and welfare bills, perhaps not surprisingly, make up the majority of the sample. These bills deal with such matters as income tax rates and allowances, the value-added tax, corporation taxes and capital gains, health care subsidies, and benefits for low-income individuals, the unemployed, pensioners, the elderly, widows and orphans, and the disabled. The bulk of the remaining bills addresses either industry and market regulation (dealing with matters such as production or supply levels of goods and services, the minimum wage, employer-union relations, privatization, industrial subsidies, and deregulation) or the environment (dealing with such matters as pollution, emissions standards, and industrial waste). A smaller portion of bills deal with regional policy (e.g., the

restructuring of regional or municipal institutions and the devolution of administrative power) or with social issues (e.g., family planning, abortion, medically assisted suicide, experimentation on human embryos, gay rights, and same-sex marriage and adoption).

For information on party policy preferences in these five issue areas, we draw upon two well-crafted studies by Laver and Hunt (1992) and Benoit and Laver (2006), which provide the results of expert surveys conducted in 1989 and 2003, respectively.<sup>13</sup> Both expert surveys asked country specialists to place the leadership of political parties on 20-point ideological scales in several distinct policy areas, including the five discussed above. The scores were averaged across experts, providing a single policy position for each party on the issue dimensions. We use this information on party preferences to construct several original measures that allow us to test the competing models of policymaking.

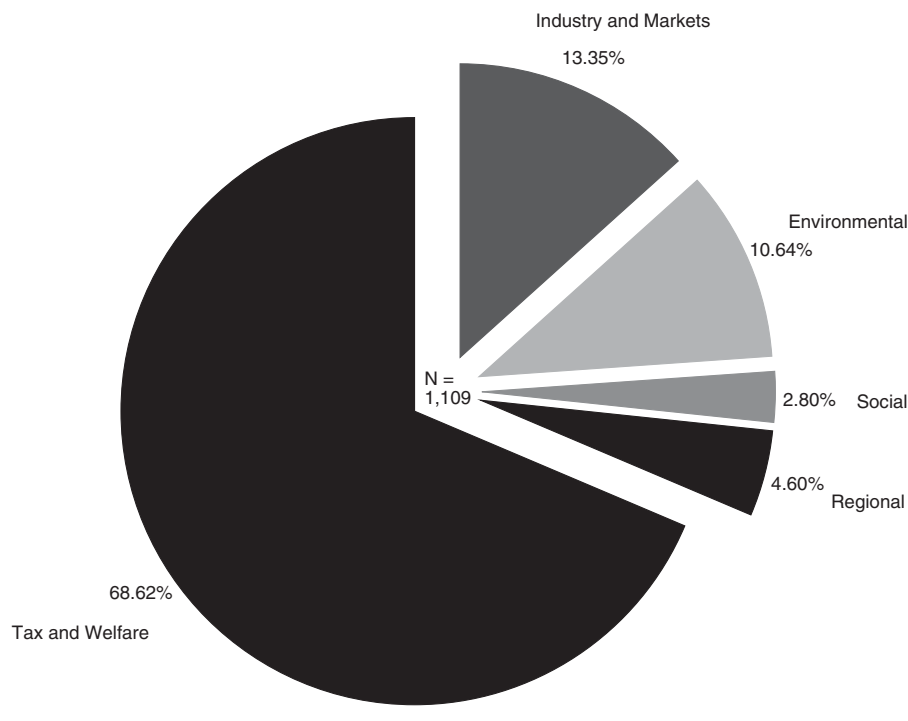
To evaluate the legislative median hypothesis, we first use party positions (along with information on party seat shares) to identify, for each bill in the sample, the median legislative party on the associated issue dimension.<sup>14</sup> We then create a measure of the absolute distance between the policy position of the party of the proposing minister on that dimension and the policy position of the party of the legislative median. If the legislative median hypothesis correctly characterizes coalition policymaking, then we should find that bills proposed by ministers from the median party on the relevant issue dimension receive fewer changes than bills proposed by ministers from off-median parties. We should also find that as the distance between the (off-median) proposing minister and the median party increases, the minister's proposal is amended more extensively in the parliamentary process. Thus, to test this hypothesis, we include two variables in the empirical model. First, we include a dichotomous indicator variable, *Off-Median Minister*, which takes a value of 1 when the proposing minister is from an off-median party (approximately 70% of bills) and a value of 0 when the minister is from the median party (approximately 30% of bills).

<sup>11</sup>Minor changes made to a bill (e.g., correction of misspellings or renumbering of sections) are ignored in the construction of this measure.

<sup>12</sup>These areas were chosen primarily because they are the five that are common across the two expert surveys of party policy preferences used for the countries in our study. As it happens, they account for the bulk of government-sponsored legislation. Our sample comprises the full set of government bills in these five policy areas that were introduced in the countries and years in our study, minus any bills that were not subject to the "normal" legislative process, such as those dealing with the budget, the ratification of international treaties, or amendments to the constitution.

<sup>13</sup>One advantage of these surveys is that they are proximate to the years in our sample. Thus, even though parties may change their issue positions over time (making the use of "snapshot" expert surveys potentially problematic), this is not especially troubling in our case given our time frame. Following Martin and Vanberg (2011), we use the Laver and Hunt (1992) survey for all governments forming and ending before 1996 (the midpoint between the two surveys) and the Benoit and Laver (2006) survey for all governments forming and ending after 1996 and for all governments whose time in office spanned the pre-1996 and post-1996 periods.

<sup>14</sup>Data on party seat shares are from the project Constitutional Change and Parliamentary Democracies (CCPD), which is described in a recent volume by Strøm, Müller, and Bergman (2008).

**FIGURE 1 Frequency of Proposed Legislation by Issue Area**

Second, we include the distance measure described above, which we label *Distance between the Minister and the Median Party*. Descriptive statistics for these measures, and all others in the study, are shown in the online supporting information.

To evaluate the coalition compromise hypothesis, we first construct a measure of the compromise position (CP) that was described in the previous section. For each bill in the sample, the compromise position on the associated issue dimension is the seat-weighted, saliency-weighted average of the policy positions of the government parties.<sup>15</sup> We then create a measure of the absolute

distance between the policy position of the party of the proposing minister on the relevant issue dimension and the coalition compromise position.<sup>16</sup> If coalition partners of the proposing minister have an influence on legislative policymaking, then we should find that this variable, *Distance between the Minister and the Coalition Compromise*, has a positive effect on the extent to which a minister's proposal is changed in the parliamentary review process.

To better isolate the legislative influence of the key actors in each model, we incorporate control variables that account for the policy divergence between the minister proposing a bill and other (potentially relevant) parliamentary parties. For example, it may be the case that a proposing minister who is ideologically distant from the median party is also ideologically distant from everyone else in the legislature (i.e., the minister may

<sup>15</sup>As discussed above, including a saliency weight in the construction of this measure is in keeping with the Baron and Diermeier (2001) model, which suggests that policy will shift toward the ideal point of the party that places greater weight on an issue. As we discuss in footnote 26, our findings are robust to eliminating the saliency weight. Issue saliency estimates for parties are from the aforementioned Laver and Hunt (1992) and Benoit and Laver (2006) surveys. As they did with positions, experts indicated the saliency of each policy area for parties on a 20-point scale. Following Martin and Vanberg (2011), we transform these issue saliency scores for each party into "relative" issue saliency scores by dividing them by the average of the party's saliency scores across the five issue areas. Thus, an issue of average saliency for a party has a relative score of 1.0, whereas an issue of below- (above-) average saliency has a score below (above) 1.0. We take the product of the relative issue saliency for a party (as a proportion of the sum of the relative saliencies of the issue dimensions across government parties) and the party's legislative seat share (as a proportion of

the legislative seat share of the government as a whole) and then normalize this product such that the products for all government parties sum to 1. These normalized party seat-saliency weights are then multiplied by the corresponding party policy positions. The coalition compromise is the sum of these weighted positions.

<sup>16</sup>This measure is conceptually and empirically distinct from the government issue divisiveness measure developed by Martin and Vanberg (2011). Their measure is the sum of weighted absolute distances between the minister and individual coalition partners, rather than the absolute distance between the minister and the coalition compromise. Their measure is perhaps best understood as a measure of "aggregate distrust" between a minister and his coalition allies.



hold an extreme position on the issues being considered). Similarly, the position of a minister may diverge substantially not only from those of coalition partners (and hence the coalition compromise) but also from the positions of major parties in the opposition. Empirically, we need to distinguish these sorts of (possibly confounding) policy distance effects from the impact of the particular theoretical variable of interest. Thus, in our test of the legislative median model, where the theory implies a positive impact of distance between the (off-median) proposing minister and the median legislative party, we include a control variable for the distance between the party of this minister and all other (off-median) parliamentary parties, which we label *Distance between the Minister and Off-Median Parties*.<sup>17</sup> Similarly, in our test of the coalition compromise model, we take into account the policy divergence between the proposing minister and parties of the opposition. In doing so, we distinguish between two types of opposition parties: “pivotal” and “nonpivotal.” We define pivotal parties as those opposition parties in minority government situations that (a) are most likely to cooperate with coalition partners in their attempt to enforce the coalition compromise (which we assume to be those opposition parties with policy positions closest to the compromise position) and (b) have a sufficient number of legislative seats collectively to give the government a working parliamentary majority for the bill under consideration. We define nonpivotal parties as those opposition parties whose support is not necessary for coalition partners to implement the compromise policy, which include all opposition parties in majority government situations as well as those opposition parties in minority government situations that do not meet our definition of pivotal. Thus, the two opposition distance measures included in the coalition compromise model are the *Distance between the Minister and Pivotal Opposition Parties* (which is 0 for all majority governments since no opposition parties are pivotal) and the *Distance between the Minister and Nonpivotal Opposition Parties*.<sup>18</sup>

In addition to these model-specific control variables, we include the number of standing committees to which a bill is referred, which we expect to have a positive impact on the level of legislative scrutiny, and thus the number of changes made to government bills. We also control for the

(logged) size of the bill introduced, since bills with many articles are naturally going to have more articles changed, on average, than bills with few articles. We also include a measure of the number of days a bill spends in the legislative process, as well as an indicator for whether a bill expires before the plenary vote. We also include an indicator for the numerical status of the government to account for the possibility that minority governments may have to make more policy changes than majority governments to entice opposition parties to support legislation. Finally, we include indicators to account for country-specific and issue-specific fixed effects.

## Analysis and Findings

Because the dependent variable is a count of the number of articles and subarticles changed in a minister’s policy proposal, we use an event count model in our empirical analysis. Specifically, we use the negative binomial model, which allows for overdispersion in the dependent variable. Overdispersion can occur if the events accumulating over an observation period are not independent (after conditioning on the covariates). In the current case, for example, successful amendments made to a bill at one point in the period of legislative review may lead to further amendments later in the process if the various sections of a bill are highly related. The negative binomial model accounts for the possibility of “contagion” effects of this type.

Our empirical strategy is to first use the negative binomial model to evaluate the legislative median and coalition compromise explanations of policymaking separately. This strategy also allows us to assess the strength of the ministerial autonomy explanation against each of these alternatives. We then evaluate the three explanations jointly within a single model. In Table 1, we present the results for the legislative median model of policymaking. The central finding is that the distance between the minister proposing a bill and the median legislative party has a positive impact on the number of changes made to the bill in the legislative process. That is, a minister with a policy position far removed from the position of the median legislator is expected to have his proposal changed more extensively than a minister with a policy position close to that of the median legislator.<sup>19</sup> Moreover, the results show a clear difference between the influence of

<sup>17</sup>Operationally, this variable is the absolute distance between the position of the proposing minister on the issues associated with a bill and the seat-weighted, saliency-weighted average position of all other off-median parties.

<sup>18</sup>We operationalize these variables as the absolute distance between the position of the proposing minister on the issues associated with a bill and the seat-weighted, saliency-weighted average position of the (pivotal or nonpivotal) opposition parties.

<sup>19</sup>It is worth noting that the results also reveal that, for the full range of minister-to-median distances in the sample, a proposal drafted by a minister from an off-median party is not expected to be changed any more extensively than a proposal by a minister

**TABLE 1 Effect Of The Median Party On The Extent Of Changes To Government Bills**

Variables	Estimates
Off-Median Minister	−0.187 (0.156)
Distance between the Minister and the Median Party	0.056** (0.027)
Distance between the Minister and Off-Median Parties	−0.021 (0.023)
Minority Government	−0.200 (0.172)
Number of Committee Referrals	0.030 (0.026)
Number of Subarticles in Draft Bill (Logged)	0.988*** (0.033)
Expiration of Bill before Plenary Vote	−1.224*** (0.169)
Length of Legislative Review	0.002*** (0.000)
Germany	0.469** (0.205)
Netherlands	0.119 (0.181)
Industrial Policy	−0.386*** (0.108)
Social Policy	−0.297 (0.226)
Regional Policy	−0.269 (0.184)
Environmental Policy	−0.115 (0.117)
Intercept	−1.375*** (0.191)
Overdispersion Parameter	0.828*** (0.058)

Note: Coefficient estimates (and standard errors) from negative binomial model. Dependent variable is the number of subarticles amended in a government bill. N = 1,109. Log-likelihood: −2539.05.

\*p < .10; \*\*p < .05; \*\*\*p < .01.

from the median party. This can be shown by evaluating the linear combination of the *Off-Median Minister* variable and the *Distance between the Minister and the Median Party* variable (which is always 0 when *Off-Median Minister* is equal to 0 and is strictly positive when *Off-Median Minister* is equal to 1) for different sample values of the latter variable. For example, when the distance variable is at its upper quartile value of 4.22, the *Off-Median Minister* coefficient is  $-0.187 + 4.22(0.056) = 0.048$ , which is positive but not statistically different from zero ( $p > .75$ ). At this variable's maximum

the median party on amendments to government bills and the influence of off-median parties. Preference divergence between the proposing minister and the latter parties has no systematic impact on the extent to which his bill is amended.

In Table 2, we present the findings from the coalition compromise model. In this case as well, there is clear empirical support for the theoretical expectations of the model. The effect of distance between the issue position of the minister and the position of the coalition compromise is positive and statistically significant. Moreover, this effect does not derive from the fact that the minister is extreme relative to *all* legislative actors. Policy divergence between the proposing minister and opposition parties has no discernible impact on the amendments made to the minister's bill, regardless of whether opposition parties are pivotal or nonpivotal to the majority status of the government. This is consistent with the argument of Martin and Vanberg (2011) that the process of legislative review is primarily a tool used by partners in government rather than members of the opposition. As the distance between the policy position of the proposing minister and the coalition compromise increases, the minister's bill is changed more extensively in the legislative process.

Note that, taken together, both sets of findings suggest that the ministerial autonomy model does not adequately explain policymaking in multiparty governments, at least not in legislatures that allow parties to gather relevant policy information and make meaningful changes to ministerial proposals. If the ministerial autonomy model did accurately describe coalition policymaking, we would find that bills are not changed systematically in response to the preferences of other government and legislative actors. However, the findings clearly indicate that ministerial proposals are amended to a greater degree the further they are either from the median legislative party or from partner parties in the coalition.<sup>20</sup>

In Figure 2, we present the substantive impact of the minister's distance from the coalition compromise (in

sample value of 8.67, the coefficient is  $-0.187 + 8.67(0.056) = 0.299$ , which is also statistically insignificant ( $p > .20$ ). However, for distance values outside the range of sample values—specifically, when the distance between the off-median minister and the median party exceeds 14.5—we would expect to see statistically significant and substantively large differences in the number of bill changes experienced by off-median ministers relative to median ministers (specifically, an increase of over 85%,  $p < .10$ ).

<sup>20</sup>We should also note that the effects of the control variables are very consistent across the two models and are unsurprising. For example, we see that large bills are changed more extensively than small bills, as are bills that spend longer in the legislative process (and that do not expire before the plenary vote).

**TABLE 2 Effect of the Coalition Compromise on the Extent of Changes to Government Bills**

Variables	Estimates
Distance between the Minister and the Coalition Compromise	0.099*** (0.029)
Distance between the Minister and Nonpivotal Opposition Parties	-0.026 (0.016)
Distance between the Minister and Pivotal Opposition Parties	0.018 (0.015)
Minority Government	-0.283 (0.229)
Number of Committee Referrals	0.034 (0.026)
Number of Subarticles in Draft Bill (Logged)	0.978*** (0.034)
Expiration of Bill before Plenary Vote	-1.266*** (0.169)
Length of Legislative Review	0.002*** (0.000)
Germany	0.597*** (0.199)
Netherlands	-0.012 (0.185)
Industrial Policy	-0.424*** (0.107)
Social Policy	-0.319 (0.224)
Regional Policy	-0.264 (0.190)
Environmental Policy	-0.171 (0.125)
Intercept	-1.442*** (0.209)
Overdispersion Parameter	0.821*** (0.058)

Note: Coefficient estimates (and standard errors) from negative binomial model. Dependent variable is the number of subarticles amended in a government bill.  $N = 1,109$ . Log-likelihood: -2534.28.

\* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ .

the right panel), alongside the impact of the minister's distance from the median party (in the left panel). Because the distance variables are measured on the same metric, the substantive effects can be compared directly. The horizontal axis displays the policy distance variable from the relevant model of policymaking, across its full range of sample values. The dotted curve represents the distribution of the data across these sample values, with corresponding kernel density estimates on the right ver-

tical axis. The solid line in each figure (enclosed by 95% confidence intervals) represents the expected percentage change in the number of amended articles in a bill that results from the corresponding change in distance on the horizontal axis (all other variables held constant).

Looking first at the results from the legislative median model, we see that when the issue distance between the minister proposing a bill and the median party increases from 0.03 (the sample minimum) to 4 (approximately the sample mean and median), the number of articles expected to be changed in the bill increases by almost 25%.<sup>21</sup> An increase in distance from the minimum to the maximum sample value (8.67) results in an expected increase in bill changes of over 60%. In substantive terms, this is a fairly large impact, and to our knowledge, it is the first finding in the comparative literature on parliamentary politics that shows a direct impact of the median party on policymaking.

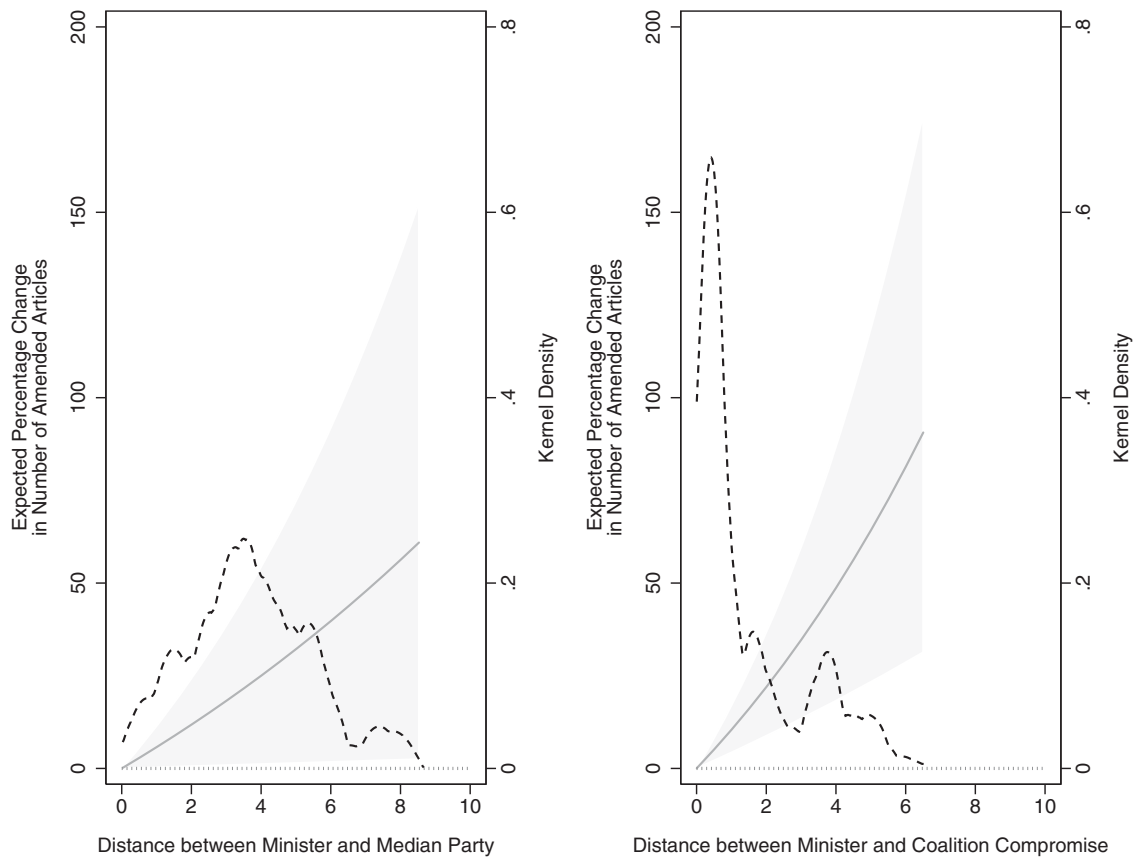
The right panel of the figure shows that the impact of the coalition compromise appears to be even larger.<sup>22</sup> A change in distance between the proposing minister and the coalition compromise from the sample minimum of approximately 0.01 to a distance of 4 points increases the expected number of amended articles by almost 50%.<sup>23</sup> This represents roughly a doubling of the effect of the same increase in distance between the minister and the median party. The figure also shows that bills dealing with the most divisive issues for the minister and his partners are expected to have over 90% more articles changed than bills dealing with relatively nondivisive issues.

<sup>21</sup>For example, for a bill of average size (24 articles) and with all other variables held at their respective means, this change in policy distance results in a change in the expected number of amended articles from 5.18 to 6.46 (i.e., a 25% increase). This corresponds to the quantity shown on the left vertical axis of the figure for a distance of 4 units between the minister and the median party. Equivalently, this quantity is 100 times the inverse-log of the product of the minister-to-median distance coefficient and the change in distance (i.e., the incidence rate ratio of the coefficient evaluated at the change in distance value) minus one:  $100(e^{0.056(4)} - 1) = 25\%$ .

<sup>22</sup>As the figure also shows via the kernel density plots, the distance between the minister and the coalition compromise tends to be much smaller, on average, than the distance between the minister and the median party. For approximately 60% of bills in the sample, the distance between the position of the proposing minister and the coalition compromise position is less than 1 point. This is perhaps not surprising since the policy position of the minister's party is incorporated into the coalition compromise and since partners in coalition governments tend to be ideologically compatible (Martin and Stevenson 2001). But for a considerable share of the data (roughly 25% of the sample), the distance between the minister and the compromise position exceeds 2 points, and for 10% of the bills in the sample, it exceeds 4 points.

<sup>23</sup>For a bill of average size (24 articles) and all other variables held at their means, this change in distance results in an increase in the expected number of bill changes from 5.4 articles to 8.1 articles.

**FIGURE 2** Separate Models of Impact of Distance between Minister and Median Party (left panel) and Distance between Minister and Coalition Compromise (right panel) on Expected Changes to Government Bills



In short, this comparison of substantive effects suggests that the influence of the coalition compromise is considerably greater than of the median party. Nonetheless, these findings provide empirical support for the idea that the process of bill change is responsive to *both* sets of actors. Since one of our goals is to assess which of the models best explains legislative policymaking, we must take additional steps in the empirical analysis to distinguish them.

Our first approach is to compare how well the separately estimated models explain the current sample of data using a model discrimination procedure. Although discrimination tests are not commonly used in political science, they are very helpful in assessing the relative goodness of fit for nonnested models.<sup>24</sup> By using infor-

mation on the observation-specific log-likelihoods estimated by competing models, discrimination tests provide probabilistic statements regarding whether one model is closer to the “true” specification than another. The null hypothesis is that the models are equivalent (i.e., equally close to the true model).

The specific relative discrimination test we employ was developed by Clarke (2003, 2007), and it is relatively straightforward to implement.<sup>25</sup> For each observation in

<sup>24</sup>Two or more models are nonnested if they cannot be reduced to one another through the imposition of parameter constraints, such as zero restrictions on covariates.

<sup>25</sup>The most common discrimination test is due to Vuong (1989). The key difference between the Vuong test (which makes the parametric assumption that the difference between log-likelihoods is asymptotically normally distributed) and the Clarke test is that the Vuong test evaluates whether the *mean* log-likelihood ratio is different from zero, whereas the Clarke test (which makes no parametric assumptions about the log-likelihood ratios) evaluates whether the *median* log-likelihood ratio is different from zero. Whether one test is preferred to the other depends on the kurtosis value of the distribution of the differences in the observation-specific log-likelihoods (Clarke 2007). If the distribution is mesokurtic (such as the normal), then the Vuong test is relatively more efficient. If the distribution is leptokurtic, the Clarke test is relatively more efficient.



**TABLE 3 Paired Sign Test of Model Discrimination**

Sign	Observed	Expected under Null
Positive	455	554.5
Negative	654	554.5
N	1,109	1,109
<i>Two-sided test:</i>		
<i>H0:</i> Median of differences in individual log-likelihoods = 0		
<i>Ha:</i> Median of differences in individual log-likelihoods $\neq$ 0		
<i>p</i> (# positive signs $\geq$ 654 or # negative signs $\geq$ 654) < .001		

our sample, we first estimate its log-likelihood as a function of the parameter estimates from the legislative median model and then its log-likelihood as a function of the parameter estimates from the coalition compromise model. We then take the difference between the two. If the difference is positive for a particular observation, then the legislative median model is a better fit for that observation (i.e., the positive difference means that the log-likelihood for the observation is higher under the legislative median model than under the coalition compromise model); if the difference is negative, then the coalition compromise model is a better fit. The Clarke test is simply a paired sign test applied to a full set of differences in individual log-likelihoods from the legislative median and coalition compromise models. If the models are equally close to the true specification, then half the differences in the log-likelihoods should have a positive sign and half should have a negative sign (in other words, the null hypothesis is that the median difference in likelihoods is equal to 0). If the legislative median model is closer, then more than half the signs should be positive, whereas if the coalition compromise model is closer, more than half the signs should be negative.

We present the results of the paired sign test in Table 3. The Clarke test statistic is the number of positive differences between the individual likelihoods. Under the null, it has a binomial probability distribution with parameters *N* (equal to 1,109 in our case) and *p* (equal to 0.50, the probability that an individual sign is positive if the models are equivalent). The top part of the table shows the distribution of signs of the differences in log-likelihoods. The bottom part shows that this 18% difference in signs in favor of the coalition compromise model is extremely unlikely if the two models explain the observed data equally well ( $p < .001$ ). Thus, the relative discrimination test

leads us to conclude quite confidently that the coalition compromise model is superior to the legislative median model in accounting for the extent of bill change.

Our second approach to distinguishing the legislative median effect from the coalition compromise effect is to model them jointly. The central advantage of a joint approach is that it allows us to account for the possibility that ministers who are far away from (or close to) the median party may be simultaneously far away from (or close to) the coalition compromise. This can happen, for example, if the median party is the large partner in a governing coalition (which would have the effect of drawing the coalition compromise closer to the legislative median position). If these two distances move together, the separate analyses may overstate one or both of the distance effects (as each may be partially “standing in” for the other). By evaluating both effects within a single model, we are able to control for this possibility.

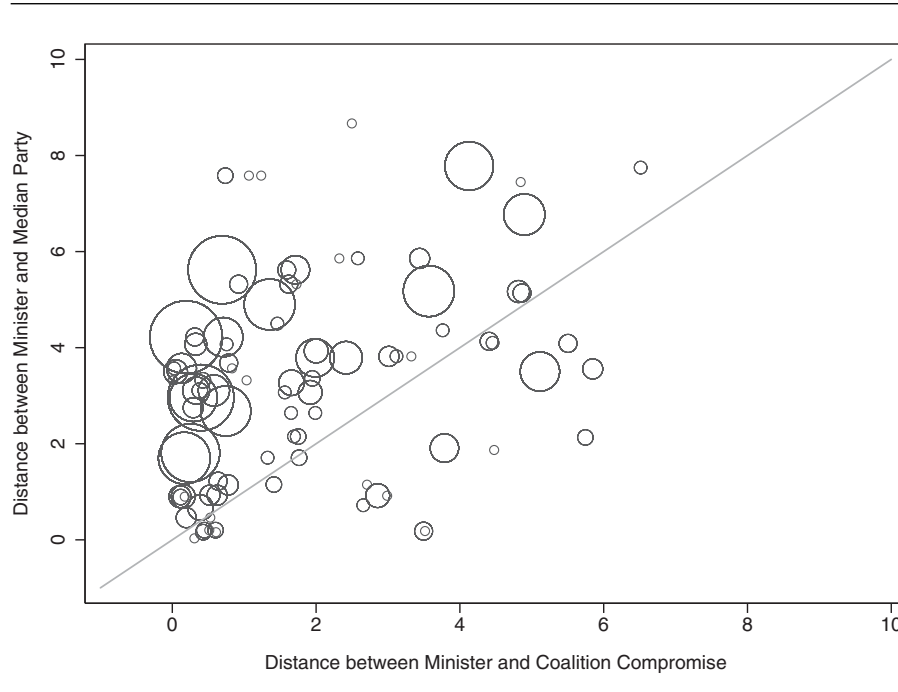
In Figure 3, we present a scatterplot of the two distance variables (for cases in which the minister is from an off-median party), weighted by the frequency of observations in the sample. There is indeed a moderate positive relationship between the two (reflected in a correlation coefficient of 0.43), but we also see a fair degree of dissimilarity. There is a large cluster of bills above the 45-degree line (approximately 60% of the cases shown) on which the proposing minister is at least twice as far away from the median party as he is from the coalition compromise. And for approximately 10% of the bills shown (those below the 45-degree line), the minister is further from the coalition compromise than he is from the median party. Thus, although there is a moderate relationship between the two distance measures (which might lead us to overstate the impact of one, or both, of them when they are estimated separately), there appear to be numerous dissimilar observations that, in a joint model, can provide leverage on the question of which effect is more important in explaining the degree of change in ministerial proposals.

In Table 4, we present the results of the joint model. The central finding is that the policy distance between the proposing minister and the median party has no systematic impact on the extent of changes made to the minister's policy initiatives once we take into account the distance between the minister and the coalition compromise. The size of the coefficient is less than half its original size. In contrast, the impact of the distance between the minister and the coalition compromise is essentially unchanged.<sup>26</sup>

In our case, the distribution of the differences in the observation-specific log-likelihoods is extremely leptokurtic, and on this basis we choose the Clarke test to compare the two models.

<sup>26</sup>In an ancillary analysis, available upon request, we perform two robustness checks relating to how we calculate the coalition compromise position. First, we remove the issue saliency weights from

**FIGURE 3 Distance between Minister and Coalition Compromise versus Distance between Minister and Median Party (Off-Median Ministers Only)**



This finding suggests that the previous result regarding the influence of the legislative median was due partly to the fact that as the distance between the minister and the median party was increasing for some of the bills in the sample, the distance between the minister and the coalition compromise was increasing as well. It also suggests that when the distance measures diverge (i.e., when the position of the minister is close to the legislative median but far from the compromise position, or close to the compromise position but far from the median), policy-making is more responsive to the preferences of coalition

members than to the preferences of the median legislator.<sup>27</sup> The results also continue to show that the ministerial autonomy model does not accurately characterize policy-making in multiparty governments—ministerial proposals are systematically changed more extensively the greater the level of disagreement between the minister and her coalition partners on the issues at hand.<sup>28</sup>

We display the substantive effects from the joint model in Figure 4. The impact of distance between the proposing minister and the median party is reduced considerably from the effect shown in Figure 2 and is no longer statistically different from zero. However, the

the calculation of the compromise position and reconstruct the *Distance between the Minister and the Coalition Compromise* variable accordingly. We find virtually no difference between the results using the non saliency-weighted variable and the results of Table 2 or Table 4. Second, instead of using (relative) seat-weights for coalition parties to calculate the compromise position, we use (relative) minimum integer weights, which are commonly employed in formal models of government formation to represent the “bargaining power” of coalition parties (see, e.g., Ansolabehere et al. 2005; Laver, de Marchi, and Mutlu 2011; Snyder, Ting, and Ansolabehere 2005). We continue to find that the changes made to ministerial proposals increase as ministers diverge from the position of the coalition compromise. This is true both when the compromise model is estimated separately (as in Table 2) and when the compromise distance variable and median distance variable are included in a joint model. Although our findings are robust to the choice of weights, discrimination tests (as used in Table 3) reveal that the models in which seat-weights are used lead to a significant improvement in model fit over the models in which minimum integer weights are used.

<sup>27</sup>It is also worth noting that the separate models from Tables 1 and 2 are nested within the joint model. Thus, one can use likelihood ratio tests to evaluate whether the joint model significantly improves goodness of fit versus the separate models. The null hypothesis is that the overall log-likelihood from the joint model is equal to the overall log-likelihood from each of the separate models. Our findings indicate that when the joint model is evaluated against the legislative median model, we can reject the null hypothesis ( $p < .01$ ). When the joint model is evaluated against the coalition compromise model, we cannot reject the null hypothesis ( $p > .50$ ). This means that the inclusion of the unique variables from the legislative median model does not add explanatory power to the coalition compromise model.

<sup>28</sup>We also perform a likelihood ratio test comparing the joint model to a model excluding all distance related variables. We find that accounting for the preferences of actors other than the proposing minister significantly improves our ability to explain patterns of change to government legislation ( $p < .01$ ).

**TABLE 4 Effects of the Median Party and the Coalition Compromise on the Extent of Changes to Government Bills**

Variables	Estimates
Off-Median Minister	−0.063 (0.183)
Distance between the Minister and the Median Party	0.024 (0.034)
Distance between the Minister and Off-Median Parties	−0.022 (0.032)
Distance between the Minister and the Coalition Compromise	0.100*** (0.035)
Distance between the Minister and Nonpivotal Opposition Parties	−0.011 (0.025)
Distance between the Minister and Pivotal Opposition Parties	0.010 (0.018)
Minority Government	−0.257 (0.237)
Number of Committee Referrals	0.032 (0.026)
Number of Subarticles in Draft Bill (Logged)	0.980*** (0.034)
Expiration of Bill before Plenary Vote	−1.270*** (0.169)
Length of Legislative Review	0.002*** (0.000)
Germany	0.522** (0.206)
Netherlands	−0.049 (0.187)
Industrial Policy	−0.407*** (0.108)
Social Policy	−0.298 (0.225)
Regional Policy	−0.237 (0.191)
Environmental Policy	−0.147 (0.125)
Intercept	−1.421*** (0.232)
Overdispersion Parameter	0.819*** (0.057)

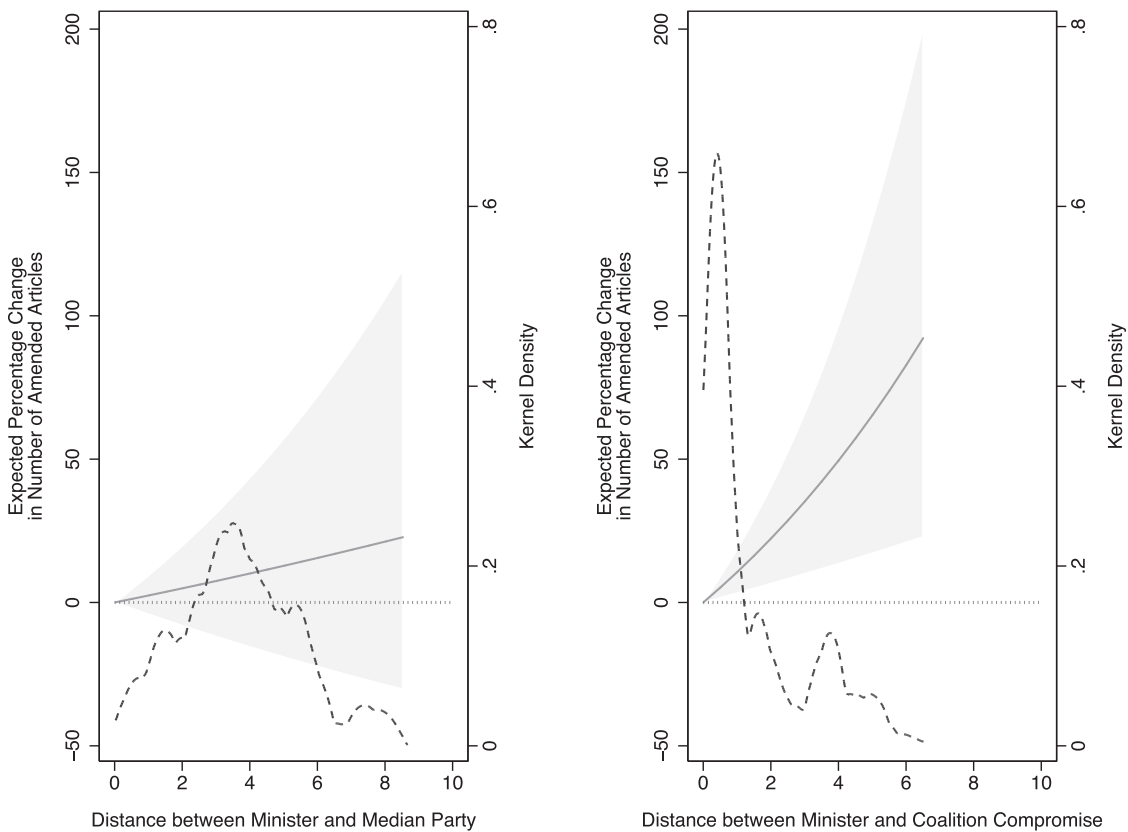
*Note:* Coefficient estimates (and standard errors) from negative binomial model. Dependent variable is the number of subarticles amended in a government bill.  $N = 1,109$ . Log-likelihood:  $-2533.19$ .

\* $p < .10$ ; \*\* $p < .05$ ; \*\*\* $p < .01$ .

effect of distance between the proposing minister and the coalition compromise remains statistically significant and substantively large. An increase in this distance from its sample minimum to its maximum is expected to result in more than a 90% increase in the number

of changed articles. In short, our conclusion from the joint model is the same as from our comparison of the separate models. Policymaking reflects the preferences of coalition partners rather than those of the median legislator.

**FIGURE 4 Joint Model of Impact of Distance between Minister and Median Party (left panel) and Distance between Minister and Coalition Compromise (right panel) on Expected Changes to Government Bills**



## Conclusion

Legislative assemblies are central institutions in democracies around the world, exercising significant control over the policies that govern the lives of citizens. Understanding whose preferences are reflected in legislative outcomes has therefore been a salient concern for students of democratic politics. Resolving this puzzle poses particular challenges in the case of multiparty governments, which are the norm in parliamentary systems. Such governments must confront the fact that the preferences of coalition members are likely to diverge, at least on occasion, but governments can adopt only one common policy on any given issue.

The literature on coalition theory suggests three distinct approaches to thinking about whose preferences are reflected in the policies adopted by coalition governments—the legislative median model, the ministerial autonomy model, and the coalition compromise model. In this study, we have investigated these alternatives empirically by analyzing the extent to which government-sponsored legislation is changed during the

legislative process. Our findings are clear. We find no support for the ministerial autonomy model. Ministerial draft bills are changed systematically in response to ideological divergence between ministers who introduce bills and other legislative actors, a finding that is clearly inconsistent with the notion that ministers can unilaterally determine policy in areas under their jurisdiction. We also find strong evidence that policy lies closer to the coalition compromise than to the ideal point of the legislative median. When we consider the two models separately, the coalition compromise model provides a better explanation of observed policymaking behavior than the legislative median model. When we consider them jointly, the preferences of the median party are unimportant in explaining how ministerial policy initiatives are changed in the legislative process. In short, our evidence suggests that policies that are adopted in parliamentary systems reflect a compromise among the policy positions of coalition partners.<sup>29</sup>

<sup>29</sup>We should note that there is a certain affinity between our findings and the debate in the literature on the U.S. Congress over the relative



Besides providing a positive account of whose preferences are reflected in legislative outcomes under multiparty government in parliamentary systems, our findings have a number of implications. At one level, they underscore that the outcomes of coalition bargaining are critical to policy. If policy were largely driven by the preferences of the legislative median party, coalition negotiations would be epiphenomenal to understanding policy outcomes in parliamentary systems. The evidence we have advanced here demonstrates that this is not true: The identity of the government that takes power has clear implications for the policies that are subsequently adopted.

Our findings also have significant implications for the extensive empirical literature on the quality of representation in democratic polities. Central contributions in that literature have measured the quality of democratic representation by assessing the congruence between the preferences of the median citizen and the median legislative party (McDonald, Mendes, and Budge 2004; Powell and Vanberg 2000). This approach derives directly from the assumption that policy outcomes are shaped significantly by the party controlling the legislative median. As McDonald, Mendes, and Budge (2004, 2) put it when defending congruence between the median voter and median legislator as an appropriate measure of the quality of representation, "bringing the two into correspondence means that the policies a popular majority would endorse if it were asked about them directly are the ones favored by the median party and hence close to those eventually approved by parliament."

The results we have presented here suggest that the extent to which the preferences of the median citizen are reflected in legislative outcomes requires more careful analysis. Our evidence implies that policy outputs are often systematically pulled away from the median legislative party and weighted instead toward a compromise position among coalition parties.<sup>30</sup> As a result, studies that assess the quality of representation by measuring the congruence between median citizens and legislative medians (McDonald, Mendes, and Budge 2004; Powell and

influence of the median legislator and the median member of the majority party (e.g., Aldrich 1995; Aldrich and Rohde 2000; Cox and McCubbins 2005; Krehbiel 1998; Rohde 1991; Wiseman and Wright 2008). In that context, advocates for the conditional party government or legislative cartel models aim to demonstrate that legislative outcomes can be systematically pulled away from the position of the legislative median, just as outcomes are pulled away from the median toward the coalition compromise in our setting.

<sup>30</sup>We should note, of course, that our results derive from systems with high party discipline, as is typical in parliamentary systems. Our findings therefore may not generalize directly to less cohesive systems, in which legislative bargaining more closely approximates unconstrained bargaining among legislators.

Vanberg 2000) may systematically overstate how well citizen preferences are reflected in policy outcomes. A more appropriate approach is to focus on the congruence between citizen preferences and the seat-weighted average position of members of the governing coalition, as some studies have done (e.g., Powell 2000).

Finally, we should note that what we offer here is but a beginning, and a number of steps for future work remain. The most important is to assess the connection between citizen preferences and policy outcomes in a more direct manner. The contribution in the current study is to move beyond abstract measures of congruence on the left-right scale, which have dominated the literature on the quality of representation to date, to consider actual policymaking at the micro level. In focusing on the extent to which government bills are changed, we are able to demonstrate more directly which parties' preferences are reflected in concrete policy decisions. Nevertheless, the implications for the quality of representation remain circumstantial in an important respect. We have only been able to focus on the degree of change to bills, without developing direct measures of the policy content and position of bills that are adopted. This limitation provides an obvious opportunity for future work to more directly assess the substantive positions adopted in specific bills and to link these positions to the issue preferences of voters.

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## Supporting Information

Additional Supporting Information may be found in the online version of this article at the publisher's website:

**Appendix Table 1:** Descriptive Statistics for Dependent and Independent Variables