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Legislative Effects of Electoral Mandates

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Data has been taken from the Hungarian National Assembly, where the mandate type (single member district (SMD) vs. party list or proportional representation (PR)) changes for a number of legislators each term, to explore whether and how such changes lead to changes in legislators' voting behavior. When the electoral system under which a legislator was elected changes from PR to SMD, then the rate at which the legislator defects against the party line of voting increases significantly. Contrary to expectations, when the electoral system changes from SMD to PR, there is no significant change in the voting behavior of legislators. Additional robustness tests confirm these results. The lasting influence of reputations and habits may account for the asymmetric results.

Does the electoral system influence legislators' behavior in parliament? While this question has received considerable attention in the existing literature, the empirical findings have remained inconclusive. We argue that one possible reason for this is the fact that existing studies have largely relied on incomplete research designs. Two common empirical strategies have been used: (1) cross-national comparison of countries with different electoral systems,[1] and (2) within country comparison of legislators elected under different rules in mixed member systems (MMS).[2] Neither of these strategies is ideal for uncovering the effect of electoral systems. The former does not allow full understanding of the causal effects of rules because differences in institutions may be confused with differences in cultural characteristics, historical legacies, or other possible confounding factors that are difficult to measure. Studying MMSs seems a better strategy because it allows us to hold constant confounding factors at the country level while providing the necessary variance in

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[1] For example, Carey 2007; Carey 2009; Crisp et al. 2004; Morgenstern 2004; Morgenstern and Swindle 2005; Shomer 2010.

[2] Ferrara 2004; Haspel, Remington, and Smith 1998; Herron 2002; Jun and Hix 2010; Kunicova and Remington 2008; Lancaster and Patterson 1990; Sieberer 2010; Stratmann and Baur 2002; Thames 2001; Thames 2005. Another possibility is to compare different legislative chambers in the same country if these chambers employ different electoral rules (see, for example, Desposato 2006). However, these situations are rare, and, therefore, MMS has become a more commonly used setting for studying the causal connection at hand.

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electoral rules.[3] However, this strategy implies that the average member of parliament (MP) elected under single member district (SMD) rules and the average MP elected under proportional representation (PR) rules are as similar as they can be in all relevant respects other than their mandate type – an assumption that is untenable. Finding that MPs from SMDs are more likely to be mavericks than their colleagues from PR lists may simply reflect the tendency of more independently-minded candidates to run in SMDs.[4]

Given these incomplete research designs it is not surprising that the findings regarding the connection between legislative behavior and electoral institutions have remained inconclusive.[5] For example, while some cross-national studies report that electoral systems significantly influence party unity, Morgenstern and Swindle show, with data from twenty-three democracies, that the electoral system has no clear effect on whether legislators follow local interests when voting in parliament.[6] The findings from the MMS studies are also mixed.[7] Some studies have found that SMD MPs are not significantly more likely to break party unity in parliamentary voting than their PR counterparts once other characteristics – such as party affiliation – are controlled for.[8] Yet, other studies find that SMD MPs are significantly more likely to be mavericks than PR MPs, even after accounting for relevant controls.[9] Such contradictory findings have been reported even for the same country.[10] Contradictory findings have been reported also for parliamentary behavior other than voting, such as committee assignments:[11] although some studies claim that SMD MPs are more likely than their PR counterparts to serve in constituency oriented committees,[12] other studies show little evidence of such a connection.[13]

Our research design makes use of a different kind of controlled comparison offered by MMS but not exploited in previous studies – one that allows us to identify the effect of electoral rules on the voting behavior of legislators more rigorously. Specifically, we make use of the fact that in an MMS some legislators can switch district types from one term to the next, i.e., the *same* legislator can be elected from an SMD for one term, but from a party list for another. This allows us to hold constant a host of variables, including personal particulars (such as a personal inclination against authority), and study whether legislators' behavior changes when electoral rules change from SMD to PR and vice versa.

[3] MMSs have been argued to serve as 'crucial experiments' (Shugart, Valdini, and Suominen 2005, 34) or offer 'controlled comparisons' (Moser 2001; Moser and Scheiner 2004) to study the relationship between electoral rules and legislative behavior.

[4] To put it differently, if a variable affecting the outcome of interest (in this case, the legislative behavior of MPs) has significantly different distributions across groups with different mandates, statistical analysis could either reveal no effect when in fact there is one, or could mistakenly lead to the conclusion that the effect *does* exist in the absence of one (Gelman and Hill 2006). This fact may very well account for the inconsistencies in the empirical findings noted below.

[5] Carey 2007.

[6] Morgenstern and Swindle 2005.

[7] Chiva 2007; Kunicova and Remington 2008; Thames 2004.

[8] Haspel, Remington, and Smith 1998; Herron 2002; Thames 2005. See also Clark et al. (2008) who show that Lithuanian SMD MPs have higher party unity scores than their list counterparts and Jun and Hix 2010 who report the same for South Korea.

[9] Ferrara 2004; Sieberer 2010; Thames 2004.

[10] See, for example, Haspel, Remington, and Smith 1998; Kunicova and Remington 2008; Smith and Remington 2001; Thames 2001; Thames 2005.

[11] Other response variables used include (co)sponsorship patterns and acts of public posturing, such as speeches on the floor.

[12] Lancaster and Patterson 1990; Stratmann and Baur 2002.

[13] Crisp 2007; Crisp et al. 2009.

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By observing the change in the voting behavior of those legislators whose mandate type changes and of the others, we can evaluate whether and how different electoral rules causally influence individualism in parliament. As such, the results of the study contribute not only to the literature on legislative behavior and representation, but to institutional theory more broadly by directly evaluating one of its primary claims that institutions influence, rather than simply reflect, behavior.

Using data from four parliamentary terms in Hungary (1994–98, 1998–2002, 2002–06, 2006–10), we find that when the electoral system changes from PR to SMD, then legislators become significantly more constituency oriented in their voting behavior, as indicated by increased levels of defections from the party line of voting. However, when the electoral system changes from SMD to PR, there is no significant change in the voting behavior of legislators. These asymmetric results are novel and run counter to the unqualified argument according to which legislators' behavior is a response to the constant-sum power of competing principals (i.e., the party and the constituency), so that when the balance of power between them changes due to a change in electoral rules, so does the behavior of legislators.

Overall, our findings strongly suggest that the effect of the electoral system on legislative behavior is not immediate and unconditional. Rather, MPs are creatures of habit bound by their reputation (i.e. by the information they have already revealed about themselves), and change their behavior in response to new rules only under certain conditions. As we elaborate in the conclusion, we suggest that these conditions involve the extent to which one of the principals gains rather than loses power (i.e., gains the ability to sanction legislator's behavior directly). Note that our findings also directly contribute to the literature on electoral system change or reform – an area that, despite its significant practical relevance, has remained relatively unexplored, especially with regard to its effects on the 'intra-party dimension of politics.'[14] The lasting influence of past institutions, as uncovered here, may explain why electoral reforms do not always produce the expected results.[15]

LEGISLATIVE BEHAVIOR AND THE MANDATE: THEORETICAL ARGUMENT

The most common (albeit sometimes implicit) argument connects electoral rules and legislative behavior through the incentives to align with the preferences of one actor from a set of competing principals – that is, actors who have a say in a legislator's reelection prospects, but whose interests can be at odds with each other.[16] Party leaders and constituency voters are the most easily identifiable principals of the legislator.[17] Both principals expect the legislator to choose the voting alternative that they prefer. Failing to do so is costly for the reelection-oriented legislator because the offended principal can withdraw or decrease its support for them.

When the interests of the two principals coincide, the legislator has no trouble choosing from the set of alternative voting options: he or she chooses the alternative preferred by

[14] Scheiner 2008; Shugart 2005.

[15] For examples, see Scheiner 2008.

[16] See, for example, Bowler and Farrell 1993; Carey 2007; Carey 2009; Hix 2004; Kam 2009; but see Sieberer 2010 for a counter-argument

[17] Carey 2009 points out that depending on the political system, there are other potential principals such as presidents, governors, interest groups, political activists, etc. We follow Carey and focus on party leaders and voters as 'the most prominent and prevalent principals who exert pressure on legislators in the widest range of contexts' (Carey 2009, 15).

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both principals, and party discipline is observed. When the preferences of these principals are misaligned, however, the legislator must favor one at the expense of the other. Which principal the legislator chooses to favor depends on which one has a greater impact on his or her prospects of reelection, i.e., which offense is costlier. If the reelection goal is best attained through party leadership, then legislators are more likely to adhere to the party line in their voting. If the goal of reelection can be achieved by a direct relationship with voters, then party loyalty in parliament becomes less important. In such a situation, aligning with the party and defecting against voters is likely to be costlier for the legislator than defecting against the party. Therefore, increases in defections would indicate that the legislator is deliberately eschewing the party interests in favor of the constituency.[18]

The relative cost incurred by offending each of the competing principals and consequently the relative power of these principals is, in turn, affected by the electoral system in place. Previous literature argues that electoral systems where voters have no direct say over the reelection of individual candidates encourage legislators to adhere to party loyalty, while those that allow personal votes make parties less relevant for legislators' political advancement and create incentives for individualism in parliament.[19] In both systems considered here – SMD and closed-list PR – legislators are likely to depend on party resources such as favorable nomination (including list place), campaign funds, party infrastructure, and party reputation for reelection. However, the extent to which they also depend on the constituency is likely to vary across these electoral systems. Specifically, because personal votes cannot be cast and because the voting behavior of any individual legislator is less consequential for the overall party reputation in a given district, legislators in closed-list PR systems should be less likely to value their constituency as a reelection resource and, therefore, serve party interests in the legislature. In SMD systems, because voters can vote for a specific legislator and because that legislator's behavior is largely responsible for his or her party reputation in the eyes of his or her district voters, legislators should be more likely to value their constituency as a reelection resource and, therefore, serve their interests in the legislature.

When a legislator experiences a mandate change, the balance of power between the two principals is expected to change accordingly: if the change occurs from an SMD mandate to a PR mandate, the party principal gains salience with respect to the constituency principal, thereby incentivizing the legislator to be more responsive to the party's interest. Similarly, when a legislator's mandate changes from PR to SMD, his or her behavior should accordingly accommodate the interests of the electorate over those of the party more often than before.

RESEARCH DESIGN

We focus our analysis on an MMS. However, unlike the existing studies that use legislators with a PR mandate as controls for legislators with an SMD mandate, we use MPs who did

[18] More generally, it indicates a preference to satisfy any principal but the party.

[19] See, for example, Ames 2001; Cain, Ferejohn, and Fiorina 1987; Carey 2007; Carey 2009; Ferrara 2004; Haspel, Remington, and Smith 1998; Herron 2002; Jun and Hix 2010; Kam 2009; Kunicova and Remington 2008; Lancaster and Patterson 1990; Mitchell 2000; Morgenstern 2004; Owens 2003; Samuels 1999; Sieberer 2006; Sieberer 2010; Stratmann and Baur 2002; Thames 2001; Thames 2005; see also Bowler and Farrell 1993; Carey and Shugart 1995; Crisp et al. 2004; Heitshusen, Young, and Wood 2005; Hix 2004; Shugart, Valdini, and Suominen 2005; Zittel and Gschwend 2008, who consider legislators' other behaviors instead of, or in addition to, the voting behavior.

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not change mandate type from one term to the next as controls for those who did. Our approach improves on previous measures of the effect of mandate type on legislative discipline by increasing the expected comparability of the groups, and allows us to test the hypotheses derived from the competing principals theory directly.[20] Note that our research design is tantamount to studying electoral system *change* and, therefore, allows extending our results to situations of institutional change more generally.

The Justification and Context of the Hungarian Case

We use data from the National Assembly of Hungary – a post-communist democracy that has held regular democratic parliamentary elections every four years since 1990. Until 2011, this parliament offered an ideal setting for the empirical testing of our arguments because (1) it employed an MMS with 176 out of the 386 MPs elected from SMDs and the rest elected from regional and national party lists, and (2) the mandate type (SMD vs. PR) changed from one term to the next for a number of MPs, while for others it remains the same. We will estimate the impact of changing mandate types by comparing the difference between average defection levels for those MPs whose mandate changed to those whose mandate remained the same.

During the period of our study, the Hungarian MMS combined three ways to elect an MP.[21] First, in the SMD contests, candidates from different parties competed directly and voters chose their most preferred candidate on the ballot. The candidate who got the most votes won, unless nobody received more than 50 percent of the vote – in which case a runoff plurality contest would be held between the top three candidates and any candidate with more than 15 percent of the vote. Second, Hungary was divided into twenty regional constituencies, which corresponded to counties (*megyék*). The district magnitude in the regional districts ranged from 4 to 28. In the regional tier, voters voted for the party list and seats were then distributed according to a largest-remainder PR formula. Third, fifty-eight national list seats were allocated to qualifying parties based on votes that were not used to obtain a seat in the first two tiers (so called surplus votes) using the D'Hondt procedure. The regional and national lists were closed. In our empirical analysis, we use two alternative strategies to handle the PR elections: (1) we consider the MPs elected from either regional PR (RPR) or national PR (NPR) list together as having a PR mandate, and (2) we separate the RPR MPs from the NPR ones and estimate the effects for each type.

Because we are combining data over a relatively long period, the likelihood that our results represent an unusual parliamentary term is decreased. Furthermore, we believe that our results are not just characteristic of a transitioning democracy because, during the time-period under consideration, the Hungarian democracy matured and stabilized considerably. Additionally, with its two different PR tiers, the pre-2011 Hungarian case provides us with more information than other MMS systems: it allows studying

[20] To put it differently, by choosing the wrong set of MPs to compare, the existing studies have not been able to insure the type of covariate distribution balance needed to perform statistical causal inference (Rubin 2006).

[21] See Benoit 2005. In 2011, Hungary underwent a significant electoral reform. The reform eliminated the regional PR tier and the strictly compensatory nature of the national tier. In the latter, seats are now allocated using the D'Hondt divisor formula applied to surplus SMD votes plus votes cast directly for national lists. In addition, the size of the National Assembly was dramatically reduced from 386 to 199 seats, 106 of which are allocated in SMDs.

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electoral system change to and from (1) a PR with a large nationwide district (NPR) and (2) a PR with smaller geographically concentrated districts (RPR). Most importantly, however, the generalizability of our study is buttressed by the extent to which we can isolate the effect of institutional changes on legislative behavior – despite the observational nature of our data.

Candidate selection and nomination in Hungary was (and will, in all likelihood, continue to be) a highly centralized process, with party elites playing the most prominent role. National and regional lists could only be proposed by parties, and voters had no say on the order in which candidates appear on the ballots (i.e., lists were closed and there were no democratic procedures within parties to determine list ranks). Centralization also applied to selecting candidates for SMDs: while in some cases local organizations could propose candidates, the central party had the final decision-making power when it came to granting endorsements. Even in the Hungarian Socialist Party (MSZP) – the one with the most decentralized rules – the central party could veto SMD nominations put forth by local party organizations.[22] Additionally, candidates had to collect at least 750 signatures in their district to be able to run for office in the SMD race. Voters could only sign one petition and, because the possibility of fielding lists at the regional PR tier depended on the number of SMD districts that the party had contested, voters had the incentive to support the candidate of the party that they intended to vote for in the regional PR race. The Hungarian setting during this period, therefore, conforms to the theoretical assumption that both SMD and PR legislators depended on party resources for reelection purposes, while the extent to which they also depended on the constituency varied across tiers.

Candidates in Hungary were allowed to run simultaneously on all tiers of election – a possibility that parties had increasingly used. Mandate change could therefore occur via two different mechanisms: (1) an MP's nomination could change from one tier to another or from double to single nomination, or (2) an MP could be elected from a different tier than previously even if his or her nomination remained the same (i.e., the MP was double nominated both times).[23] Except for the highest rankings in the national and regional PR tiers (which were usually filled by party leadership), it is not the case that one type of mandate was deemed more prestigious than another.[24] That is, mandate changes were not the expression of career advancements, or differences in career paths, for the vast majority of party members.[25] As explained below, our results are similar regardless of the origin of mandate change.

Elections to the Hungarian parliament occur every four years, either in April or May. The electoral law in place during the period under study stipulated that the minimum duration of the campaign season was seventy-two days, but candidacies could be announced as late as twenty days before the election.[26] For most MPs, nominations were not made official more than four months ahead of the election, thereby restricting most of

[22] Enyedi 2006.

[23] We acknowledge that whether or not an MP experiences mandate change is not random (and cannot be argued to be as if random). However, our research design gives us a great assurance against spurious relationships.

[24] When candidates who had been nominated to multiple tiers won the SMD contest, their names were removed from the regional or national party lists; similarly, candidates who had been nominated in both a regional and a national PR tiers and won a regional seat were removed from the national list (Benoit and Schiemann 1995).

[25] Körösényi 1999.

[26] The Hungarian National Assembly 1997.

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the campaign season to only a few months before the end of the legislative term. While it is, of course, possible that some MPs learned or had an inkling about these nomination decisions before the official announcement, we believe that it is, in general, reasonable to expect that our voting record data are likely to reflect behaviors induced by mandates *received* rather than by mandates *expected* for the following legislative term.

During the time period under study, seven parties were represented in the Hungarian parliament: the left-wing MSZP, the liberal Alliance of Free Democrats (SZDSZ), the right-wing agrarian Independent Smallholders' Party (FKGP), the centre-right Democratic Forum (MDF), the radical rightist Justice and Life Party (MIÉP), the Christian-conservative Christian Democratic Party (KDNP), and the conservative Alliance of Young Democrats (FIDESZ). The size of these parties has varied over the parliamentary terms with MSZP and FIDESZ gaining influence over time and the others losing it or disappearing altogether.

Since only those MPs who have served in at least two terms are susceptible to mandate change, our sample is composed of the set of all MPs who served in at least two terms between 1994 and 2010.[27] There are a total of 1,419 cases in our dataset. Because we are looking at change in mandate type, we are losing the first observation for each MP.[28] Of the remaining 932, 137 MPs changed from the SMD to the PR tier, while 344 remained in the SMD tier; 117 MPs changed from the PR to the SMD tier, and 334 remained in the PR tier.[29]

MEASUREMENT STRATEGY

We measure legislative behavior using MP's parliamentary voting records. In Hungary, almost all votes are publicly recorded at the individual level avoiding the otherwise common selection bias in roll-call votes.[30] Specifically, we look at the percentage change in the weighted frequency with which an MP disagrees with his or her party line across two consecutive parliamentary terms – a variable labeled *Percent Change in Defection Rate*. The defection rate for each MP, in each term, is obtained by calculating the share of recorded votes by a given legislator that deviate from the party line of voting, weighted by the closeness of the vote in which the deviation occurred. Following previous research, we infer party line from the behavior of the majority of its members who are present and participate in voting.[31] That is, when a majority of party members vote 'aye,' then 'nay,' and 'abstain' votes are coded as defections.[32] When there is no majority of party members who are present voting the same way, then there is no party line and no

[27] We exclude those MPs who switch parties and who serve for two non-consecutive terms. Including these cases and controlling for them in the analysis does not change the substantive results.

[28] Note that in the final analysis, we are also losing all observations from the 2010 parliamentary term, because even though we know the mandate type of MPs in 2010 we do not know their defection levels. Our final sample includes 583 observations.

[29] Except for some control variables as noted below, we coded all data for this project from Hubai 2001, the website of the Hungarian National Assembly (http://www.parlament.hu) and that of the Hungarian Election Commission (http://www.valasztas.hu).

[30] The total number of votes for each of the four terms is 6,772, 7,310, 15,682, and 7,573 respectively (Carrubba et al. 2006).

[31] Carey 2009; Mainwaring and Perez-Linán 1997; Skjaeveland 2001.

[32] 'Abstain' is a voting option like 'aye' and 'nay;' it is not an equivalent of 'did not vote.' Absences, which in our data occur in less than 5 per cent of all votes that could have been cast are treated as missing data. At such a low rate, ignoring non-responses has been shown not to generate any bias in measuring legislative behavior (Rosas, Shomer, and Haptonstahl 2012).

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defections are possible. The participation rate can vary significantly and it is fair to assume that votes where very few party members participate are not important to the party and no clear party position exists. Therefore, for measurement purposes, defection is only possible in the case of those votes where the majority (50 percent or more) of party members are present and voting. Because defections in which the vote was closer are presumably more costly to the party, we weigh each defection by a measure of closeness of the corresponding vote.[33] Finally, we record the percentage change in defection rate in order to treat changes relatively with respect to each MP's previous level of defection, rather than absolutely.[34] Our observations of this variable range from −100 to +671.791, with a mean of +0.921.

In terms of additional descriptive statistics, our sample offers considerable variance in the defection rate: five MPs never defected against their party during the terms that they are included in the dataset, while the maximum defection rate was 12.269. The defection rate of an average MP was about 1.288. Comparing groups of SMD and PR legislators in Hungary, previous research shows that the former are more likely to break party unity and engage in constituency work than the latter.[35] A similar comparison using our data shows that the difference is not striking: the average defection rate is about 1.381 for MPs from SMDs and about 1.202 for MPs from PR lists. This difference is not statistically significant and would lead us to believe that voting behavior across the two tiers does not differ – a conclusion that a careful, more appropriate analysis proves to be false.

Our main explanatory variable is *Mandate Change*, distinguishing between the groups of returning legislators whose mandate type changed and those for whom it did not. We also include a number of control variables. *Double Nomination* measures whether a given MP was nominated in both the SMD and at least one of the PR tiers in the current election. Legislators who are double nominated may not behave according to the expectation of single-nominated SMD or PR legislators.[36] In our setting this may mean that MPs who are doubly nominated and simply happen to be elected from a tier other than that from which they were previously drawn have less of an incentive (or none at all) to change their behavior.[37] *Electoral Security* may affect legislator's voting behavior as well as the likelihood of mandate change:[38] more electorally secure MPs may be more likely to voice their disagreement with the party and less likely to experience mandate change.

[33] Morgenstern 2004.

[34] Using the *difference* between defection rates from one term to the next (the observed range of which goes from −10.778 to +4.765) as the dependent variable does not change our substantive conclusions (see Table 1A in the online Appendix).

[35] Ilonszki and Judge 1994; Judge and Ilonszki 1995; Montgomery 1999. But see Thames 2005, who reports no evidence of a mandate divide in Hungary.

[36] Bawn and Thies 2003; Crisp 2007.

[37] Following previous research (e.g. Ferrara 2004), we also estimated a model differentiating between types of double nomination with respect to the viability of the nomination. The existing literature defines a list position as viable when the ratio of electoral quotas obtained by the party to the candidate's list rank is greater than one. According to this criterion, we find that *all* MPs who were doubly nominated had a viable list position. As a result, doubly nominated MPs only fell in two categories: those who where nominated in a safe SMD district (defined as districts in which the winner won by a margin of 8 per cent or more, following the previous literature), and those who were not. Replacing the variable Double Nomination with these new variables (i.e., Double Nomination: safe SMD and safe List; and Double Nomination: marginal SMD and safe List) does not change our main result about the asymmetry of the effect of mandate type.

[38] Ferrara 2004.

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Therefore, we control for the distance between the candidate's or list's vote share and the effective electoral threshold, defined by Lijphart to be roughly $0.75/(M+1)$, where M is the district magnitude.[39] *Principal Distance* controls for the extent to which the preferences of the two competing principals differ by capturing the distance between the legislator's party ideal point and the position of the median voter in the legislator's constituency on a left–right scale.[40] We use data assembled by the Comparative Manifestoes Project to obtain party locations[41] and, in conjunction with district level electoral returns, to calculate district medians in the way proposed by Kim and Fording.[42] The variable measures the difference between the location of the MP's party and that of the district median. Additionally, since defection rate may vary across parties,[43] we measure MP's party affiliation by including party dummies,[44] and we include parliamentary term dummies to control for any time effects.[45]

ANALYSIS AND RESULTS

We use MCMC methods to estimate a multilevel (or mixed) linear regression,[46] and obtain estimates of the effect of mandate change on the change in an MP's defection rate.

[39] See Lijphart 1999. We prefer to use electoral security because this measure has the advantage of being comparable across types of mandates – something that is not the case with alternative measures such as 'margin of victory' and 'list place:' the former is hard to define for list MPs and the latter cannot be measured for SMD MPs. However, we also estimated separate models for the SMD and PR subsamples of our data using subsample-specific measures of security. For the sample of MPs who came from an SMD mandate we measured the margin of victory (i.e., the difference between their vote and 50 percent), and for MPs who came from a PR mandate we measured the list place (i.e., the number of quotas (seats) earned by the party divided by the MP's list place). Our main results remain unaltered in these alternative models.

[40] Hix 2002.

[41] Volkens et al. 2011.

[42] Kim and Fording 1998; Kim and Fording 2003. This technique tries to approximate the ideological position of the median voter within a district using parties' ideological location and the share of their votes in that district. After creating a grouped frequency distribution of ideologies within the district, the median is calculated as usual by $M = L + W\,[(0.5 - F)/f]$, where L is the lower limit of the interval containing the median; W is the width of said interval; F is the cumulative share of votes up to said interval; and f is the share of votes in said interval.

[43] Haspel, Remington, and Smith 1998; Herron 2002; Thames 2005.

[44] KDNP and MIÉP are effectively dropped because they did not have enough returning MPs. FKGP represents the reference category. Note that party dummies control for various party level characteristics, including their seat shares. Still, one might argue that defection rates may depend on the overall balance of power between the government and opposition. Therefore, we estimated an alternative model that included the difference between the opposition and government seat shares. The results were unaffected by this addition.

[45] Since we are looking at change in defection rate, the first parliamentary term for which we have data – 1994–98 – gets dropped from the analysis; the 1998–2002 term is the reference category.

[46] Posterior samples were obtained using JAGS. Two chains of 160,000 samples (80,000 of which were discarded as burn-in) were computed, with Geweke statistics for all coefficients well below 2. Random effects and fixed effects were each given flat multivariate Normal-Inverse Wishart prior distributions. Data level R^2 measures were calculated according to Gelman and Hill 2006. In this particular case, results are equal to (up to sampling error) results obtained using REML implemented in the lme4 package for R; see Table 2A in the online Appendix for results using this alternative estimation technique. We are presenting here the results of the Bayesian estimation for the sake of consistency, because vanilla methods were unable to adequately maximize the likelihood function associated with the model presented in Table 3 below.

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Given our definition of comparison groups, we estimate a model with random intercepts and random slopes for two distinct (and non-nested) groups: (1) MPs whose mandate in the preceding term came from an SMD district, and (2) MPs whose previous mandate came from a PR district. The general form of each model of the *Percent Change in Defection Rate* (ΔDR) for the i^{th} observation is:

$$\begin{aligned}\%\Delta DR_i = {} & \alpha_{j[i]} + \theta_{j[i]} Mandate\ Change_i \\ & + \beta_1\ double\ Nomination_i \\ & + \beta_2\ Party_i + \beta_3\ Parliamentary\ Term_i \\ & + \beta_4\ Electoral\ Security_i + \beta_5\ Principal\ Distance + \varepsilon_i\end{aligned} \tag{1}$$

where the grouping indicator $j[i]$ tracks whether MP i previously had an SMD or PR mandate; the $\alpha_{j[i]}$ is a Normal (namely, $N(\mu_\alpha, \sigma_\alpha)$) random deviate for the defection of MPs whose mandate did not change from one term to the next; $\theta_{j[i]}$ is the effect of changing mandates, drawn from a normal distribution $N(\mu_\theta, \sigma_\theta)$; *Mandate Change* is an indicator variable signaling whether the MP changed her mandate type (from SMD to PR for the first group, and vice versa for the second); and controls are as defined in the previous section.

The results of this model, presented in Table 1, only partly support the competing principals theory. Changing the mandate from PR to SMD produces a significant change in voting behavior, i.e., those MPs whose mandate changes become significantly more independent and less partisan than their peers whose mandate remains PR. Specifically, changing mandates from PR to SMD increases the percentage change in an MP's defection rate from one term to the next by about 47 percentage points, which is a change of about half of one standard deviation. However, changing the mandate from SMD to PR *does not* significantly alter the MP's voting behavior. This finding is surprising and runs counter to the expectations of the competing principals theory. Therefore, we proceeded with additional analyses in an attempt to find out the possible reasons for the unexpected results.[47]

[47] Despite the strength of our controlled comparison research design in ensuring comparability across groups, the asymmetry in the institutional effects seems counter-intuitive. This is why we performed an additional robustness test using propensity-score matching to help us achieve a better balance in the control covariates. Specifically, we used GenMatch (Sekhon 2011), an R programme which relies on a genetic algorithm to search for the optimal balance in the five independent variables included in Table 1 and on a propensity score (i.e., probability of being treated), using a 'one-to-one with replacement' matching scheme (Rubin 2006). Balance was achieved in all potentially confounding variables identified in both datasets. Using balanced datasets, we estimated the average treatment effect (ATE) (Rubin 2006) of changing mandates, which amounts to the average percentage change in defection rates accounted for by different treatment regimes. This procedure confirms the results presented in Table 1, yielding an unreliable mean change in discipline for those who changed mandates from SMD to PR: −20.453 (90 percent C.I. (−59.556, 18.648), $N = 750$); and a significant mean percent change of 144.388 (90 per cent C.I. (37.579, 251.196), $N = 576$) for those who changed mandates from PR to SMD. Once again, our original expectations derived from the competing principals theory are not entirely borne out, as the asymmetry remains robust to a more careful control for covariate balance. It is also worth noting that the power of these tests was sufficiently high to allow us to conclude that the finding about no differences across groups is reliable, since even small differences would be picked up by the test as significant (Agresti and Finlay 2008). More detailed information about the matching procedure, including Figure 1A showing balance and power functions, is presented in the online Appendix.

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TABLE 1 *The Effect of Mandate Change on Percentage Change in Defection Rate, Linear Multilevel Model*

Explanatory variables	Estimate (s.d.)
Random effects	
Mandate change	
From SMD to PR	−3.726 (13.305)
From PR to SMD	47.438 (16.107)*
Intercept	
Intercept SMD	−80.692 (24.924)*
Intercept PR	−69.168 (22.284)*
Fixed effects	
Party	
Fidesz	96.330 (23.510)*
MDF	134.832 (27.654)*
MSZP	22.406 (22.746)
SZDSZ	31.765 (22.916)
Parliamentary term	
2002–06	−25.766 (9.662)*
2006–10	28.276 (9.749)*
Double nomination (at time t)	21.348 (11.208)*
Electoral security	14.710 (37.109)
Principal distance	0.41 (0.722)
Data level std. dev.: σ_y	81.817
Mandate change std. dev.: σ_θ	46.349
Intercept std. dev.: σ_α	17.753
Data level R^2	0.253
N	582

Note: Table entries are means of posterior sampling distributions of regression coefficients, with the respective distribution's standard deviation in parentheses. Outcome variable is *Percent change in defection rate*. The reference category for *Party* is FKGP and for *Parliamentary term* 1998–2002. *$p<0.1$.

Different Types of Proportional Representation Lists

Fortunately, the Hungarian setting during the time period under consideration allows us to do more than simply look at the differences between SMD and PR. This is because, as discussed above, the PR seats are filled from two different kinds of lists: of the 210 PR seats, a maximum of 152 mandates are allocated from the twenty regional closed constituency lists and a minimum of fifty-eight mandates are allocated from the closed national (compensation) list. Voters cannot vote for the national list directly; rather, they can cast two votes: one for a candidate in an SMD and one for a regional party list. The allocation of seats from the national lists is decided based on surplus votes from the other two tiers. Therefore, MPs elected from a national list essentially have no easily identifiable geographical constituency. By deciding the composition of the national list, the party becomes their sole principal. In a continuum of constituency-centered to party-centered electoral rules, in the Hungarian case, the SMD tier and the national list tier should represent the opposite ends of the scale respectively with the regional list tier constituting a middle category. MPs from the latter are tied to the party due to closed lists but they also have identifiable geographical constituencies

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TABLE 2 *The Effect of Mandate Change on Percentage Change in Defection Rate, Different PR Tiers, Linear Multilevel Model*

Explanatory variables	Estimate (s.d.)
Random effects	
Mandate change	
From SMD to RPR	−1.408 (14.431)
From SMD to NPR	−1.839 (12.222)
From RPR to SMD	41.212 (17.930)*
From NPR to SMD	43.098 (22.302)*
Intercept	
Intercept SMD	−84.998 (25.621)
Intercept RPR	−72.806 (22.561)
Intercept NPR	−62.313 (22.839)
Fixed effects	
Party	
Fidesz	99.933 (24.151)*
MDF	138.328 (28.391)*
MSZP	26.338 (23.499)
SZDSZ	30.234 (22.853)
Parliamentary term	
2002–06	−25.762 (9.656)*
2006–10	27.757 (9.721)*
Double nomination (at time t)	22.895 (11.305)*
Electoral security	7.231 (38.510)
Principal distance	0.108 (0.729)
Data level std. dev. σ_y	81.860
First mandate change type std. dev.: σ_{θ_1}	33.910
Second mandate change type std. dev. σ_{θ_2}	5.132
Intercept std. dev.: σ_α	16.696
Data level R^2	0.252
N	582

Note: Table entries are means of posterior sampling distributions of regression coefficients, with the respective distribution's standard deviations in parentheses. Outcome variable is *Percent change in defection rate*. The reference category for *Party* is FKGP and for *Parliamentary term* 1998–2002. *$p < 0.1$.

functioning as a possible competing principal and potentially drawing them away from party-centered behavior in parliament. Given this, it would not be surprising if the effect of mandate change differs for the different types of PR. It is equally possible that mandate switches to and from one type of PR are driving our asymmetrical findings.

In order to test for this, we estimate the model in Equation 1, but this time with random intercepts and random slopes for three distinct groups of MPs depending on their previous mandate: (1) SMD, (2) RPR, or (3) NPR, each with at most two possible directions of change (for example, the mandate of SMD MPs can change to either RPR or NPR). Table 2 presents the results of this analysis. In general, support for the asymmetry hypothesis remains: a mandate change from SMD to PR – this time to either type of PR – produces no significant change in an MP's voting behavior. However, the effect of the mandate change from PR to SMD is statistically significant for both types of PR: the percentage change in defection rate of those MPs who switch from RPR to SMD

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increases by about 42 percentage points, and a similar switch from NPR to SMD increases the percentage change by about 43 points.[48]

The Effect of the Origin of Mandate Change

As noted above, mandate change can occur via two different mechanisms: (1) an MP's *nomination* can change from one tier to another or from double to single nomination, or (2) the MP can be *elected* from a different tier than previously even if his or her nomination remains the same (i.e., the MP is doubly nominated both times). Another test we can perform, then, is to explore whether and to what extent both sources of mandate change influence voting behavior, in order to separate the effects of *mandates received* from the effects of *potential mandates*. For instance, it is possible that MPs only respond to mandate changes when they are the result of party decisions – in which case they would change their behavior only (or to a greater extent) when their nomination changes *but not* when they are simply elected from a different tier without nomination changes. In the latter case, MPs may continue serving their previous principal in the hope of earning a mandate from them again in the future. In order to get at this conditional effect, we augment the number of groupings in the model presented in Table 1 to include all combinations between mandate change and nomination change. Nomination change is coded '1' if an MP's nomination changes (1) from SMD to PR or PR to SMD, (2) from single nomination to double nomination, or (3) from double nomination to single nomination.

The results of the augmented multilevel model are presented in Table 3. The effect of mandate change in the SMD group remains insignificant regardless of the source of this change. For the PR group, however, (i.e., for those MPs who were previously elected from a PR list), mandate change, *regardless of its origin*, results in significant change in voting behavior. Specifically, mandate change that results from a nomination change is associated with about 35 percentage point increase in the change in defection rate, and a mandate change that results from being elected from a different tier (even though the nomination remains the same), is associated with about 50 percentage point increase in the change in defection rate. This evidence suggests that behavior is affected by changes in the type of mandate itself regardless of the changes in nomination – as these effects are discernible both when a nomination change is present and when it is not – but also that the effect is even greater when the nomination remains the same.[49] This attenuating effect of changes in potential mandates (largely controlled by party elites in Hungary) on the effect of changes in the mandate actually received is interesting in and of itself, and future research could explore the strength and logic of this finding. For our purposes, however, the evidence is enough to support the claim that our main substantive result (namely, the asymmetry in effects when mandate changes occur in different directions) is not an

[48] Results obtained using matched datasets support these findings. Specifically, we find that the ATE for those who changed mandates from SMD to RPR or to NPR is not significant (90 percent CI (−62.134, 0.978) and (−32.147, 55.757), respectively). The ATE for those who changed from RPR to SMD was positive and significant (90 percent C.I. (13.027, 92.808)); it was also reliably positive (as expected) for those who changed from NPR to SMD (90 percent C.I. (28.265, 380.389)). Figure 1A in the online Appendix presents covariate balance (evaluated using a *z*-test for differences in means and proportions) and statistical power calculations.

[49] The baselines with respect to which these two coefficients are meaningful – that is, their corresponding intercepts – are not statistically different, so a simple comparison between the coefficients themselves is enough.

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TABLE 3 *The Effect of Mandate Change on Percentage Change in Defection Rate Conditional on Nomination Change, Linear Multilevel Model*

Explanatory variables	Estimate (s.d.)
Random effects	
Mandate change × nomination change	
From SMD to PR, no nomination change	−4.501 (14.777)
From SMD to PR, nomination change	11.008 (19.441)
From PR to SMD, no nomination change	50.142 (20.103)*
From PR to SMD, nomination change	35.673 (17.727)*
Intercept	
Intercept SMD, no nomination change	−79.631 (25.569)*
Intercept SMD, nomination change	−74.372 (24.63)8*
Intercept PR, No nomination change	−68.307 (22.716)*
Intercept PR, nomination change	−70.362(23.170)*
Fixed effects	
Party	
Fidesz	96.021 (23.368)*
MDF	133.200 (27.672)*
MSZP	21.740 (23.025)
SZDSZ	31.163 (23.329)
Parliamentary term	
2002–2006	−26.952 (9.787)*
2006–2010	27.733 (9.825)*
Electoral security	12.081 (38.965)
Principal distance	0.128 (0.740)
Data level std. dev.: σ_y	82.144
Mandate change × nom. change std. Dev.: σ_θ	31.864
Intercept std. dev.: σ_α	9.073
Data level R^2	0.249
N	582

Note: Table entries are means of posterior sampling distributions of regression coefficients, with the respective distribution's standard deviation in parentheses. Outcome variable is *Percent change in defection rate*. The reference category for *Party* is FKGP and for *Parliamentary term* 1998–2002. *$p < 0.1$.

artifact of unaccounted changes in nomination. Although the size of the effect of mandate change on legislative behavior depends on the specific avenue through which the change takes place, it is the case that a mandate change from PR to SMD is associated with significant increases in defection rates regardless of the source (i.e., nomination or election) of the change, and that the same is never true when considering changes in the opposite direction.

Selection Effects

Finally, it is possible that the mechanism for the SMD-to-PR change is different from that of the PR-to-SMD change. This difference in mechanisms might account for the asymmetry in our results. Changes in the former direction can be the result of a punishment already taking place – namely, a stick wielded by the electorate on a legislator who sided with the party all too often. Such legislators would arguably still be of great value to the party, which would explain their reappearance for yet another consecutive term under the

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same party. Changes in the other direction (i.e., from PR to SMD) cannot be thought of in the same way, because running successfully in an SMD race requires quite a bit of party support – something a consistent party maverick might be hard pressed to get. Hence, changes in the direction of SMD to PR are consistent with a selection process that is not present in the case of mandate changes occurring in the direction of PR to SMD.

To check if this is indeed the case, we explored whether the defection rate was systematically different for MPs whose mandate changed from SMD to PR and MPs whose mandate remained SMD *at the time when both sets of legislators had an SMD mandate*. Although our response variable is designed to take into account potential differences in 'baseline' defection rates, it is possible that systematically smaller changes in already disciplined SMD-turned-PR MPs are obscuring the effects of the mandate change in our modeling strategy. The mean defection rate for the group of MPs whose mandate changed from SMD to PR, however, was actually higher than that of MPs whose mandate remained SMD: the mean defection rate of changing MPs was 2.059, while the mean defection rate of MPs whose mandate remained SMD was 1.321. The difference is significant at the usual confidence levels (p-value is 0.0004), implying that legislators whose mandate changed to PR were actually significantly more likely to defect against the party. Hence, it does not appear to be the case that selection through effective punishment on the part of principals is driving our finding of asymmetry.

To summarize, we have found a significant asymmetry in the effect of electoral system change from SMD to PR and vice versa. The former does not alter MPs' voting behavior, while the latter significantly increases – by about 35 to 49 percentage points, i.e., by approximately half of one standard deviation – MPs' percentage change in defection rate against their party. These findings remain robust in the presence of a number of control variables, and when using either multilevel linear regression or matching analysis.[50] Furthermore, the results hold for both the regional and national PR tier and do not depend on nomination changes, double nomination, or selection effects. Overall, our original findings appear to be robust, but they run counter to the theoretical expectations derived from the argument about competing principals.

One issue that we have not yet addressed is what the literature on MMS often refers to as the 'contamination effect,' i.e., the idea that the SMD and PR tiers in such systems are not independent of each other and MPs elected in the SMD (PR) tier of an MMS do not behave as do those elected in pure SMD (PR) systems, because of the presence of the other tier. One might argue that our results emerge only because of the fact that the two tiers may not be independent and, therefore, our results do not help us understand electoral system change more generally.

Contamination has been argued to result from two main sources: (1) the concurrent presence of copartisans elected under different rules can make both SMD MPs and PR MPs less constituency oriented than they would be in pure systems, or (2) the possibility of dual candidacies can make MPs follow a mixed strategy in legislative behavior.[51] Both arguments imply that the behavior of MPs from different tiers is not significantly different from each other. For our analysis this means that we should find symmetrical null effects for both changes from SMD to PR and vice versa. Our asymmetric results negate this possibility. As for dual candidacy, we have explicitly accounted for this variable in our

[50] See fnn. 47 and 48.
[51] Bawn and Thies 2003; Crisp 2007.

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analyses, and the results regarding the effect of mandate change remain reliable. Moreover, we are including party indicators in all of our models, and this effectively holds the composition of each party's legislative delegation constant, thereby controlling for the effects that come about by having different mixtures of SMD and PR legislators.[52]

Finally, if we are interested in understanding the effects of change of electoral rules for a given legislator on their legislative behavior, this effect should not hinge on the concurrent existence of legislators elected under a different set of rules. In other words, whatever 'contamination effects' exist, they are held constant when one focuses exclusively on a single country with a mixed member system, so that any effect we do find is brought about by change in the set of rules that got any individual candidate elected. This is similar to situations where countries change from one type of pure system to another. In sum, while not taking a stance in the contamination debate, we believe that our results have implications beyond mixed systems and help us understand electoral system change more generally.

DISCUSSION AND CONCLUSION

Using a setting that allows us to control for spuriousness in an observational situation, we have explored the effect of change in electoral rules on legislative behavior. We have found that if an MP's mandate changes from PR to SMD, then that MP will become significantly more independent in his or her voting behavior – a relationship that holds for both types of PR used in Hungary, i.e., regardless of whether an MP's previous mandate came from the regional or national PR list. However, if an MP's mandate changes from SMD to PR – including either regional or national PR and regardless of whether the mandate change results from a change in nomination or a change in electoral fortune – then the legislative behavior of that MP does not change significantly. This is a robust but unexpected finding that we were unable to explain away when testing for a number of possible explanations. In this concluding section, we offer two plausible interpretations of the novel finding. They both share the notion that, although hypotheses about the effect of mandate change derived from the competing principals theory is blind to any past experiences, electoral change does not occur in a vacuum. As a result, past experiences and reputations may shape how institutional arrangements affect current legislative behaviors.

First, MPs may be constrained by their personal reputations built under the previous electoral rules. Some studies, for example, argue that nonconformist MPs use party loyalty strategically to fool party elites into promoting them to desirable positions. Once this has been achieved, MPs are free to reveal their true preferences and break unity.[53] If this is the case, then MPs who have had an SMD mandate and have broken with the party line in order to satisfy their constituency principal cannot credibly play the 'loyalist' card once in office through a PR mandate. They may also not want to act as a loyalist if they continue to draw their support from the SMD constituency.[54] Instead, they are likely to resort to other means to please the party leaders. For example, they could capitalize on the personal reputations built through defying their parties. Studies have shown that parties often reward such MPs for the added support brought about by 'locals' and 'mavericks' even if it comes at the expense of defections.[55] In other words, legislative

[52] Crisp 2007.
[53] Hu 2012; Hu and Heller 2010.
[54] Taylor 1992.
[55] Shugart, Valdini, and Suominen 2005; Tavits 2009.

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discipline need not be a zero sum game between party leaders and MPs who have proven their personal worth.[56] As a result, on one hand, SMD-turned-PR backbenchers – having already revealed their 'true type' as mavericks – would have no incentive to toe the party line to any greater extent than their colleagues who retained their SMD mandates. Rather, they may have an incentive to maintain their already established reputations as independent thinkers amongst their core constituents.[57] Their PR-turned-SMD counterparts, on the other hand, cannot afford to keep up a loyalist façade when faced with the possibility of losing the support of voters. A change from PR to SMD would signify not just the possibility, but the necessity, for MPs to increase their defection rates.

Alternatively, it is possible that the lasting influence of past institutions – combined with MPs' selective incentives to respond to mandate change depending on whether a principal gains or loses power as a result of the change – may account for this persistence of indiscipline. As with any institutional change, the effects of changing the rules through which an MP is elected are likely to be incremental and path-dependent because of the formalization of the existing set of practices.[58] The actors involved are likely to have adapted to the situation *before* the change in ways that influence their behavior also *after* the change,[59] making them 'punishment avoiders' rather than 'reward seekers.' The expected change in behavior may, therefore, occur only to the extent that it is necessary to avoid punishment by either principal.

Consider a change from PR to SMD. Legislators who maintain their party-centered behavior acquired under PR are likely to be punished by voters, because now, unlike under PR, voters can vote directly for them and decide when to oust them for being party lackeys. As a result of this *added ability* to determine a legislator's future, the distribution of power between the two competing principals changes: voters become more powerful than they were under PR. This, in turn, generates a significant incentive for the legislator to adjust his or her prior parliamentary voting behavior and account for constituency interests. However, if the change occurs from SMD to PR, it is possible that a different dynamic takes place. An SMD legislator is already attending to party interests given that he or she needs access to party resources to run. This legislator is also attending to constituency interest and has a history of a favorable personal reputation in his or her district. When the electoral system changes to PR, no principal necessarily *gains* any additional power, i.e., the ability to punish the legislator for undesirable behavior. At the same time, the constituency-principal *loses* some of the power it commanded under SMD: namely, the ability to directly vote for or against (and thereby reward or punish) the legislator. Since neither principal gains power over the MP's reelection prospects, neither one has more ability to punish the legislator for defecting than they had before the change of the electoral system.[60] Thus, while a legislator may choose to abandon constituency interests in favor of party interests in such cases, he or she faces no immediate pressure

[56] Kam 2009.
[57] We are grateful to an anonymous reviewer for bringing this plausible mechanism to our attention.
[58] Mahoney and Thelen 2010; North 1990.
[59] Crisp et al. 2009.
[60] If this interpretation is correct, it may, in fact, indicate a more general rule, according to which changes that relax accountability to one of the principals (while holding the others constant) seems to make no discernible difference in the behavior of legislators, while changes that increase accountability to one of the principals do make a difference in the behavior of legislators, particularly in terms of how likely they are to follow or break party discipline. This would be an important addition to the already well-accepted argument about the relevance of competing principals in determining legislators' behavior.

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from the party to do so, suggesting that any changes in legislative behavior resulting from an SMD-to-PR switch are not likely to be sudden and pronounced.

Further investigation of these plausible theoretical avenues for explaining our asymmetric results would not only contribute to the study of political institutions and legislative behavior, but could also provide important lessons for the constitutional engineers interested in encouraging the representational strategies of legislators to be more or less party centered. Specifically, new electoral rules may not produce desired behavior because habits adopted and reputations acquired under previous rules persist, or because they affect the incentive structures provided by the new institutional framework. Reformers would, therefore, be especially well advised to consider (a) the changes that the electoral reform produces in the relative power of the different principals of the MP, and (b) the constraints imposed on MPs who, by virtue of having served under different rules in the past, have revealed information about themselves, in order to predict the consequences of electoral reform more accurately.

Finally, our findings suggest a new way of thinking about MMS. Literature on MMS often refers to the contamination effect described above. Our results suggest a different type of contamination: one that comes from MPs' personal electoral histories in a different tier, i.e., legislators' current behaviour may be 'contaminated' by having previously been elected under different rules. Rather than being a nuisance, this type of contamination can be informative about possible consequences of electoral reform, as we have suggested here. More generally, our study highlights the benefit of searching for opportunities to exploit controlled comparisons offered by the real world to understand how democratic institutions work. Such comparisons allow better testing of (causal) theories because sources of extraneous variance are held constant by design. With the help of such a comparison, we have been able to provide a more appropriate test of the effect of electoral systems on legislative behavior than has been offered by previous studies.

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