

ORIGINAL ARTICLE

Political lotteries and roll-call voting in the Belgian parliament during democratization

Brenda Van Coppenolle¹ , Jessica De Rongé² and Sofija Riegger³

¹CEVIPOF, Sciences Po, Paris, France; ²CEE, Sciences Po, Paris, France and ³Faculty of Political and Social Sciences, Universitat Pompeu Fabra, Barcelona, Spain

Corresponding author: Brenda Van Coppenolle; Email: brenda.vancoppenolle@sciencespo.fr

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Abstract

How do political lotteries affect choices and outcomes? We study the monthly lotteries used to assign all legislators to deliberation committees in 19th century Belgium. We focus on the period of democratization around the entry of a new, third, and Socialist party. We ask whether random, more extensive exposure to certain MP types affected voting over all roll-call votes between 1892 and 1902, i.e. debating more Socialists, more incumbents, or more of those from majority Flemish-speaking districts. We find small but significant exposure effects on rebelling against the party majority, against the deliberative ideal but along government-opposition logic. Legislatures may similarly limit lottery's potential today.

Keywords: democratization; legislative and deliberative committees; party cohesion; political lotteries; roll-call voting

1. Introduction

Political lotteries randomly select individuals before they take a political decision. Today, theorists and advocates of randomly drawn assemblies argue that sortition from the population can lead to informed decision-making by citizens, complementing representative institutions in democracies. Several localities, regions and even countries have been or are planning to experiment with such lotteries for informed deliberation.¹ Yet how have political lotteries complemented democratic decision-making in the past, for example in deliberative committees randomly drawn from the legislature? How have such deliberations affected outcomes? Present-day advocates of lotteries before decision-making often argue that persuasion can take place among people with different political viewpoints during deliberation. Yet whether and if political lotteries change the legislative decision-making process, and therefore outcomes in legislatures where real political decisions are taken, is not well-understood. Understanding if and how random lotteries can change real legislative decisions through deliberation is important as we also know that roll-call voting introduces strategic incentives for participants in the legislative decision-making process to try to bias political choices toward their own preferences.

We can learn from historical experiments with lotteries drawing committees from the elected parliament to understand how they affect political outcomes. This paper studies a natural experiment in

¹Examples include initiatives in Brussels, Paris, France, the UK, etc. A recent dataset by the OECD provides a complete overview.

the case of Belgium of the 19th century, where an institutionalized, monthly lottery within the legislature randomly assigned all elected legislators to smaller discussion groups called sections. Much like advocates for randomly drawn mini-publics today, contemporaries thought these lot-drawn sections would allow for preparatory, informative and constructive debate to inform the legislative process. The elected legislature, where the relevant legislation was subsequently debated and voted on, was presented with a summary report of these discussions before starting their legislative proceedings.

Among a handful of comparable, democratizing European legislatures that had such systems, Belgium is an excellent case to start studying these questions. Along with lotteries, it had a stable two-party system since its independence in 1830. We focus in this article on the time period around the introduction of universal, male and plural suffrage, when a new, third party, the Socialist party, entered the chamber for the first time—substantially widening viewpoints and political disagreement in the elected legislature. The Belgian legislature is also of particular interest as legislators commonly decided by roll-call voting. This paper exploits information available on individual MP vote choices that we recently collected and digitized. We ask to what extent the political lotteries affected individual MPs' vote choices, or how the group composition of the randomly drawn sections affected an MP's decision to rebel against their party majority. We expect that debating the new socialist legislators should affect the voting behavior of the other parties' MPs, if political lotteries indeed opened up the debate and the legislative decision-making process to legislative minorities. If meeting with socialists and listening to their political arguments was persuasive, we should observe more rebellion among non-socialist MPs, in line with deliberative theory.

Our results are in line with insights from legislative studies, and do not support the promising, ideal deliberative picture. We find that the majority-party legislators faced with more members of the Socialist party were if anything less—and certainly not more—likely to rebel against the majority of their party. We also find no evidence that socialists were more persuasive initially at first entry into parliament. We then consider whether debating more MPs representing a similar majority-language district affected voting behavior, as Belgium is well-known to be split along linguistic lines today. Yet we found no effect of sharing this characteristic on subsequent voting. Finally, debating more politically experienced incumbents may induce more elite dominance of the conversation hence influencing decisions. We found indeed that debating more incumbents mattered, but in an unexpected direction compared to the deliberative ideal: new MPs became less rebellious against their own party, particularly those from the majority party faced with a section majority of their own party's incumbents.

We conduct a number of randomization checks to support our research design, as well as robustness checks to strengthen the credibility of the design's assumptions. We find no clear evidence of systematic lottery manipulation, and we find no placebo effect of future group assignment on earlier roll-call votes.

Our long-term view is robust to excluding all non-contentious votes. Yet perhaps deliberation effects cannot be observed across all votes, but only when the subject is particularly contentious. Therefore, we consider in detail one crucial measure that we know passed only with cross-partisan support. In 1899, Belgium was the first European country to introduce PR during the democratization period we study. While new legislators were more likely to rebel with more incumbents in their section, we do not find evidence for cross-party persuasion. Instead, there is limited evidence that the sections helped socialists to coordinate.

Our results highlight how a randomly drawn assembly that votes alters what expectations we can have of deliberation. Our results rather support typical legislative politics mechanisms. These findings are in line with a large body of literature in legislative politics and in political economy on roll-call voting, highlighting the empirical research challenges in estimating preferences from roll-call votes when parties may influence individual votes (e.g. Cox and McCubbins, 1993; Høyland, 2010; Hug, 2010; Dewan and Spirling, 2011; Kam, 2014; Proksch and Slapin, 2014; Schwarz *et al.*, 2017; Hix *et al.*, 2018)

including in historical legislatures like the one studied here (e.g. Schonhardt-Bailey, 2003; Hansen and Debus, 2011; Bronner, 2014; Eggers and Spirling, 2016), and how a binding decision can change the type of equilibrium reached by behavioral voters even if they have common values (e.g. Dewan and Myatt, 2007; Bouton and Castanheira, 2012; Van Coppenolle *et al.*, 2026). Our results also conform to the null results of a contemporary, one-off political lottery in the 1848 Danish Constituent Assembly on roll-call votes on constitutional article proposals (Cirone and Van Coppenolle, 2026), where persuasion was arguably even more costly and unlikely. Present-day advocates of democratic innovation put forth randomly drawn assemblies in democracies as a possible solution for addressing polarizing political collective action problems. In the UK and France in recent years, for example, assemblies of randomly drawn citizens debated together and advised governments on how to address climate change. Deliberation in close-to-ideal circumstances has been shown to help people process information, persuade others, lead to opinion change, and therefore encourage collective action-taking (e.g. Dryzek *et al.*, 2019). Yet such assemblies are rarely randomized, or asked to vote (Farrar *et al.*, 2009). Establishing persuasion empirically is difficult even in the absence of voting (e.g. Esterling *et al.*, 2021). Yet even more importantly, voting over costly alternatives is well-understood to introduce strategic incentives to manipulate communication. Our paper provides crucial empirical and historical evidence for the limits of lotteries in such legislative and partisan contexts.

2. Literature

Political lotteries among legislators who otherwise would not interact, could open up the deliberation and the decision-making process to new actors. Yet persuasion is difficult to verify empirically in legislative settings.

Deliberation in close-to-ideal circumstances has been shown to improve information processing, persuasion and collective action (e.g. Dryzek *et al.*, 2019). While the literature on deliberative democracy is extensive, deliberation is often considered a thick treatment that often involves not only several weekends of participants' time, but also plenty of information and often also media attention for the lottery-drawn assembly's progress. Consequently, the experimental literature that aims to closely identify its explanatory mechanisms is more limited. For example, we do know that randomized (gender) group composition affects the quality of deliberation, and arguably its outcomes (Karpowitz and Mendelberg, 2007; Mendelberg *et al.*, 2014). Other studies that implemented randomization within randomly drawn deliberative assemblies found that sub-group composition does not affect preferences (Farrar *et al.*, 2009), except for specific topics (Farrar *et al.*, 2010). In strategic contexts, as when participants are aware of an upcoming, costly vote, they are less likely to coordinate on an outcome that involves a high level of collective action (Van Coppenolle *et al.*, 2026). There may be scope for persuasion as a result of participants sharing common values, or reasons for and benefits of collective action (e.g. Dewan and Myatt, 2007). Yet even then the outcome may be dependent on the number of individuals holding certain pre-existing opinions. The information equilibrium of more collective action is chosen more often over the equilibrium selecting median preference if the size of the minority is small (e.g. Bouton and Castanheira, 2012). The literature therefore suggests that we should be aware of the context, and expect the group size and composition, as well as other lottery design aspects, to affect deliberation and therefore outcomes.

Empirically, it is also very difficult to establish that persuasion has taken place. Persuasion of participants in lot-drawn assemblies has been found using careful pre- and post-survey design (Esterling *et al.*, 2021). Those holding less strong opinions, or moderates, were shown to be more persuadable than others. Yet these participants were only surveyed about their opinions, avoiding the strategic incentives that voting introduces. As to the mechanisms explaining persuasion, the ability to communicate allows groups to improve coordination on a feasible option given fixed preferences (Goeree and Yariv, 2011). A large literature supports the idea that individuals process information, pay attention to specific issues, and update their beliefs accordingly (e.g. Forsythe *et al.*, 1993; Feddersen

and Pesendorfer, 1999; Morton and Williams, 1999, 2001; Dickson *et al.*, 2008; Little, 2023). Again, we should expect the effects to be larger for the less decided or the more persuadable. Similarly, a large literature in legislative politics points at the strategic incentives to manipulate communication and voting (see Martin *et al.*, 2014 for a useful overview). Even when there are good reasons for cooperation, there are incentives to double-down in a government vs. opposition logic in repeated interactions as take place in legislatures (e.g. Dewan and Spirling, 2011).

Historical experiments like the one we study here offer ideal settings to test how lotteries in legislatures work. Even when political lotteries were in place in legislatures or executive bodies, and able to produce some desirable effects for some time (Cirone and Van Coppenolle, 2018; Abramson, 2024), the wish to control selective incentives by parties led to their dismantling (Cirone and Van Coppenolle, 2019). In Denmark's 1848 Constituent Assembly, fledgling parties improved cohesiveness in roll-call voting over time, even while constituents debated in lottery-drawn groups (Cirone and Van Coppenolle, 2026). In early legislatures, preferences and fledgling parties offer some structure to roll-call voting even in the absence of strong institutions such as whips or party leaders (e.g. Eguia, 2013; Hansen, 2016; Häge, 2019; Sieberer and Herrmann, 2019; Dewan *et al.*, 2020; Szöcsik *et al.*, 2024). Yet institutional developments, and the goal of party leaders to control selective incentives, further contributed to cohesive parties (e.g. Cox, 1987; Cox and McCubbins, 1993, 2005; Eggers and Spirling, 2016; Cox *et al.*, 2019). As a result, the literature has extensively debated how to correctly estimate preferences in present-day well-established legislatures with strong parties, using either roll-call votes or other information sources (e.g. Høyland, 2010; Hug, 2010; Kam, 2014; Proksch and Slapin, 2014; Schwarz *et al.*, 2017; Hix *et al.*, 2018). In this paper, we focus on roll-call votes as a measure of revealed preferences.

How could increased contact between randomly drawn legislators affect legislative voting in the assembly? The contact theory literature has investigated the influence of informal social interaction between MPs from different parties. Researchers have studied how living together (Minozzi and Caldeira, 2021), seating proximity (Masket, 2008; Saia, 2018; Darmofal *et al.*, 2025) and office proximity can influence an MP's vote (Rogowski and Sinclair, 2012). These previous studies have found mixed results. In our paper, we can exploit a natural experiment and use the random allocation to sections for preparatory debates to trace the effect of increased contact on legislative voting.

3. Historical background

3.1. Political system and context

In 1830, the system of lottery-drawn preparatory legislative committees, i.e. sections, was copied into the new country's parliamentary rules of procedure. It is therefore unlikely that the reasons for adoption are correlated with potentially omitted causal factors related to the political system in the period we study here, over 60 years later. The system stayed in place throughout 19th century, along with a more specialized committee-system.

We focus in this paper on the end of the 19th and early 20th century. Since independence, two established parties had been represented in parliament, and on occasion had alternated in power: the Liberal and the Catholic party. They were mostly split along religion and laïcité lines. After the shock of the introduction of the 1894 universal (male, plural) suffrage, a third party entered the parliament for the first time: the Socialist party.²

Along with the entry of a third party into this previously well-established two-party system, came an increase in the representation of diverging political views and demands, in political conflict between parties within votes, and a decline in intra-party cohesion. Some contentious reforms reflected these new conflicts particularly well. As a result of this shock and the continued demand for reform, the existing Mixed-Member District-majority electoral system was changed to a Proportional

² A fourth party was a break-away faction of the Catholics with most of the time only a single member.

Representation (PR) electoral system after 1899 (Van Coppenolle and Farhat, 2026). For these reasons the Belgian case in general, and these votes in particular, should be particularly likely to reveal any influence of cross-party connections in lottery-drawn sections on subsequent individual choices, as we argue further below.

3.2. Lot-drawn sections

The lottery-drawn sections' membership was assigned monthly, by the middle of the month if parliament was in session. The purpose of these lottery-drawn sections was similar to their role in other countries, such as the United Kingdom of the Netherlands: To subdivide legislators randomly so as to expose them to other (minority) opinions and debate legislation before it reached the floor of the full assembly. Before a proposal for new legislation or an amendment to it could be considered by the legislature, it was sent for consideration to these monthly groups. Each group conducted a detailed preliminary investigation of viewpoints among its members, which was informal and about which no public record survives. Each lottery-drawn section held at least one meeting to gather opinions and delegate a rapporteur to a central section. This central section then summarized opinions, sometimes providing details on each separate section's majority and minority views. The report was typically attached to a legislative proposal, and often counter-signed by the king if the proposal came from the government, before it was debated in the assembly. Belgium's political lotteries are therefore an example of repeated lotteries in the legislative process. They institutionalized deliberation among legislators before high stake votes took place.

More specifically, upon proposing a project or an amendment, whether initiating from the executive or from a member of the legislature, the chamber could decide whether to send it to the sections for consideration. These lottery-drawn groups would each nominate a vice-president, consider the legislative work, and after their deliberations delegate a reporter to a central section. The central section was presided by the chamber president, and also by the other chamber bureau members, each of whom had presided one of the sections. Once the sections had deliberated, the reporters would join the central section, to discuss and report what had been debated in their section. They would decide if necessary by vote on what the majority opinion in the sections was, and then write up a summary to be presented to the chamber before legislative debate could begin.

There are no notes of these individual sections' deliberations. Instead, the central reports are readily available. These reports summarize the arguments in favor or against important legislative proposals that were made in sections and brought by their delegates to the central section. They also sometimes summarize the different sections' views, though individual MP's voting choices within their sections cannot be known from these reports. In any given month, everyone elected to and serving in parliament at that time was drawn to these sections. We have no record of whether MPs actually attended their deliberation section's sessions. Therefore, all MPs were assigned to a section and this assignment happened regardless of whether the members were present for voting at the time. There are cases in which MPs were assigned to sections though we find no votes for them that month due to them being absent from Parliament.

Historians have mentioned the presence of these lottery-drawn groups, but to the best of our knowledge this is the first detailed, empirical study of their role in influencing roll-call votes in the legislature in which they were used, and specifically during Belgium's democratization process. Each month, legislators were randomly assigned to one of the six sections. During the 1892–1902 period, the number of MPs in each section varied between 22 and 27 members. The average composition of a section in terms of partisanship was as follows: 16–17 Catholic party MPs, 4–5 Liberal party MPs and 3–4 Socialist party MPs. Looking at language distribution, the average number of MPs elected in Flemish-speaking constituencies was 11, whereas for the French-speaking constituencies the average number was 10 (and the mean of MPs elected in Brussels was 3). On average, 15 members were incumbents, which made that incumbents formed the majority of the sections in a large majority of

cases. With about 20% of the 152 seats after their first entry in 1894, the socialists formed the second-largest party in a parliament dominated by an absolute majority of Catholics, but never formed a majority in the sections we study here.

How much quality deliberation between different viewpoints actually took place in these groups? We argue that at the very least they offered a platform for MPs across party lines to meet and be confronted with each others' opinions. At least one MP, the reporter, had to listen carefully to distill majority and minority opinions on the topic discussed. It is possible that the conversation was dominated by some, for example by incumbents or by the governing majority, perhaps via the presidency. In any case, if new arguments of newly elected members could have had any persuasive influence on legislators, the randomly drawn sections, with their smaller size and their informal, unrecorded and non-public meetings, were the most likely venue for this to occur. The question is ultimately an empirical one. As exposure to others was random, we can attempt to tease out this effect from other connections the legislators are likely to have had.

3.3. Case selection

The case of Belgium presents us with a repeated, natural experiment. Monthly lotteries imply that the composition of an MP's section in which to debate legislative proposals varies randomly from one month to the next.

Among other European legislatures with similar systems, Belgium used this system of institutionalized lotteries for a very long time, since its establishment in 1830 until the middle of the 20th century. The system was only occasionally debated but never changed, and functioned under a stable two-party system where parties occasionally alternated in power. We consider here the time period when a third party with different political views for the first time entered. While Denmark had used this lottery-based system in an important one-off way to help draft its constitution in 1848 (Cirone and Van Coppenolle, 2026), and France used it repeatedly to appoint committee members under the Third Republic (Cirone and Van Coppenolle, 2018, 2019), Belgium used the lottery-drawn deliberation committees from its inception early on in the century, repeatedly and continuously, to discuss and prepare legislative debate (as continued also in the Netherlands, though initially in the absence of direct elections (Van Coppenolle, 2022), and as later also happened in several other European legislatures at varying stages of democratic development).

In Belgium, where roll-call vote is standard, we expect to see the effect of lottery-drawn deliberation on roll-call voting due to little selection bias in (the universe of) roll-call votes, which in some countries are called only selectively (Hug, 2010; Hug *et al.*, 2015). In addition to voice voting, the threshold for requesting a roll-call vote was very low, and many standard roll calls passed unanimously. Party cohesion was relatively high within the established parties, and increased even more after the shift to a PR electoral system (Van Coppenolle and Farhat, 2026). Their outcomes as well as individual votes are well-recorded. Yet there were no institutions like whips or faction leaders in place to formally police voting behavior. As there is evidence of factional struggles within parties, there is important variation to analyze.

4. Theory and hypotheses

We are interested in how the random composition of an MP's discussion group affected their opinions and voting. Randomly encountering more MPs of a given characteristic may make an MP more likely to be persuaded by such a group. As a group gains strength in numbers, it may be easier for them to dominate the conversation, present their arguments, and persuade fellow participants.

We focus on a limited number of characteristics that we think are particularly relevant. One characteristic is the party affiliation to the Socialist Party. While Catholics and liberals worked together in the parliament for over 60 years, their different views on political issues had been part of the political

debates for a long time. In contrast, the socialists, new to parliament, may bring new information and arguments to the political debates. Through deliberation, MPs from established parties may be persuaded by ideas and arguments proposed by socialist MPs. The increasing number of socialists in a section may make the effect of deliberation stronger, as the critical mass argument theorizes. Still, following this strength-in-numbers (or critical mass) arguments, there may have been persuasion based on any other type of defining group characteristic. We are particularly interested in whether sharing the language of the majority of an MP's district made some arguments more persuasive, as Belgium is today divided along linguistic lines.

Yet deliberation could also be less-than-ideal if experienced elites can coordinate to dominate the deliberation. From legislative politics too, we know there should be ample incentives for them to do so. Therefore, we expect that elites experienced in presenting arguments and information and in debating large groups may dominate deliberations. Incumbents tend to be more aware of the strategic importance of cohesion in parliamentary speeches, agenda-setting in meetings, information provision, framing, etc. If MPs randomly encounter more incumbents, i.e. with political tactics in strategic deliberation, they may be more likely to be persuaded by such a group.

This should hold even more strongly for those who are less decided or more persuadable, for example if they are less politically experienced, or new. As an alternative hypothesis to this deliberative ideal where new MPs are the most open-minded, new MPs may enter parliament with strong ideological beliefs and/or strong loyalty to their party (at least until they get used to the parliamentary environment), meaning that they would be less likely to go against their party's majority.

Finally, the experience with, as well as the incentives for, influencing deliberation, voting and therefore outcomes, could be larger for large governing, majority parties than for (younger or more split) opposition parties. The stakes are higher for the former, majority party, as they have a good chance of determining the policy choice, and more so than the opposition.

First, we expect that deliberation improves “unbiased” information-processing, attention, coordination and persuasion.

1. Deliberating with more socialists should make an MP more likely to rebel against his party-majority.
2. Deliberating with more similar MPs, such as those from the same majority-language spoken in the represented district, should make an MP more likely to rebel against his party-majority. Party affiliation is a specific type of shared characteristic, see below.

Second, we expect that deliberation may lead to “biased” (or strategic) information-processing, attention, coordination, and persuasion (unidirectional):

3. After randomly encountering incumbents, MPs may be more likely to be persuaded by such a group, particularly if they are themselves less politically experienced and arguably more persuadable, i.e. new MPs.

Finally, following government/opposition logic, we expect that deliberation may lead to “biased” information-processing, attention, coordination, and persuasion (government-opposition directional):

4. If opposition MPs randomly encounter more incumbents from the governing, majority party, they may be less likely to be persuaded by such a group.
5. If majority party MPs randomly encounter more incumbents from the opposition, minority parties, they may be less likely to be persuaded by such a group.

The next section describes our empirical strategy to test these hypotheses.

5. Empirical strategy

The Belgian case presents us with a repeated, monthly quasi-natural experiment. For reasons set out in detail in the historical overview, the Belgian lower chamber roll-call votes should be particularly likely to reveal any deliberative persuasion effects of these lottery-drawn legislation-preparing sections in the legislature. In this section, we outline our data, variables and research design.

5.1. Data

We collected membership of the Belgian lower chamber of parliament, as well as individual characteristics such as party, district and incumbency status. There were at most 152 deputies at any given point seated in the parliament's main, lower chamber. Not all of them were present at all times throughout our time period.

We consider the period of July 1892 to May 1902, for which we were able to collect and digitize both the monthly lottery-lists and the individual vote choices. Over 1000 roll call votes took place. We matched these roll calls to the MPs that were members of the lower chamber over the 19th to the 22nd parliaments. The first parliament in our data was the last elected under the old electoral system and limited franchise, which had supported a stable two-party system since 1830. In the 20th session for the first time a third party, the Socialist party, entered the parliament. The last parliament included in our data was the first elected under the PR electoral system. Its term ran from 1900 to 1902, when a first half of the legislature's membership was renewed as required by electoral law. There were 93 monthly draws over our time period, within four separate parliamentary terms. In each monthly draw, the full membership of the lower chamber was subdivided over a total of 6 sections. The composition of the lottery-drawn sections, both real and in expectation, therefore differs along with the membership of the legislature in a given month.

5.2. Variables

To test whether costly persuasion has taken place, we consider the extent to which an MP is willing to rebel against the majority of their party. We define the dependent variable $Rebel_{i,\nu}$. This dummy equals one if on a given roll-call vote ν , an individual MP i voted against his party majority—voting in one of three possible ways: for, against or abstain. We also define a set of dummies indicating whether an MP had a given individual $Characteristic_i$.

To assess the influence of the political lottery on section deliberation and subsequent roll-call voting, we define the section that an MP formed part of that month as s_d that month. This section ranges between 1 and 6, and differs per (mid-)monthly draw d . The section number has no substantive meaning. While the number of sections drawn always totaled 6, there was no substantive difference between the tasks assigned to these sections. Therefore, the same section numbers are not more nor less comparable across months than different section numbers.

To consider the influence of a random deliberation group's composition, we define our treatment variables in the following way:

$$NrCharacteristics_s = \sum_{i=1}^{max(i)_{s_d}} Characteristic_i$$

The treatment $NrCharacteristics_s$, the number of individuals with a given characteristic, varies for each lottery-drawn section s , and equals the sum of individuals i with that characteristic from the first to the last individual within each section, so up unto the maximum number of individuals in a section $max(i)_{s_d}$, which can differ by the draw d .

Therefore, the treatment variable, for example for the effect of Socialist party members, measures the effect of the number of socialists in a given section. If the extent to which legislators are exposed to

new or diverging political opinions matters for deliberation and persuasion in vote choices, we should observe that effect to increase with the number of people holding such opinions. An alternative way to operationalize this exposure, instead of the sum, would have been to measure whether members were exposed to such opinions at all, or whether such opinions formed the majority. Unfortunately, there are no sections without incumbents, without members of either linguistic community, or without socialists. Yet we can assess what the treatment effect is of having a majority of one's section composed of either representatives of Flemish-speaking districts, or of incumbents. Socialist members, or the opposition in general, almost never formed the majority of the section in this time period in which the governing party held an absolute majority of seats after the 1894 elections. Instead, we also present the results of the natural logarithm of the number of representatives with a given characteristic in the supplementary appendix.

5.3. Research design

Conditional on the lottery-draws and the subsequent group composition being as-good-as-random, we can estimate the effect of group composition on roll-call voting directly. We consider the 93 draws as a series of natural experiments within a MP-roll-call panel. We estimate the following model:

$$\text{Rebel}_{i,v} = \alpha + \beta_1 \text{Nrcharacteristics}_s + \beta_2 \text{characteristic}_i + \beta_3 \text{Nrcharacteristics}_s \times \text{Characteristic}_i + \theta_p + \delta_d + (\gamma_i) + (\tau_v) + \epsilon_{i,v} \quad (1)$$

where θ_p and δ_d indicate fixed effects for each party and each monthly draw d (including their interaction), resulting in an MP i 's assignment to a section $s_d \in [1, 6]$. The errors in our preferred specification are clustered at section-by-draw s_d level. In two additional model specifications we add either γ_i or τ_v fixed effects for each individual and each roll-call vote v , respectively. In these models, we cluster the errors at the individual i level, and at the roll-call vote v level, respectively, instead.

While the treatment variable measures the extent of exposure, we expect that exposure to have a different effect depending on one's own characteristic. For example, being exposed to more socialists should matter less for other socialists, who were presumably already convinced of their political viewpoints. The interaction effect is introduced to consider that the effect of deliberating with MPs who share the characteristic and the effect of deliberating with MPs who do not share the characteristic may differ. Supplementary appendix A presents summary statistics for these variables, as well as randomization checks in support of our research design.³

6. Results

For each hypothesis, a number of tests were run. Model 1 in each analysis represents a baseline analysis, our preferred specification that has fixed effects for each party and for each monthly draw, along with their interaction effect. Model 2 then includes an additional fixed effect for each individual MP, in order to control for differences in how individual MPs vote, such as their individual ideologies, policy preferences, or general risk aversion or "rebelliousness." Finally, model 3 in each analysis controls for each vote taken instead, as the topic of the vote may also influence how rebellious MPs are.

First, we tested whether deliberating with more MPs who are members of the new Socialist party make an individual MP more likely to rebel against his party-majority. Table 1 shows that an increase in the number of socialists had no or a tiny, but significantly negative effect on average, controlling for the party and the monthly draw, the opposite of those predicted. Within the same (non-Socialist) party in a given monthly draw (model 1), and within the same individual (model 2) or within the same vote (model 3), there is an at most 0.1% decrease per additional socialist in a group on the probability of rebelling against one's party majority. These persuasion effects on roll-call vote rebellion are for the non-socialists only. Table 1 confirms that the total effect of the number of socialists

³See Hyytinen *et al.* (2018) for a similar approach using the hypergeometric distribution.

Table 1. Nr of socialists in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$NrSocialists_s$	−0.001 [0.001]	−0.001 [0.001]	−0.001** [0.001]
$Socialist \times NrSocialists_s$	0.002 [0.001]	0.002* [0.001]	0.002** [0.001]
Total effect $NrSocialists_s$ for socialists	0.001	0.001	0.001
t -stat	1.170	1.084	1.260
p -value	0.243	0.279	0.208
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,245	112,244	122,245

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn total number of Socialist legislators in an MP’s deliberation group in the relevant month preceding the roll call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

Table 2. Nr of Socialists in randomly drawn deliberation group and rebellion, at first entry

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$NrSocialists_s$	−0.006** [0.003]	−0.002 [0.004]	−0.006* [0.003]
$Socialist \times NrSocialists_s$	0.006** [0.003]	0.003 [0.004]	0.006** [0.003]
Total effect $NrSocialists_s$ for Socialists	< −0.001	0.001	< 0.001
t -stat	−0.081	1.043	0.948
p -value	0.936	0.299	0.351
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	3,524	3,524	3,524

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote in 1894–1895, in the first six months after the Socialist party first entered parliament. The treatment variable is the randomly drawn total number of socialist legislators in an MP’s deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

in one’s randomly drawn section is not significant in the case of the socialists, regardless of our control strategy (see the coefficient indicated “Total effect” of this sum and its t -statistic and p -value in columns 1–3). These analyses include all votes. Yet the results are no different if we exclude assembly unanimous votes, i.e. keep only contentious votes on which at least some individuals in any of the parties differed in opinion (see supplementary appendix table A11). We also obtain negative results if instead of estimating the effect of a single additional socialist, we consider the natural logarithm of their numbers instead (see supplementary appendix tables A16 and A17).

Perhaps any deliberative effect would only be present in the first few times the socialists entered the sections. We restrict the sample to those draws and votes that took place in the first six months after the socialists entered parliament for the first time. However, the results from Table 2 confirm our finding that non-socialist MPs are actually less likely to rebel with each additional socialist they encountered in their section. As before, the number of socialists does not matter for rebellion among socialists (see the total effect in Table 2).

We also looked at how demographic composition may impact voting behavior. Table 3 shows the analysis of how the number of members from majority Flemish-speaking districts in any group impacted the voting behavior. There is no clear effect on MP rebellion from group voting lines as the effect sizes are not significant at conventional levels (column 1). The effect remains of similar size after

Table 3. Nr of MPs from majority Flemish-speaking districts in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$NrFlemish_s$	-0.001 [0.001]	-0.001 [0.001]	-0.001 [0.000]
Flemish	-0.010 [0.013]		-0.014* [0.009]
Flemish $\times$ $NrFlemish_s$	< 0.001 [0.001]	< 0.001 [0.001]	< 0.001 [0.001]
Total effect $NrFlemish_s$ for Flemish MPs	-0.001	< -0.001	< -0.001
t-stat	-0.722	-0.346	-0.874
p-value	0.470	0.730	0.382
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,203	112,202	122,203

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn total number of MPs from majority Flemish-speaking districts in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

Table 4. Nr of Incumbents in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$Incumbents_s$	-0.001* [0.001]	< -0.001 [0.001]	-0.001* [0.000]
Incumbent	-0.051*** [0.013]	-0.037*** [0.013]	-0.052*** [0.010]
Incumbent $\times$ $NrIncumbents_s$	0.002*** [0.001]	0.002* [0.001]	0.002*** [0.001]
Total effect $NrIncumbents_s$ for Incumbents	0.001**	0.001*	0.001***
t-stat	2.398	1.913	3.450
p-value	0.017	0.057	0.001
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,203	112,202	112,203

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn total number of incumbent MPs in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

including individual or vote fixed effects (columns 2 and 3). Again, we show in the supplementary appendix that the results are not different in the contentious sample (supplementary appendix table A12) or using the natural logarithm of our treatment variable (supplementary appendix tables A18 and A19).

The next effect tested is that of incumbency. Again, our results are not in the predicted direction. The increase of incumbents causes a decrease in rebellion overall. According to Table 4, for each additional incumbent we see a 0.1% decrease in the likelihood of rebellion. In the instance that a member in the group is an incumbent himself, the effect is positive and significant (see total effect). If anything, facing more incumbents made new MPs more cautious and less likely to rebel against their party majorities, while the effect for incumbents was the opposite as they were emboldened to take differing positions. Again, we confirmed that results are similar in the contentious sample or with alternative coding (supplementary appendix tables A13, A20, and A21).

The socialists were never in the majority in the legislature, and they never formed the majority of the sections. Yet we can estimate the effects for MPs in sections with a majority representing majority-Flemish-speaking constituencies in Table 5, and for sections with a majority of incumbents

Table 5. Section majority from Flemish-speaking districts in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$FlemishMajority_s$	−0.002 [0.003]	−0.002 [0.003]	−0.002 [0.003]
Flemish	−0.011*** [0.004]		−0.011*** [0.004]
$Flemish \times FlemishMajority_s$	0.003 [0.005]	0.003 [0.004]	0.004 [0.004]
Total effect $FlemishMajority_s$ for Flemish MPs	0.001	0.001	0.001
t-stat	0.218	0.196	0.511
p-value	0.828	0.845	0.609
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,203	112,202	112,203

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn dummy indicating whether a majority of the section was formed by MPs from majority Flemish-speaking districts in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

Table 6. Section majority of incumbents in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$IncumbentMajority_s$	−0.010** [0.004]	−0.004 [0.003]	−0.009*** [0.003]
Incumbent	−0.027*** [0.006]	−0.021*** [0.007]	−0.028*** [0.005]
$Incumbent \times IncumbentMajority_s$	0.016** [0.006]	0.009* [0.005]	0.016*** [0.004]
Total effect $IncumbentMajority_s$ for Incumbents	0.006	0.005	0.007***
t-stat	1.561	1.531	2.737
p-value	0.119	0.127	0.006
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,203	112,202	112,203

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn dummy indicating whether a majority of the section was formed by incumbent MPs in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

in Table 6. We confirm that whether one's section majority was composed of same-language members did not matter for an MPs voting behavior, as the estimates in Table 5 are close to zero and not significant regardless of an MP's district language. Yet whether a majority of one's section was formed of incumbents does seem quite relevant, see Table 6. For new MPs in majority-incumbent sections, the probability of rebellion is about 1% lower (evaluated at a mean of 7.4% this is a 14% change). In contrast, the effect for incumbents in majority-incumbent sections is to increase rebellion, by about 0.5–0.7%.

Next, we considered whether the sections enabled more partisan persuasion, the fourth hypothesis. Opposition MPs were not significantly more or less likely to rebel if the number of incumbent majority MPs in the section was larger (see Table 7). In addition, the total effect of an additional fellow member for a Catholic majority-party MP cannot be distinguished from zero. Results are similar for the contentious sample, and using the log-transformation instead (see supplementary appendix tables A14, A22, and A23). We can also consider whether such MPs form the section majority. In Table 8,

Table 7. Nr of Cath. Incumb. in randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$NrMajPartyIncumbents_s$	0.001 [0.001]	0.001 [0.001]	<-0.001 [0.001]
MajorityParty $\times$ $NrMajPartyIncumbents_s$	-0.001 [0.001]	<-0.001 [0.001]	-0.001 [0.001]
Total effect $NrMajPartyIncumbents_s$ for MajorityParty	<-0.001	<0.001	<-0.001
<i>t</i> -stat	-0.867	0.613	-0.969
<i>p</i> -value	0.386	0.540	0.333
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,245	112,244	112,245

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn total number of the majority, Catholic party incumbent MPs in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

Table 8. Section majority of Cath. Incumb. In randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$MajPartyIncumbentsMajority_s$	0.006 [0.004]	0.009** [0.004]	0.006 [0.004]
MajorityParty $\times$ $MajPartyIncumbentsMajority_s$	-0.012*** [0.004]	-0.010** [0.005]	-0.010** [0.005]
Total effect $MajPartyIncumbentsMajority_s$ for MajParty	-0.006*	-0.001	-0.005**
<i>t</i> -stat	-1.801	-0.341	-2.241
<i>p</i> -value	0.072	0.733	0.025
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other fixed effects:	No	γ_i : MP	τ_v : Vote
Observations	112,245	112,244	112,245

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn dummy indicating whether a majority of the section was formed by (Catholic) majority party incumbent MPs in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

we can see that if anything, a majority of majority party incumbents made an opposition MP more likely to rebel (model 2). Yet for members of the majority party, having a majority of incumbents of that majority also made one less likely to rebel (see the total effect in Table 8).

Finally, Table 9 presents the analysis of the impact of the number of opposition incumbents. The table shows that the number of incumbents from the opposition party in a section does not influence Catholic, majority-party MPs to rebel. The three models find a decrease from the average of at most 0.001 by each additional incumbent in the section from the opposition for majority MPs. Furthermore, an additional opposition incumbent in a section will not differentially influence an MP from the opposition, as you can see in the interaction effect in the table. The total effects confirm the absence of a total effect of the number of opposition incumbents on opposition members. Similar results obtain in the contentious sample, or under alternative coding (see supplementary appendix tables A15, A24, and A25).⁴ The results appear to contradict our fifth hypothesis. A Catholic MP will not be less likely to rebel if he encounters experienced MPs from the opposition.

Overall, we found no evidence that deliberation (positively) changed votes or outcomes. The random group composition produced effects opposite to the ones (hypothesized, ideal) deliberation

⁴ As opposition incumbents never formed the majority in any of the sections, we cannot conduct this additional test.

Table 9. Nr of Minority Incumb. In randomly drawn deliberation group and rebellion

DV: $Rebel_{i,v}$	(1)	(2)	(3)
$NrOppositionIncumbents_s$	<0.001 [0.001]	<-0.001 [0.001]	<-0.001 [0.001]
OppositionParty $\times$ $NrOppositionIncumbents_s$	-0.001 [0.001]	-0.001 [0.001]	-0.001 [0.001]
Total effect $NrOppositionIncumbents_s$ for Opposition	-0.001	-0.001	-0.001
t-stat	-1.183	-1.020	-0.950
p-value	0.237	0.309	0.342
Party fixed effects θ_p :	Yes	Yes	Yes
Section draw δ_d fixed effects, and interaction:	Yes	Yes	Yes
Other Fixed Effects:	No	γ_i : MP	τ_v : Vote
Observations	112,245	112,244	112,245

Notes: Dependent variable is whether a legislator rebelled against his party majority on a given vote between 1892 and 1902. The treatment variable is the randomly drawn total number of the minority, opposition party incumbent MPs in an MP's deliberation group in the relevant month preceding the roll-call vote. We exclude four draws with incomplete section lists. All models include fixed effects for each party, each monthly draw and their interaction. We add either fixed effects for each individual MP (model 2) or for each roll-call vote (model 3). Errors are clustered at section-by-draw level (model 1), individual MP level (model 2), or by roll-call vote v level (model 3). * < 0.10, ** < 0.05, *** < 0.01.

would predict. Instead, we found more evidence in line with typical strategic party and government/opposition politics. We interpret this to mean that political lotteries are as manipulable as other institutions by strategic party actors.

7. Robustness

Our research design may have some limitations. First, our time-frame may be too broad. Perhaps we cannot expect deliberation to work repeatedly over time, but only for new MPs, before their career incentives or learning about political tactics takes over. Second, perhaps we should only consider specific measures or topics more likely open to cross-partisan cooperation—previous research also established that deliberation worked for some, but not all, topics. We present a number of robustness checks here.

Was there more persuasion among new legislators of the fully renewed 1900 parliament? We focus on such a subsample in table A2 in the supplementary appendix. We find that new legislators in 1900 were even less persuaded by socialists than all legislators we considered before. Debating more socialists makes new legislators more loyal to their parties, and we still find no treatment effects for socialists. New legislators of 1900 were also not more nor less persuaded by Flemish-district representatives, the same result we found before. A slight difference is that it made the Flemish representatives more rebellious when they were debating more Flemish-district representatives (see table A3 in the supplementary appendix). Finally, the new legislators of 1900 were also no more nor less persuaded by incumbents (see table A4 in the supplementary appendix). This differs from our main finding, as we found them to be more loyal before. We conclude that political lotteries did not work better from a deliberative persuasion perspective among the newly elected.

Was there more persuasion in the 1899 PR votes that passed with cross-party support? We focus on a subsample of relevant votes in tables A5 to A6 in the supplementary appendix. We find some support for elite, but not cross-partisan influences. New legislators on 1899 PR votes were less loyal to their parties when faced with more incumbents (see supplementary appendix table A5). If anything they rebelled more, the opposite of what we found for all roll-calls before. Yet we find no evidence for cross-party persuasion in sections on PR roll-calls (see supplementary appendix table A6). If anything, we find support for government-opposition doubling down, as we observe less rebellion when faced with more individuals from the opposite side. There is in contrast some evidence that opposition MPs convinced other opposition MPs (the vote was indeed free for the Socialist party, see models 4–6). We conclude that political lotteries did not work better among the newly elected (from deliberative-persuasion point of view), but were used by incumbents to persuade new legislators to be more loyal if anything—or to rebel on particularly contentious legislation in favor of incumbents' opinions. Finally,

political lotteries may have played only a very limited role in forging the cross-partisan support for PR, but as coordination device for socialists.

A final robustness check confirms that there are no placebo treatment effects. We define a placebo treatment effect as before, but we consider all relevant independent variables two draws after the actual draw that preceded a roll-call vote. Tables A7, A8, and A9 in the supplementary appendix confirm there are null results of these placebo treatments on our three main treatment variables.

8. Conclusion

This paper considered a repeated natural experiment within the 19th century Belgian legislature, where monthly lottery-draws assigned MPs to debate legislation in smaller groups. We asked whether the random group composition affected legislators' opinion as measured by their roll-call voting. We found that the promise of positive deliberation effects was not fulfilled in this context, hypotheses from legislative politics instead were better supported. MPs rebelled less the more new socialists they debated in these groups, even right after they entered and were arguably most persuasive. Debating more politically savvy incumbents similarly reduced rebellion. Majority party MPs, as a result of meeting a majority of their party's incumbents in their section, doubled-down in government vs. opposition logic, and rebelled less. We found no effect for language. There was some evidence for intra-party faction coordination.

Perhaps counter-intuitively then, lotteries did not open politics in the Belgian legislature for new actors such as the socialists, at least not via persuasion on roll-call voting. The Belgian case presented a close-to-ideal research design for high-stake legislative lotteries which introduced repeated, institutionalized, deliberation in smaller groups before high stake votes were taken. The single-party government held a majority in parliament, which mostly voted cohesively, even though these legislators were also internally divided on important matters such as the electoral system. While a record number of new MPs had entered for the first time, many incumbents had survived and might have dominated the conversations in their sections. Indeed, we found that new members were less likely to rebel against incumbents. Perhaps it is precisely because the majority had little to fear from this system, that it was not finally abolished until the middle of the 20th century. Future research will be conducted to test the external validity of these findings to different party systems in different European countries at that time. This study carries an important lesson for today: Lot-drawn assemblies are no panacea. Their design and interaction with government-opposition dynamics is crucial to help deliberation obtain positive collective action in legislative settings.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/psrm.2026.10105>. To obtain replication material for this article, <https://doi.org/10.7910/DVN/CTZ74Q>.

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Data availability. Replication data is available on the PSRM Dataverse site. The appendix is available as online supplementary material.

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