Even in the Best of Both Worlds, You Can't Have It All: How German Voters Navigate the Trilemma of Mixed-member Proportionality

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Abstract

The growing fragmentation of party systems confronts mixed-member proportional electoral systems with a trilemma: Combining the goals of proportionality and of a guaranteed representation of district winners makes it ever more difficult to also achieve a third goal: the fixed size of parliament. Against the background of electoral reform in Germany, this paper studies how citizens position themselves in this trilemma. Using original survey data, we find that all goals are popular and no combination of goals commands majority support. In a context where institutional reform becomes politicized, the trilemma is thus not only a logical, but also an empirical constraint. Moreover, abstract preferences in the trilemma systematically predict how voters evaluate the status quo and specific reform proposals. At the same time, voters are receptive to the logical constraints of the system: Informing respondents about the trilemma trade-offs in an experimental setting makes them more accepting of reform proposals.

Introduction

In representative democracies, elections are the main mechanism through which citizens can participate in the political process. The rules that govern the electoral process directly affect how voters can make their interests heard. Thus, the legitimacy of the electoral rules underpins the input legitimacy of the system, requiring the acceptance of this system by voters (Jankowski et al. 2019). Against this background, the increasing politicization of electoral rules in many countries requires more scholarly attention. In several countries, such as the US, the UK, Canada, or Germany, questions of electoral reform have become subject to contestation in the public. This development raises the fundamental question of how voters navigate institutional reforms: How do they react to the trade-offs that necessarily accompany every reform? Are voters an additional obstacle to reform because they are divided over how to resolve these trade-offs? Or can voters become a constructive force for reform, because they accept that trade-offs are inevitable in a democracy?

In this paper, we study these questions in the context of the reform of mixed-member proportional electoral (MMP) systems. Such systems have often been discussed as representing "the best of two worlds" (Shugart and Wattenberg 2001; Linhart et al. 2019) since they seem to combine the advantages of multi-member systems (proportionality) and single-member systems (party-system concentration). However, in recent years, these systems have also come under reform pressure. The reason is that in the mechanics of the system, the goal of proportionality comes into conflict with the goal of district representation (Bochsler 2023): Maximizing the number of directly elected representatives increases the likelihood that the total number of seats allocated to party lists is not sufficient to ensure proportionality. The MMP system of Lesotho, for example, in which only a third of all seats are allocated via party lists, often fails to achieve proportionality (Bochsler 2023). New Zealand may soon be faced with a similar problem, as its electoral law guarantees the South Island to have 16 districts. Faster population growth in the North Island has resulted in an increase in the total number of districts from 65 in the first MMP election in 1996 to 72 in the most recent election. According to population predictions, this number is likely to increase further (StatsNZ 2022).

An ostensibly simple solution for this problem would be to make the number of seats in parliament flexible and to add list seats until proportionality is restored. However, this is not the solution that countries with MMP systems have typically opted for. Lesotho has a fixed number of 120 MPs, while the Scottish parliament is fixed at 129 MPs (73 of which are elected in single districts). New Zealand, in turn, allows for overhang seats, but does not provide compensation seats, which is why the number of MPs has fluctuated between the statutory 120 and a maximum of 123.

These examples highlight a fundamental incompatibility at the heart of MMP electoral systems. Such systems strive to reconcile (at least) three principles at the same time: The first principle is proportionality in the translation of party votes into seats, since MMP systems are ultimately a type of proportional representation systems. The second principle is district representation, which makes the system a mixed-member system: Each district elects a candidate by simple majority rule. The third principle is the

fixed and predictable size of the legislature. While in a theoretical account the fixed size of parliament may not appear to be a principle on the same level as proportionality and district representation, the examples above indicate that electoral system designers nevertheless consider it highly important. They are rather willing to compromise on proportionality than on size.

At low degrees of party system fragmentation, MMP systems may be able to (largely) reconcile the three goals, since the distribution of district seats will be relatively proportional. Under conditions of increasing party system fragmentation, however, MMP systems can only guarantee two of the goals, but may have to abandon the third: Maintaining proportionality while ensuring the membership of district winners necessitates overhang and compensation seats that increase the size of parliament. Holding the size of parliament constant while maintaining proportionality entails that not all district winners actually become members of parliament. Finally, holding the size of parliament constant while guaranteeing that every district winner is able to enter the legislature compromises proportionality. We call this the trilemma of mixed-member proportional systems.

In this paper, we ask how voters navigate this trilemma: Does the trilemma actually materialize in the preferences of the electorate? Do preferences in the trilemma predict attitudes towards concrete reform proposals? And may voters become a constructive force for reform if they learn about the logical constraints of the trilemma?

To answer these questions, we study the German electoral system, arguably the most prominent case of a MMP system, which is increasingly confronted with this trilemma because of the increasing fragmentation of the German party system. The 50% of seats that are allocated to party lists do not allow to fully balance the very disproportional allocation of district seats anymore. The original solution was to allow the creation of so-called overhang seats, much like in New Zealand: district seats that exceed the seat share that a party would be entitled to, based on the party list result. However, in 2012, the German constitutional court ruled that the number of (uncompensated) overhang seats needed to be limited, in order to not infringe on proportionality too much. In response, the German parliament decided to make the size of the parliament flexible. In the last three elections, the electoral system has allocated roughly as many list seats as it is necessary to achieve full proportionality (so-called compensation seats). As a consequence, the Bundestag has grown to 736 MPs in 2021, widely exceeding its statutory size of 598 MPs. In March 2023, the German government finally enacted a reform, which got immediately challenged by the opposition in the constitutional court.

The German experience demonstrates that other countries' reluctance to make the parliament size flexible may be well founded: The growth of the Bundestag was deeply unpopular and encountered widespread opposition among the German public. According to a study by the Bertelsmann foundation, 8 out of 10 German voters supported an electoral system reform that reduces the size of the Bundestag in 2022 (Bertelsmann Stiftung 2023). Thus, whereas the potential conflict between district representation and proportionality arises from the mechanics of the system, the third element of the dilemma—the size of parliament—largely arises from the reaction of the public.

In the following, we analyze preferences over electoral system choice in the context of the reform process of the German electoral system in 2022/2023. This case selection strategy provides us with two advantages: First, we can elicit voters' attitudes in a situation where the topic is relatively salient, making it more plausible that at least some voters have already started to form an opinion. Second, the status quo election law and the two main reform proposals that were discussed in the reform process—the ultimately accepted proposal to cut overhang seats and the rejected proposal to introduce parallel voting—align with the theoretical trilemma presented above.[1] Existing studies of German voters' preferences about electoral rules tend to investigate abstract concepts like representation and concentration as important goals in isolation, without directly examining the trade-offs that any reform has to deal with and the preferences over specific reform proposals (Bytzek 2020; Jankowski et al. 2019). Our case selection allows us to study voter preferences regarding both the abstract democratic goals and the corresponding reform proposals in a setting, where final decisions had not yet been made.

We analyze data from an original survey of 1.717 German voters—representative for quotas on age, gender, and education—administered in October 2022 at the height of the reform discussions, but between the presentation of reform proposals and the decision made by the Bundestag in March 2023. Based on this data, we develop three important findings. First, we find that the trilemma described above exists in the mind of German voters: When respondents are asked to choose their two preferred goals out of proportionality, guaranteed district representation, and parliament size, each of the three goals is chosen by a majority of respondents but no combination of two goals commands majority support. Thus, the trilemma restricts policymakers' options not only on a conceptual level, but also through the preferences of the German electorate.

Second, we find that preferences regarding abstract trilemma principles predict preferences concerning concrete reform proposals. This is despite the fact that most respondents do not understand the existing system very well, which is in line with the existing literature (Jankowski et al. 2022; Behnke 2015; but see Karp 2006). Nevertheless, we find that citizens, when they receive some information about the system, are able to express consistent preferences over abstract principles and specific reform proposals, at least for 2 out of 3 proposals. Moreover, this association holds if we control for partisanship, suggesting that voters indeed have an abstract preference for institutional rules that transcends partisan considerations.

Third, we find that making reform trade-offs explicit induces people to be more accepting of difficult choices, which is in line with recent arguments in the literature (Müller and Séville 2022). Informing respondents about the trilemma before soliciting their opinions on reform proposals improves the evaluation of each reform option and the status quo. In essence, when respondents are made aware of the trade-offs that any electoral law has to deal with, they become more appreciative of proposals that inevitably abandon one of these goals. Policymakers thus have an opportunity to increase the popularity of institutional reforms by explaining the trade-offs they face.

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[1] For a detailed description of these proposals, see Background section below.

Taken together, these results contain some good news for democratic institutions on normative grounds. For one, they suggest that voters have meaningful institutional preferences that go beyond purely instrumental concerns. While electoral reform is heavily contested between parties, preferences over principles are a more important determinant of the evaluation of specific proposals than respondents' partisanship. Moreover, voters are receptive to the constraints under which policymakers operate. Telling voters that they can't have it all—that is, communicating the logical limitations of rule-setting—makes them more accepting of any reform proposal. Hence, the politicization of institutional reforms alone does not inevitably result in the failure of reform attempts due to partisan deadlock.

This paper proceeds as follows: In the next section, we explain why any attempt to reform the German electoral law is faced with a trilemma in which only two out of three popular goals can be achieved. Based on this, we formulate hypotheses about voters' trilemma preferences. Afterwards, we describe our survey design and the different reform proposals that were discussed in the political debate. We then present our results, before we conclude with a brief reflection about potential implications of our findings.

Background

With the fragmentation of post-war party systems, electoral reform has become a hotly debated topic in many countries, such as the United Kingdom (Laycock et al. 2013), Italy (Chiaramonte and D'Alimonte 2018), or Canada (Milner 2017). For many years, the German MMP electoral system has been held up as a prime candidate for replacing strained existing systems (regarding the introduction of mixed systems in Italy, Japan, and New Zealand in the 1990s, see Scheiner (2008), Högström and Dahlberg (2023); regarding the effects of mixed systems in Eastern Europe, see Kostadinova (2002)). Indeed, New Zealand in 1993 voted to replace its first-past-the-post system with a new system that was explicitly modelled on the German system (Denemark 2001). For some time, this system was even discussed as offering "the best of both worlds", namely a high degree of proportionality and a relatively high party system concentration (Shugart and Wattenberg 2001; Raabe and Linhart 2018). However, countries that have introduced MMP systems have often struggled with making them work as intended (see Bochsler 2023; Linhart et al. 2019 for the examples of Albania and Lesotho).

Moreover, Germans themselves have increasingly become uncomfortable with their electoral system, exactly because of the distortions introduced by the attempt to combine proportionality with single-member districts. Despite the growing fragmentation of the party system, SPD and CDU/CSU, the two traditional mainstream parties, continued to win almost all single member districts. However, their declining share of the general party vote did not generate enough total seats to cover their district seats. The increasing fragmentation thus resulted in a growing number of overhang seats, which increased the size of the Bundestag and distorted its proportionate composition. Because of this distortion, the German constitutional court ruled in 2012 that overhang seats above a certain limit had to be balanced with compensation seats to preserve proportionality (Bundesverfassungsgericht 2012). This massively accelerated the growth of the Bundestag. In 2021, for example, the center-right CSU won 45 out of 46 district mandates

in the state of Bavaria. However, its nationwide vote share of 5.2% entitled it to only 34 list seats. The resulting overhang seats necessitated a total of 126 compensation seats (some of which could be used to cover overhang seats in other states).[2] As a consequence, the Bundestag grew to 709 members in 2017 and to 736 in 2021, significantly surpassing its statutory size of 598. Before the 2021 election, some forecasts even predicted a Bundestag with 800 or 900 seats (Vehrkamp 2021).

The growth of the Bundestag brought the parliamentary size on the political agenda. While parliament size is often taken as a given—in fact, in most electoral systems it is simply fixed (Gerzso and van de Walle 2022)—the German case demonstrates that it can become the subject of heated political debate. In effect, all major political parties agreed that it was necessary to reduce the size of parliament. However, they vehemently disagreed on the best way to do this.

The consensus on the need for a smaller Bundestag that dominated the political debate, rested on two types of arguments that were also explicitly used as justifications in the preamble of the reform law passed in March 2023. The first argument was that "this development [growing size] creates several problems for the workability and functionality of Parliament" (Deutscher Bundestag 2023a: 1, our translation). Among such practical concerns were the costs of a larger parliament and the worry that an increasing number of MPs may undermine the efficacy of the parliamentary processes (Deutscher Bundestag 2022). Some also argued that the Bundestag simply does not have enough space for the additional MPs and their staff (Ismar 2021). Indeed, an expert commission that the Bundestag tasked with the mandate to come up with concrete reform proposals cited political science research[3] to argue that a Bundestag with more than 700 MPs is sub-optimally big and that a size of 450 MPs would be more adequate (Deutscher Bundestag 2022: 11).

The second argument, which is of more interested to us in this paper, was that "a parliament that is too large and increasingly exceeds the statutory number of members will encounter political acceptance problems among citizens" (Deutscher Bundestag 2023a: 1, our translation). This line of reasoning was also made prominent in the debate in parliament. When Sebastian Hartmann of the SPD introduced the reform proposal of the ruling coalition of SPD, FDP, and the Greens, before the decisive Bundestag vote in March 2023, he directly appealed to voters: "Dear citizens, we demonstrate: When we change this country, when we aim to reform this country, we do not spare ourselves." (Sebastian Hartmann, cited in Deutscher Bundestag (2023b), our translation). Moreover, public law professors warned that the—increasingly visible—inability of the political actors to reform the electoral system would damage "the reputation of democracy" (Appell deutscher Staatsrechtslehrer 2019).

However, all attempts to find a compromise that was palatable to a broad majority in the Bundestag failed. This was in many ways an expression of different preferences over the fundamental trilemma. While

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[2] The electoral law actually allowed for 3 uncompensated overhang seats, otherwise, the necessary compensation would have been even bigger.

[3] Such as the cubic (Taagepera 1972) or square (Auriol and Gary-Bobo 2012) root rules on the optimal size of parliaments.

all parties agreed on the need for a smaller Bundestag, they disagreed about the relative importance of the other two goals. SPD, FDP, and the Greens emphasized proportionality in the translation of votes to seats. CDU/CSU, by contrast, emphasized the representation of district winners (a principle that conveniently suits CDU/CSU for reasons of self-interest, since they usually win a plurality of districts).[4]

As a consequence, both the coalition parties and the CDU/CSU presented their own reform proposals. These proposals had to operate within the confines of the constitutional court ruling of 2012 (Bundesverfassungsgericht 2012), which effectively took the approaches taken in New Zealand (not compensating overhang seats) or Scotland (reducing other parties' proportional entitlement) off the table. Instead, reforms had to tackle the creation of overhang seats directly. In response, both proposals opted for different solutions to the trilemma. They both maintained a ballot structure in which voters have two votes: one vote for a district candidate and another for a party list. However, they differed in their methodologies for translating these votes into seats.

The proposal of the coalition parties cuts overhang seats. This means that district winners only become members of the Bundestag as long as their party's entitlement to seats based on the share of second votes is not exceeded; so-called *Zweitstimmendeckung*. Importantly, the reform fixes the previously fluctuating size of the German parliament.[5] This proposal thus opted for a combination of proportionality and fixed size and sacrificed guaranteed district representation.

CDU and CSU, forming the largest opposition faction, proposed a system of parallel voting, where the two votes are tallied separately to allocate seats (that is, a mixed-member majoritarian system, characterized as "the worst of both worlds" by Doorenspleet (2005), since it combines the defects of majoritarian and proportional representation systems). Under this proposal, 299 members would have entered the Bundestag based on receiving a plurality of votes in their district and another 299 members would have been allocated using the share of second votes.[6] This proposal thus opted for a combination of guaranteed district representation and fixed size; and dropped proportionality.

Together with the status quo, the two reform proposals thus conform to each possible solution of the trilemma: Parallel voting gives up on the goal of proportionality between parties. Cutting overhang seats gives up on the goal of guaranteed district representation by the district winner. Sticking to the status quo election law would preserve proportionality and district representation but implies giving up on the goal of

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[4] On the general difficulties of balancing district seats and party seats, see (Bochsler 2023). Changing the balance of list seats and district seats is not a trivial reform since it is an established finding in the literature on mixed electoral systems that the two tiers affect each other (e.g. Cox and Schoppa 2002; Maeda 2016).

[5] An adapted version of the original proposal was accepted by the Bundestag in March 2023. It fixes the size of the Bundestag at 630 members. In addition, parties that win at least three constituency seats are no longer exempted from the 5% threshold (*Grundmandatsklausel*). This element of the reform was added at the last minute and does not concern us here.

[6] The advantages and disadvantages of different reform proposals have been widely discussed, both in the media and in political science in the run-up to the 2023 decision (Decker and Jesse 2020; Sohnius et al. 2022; Weinmann and Grotz 2020; Behnke 2022, 2019; Pappi and Bräuninger 2018).

a fixed Bundestag size. Studying these proposals thus allows us to test voters' trilemma preferences in a real-world setting, amidst an ongoing electoral reform process.

Hypotheses

Against this background, our first research question is descriptive in nature and asks whether the trilemma is real: We want to evaluate whether the trilemma also emerges from people's responses, that means, whether they support all three goals of the system to a similar extent. In other words: Does the constraint that we think makes reform so difficult really exist? If the theoretical reform trilemma of MMP systems turns into a political obstacle for reform, we should find evidence in favor of the following hypothesis:

H1:   Each individual trilemma goal (proportionality, district representation, and fixed size) is supported by a majority of respondents. Hence, when asked to pick a combination of two goals, however, no combination achieves majority support.

Second, we ask whether abstract preferences in the trilemma predict people's attitudes towards specific reform proposals. Here, we can derive two hypotheses that connect people's choice of their preferred trilemma combination with their specific reform preferences. First, if voters have coherent preferences over electoral reform, those whose trilemma choice includes the size of parliament should perceive a higher reform pressure:

H2a: Respondents who have parliament size in their trilemma choice perceive a higher reform pressure.

Moreover, trilemma choice should also affect individuals' evaluation of the specific reform proposals. For example, those respondents who favor a combination of proportionality and parliament size should rate the proposal of cutting overhang seats more highly than other respondents/the other proposals.

H2b: Respondents' trilemma choice predicts their evaluation of the status quo and of specific reform proposals.

Lastly, we are interested in how voters navigate trilemmatic situations more generally. Does being confronted with a trilemma increase or reduce support for reform? Trilemma situations are a familiar type of choice situations that are most often analyzed in political economy. Perhaps the most famous trilemmas are the "impossible trinity" of fixed exchange rates, capital mobility, and autonomous monetary policy (Frieden 1991) and the "globalization trilemma" between economic integration, democratic politics, and national sovereignty (Rodrik 2011). Research on how voters handle such trade-offs generally argues that emphasizing trade-offs reduces support for any single goal (Häusermann et al. 2019; Garritzmann et al. 2023; Häusermann et al. 2022; Bremer and Bürgisser 2023).

By contrast, we are interested in the evaluation not of single goals, but of attainable combinations of goals. In this regard, politicians may actually benefit from making trade-offs transparent to foster a better understanding of their own reform constraints (Müller and Séville 2022). This would mean that explaining these constraints to voters should lead to a higher degree of acceptance and a greater sense of legitimacy for

the proposed reform. After all, the trilemma gives a strictly logical explanation for why real-world reform proposals must compromise on certain goals (which could reduce the likelihood that these compromises are attributed to politicians' incompetence or bad faith). Hence, we ask how voters react to making the trade-offs involved explicit and test if these constraints lead to a higher acceptance of the status quo and the reform proposals.

H3a: Informing respondents about the nature of the trilemma increases support for the status quo.

H3b: Informing respondents about the nature of the trilemma increases support for reform proposals.

Survey Design

To study German voters' preferences over electoral reform, we conducted an online survey in October 2022.[7] The survey was administered by Bilendi, a professional survey company that operates an online access panel with 300,000 potential respondents in Germany. We tasked Bilendi with participant recruitment only. Survey programming and quota checks were done by us using the platform Qualtrics. We recruited 1.717 German citizens between the age of 18 and 74.[8] Within the age range, respondents were selected to be representative of the German population on quotas for age, gender, and education. At the beginning of the survey, participants answered a few demographic questions. To gauge people's knowledge of the German electoral system, we used a battery of four questions on general features of the status quo (see Figure A1 in the Appendix). About a quarter of respondents selected the right answer on all four questions. Another quarter answered three out of four questions correctly, while the remaining half was approximately evenly split between those who got two, and those who got one or zero questions right. In line with earlier research, this shows a relatively limited understanding of the workings of the existing system, given that random guessing would result in a 25% chance of having three answers correct and a 6.25% chance of having all four correct.

In the main part of the survey, we randomly assigned about half of the respondents to either the treatment arm of the survey (group 1) or the control arm of the survey (group 2). Figure 1 shows the logic of the survey flow. Participants in group 1 started the main part of the survey with a description of the three fundamental goals of the electoral system, rated the importance of these goals, and made their trilemma choice (Figure 1, step 1). Subsequently, these participants received information and answered questions on the status quo electoral law (Figure 1, step 2). Then, participants were randomly presented one of the two reform proposals, which creates two subgroups, and answered questions on the proposed reform (Figure 1, step 3). Participants in group 2 followed the same sequence and protocol, but only started the main part of the survey at step 2.[9] Therefore in step 3, subgroups 1a and 2a received information on the cut-overhang-

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[7] The study has been pre-registered at OSF.

[8] For descriptive statistics of the different experimental groups, see Tables A4 and A5 in the Appendix. There were also other survey arms not analyzed in this paper.

[9] For group 2, the evaluation of the goals and the trilemma choice took place after step 3, but because this data is most likely affected by the previous information and ratings, it is not analyzed in this paper.

seats proposal whereas subgroups 1b and 2b received information on the parallel-voting proposal (see Figure 1, step 3a).
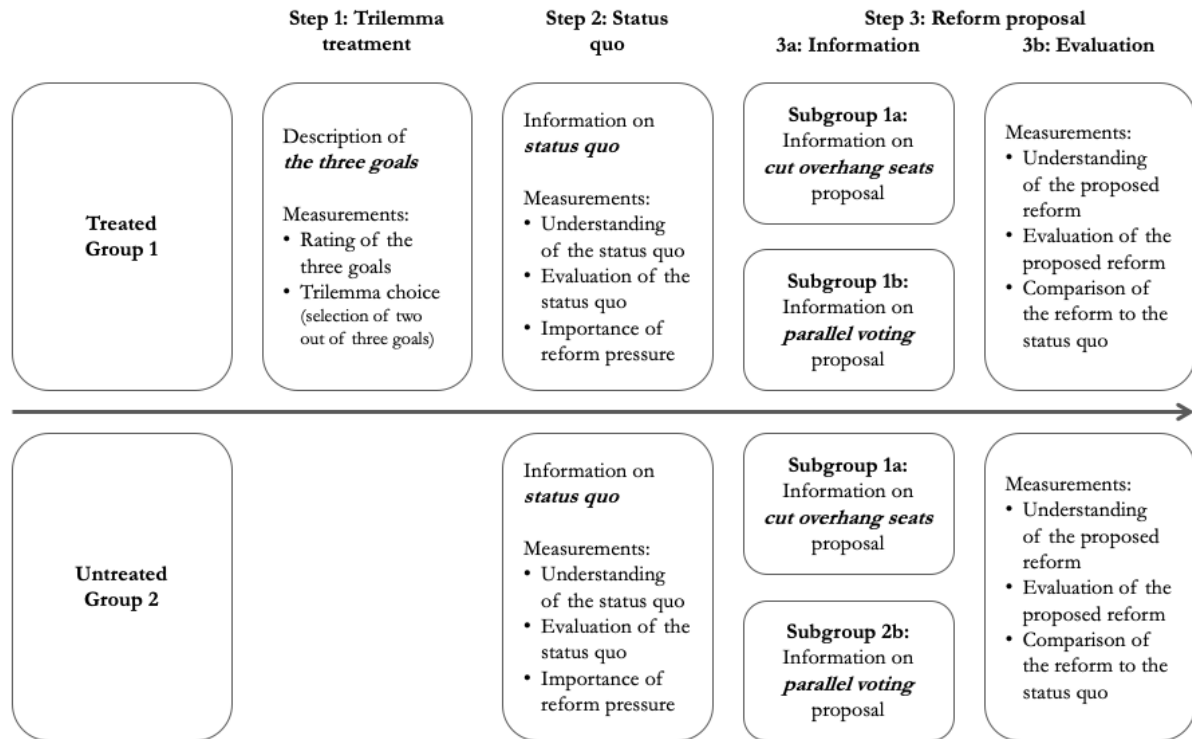

Figure 1: Survey Design (main part) and Treatment Groups

We now explain each step in greater detail. For group 1, the three goals were described as follows:

- One goal is proportional representation: This means that the share of seats that a party gets in the Bundestag should correspond to its share of second votes.
- One goal is district representation: This means that a person who wins the most votes in a district is guaranteed a seat in the Bundestag.
- One goal is a fixed size of the Bundestag: This means that the number of MPs does not exceed the statutory size of 598.

For each goal, participants in group 1 reported the importance using a 7-point scale reaching from "not important at all" to "very important". After asking about the importance of each goal in isolation, we then confronted respondents with the trilemma situation and asked them to indicate which two of these three goals they would pick (trilemma choice).[10] The observational data from step 1 thus allow us to investigate Hypothesis 1; i.e., whether the theoretical trilemma manifests empirically in voters' preferences.

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[10] The question read: "In reality, however, it may be the case that only two of these three goals can be met. Which two goals do you think should be met? Please select exactly two answers."

In step 2, we provided participants with information about the status quo electoral law. The description (see Table 1) tried to accommodate for the limited knowledge of many voters.[11] In particular, we explained the building blocks of the current system and the mechanism which leads to the growth of the Bundestag. To test whether respondents understood the mechanisms of the electoral status quo, we presented them with a fictitious electoral result and asked them to estimate the number of seats that a party would obtain with this result. The question read as follows: "Now assume that a party receives 20% of the second votes, which corresponds to about 120 (out of a total of 598) representatives in the Bundestag. With the first vote, this party wins 140 of 299 electoral districts. How many seats will this party probably have in the Bundestag?" After choosing their response in a 6-item multiple-choice question (100, 120, 140, 160, 180, or 200 seats), participants were presented with the correct response (140 seats). We then asked respondents about their evaluation of the status quo electoral system on a 7-point-scale (from "very bad" to "very good"), as well as about how strongly they perceived the system to need reform (also on a 7-point scale).[12] Connecting the observational data from step 1 and step 2 allows us to test Hypotheses 2a and 2b for the respondents in group 1.

In step 3, participants in subgroups 1a and 2a were provided information about the reform proposal to cut overhang seats whereas participants in subgroups 1b and 2b were provided information about the proposal to introduce parallel voting (see Figure 1, step 3a). Table 1 depicts the two reform proposals. In formulating the description of the proposals, we aimed for as much comparability as possible between the reform options as well as with the status quo. The descriptions also aimed to make the costs associated with each reform proposal explicit. Cutting overhang seats accepts that not all district winners will receive a seat. Parallel voting accepts (or rather intends) disproportionality in the translation from votes to seats. After explaining the specific proposal to the respondents, we again presented to them a hypothetical election result and asked them to estimate the number of seats that a party would obtain with this result to test their understanding of the of the respective reform proposal. Afterwards, as our main outcome variable, we asked about the evaluation of the reform on a 7-point-scale (from "very bad" to "very good"). This allows us to compare the evaluation of the reform with the evaluation of the status quo. Additionally, we asked participants directly whether they preferred the reform to the status quo (see for the measurements also Figure 1, step 3b).

Randomly assigning respondents to either the treatment arm (group 1) or the control arm (group 2) of the survey allows us to estimate the causal effect of receiving information about the political constraints of reforming electoral systems on respondents' evaluation of the two reform proposals. This is a rigorous test for Hypotheses 3a and 3b. Given that we cannot fully rule out that also respondents in the untreated group 2 might have at least been implicitly informed about the trilemma, for example by media coverage,

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[11] Of course, the German electoral system is considerably more complicated in its details (see e.g., the *Grundmandatsklausel*). However, we tried to focus on those factors that were relevant for the specific reform proposals.
[12] The question about reform pressure read: "There are ongoing discussions about reforming the election law in Germany, in order to decrease the size of the Bundestag to its statutory size of 598 members. How important is such a reform to you?"

we should estimate the effect of the trilemma treatment conservatively. In our observational analyses, we check the robustness of our results using respondents' interest in politics as a proxy for possible pre-treatment.

Results

In the following, we first report how respondents position themselves in the trilemma of MMP systems. In doing so, we demonstrate that they have meaningful preferences over electoral principles and their combinations. Next, we study whether peoples' trilemma choice explains preferences for specific reform proposals. Lastly, we investigate experimentally whether informing respondents about the nature of the reform trade-offs makes them more accepting of any proposal to reform the electoral system in Germany.

Preferences Regarding the Trilemma of MMP Systems

Does the reform trilemma of mixed-member proportional electoral systems show up in peoples' preferences? To answer this question, we presented the three trilemma goals to respondents who then had to choose their two preferred goals. The results of this choice amongst participants who received the trilemma information before they were asked about their preferences regarding electoral systems (group 1) are presented in Figure 2. The left panel shows which share of respondents picked each goal when participants were asked to pick two out of three goals. As can be seen from the graph, about 72% of respondents picked the Bundestag size as one of two principles that any electoral system should satisfy. Somewhat surprisingly, district representation as well as proportional representation—the two principles that the status quo satisfied—were slightly less frequently chosen with 68% and 59%, respectively. Importantly, however, each principle was selected by more than half of the respondents, and the error bars are consistently above the majority threshold of 50%. These results thus demonstrate that all three goals can count on majority support even when participants are forced to trade-off principles against each other.

Table 1: Description of the Status Quo and Both Reform Proposals

Status Quo	Cut overhang seats	Parallel voting
The current electoral law for the Bundestag is:	At the moment, there are discussions to change the current Bundestag election law. One proposal is:	At the moment, there are discussions to change the current Bundestag election law. One proposal is:
The share of second votes that a party wins determines how many seats that party receives in the Bundestag.	**The share of second votes that a party wins determines, as before, how many seats that party receives in the Bundestag.**	**Only half** of the seats in the Bundestag (299 out of 598) are allocated among the parties according to the share of second votes. **The other 299 are determined exclusively through the districts.**
A party that receives 20% of the second votes should thus also receive about 20% of the seats in the Bundestag.	A party that receives 20% of the second votes should thus also receive about 20% of the seats in the Bundestag.	A party that receives 20% of the second votes thus does not have to receive 20% of the seats in the Bundestag.
The federal territory is divided into **299 electoral districts**, in which a district candidate is elected with the first vote.	The federal territory is, as before, divided into **299 electoral districts**, in which a district candidate is elected with the first vote.	The federal territory is, as before, divided into **299 electoral districts**, in which a district candidate is elected with the first vote.
Every person who wins one of the electoral districts is guaranteed to enter the Bundestag.	**However, not** every person who wins one of the electoral districts is guaranteed to enter the **Bundestag anymore.**	**Every person who wins one of the electoral districts is guaranteed to enter the Bundestag, as before.**
Sometimes, a party wins more electoral districts than it is entitled to seats according to the share of second votes. These additional seats are called **overhang seats.**	If a party wins more electoral districts than it is entitled to seats according to the share of second votes, it may not fill these excess seats.	Since the second votes now only determine the other half of the seats, a party in any case receives a seat for each electoral district it wins.
To ensure that the share of seats a party holds in the Bundestag corresponds again to its share of second votes, all other parties receive additional seats in this case, so called **compensation seats.**	**There will no longer be any overhang or compensation seats.**	**There will no longer be any overhang or compensation seats.**
However, due to the overhang and compensation seats, the Bundestag regularly exceeds the size of **598** members.	The Bundestag will therefore no longer exceed a size of **598** members.	The Bundestag will therefore no longer exceed a size of **598** members.
This is why the Bundestag has significantly grown to currently **736** members in recent years.	However, not all candidates who win an electoral district will receive a seat in the Bundestag if their party wins more electoral districts than it is entitled to seats according to the second votes.	However, the share of seats that the party receives in the Bundestag no longer corresponds to its share of second votes if it wins very many or very few electoral districts.

The same information is organized in a different way in the right panel of Figure 2, which focuses on the combinations of goals that respondents picked. Here, the flipside of the popularity of each single dimension is that no combination of goals commands majority support; error bars do not include the 50% threshold. While reducing the size of the Bundestag in combination with preserving district representation is the most popular option, it is only selected by a little more than 40%. Even the least popular option, which would effectively preserve the status quo, is supported by more than a quarter of the respondents. The fact that each goal on its own is popular and receives majority support—equivalent to the fact that no combination of two goals receives majority support—is strong evidence in favor of the notion that the trilemma of mixed-member proportional systems is present among German voters, which corroborates Hypothesis 1.

To further explore whether these choices in the trilemma reflect meaningful and coherent preferences, we run plausibility checks on these data to see whether respondents understood the logic and the implications of each principle. For one, we asked each respondent in group 1 to rate the importance of each goal separately on a scale from 1 to 7. Respondents who pick a combination of district representation and Bundestag size find proportional representation statistically significantly less important (diff = -.34, p < .01) than respondents who choose the other two combinations of goals. For voters who jointly select proportional representation and the size of the Bundestag, district representation is similarly less important (diff = -.67, p < .01). And finally, supporters of the status quo—those respondents that choose proportional representation and district representation—place less importance on the size of the Bundestag (diff = -1.04, p < .01).

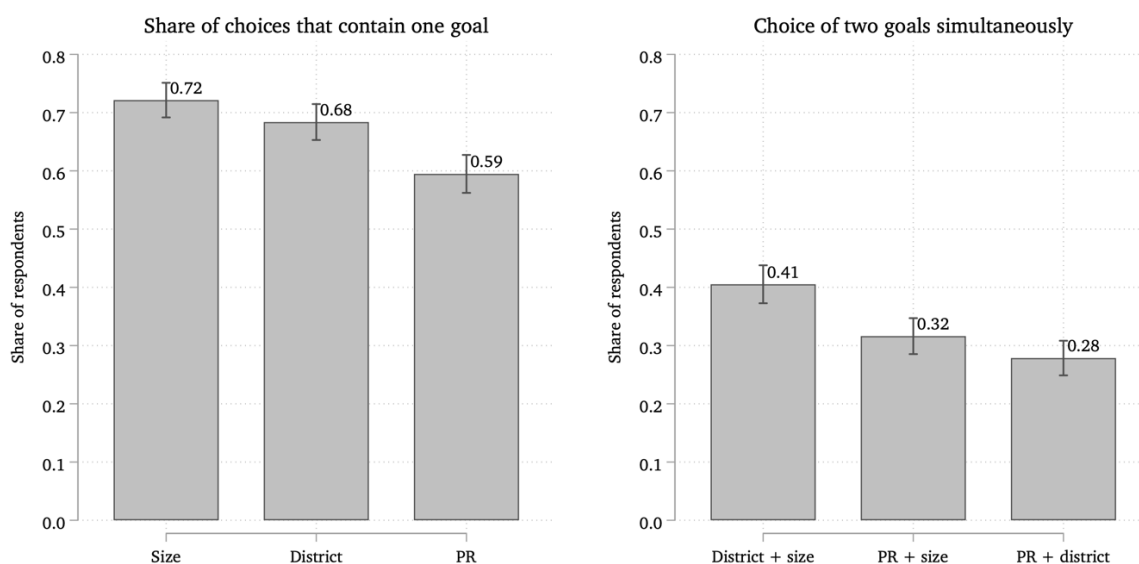**Figure 2: Popularity of Goals and Choice in Trilemma Setting, Group 1**[13]

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[13] Because we asked respondents to pick two out of three goals, the cumulative sum of responses adds up to 200% in the left panel.

These differences are robust to controlling for respondents' gender, age, and level of education. As Table A1 in the Appendix shows, respondents that place greater importance on proportional representation are more likely to include proportionality in their trilemma choice set. A similar relationship holds for the other two principles, representation of district winners and a fixed size of the Bundestag. Moreover, we find differences along party lines: CDU/CSU voters (5.47; on a 1 to 7 scale) and SPD voters (5.40) are most supportive of district representation, while supporters of smaller parties were least supportive (FDP voters: 4.84, Die Linke voters 5.00).[14] These are small differences, but they are in line with what one would expect, given that these smaller parties hardly win (or have won) any districts. Hence, we are confident to conclude that the reform trilemma indeed materializes in the preferences of German voters: Reform is difficult not only because of self-interested politicians, but also because it truly has to trade-off different popular goals.

Relationship between Trilemma Choice and Preferences for Electoral Reform Options

So far, we have established that the trilemma is real for the German electorate: All three goals are not only normatively desirable, but also empirically popular. In the next step, we thus investigate whether peoples' preferences for abstract principles explain their choice of concrete electoral systems.

In Table 2, we regress the importance of reforming the status quo as well as respondents' evaluations of the status quo and the two reform options on their choice in the trilemma of mixed-member proportionality.[15] We control for respondents' knowledge of the status quo, their gender, age in years, and education levels. Furthermore, we also control for turnout and vote choice in the 2021 federal election, allowing us to estimate the effect of trilemma choice net of any partisan effects. The results are robust to adding more control variables, especially political interest, which might proxy the probability by which respondents have followed the reform debate and were, thus, pre-treated (see Table A2 in the Appendix).

Model 1 shows that people's perceived reform pressure is in line with their preferences over the three fundamental electoral goals. Respondents who picked proportionality and district representation as their preferred principles—that is, those principles that the status quo election law fulfils—judge the reform pressure at 4.8 on a 7-point scale. Among those whose preferred goals included the Bundestag size, demand for reform is significantly and substantively higher. This is evidence in favor of Hypothesis 2a.

Model 2 connects the trilemma choice of respondents with their evaluation of the status quo. The status quo receives the highest support among respondents that are willing to sacrifice the size of the Bundestag (the baseline category). For both other trilemma choices—i.e., those that include the Bundestag size—the average rating of the status quo is statistically significantly lower. We also find coherence between trilemma choice and the evaluation of the proposal to cut overhang seats (model 3). This proposal maintains

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[14] Green voters, on the other hand, are in between the traditionally larger and traditionally smaller parties when it comes to district representation (5.27).

[15] We again analyze observational data from group 1 here, because respondents in this group first answered the trilemma questions before they evaluated electoral systems (see Figure 1).

proportional representation and fixes the size of parliament, which we set as the baseline category in that regression. Respondents that pick these abstract goals also evaluate the reform proposal most favorably, as indicated by the fact that any other trilemma choice uncovers a statistically significant negative effect.[16]

As for the proposal to introduce parallel voting (model 4), we do not find statistically significant differences between respondents with different trilemma choices, even though we would have expected that this reform option ranked highest among respondents that are willing to forego proportional representation of parties in the legislature (the baseline category in this regression). Thus, we find that support for one reform proposal corresponds with the abstract goals that people prefer, in line of Hypothesis 2b. However, we do not find the same relationship for the other reform proposal. This lack of a relationship for the parallel voting proposal may have to do with the low level of understanding of this proposal. To look at the understanding of each proposal, we use data on respondents' answers to the hypothetical election results that we presented after each reform proposal. Whereas 47% of respondents pick the correct number of seats in the cutting-overhang-seats proposal, only 8% of respondents were able to correctly identify the strongly distorting effect of the parallel-voting proposal.[17] That the consequences of the vote-to-seat transformation are not very well understood for this proposal may thus explain why we do not find statistically significant effects for trilemma choice. Additionally, parallel voting is a rather extreme proposal in terms of its consequences. Thus, even those who in principle supported the trilemma combination of size and district representation may have been reluctant to support such an extreme proposal.

Importantly, we also do not find major partisan differences. Using SPD voters as a baseline, we neither find statistically significant differences for voters of the other parties in the governing coalition (Greens and FDP), nor for voters of the CDU/CSU or Die Linke. Only respondents who voted for the AfD in the 2021 federal election have statistically significantly different evaluations from all mainstream party voters. Interestingly, AfD voters tend to dislike both the status quo election law as well as each reform option. Taken together, this implies that respondents' abstract trilemma choice matters more for the evaluation of electoral systems than instrumental, partisan concerns.

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[16] In Appendix Tables A3 and A4, we analyze whether these effects are stronger for more knowledgeable respondents. However, our measure of knowledge is arguably too noisy for conducting a strong test (see the discussion in Figure A1). Thus, while we find some evidence for such an interaction effect, we caution against overinterpreting it.

[17] An additional 45% predicted some disproportionality but underestimated its degree, see Table A5 in the Appendix.

Table 2: Evaluation of Status Quo and Reform Proposals by Trilemma Choice

	(1) Importance of reforming status quo	(2) Evaluation of status quo	(3) Evaluation of cutting overhang seats	(4) Evaluation of parallel voting
Trilemma choice: PR + district	baseline	baseline	-0.567***	0.135
			(0.18)	(0.17)
Trilemma choice: PR + size	0.842***	-0.411***	baseline	0.165
	(0.12)	(0.13)		(0.17)
Trilemma choice: district + size	0.813***	-0.635***	-0.365**	baseline
	(0.11)	(0.12)	(0.16)	
Knowledge about status quo	0.219***	-0.246***	0.029	-0.041
	(0.05)	(0.05)	(0.07)	(0.07)
Gender (male)	0.260***	0.233**	0.046	0.353**
	(0.09)	(0.10)	(0.14)	(0.14)
Age in years	0.018***	-0.010***	0.013***	-0.013***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level	0.196**	-0.025	0.088	-0.049
	(0.08)	(0.09)	(0.12)	(0.13)
Voted for SPD	baseline	baseline	baseline	baseline
Voted for CDU/CSU	-0.055	0.129	0.203	0.031
	(0.16)	(0.17)	(0.24)	(0.23)
Voted for Bündnis 90/Die Grünen	0.087	-0.014	0.217	0.107
	(0.16)	(0.17)	(0.24)	(0.26)
Voted for FDP	0.047	-0.147	0.237	-0.036
	(0.18)	(0.20)	(0.27)	(0.29)
Voted for AfD	-0.102	-0.717***	-0.495*	-0.474*
	(0.17)	(0.18)	(0.26)	(0.26)
Voted for Die Linke	-0.352*	-0.148	-0.100	0.098
	(0.19)	(0.20)	(0.28)	(0.30)
Voted for other party	-0.289	-0.281	0.179	-0.168
	(0.19)	(0.20)	(0.32)	(0.28)
Did not vote in 2021 federal election	-0.658***	-0.571***	-0.367	-0.415
	(0.16)	(0.17)	(0.23)	(0.26)
Constant	2.836***	5.370***	4.032***	4.686***
	(0.29)	(0.31)	(0.45)	(0.46)
# of respondents	876	876	455	421
R-squared	0.226	0.101	0.085	0.053
Prob > F	0.000	0.000	0.000	0.050

Note: Standard errors in parentheses; * $p<0.10$, ** $p<0.05$, *** $p<0.01$

Effect of Trilemma Information on Reform Preferences

Lastly, we inquire whether and how telling respondents about the fundamental trilemma affects preferences about the electoral system. To investigate whether the trilemma of MMP systems turns into a constraint for reform by the voters, we leverage the fact that we randomly exposed the respondents of group 1 to the trilemma information before they evaluated the electoral system (see Figure 1). We test whether group 1 and group 2 differ in their support for the status quo and the two reform proposals.
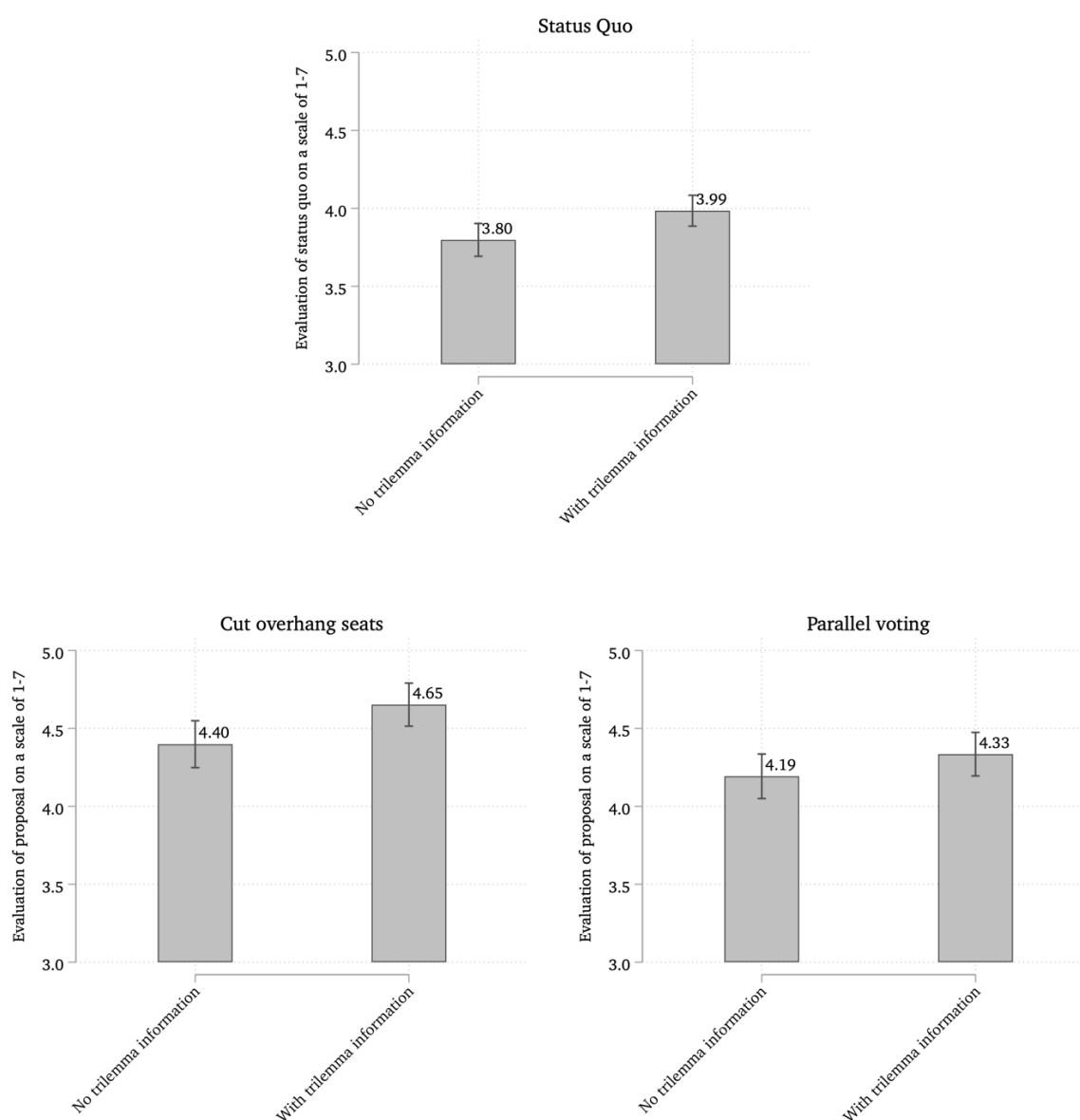

Figure 3: Effect of Trilemma Treatment on Evaluation of Status Quo and Reform Proposals

The top graph in Figure 3 investigates support for the status quo.[18] Acceptance of the status quo increases statistically significantly (p < .05) when respondents are being told before their evaluation that it is impossible to achieve all three goals at the same time. In line with Hypothesis 3a, making trade-offs between the different underlying principles of electoral systems design explicit thus affects voters' preferences and increases support for the status quo.

The same result emerges for the evaluation of the proposal to cut overhang seats (see the lower-left graph in Figure 3). When respondents are told that there is an unresolvable trade-off, they rate this proposal significantly higher (p < .05). Evaluation of parallel voting also improves, although this effect is not significant (p = 0.16; see the lower-right graph in Figure 3).[19] This may again have to do with the weaker understanding of the logic of this proposal.

Thus, we find tentative support that informing respondents about the trilemma of electoral reform before asking them about their approval of reform proposals improves the evaluation of different electoral reforms in line with Hypothesis 3b. Providing respondents with a strictly logical explanation for why real-world reform proposals must compromise on certain goals seems to make them more acceptant of such compromises.

Conclusion

In March 2023, after all attempts for a consensual reform had failed, the governing coalition finally pushed through a version of the cut-overhang-seats proposal with their own parliamentary majority. However, it is far from clear that this reform will survive upcoming legal challenges or a future change of government. The CDU/CSU has already announced that they will change the electoral rules again, once back in power (Funk 2023). Additionally, they have challenged the reform in the constitutional court.

Much like in many other countries, political institutions are being increasingly politicized in Germany. For a long time, there had been an implicit agreement among political players that the rules of the political game should only be changed with the consent of all or at least most parties, even if legally these rules could be changed by simple majority (as for example the German electoral law). This is connected to a deeper problem: Politicizing institutional rules turns party competition within these rules into competition about them. In the extreme, politicization may undermine the losers' acceptance of parliamentary democracy if the electoral system is perceived as biased.

Against this background, we have found it important to study the question of electoral reform from the perspective of voters. Our results contain both good and bad news for the question of reform legitimacy among voters. On the one hand, they demonstrate how difficult it is to design a reform that aligns with the

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[18] We provide regression estimates, where we also control for respondents' knowledge of the status quo, their gender, age in years, education levels, and turnout and vote choice in the 2021 federal election in the Appendix (see Table A6 for the status quo, Table A7 for cutting overhang seats, and Table A8 for parallel voting).

[19] See Tables A9 and A10 in the Appendix for estimates of covariate balance.

preferences of a majority of voters. Our findings indicate that the trilemma of mixed-member proportional systems is not just a logical constraint for reform but is also reflected in the preferences of the electorate. Proportionality, district representation, and a limited size of parliament are each supported by a majority of voters. And while voters perceived a strong need for reform of the electoral system, no abstract reform proposal commanded majority support. From this perspective, our results suggest that while the self-interest of politicians and political parties undoubtedly plays a significant role, it is not the sole barrier to electoral reform. Our study demonstrates a deeper challenge for the reform of MMP systems, that even an uninterested third party would find difficult to overcome: Most likely any reform attempt is confronted with a trilemma.

At the same time, our analysis generated findings that are more reassuring with regard to the politicization of institutional rules. Voters in our study did not perceive the debate about electoral reform as purely politicized but were receptive to the substantial trade-offs in electoral principles inherent in the different reform options. We have shown experimentally that providing information about policymakers' constraints increases voters' acceptance of both the status quo and of the specific reform proposals, which implies that voters are able to acknowledge the logical constraints of the system and incorporate them into their assessments. Making the limitations for policy-making that emanate from trade-offs more transparent can make people more accepting of political reform and should consequently attenuate political conflict. Political elites may actually use this to their advantage when trying to explain their reform proposals to the public. An intriguing route for future research would be, however, to explore whether there are minimum requirements for each goal of the trilemma, that is to which degree reform proposals can violate one of the principals for still being accepted by voters.[20]

While we surveyed voters in Germany because of the German MMP system and the, at the time, ongoing debate about electoral reform, we think our study points to a more general observation: Voters are in principle capable and willing to judge electoral systems on their merits and recognize the inherent limitations of different systems. However, the degree of politicization of a political system might affect which role this general capability can play in practice: If voters in their political system view reform debates merely through a partisan lens, they might be less willing to engage with the substantial questions of different reform options. Thus, while we are confident that in principle our finding that voters can navigate the trade-offs in the trilemma of electoral reform is generalizable to other countries, it remains an open question—to be addressed by future research—how generalizable our results are to the political system of a specific other country.

Our results might even have repercussions that go beyond electoral rules or even the make-up of democratic institutions more generally, since trilemma situations are a familiar feature of important policy questions. The Unholy Trinity, or Mundell-Fleming trilemma, for instance, maintains that any government has to sacrifice one out of three policy goals under conditions of economic openness: fixed exchange rates, autonomous monetary policy, or capital account openness. The common interpretation of such trade-off

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[20] We thank an anonymous referee for pointing us to this additional research question.

situations is that unconstrained survey-questions overestimate support for any single policy goal and that pointing out trade-offs reduces stated support (thus leading to more realistic estimates). While we do not disagree with this assessment, we suggest an additional interpretation: Explaining trade-offs may not only lead to a more realistic measure of preferences but may also affect preferences by increasing the support for attainable combinations of goals. If politicians explain the logical constraints under which they must operate, they may find a receptive audience among voters.

References

Appell deutscher Staatsrechtslehrer. 2019. "Offener Brief an den Deutschen Bundestag." In Verfassungsblog.

Auriol, Emmanuelle, and Robert J. Gary-Bobo. 2012. "On the optimal number of representatives." Public Choice 153 (3):419-45.

Behnke, Joachim. 2015. "Der Einfluss der Kenntnis des Wahlsystems auf das Wahlverhalten: Weil sie nicht wissen, was sie tun, tun sie, was sie nicht wollen?" Zeitschrift für Parlamentsfragen 46:588–607.

———. 2019. "Einfach, fair, verständlich und effizient – personalisierte Verhältniswahl mit einer Stimme, ohne Direktmandate und einem Bundestag der Regelgröße." Zeitschrift für Parlamentsfragen 50 (3):630-54.

———. 2022. "Wahlrechtsreform: Ist der gordische Knoten endlich geplatzt?" Zeitschrift für Politikwissenschaft 32:805–15.

Bertelsmann Stiftung. 2023. "Fast 80 Prozent der Menschen für Verkleinerung des Bundestages auf die Regelgröße „598"." Gütersloh.

Bochsler, Daniel. 2023. "Balancing district and party seats: The arithmetic of mixed-member proportional electoral systems." Electoral Studies 81:Online First.

Bremer, Björn, and Reto Bürgisser. 2023. "Do Citizens Care About Government Debt? Evidence From Survey Experiments on Budgetary Priorities." European Journal of Political Research 62 (1):239-63.

Bundesverfassungsgericht. 2012. "Urteil des Zweiten Senats vom 25. Juli 2012." BVerfGE.

Bytzek, Evelyn. 2020. "Präferenzen zu unterschiedlichen Reformoptionen des Wahlsystems für Bundestagswahlen." Politische Vierteljahresschrift 61:433-47.

Chiaramonte, Alessandro, and Roberto D'Alimonte. 2018. "The new Italian electoral system and its effects on strategic coordination and disproportionality." Italian Political Science 13 (1):8-18.

Cox, Karen E., and Leonard J. Schoppa. 2002. "Interaction Effects in Mixed-Member Electoral Systems: Theory and Evidence From Germany, Japan, and Italy." Comparative Political Studies 35 (9):1027-53.

Decker, Frank, and Eckhard Jesse. 2020. "Wahlrechtsreform. Eine Agenda in zwölf Punkten." Zeitschrift für Parlamentsfragen 51 (4):785-801.

Denemark, David. 2001. "Choosing MMP in New Zealand: Explaining the 1993 Electoral Reform." In Mixed-Member Electoral Systems. The Best of Both Worlds?, ed. M. Shugart and M. P. Wattenberg. Oxford: Oxford University Press.

Deutscher Bundestag. 2022. "Unterrichtung durch die Kommission zur Reform des Wahlrechts und zur Modernisierung der Parlamentsarbeit. Zwischenbericht.". Drucksache 20/3250.

———. 2023a. "Entwurf eines Gesetzes zur Änderung des Bundeswahlgesetzes und des Fünfundzwanzigsten Gesetzes zur Änderung des Bundeswahlgesetzes." In Drucksache 20/5370.

———. 2023b. "Stenografischer Bericht der 92. Sitzung." In Plenarprotokoll 20/92.

Doorenspleet, Renske. 2005. "Electoral Systems and Democratic Quality: Do Mixed Systems Combine the Best or the Worst of Both Worlds? An Explorative Quantitative Cross-national Study." Acta Politica 40 (1):28-49.

Frieden, Jeffry A. 1991. "Invested Interests: The Politics of National Economic Policies in a World of Global Finance." International Organization 45 (4):425–51.

Funk, Albert. 2023. "Ampel setzt ihre Wahlrechtsreform um." Tagesspiegel, 17.03.2023.

Garritzmann, Julian, Erik Neimanns, and Marius Busemeyer. 2023. "Public opinion towards welfare state reform: The role of political trust and government satisfaction." European Journal of Political Research 62:197-220.

Gerzso, Thalia, and Nicolas van de Walle. 2022. "The Politics of Legislative Expansion in Africa." Comparative Political Studies 55:2315–48.

Häusermann, Silja, Thomas Kurer, and Denise Traber. 2019. "The politics of trade-offs: Studying the dynamics of welfare state reform with conjoint experiments." Comparative Political Studies 52 (7):1059-95.

Häusermann, Silja, Michael Pinggera, Macarena Ares, and Matthias Enggist. 2022. "Class and social policy in the knowledge economy." European Journal of Political Research 61:462-84.

Högström, John, and Stefan Dahlberg. 2023. "Does Changing an Electoral System to a Mixed System (Really) Affect Voter Turnout and the Party System?" Comparative Sociology 22 (2):259-79.

Ismar, Georg. 2021. "Home-Office und ein Holz-Provisorium: 736 Abgeordnete, aber zu wenig Büros – wie der Bundestag mit Platzmangel kämpft." Tagesspiegel, 23/10/2021.

Jankowski, Michael, Eric Linhart, and Markus Tepe. 2019. "Welches Wahlsystem wollen die Wähler? Evidenz von einem Conjoint-Experiment." Politische Vierteljahresschrift 60:221-43.

———. 2022. "Keep it Simple! German Voters' Limited Competence to Evaluate Electoral Systems' Functions." German Politics 31 (4): 579-601.

Karp, Jeffrey. 2006. "Political knowledge about electoral rules: Comparing mixed member proportional systems in Germany and New Zealand." Electoral Studies 25:714-30.

Kostadinova, Tatiana. 2002. "Do mixed electoral systems matter?: a cross-national analysis of their effects in Eastern Europe." Electoral Studies 21 (1):23-34.

Laycock, Samantha, Alan Renwick, Daniel Stevens, and Jack Vowles. 2013. "The UK's electoral reform referendum of May 2011." Electoral Studies 32 (2):211-4.

Leyenaar, Monique, and Reuven Y. Hazan. 2011. "Reconceptualising Electoral Reform." West European Politics 34 (3):437-55.

Linhart, Eric, Johannes Raabe, and Patrick Statsch. 2019. "Mixed-member proportional electoral systems – the best of both worlds?" Journal of Elections, Public Opinion and Parties 29 (1):21-40.

Maeda, Ko. 2016. "Voter turnout and district-level competitiveness in mixed-member electoral systems." Journal of Elections, Public Opinion and Parties 26 (4):452-69.

Milner, Henry. 2017. "Electoral System Reform, the Canadian Experience." Election Law Journal 16 (3).

Müller, Julian, and Astrid Séville. 2022. "Ist Dauerreflexion kommunizierbar? Das Habeck-Paradox." Merkur (873):82-7.

Pappi, Franz Urban, and Thomas Bräuninger. 2018. "Elektorale Responsivität als Kriterium zur Beurteilung des deutschen Bundestagswahlrechts." Politische Vierteljahresschrift 59:199-219.

Raabe, Johannes, and Eric Linhart. 2018. "Which electoral systems succeed at providing proportionality and concentration? Promising designs and risky tools." European Political Science Review 10 (2):167-90.

Rodrik, Dani. 2011. The Globalization Paradox. New York: W. W. Norton.

Scheiner, Ethan. 2008. "Does Electoral System Reform Work? Electoral System Lessons from Reforms of the 1990s." Annual Review of Political Science 11 (1):161-81.

Shugart, Matthew, and Martin P. Wattenberg, eds. 2001. Mixed-Member Electoral Systems. The Best of Both Worlds? Oxford: Oxford University Press.

Sohnius, Marie-Lou, Thomas Gschwend, and Oliver Rittmann. 2022. "Welche Auswirkungen haben größere Wahlkreise auf das politische Verhalten? Ein empirischer Beitrag zur Wahlrechtsreform." Politische Vierteljahresschrift 63:685-701.

StatsNZ. 2023. Subnational population projections: 2018(base)–2048 update 2022 [cited 08/11 2023]. Available from https://www.stats.govt.nz/information-releases/subnational-population-projections-2018base2048-update/#north.

Taagepera, Rein. 1972. "The size of national assemblies." Social Science Research 1 (4):385-401.

Vehrkamp, Robert. 2021. "#Mandaterechner. Wie groß wird der Bundestag?". Gütersloh: Bertelsmann Stiftung.

Weinmann, Philipp, and Florian Grotz. 2020. "Reconciling Parliamentary Size with Personalised Proportional Representation? Frontiers of Electoral Reform for the German Bundestag." German Politics 31 (4):558-78.

Even in the Best of Both Worlds, You Can't Have It All: How German Voters Navigate the Trilemma of Mixed-member Proportionality

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Online Appendix

Abstract

The growing fragmentation of party systems confronts mixed-member proportional electoral systems with a trilemma: Combining the goals of proportionality and of a guaranteed representation of district winners makes it ever more difficult to also achieve a third goal: the fixed size of parliament. Against the background of electoral reform in Germany, this paper studies how citizens position themselves in this trilemma. Using original survey data, we find that all goals are popular and no combination of goals commands majority support. In a context where institutional reform becomes politicized, the trilemma is thus not only a logical, but also an empirical constraint. Moreover, abstract preferences in the trilemma systematically predict how voters evaluate the status quo and specific reform proposals. At the same time, voters are receptive to the logical constraints of the system: Informing respondents about the trilemma trade-offs in an experimental setting makes them more accepting of reform proposals.

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Figure A1: Distribution of Knowledge about Status Quo

Correct Answers to 4 Status Quo Knowledge Questions
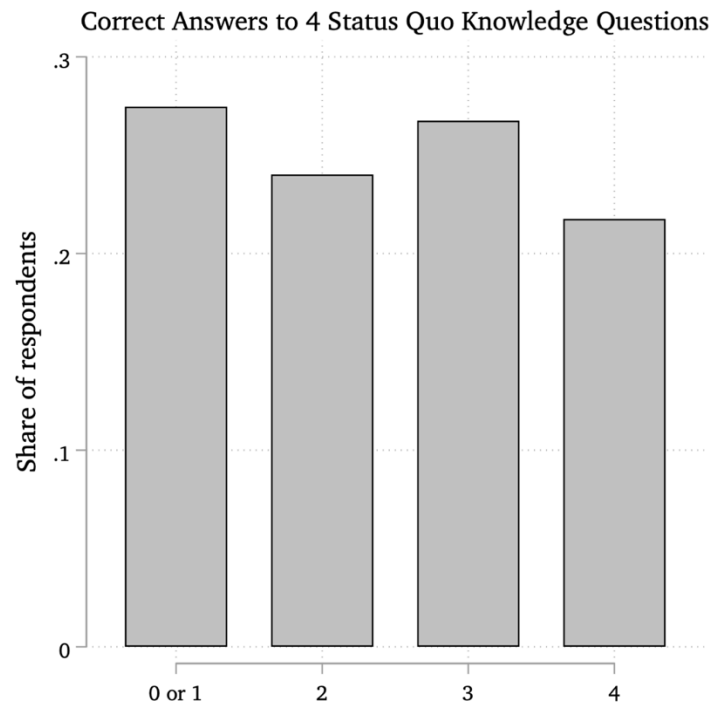
Note: To gauge respondents' understanding of the existing electoral rules, we asked them which of the following statements are true/false:

- The second vote is more important for the final election outcome than the first vote [true]
- With my second vote I vote for the person that I want to be chancellor [false]
- With my first vote, I can vote for the candidate of a party that I do not support with my second vote [true]
- Every party that can be voted for in the federal election also receives seats in the parliament [false]

These results show that voters' knowledge of the status quo is rather limited. Only about 50% of respondents were able to answer at least 3 out of 4 questions about the status quo correctly. If people had been guessing, we would expect that number to be 31% – based purely on guesswork, 25% should get 3 out of 4 questions right and an additional 6.25% should get all 4 questions right. Thus, only those respondents who correctly answered all four questions can be considered as having a high understanding of the current system.

Table A1: Explaining Trilemma Choices

	(1)	(2)	(3)
	Trilemma choice set includes…		
	Proportional representation	Guaranteed district representation	Fixed size of the Bundestag
Importance of proportional representation	0.042***		
	(0.01)		
Importance of district representation		0.069***	
		(0.01)	
Importance of fixed Bundestag size			0.088***
			(0.01)
Gender (male)	0.004	-0.057*	0.006
	(0.03)	(0.03)	(0.03)
Age in years	-0.004***	-0.000	0.001
	(0.00)	(0.00)	(0.00)
Education level	0.033	-0.067***	-0.016
	(0.03)	(0.02)	(0.02)
Constant	0.484***	0.581***	0.236***
	(0.10)	(0.10)	(0.08)
# of respondents	876	876	876
R-squared	0.029	0.059	0.093
Prob > F	0.000	0.000	0.000

Note: Standard errors in parentheses; * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A2: Evaluation of Status Quo and Reform Proposals by Trilemma Choice –
Additional Controls

	(1) Importance of reforming status quo	(2) Evaluation of status quo	(3) Evaluation of cutting overhang seats	(4) Evaluation of parallel voting
Trilemma choice: PR + district	baseline	baseline	-0.595***	0.164
			(0.18)	(0.17)
Trilemma choice: PR + size	0.832***	-0.403***	baseline	0.164
	(0.12)	(0.13)		(0.17)
Trilemma choice: district + size	0.792***	-0.645***	-0.385**	baseline
	(0.11)	(0.12)	(0.16)	
Knowledge about status quo	0.192***	-0.246***	0.002	-0.040
	(0.05)	(0.05)	(0.07)	(0.07)
Gender (male)	0.167*	0.176*	-0.031	0.286**
	(0.09)	(0.10)	(0.14)	(0.14)
Age in years	0.017***	-0.010***	0.014***	-0.013***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level	0.085	-0.044	-0.054	-0.104
	(0.09)	(0.09)	(0.13)	(0.14)
Voted for SPD	baseline	baseline	baseline	baseline
Voted for CDU/CSU	-0.066	0.144	0.227	0.031
	(0.15)	(0.16)	(0.24)	(0.23)
Voted for Bündnis 90/Die Grünen	0.110	-0.050	0.237	0.082
	(0.16)	(0.17)	(0.23)	(0.27)
Voted for FDP	0.041	-0.125	0.196	-0.010
	(0.18)	(0.20)	(0.27)	(0.29)
Voted for AfD	-0.079	-0.694***	-0.485*	-0.436*
	(0.17)	(0.18)	(0.25)	(0.26)
Voted for Die Linke	-0.315*	-0.172	-0.063	0.117
	(0.19)	(0.20)	(0.28)	(0.30)
Voted for other party	-0.145	-0.221	0.272	-0.050
	(0.19)	(0.21)	(0.32)	(0.28)
Did not vote in 2021 federal election	-0.480***	-0.534***	-0.203	-0.331
	(0.16)	(0.17)	(0.24)	(0.27)
Political interest	0.312***	0.131**	0.242***	0.188*
	(0.06)	(0.06)	(0.09)	(0.10)
Income	0.023	-0.023	0.041	-0.004
	(0.02)	(0.02)	(0.03)	(0.03)
Urban resident	-0.010	0.111**	0.091	0.053
	(0.04)	(0.04)	(0.06)	(0.07)
Constant	2.264***	4.940***	3.311***	4.190***
	(0.32)	(0.34)	(0.51)	(0.51)
# of respondents	876	876	455	421
R-squared	0.252	0.114	0.108	0.065
Prob > F	0.000	0.000	0.000	0.035

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01. Models include additional control variables.

Note on Tables A3 and A4

In Tables A3 and A4, we test whether there is an interaction between trilemma choice and knowledge for the prediction of the evaluation of reform proposals.

In Table A3, we use the knowledge measure discussed above. Unfortunately, it does not discriminate very well between low and medium levels of understanding. Thus, we dichotomize this knowledge measure into those who got all four questions right vs. everybody else. Moreover, whatever knowledge differences existed between different respondents at the beginning of the survey, our quite detailed explanation of the status quo should have reduced differences in understanding, and also its potential effects. While the results here go into the expected direction, they are only statistically significant for the evaluation of the status quo.

In Table A4, we seek to refine this measure by combining it with responses to the hypothetical election result. If we only use those respondents who got all four knowledge questions right and correctly predicted the seat allocation in the hypothetical result for the status quo as highly knowledgeable, we end up with 118 (out of 876) treated respondents who are highly knowledgeable. In contrast to the simple knowledge measure, this conservative measure should capture truly knowledgeable respondents: the likelihood of answering all five questions correctly by pure guessing is just 1%.

Using this variable in an interaction term with respondents' trilemma choice yields effects in the expected direction for the evaluation of the status quo and the cutting overhang seats proposal. Highly knowledgeable respondents seem to show a closer connection between their choice of abstract electoral principles and their preferences for concrete electoral rules, compared to less knowledgeable respondents.

Table A3: Evaluation of Status Quo and Reform Proposals – Interaction of Trilemma Choice and Status Quo Knowledge

	(1) Importance of reforming status quo	(2) Evaluation of status quo	(3) Evaluation of cutting overhang seats	(4) Evaluation of parallel voting
Trilemma choice: PR + district	baseline	baseline	-0.475**	0.135
			(0.21)	(0.19)
Trilemma choice: PR + size	0.791***	-0.296**	baseline	0.064
	(0.14)	(0.15)		(0.20)
Trilemma choice: district + size	0.714***	-0.478***	-0.322*	baseline
	(0.13)	(0.13)	(0.19)	
Knowledge about status quo, binary	0.072	-0.090	0.012	-0.192
	(0.22)	(0.23)	(0.26)	(0.29)
PR + district * knowledge	baseline	baseline	-0.371	0.011
			(0.40)	(0.45)
PR + size * knowledge	0.307	-0.540*	baseline	0.350
	(0.27)	(0.29)		(0.40)
District + size * knowledge	0.457	-0.791***	-0.265	baseline
	(0.28)	(0.30)	(0.39)	
Gender (male)	0.283***	0.221**	0.054	0.352**
	(0.09)	(0.10)	(0.14)	(0.14)
Age in years	0.019***	-0.011***	0.014***	-0.014***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level	0.237***	-0.042	0.127	-0.061
	(0.08)	(0.09)	(0.12)	(0.13)
Voted for SPD	baseline	baseline	baseline	baseline
Voted for CDU/CSU	-0.033	0.123	0.249	0.030
	(0.16)	(0.17)	(0.25)	(0.23)
Voted for Bündnis 90/Die Grünen	0.136	-0.054	0.287	0.112
	(0.17)	(0.17)	(0.24)	(0.27)
Voted for FDP	0.047	-0.122	0.257	-0.041
	(0.19)	(0.20)	(0.27)	(0.29)
Voted for AfD	-0.118	-0.691***	-0.515**	-0.475*
	(0.17)	(0.18)	(0.26)	(0.26)
Voted for Die Linke	-0.342*	-0.121	-0.068	0.095
	(0.19)	(0.20)	(0.29)	(0.30)
Voted for other party	-0.299	-0.276	0.183	-0.154
	(0.19)	(0.20)	(0.32)	(0.28)
Did not vote in 2021 federal election	-0.736***	-0.482***	-0.381	-0.392
	(0.16)	(0.17)	(0.23)	(0.26)
Constant	3.150***	4.909***	3.954***	4.663***
	(0.30)	(0.31)	(0.46)	(0.48)
# of respondents	876	876	455	421
R-squared	0.216	0.104	0.088	0.055
Prob > F	0.000	0.000	0.000	0.083

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01. Models interact trilemma choice with a binary indicator of respondents who were able to identify the correct answer to all four knowledge questions.

Table A4: Interaction of Trilemma Choice and Refined Knowledge Measure

	(1) Importance of reforming status quo	(2) Evaluation of status quo	(3) Evaluation of cutting overhang seats	(4) Evaluation of parallel voting
Trilemma choice: PR + district	baseline	baseline	-0.382*	0.204
			(0.20)	(0.19)
Trilemma choice: PR + size	0.847***	-0.357**	baseline	0.108
	(0.13)	(0.14)		(0.19)
Trilemma choice: district + size	0.762***	-0.532***	-0.258	baseline
	(0.12)	(0.13)	(0.17)	
High knowledge + seats correct	0.102	0.041	0.449	-0.183
	(0.26)	(0.27)	(0.31)	(0.35)
PR + district * knowledge + seats	baseline	baseline	-1.087**	-0.562
			(0.46)	(0.55)
PR + size * knowledge + seats	0.214	-0.604*	baseline	0.284
	(0.33)	(0.35)		(0.48)
District + size * knowledge + seats	0.338	-0.789**	-0.923*	baseline
	(0.36)	(0.38)	(0.53)	
Gender (male)	0.292***	0.207**	0.051	0.358**
	(0.09)	(0.10)	(0.14)	(0.14)
Age in years	0.020***	-0.013***	0.013***	-0.012***
	(0.00)	(0.00)	(0.00)	(0.00)
Education level	0.258***	-0.080	0.107	-0.026
	(0.08)	(0.09)	(0.12)	(0.13)
Voted for SPD	baseline	baseline	baseline	baseline
Voted for CDU/CSU	-0.011	0.084	0.261	0.032
	(0.16)	(0.17)	(0.24)	(0.23)
Voted for Bündnis 90/Die Grünen	0.160	-0.099	0.265	0.137
	(0.16)	(0.17)	(0.23)	(0.26)
Voted for FDP	0.081	-0.178	0.226	-0.053
	(0.19)	(0.20)	(0.27)	(0.29)
Voted for AfD	-0.097	-0.724***	-0.513**	-0.465*
	(0.17)	(0.18)	(0.25)	(0.26)
Voted for Die Linke	-0.292	-0.210	-0.075	0.128
	(0.19)	(0.20)	(0.28)	(0.30)
Voted for other party	-0.303	-0.271	0.212	-0.157
	(0.19)	(0.21)	(0.32)	(0.28)
Did not vote in 2021 federal election	-0.738***	-0.475***	-0.388*	-0.401
	(0.16)	(0.17)	(0.23)	(0.26)
Constant	3.056***	5.059***	3.946***	4.507***
	(0.30)	(0.31)	(0.45)	(0.47)
# of respondents	876	876	455	421
R-squared	0.210	0.089	0.098	0.060
Prob > F	0.000	0.000	0.000	0.045

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01. Models interact trilemma choice with a binary indicator of respondents who were able to identify the correct answer to all four knowledge questions and who correctly predicted the seat allocation in the hypothetical scenario after we presented the status quo electoral law.

Table A5: Understanding of the Distortive Effect of Parallel Voting

	All (N=425)	Highest knowledge (N=89)
Approximately 100 seats	15%	11%
Approximately 120 seats	32%	29%
Approximately 140 seats	33%	43%
Approximately 160 seats	10%	1%
Approximately 180 seats	2%	2%
Approximately 200 seats	8%	13%

Note: Calculations based on untreated group 4.

Question: Assume once again that a party receives 20% of the second votes, which corresponds to approximately 120 (out of a total of 598) members in the Bundestag. With the first vote, this party wins 140 out of 299 electoral districts. How many seats will this party likely have in the Bundestag?

Table A6: Effect of Trilemma Information on Evaluation of Status Quo

	(1)	(2)	(3)
No trilemma information	baseline	baseline	baseline
With trilemma information	0.187**	0.208***	0.203***
	(0.07)	(0.07)	(0.07)
Knowledge about status quo		-0.248***	-0.250***
		(0.04)	(0.04)
Gender (male)		0.153**	0.116
		(0.07)	(0.07)
Age in years		-0.013***	-0.014***
		(0.00)	(0.00)
Education level		-0.014	-0.034
		(0.06)	(0.07)
Voted for SPD		baseline	baseline
Voted for CDU/CSU		-0.001	0.005
		(0.12)	(0.12)
Voted for Bündnis 90/Die Grünen		-0.196	-0.204
		(0.13)	(0.13)
Voted for FDP		-0.348**	-0.326**
		(0.14)	(0.14)
Voted for AfD		-1.098***	-1.066***
		(0.13)	(0.13)
Voted for Die Linke		-0.356**	-0.367**
		(0.16)	(0.16)
Voted for other party		-0.659***	-0.608***
		(0.14)	(0.14)
Did not vote in 2021 federal election		-0.768***	-0.717***
		(0.12)	(0.13)
Political interest			0.106**
			(0.04)
Income			-0.015
			(0.01)
Urban resident			0.068**
			(0.03)
Constant	3.798***	5.231***	4.913***
	(0.05)	(0.22)	(0.24)
# of respondents	1717	1717	1717
R-squared	0.004	0.098	0.105
Prob > F	0.011	0.000	0.000

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01.

Table A7: Effect of Trilemma Information on Evaluation of Cutting Overhang Seats

	(1)	(2)	(3)
No trilemma information	baseline	baseline	baseline
With trilemma information	0.254**	0.226**	0.229**
	(0.10)	(0.10)	(0.10)
Knowledge about status quo		0.100**	0.084*
		(0.05)	(0.05)
Gender (male)		0.175*	0.143
		(0.10)	(0.10)
Age in years		0.007**	0.007**
		(0.00)	(0.00)
Education level		-0.035	-0.109
		(0.09)	(0.10)
Voted for SPD		baseline	baseline
Voted for CDU/CSU		0.016	-0.000
		(0.18)	(0.18)
Voted for Bündnis 90/Die Grünen		0.121	0.117
		(0.18)	(0.18)
Voted for FDP		0.059	0.039
		(0.20)	(0.20)
Voted for AfD		-0.671***	-0.682***
		(0.19)	(0.19)
Voted for Die Linke		-0.347	-0.321
		(0.23)	(0.23)
Voted for other party		-0.443**	-0.400*
		(0.21)	(0.21)
Did not vote in 2021 federal election		-0.428**	-0.344*
		(0.17)	(0.18)
Political interest			0.111*
			(0.06)
Income			0.029
			(0.02)
Urban resident			0.006
			(0.05)
Constant	4.399***	3.820***	3.555***
	(0.07)	(0.32)	(0.36)
# of respondents	871	871	871
R-squared	0.007	0.062	0.068
Prob > F	0.015	0.000	0.000

Note: Standard errors in parentheses; * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Table A8: Effect of Trilemma Information on Evaluation of Parallel Voting

	(1)	(2)	(3)
No trilemma information	baseline	baseline	baseline
With trilemma information	0.142	0.159	0.146
	(0.10)	(0.10)	(0.10)
Knowledge about status quo		-0.040	-0.055
		(0.05)	(0.05)
Gender (male)		0.248**	0.149
		(0.10)	(0.10)
Age in years		-0.009***	-0.009**
		(0.00)	(0.00)
Education level		-0.046	-0.132
		(0.09)	(0.09)
Voted for SPD		baseline	baseline
Voted for CDU/CSU		0.020	-0.007
		(0.17)	(0.17)
Voted for Bündnis 90/Die Grünen		-0.169	-0.154
		(0.18)	(0.18)
Voted for FDP		0.147	0.160
		(0.21)	(0.20)
Voted for AfD		-0.820***	-0.729***
		(0.18)	(0.18)
Voted for Die Linke		-0.125	-0.109
		(0.22)	(0.22)
Voted for other party		-0.571***	-0.411**
		(0.19)	(0.20)
Did not vote in 2021 federal election		-0.533***	-0.344*
		(0.18)	(0.18)
Political interest			0.270***
			(0.06)
Income			0.008
			(0.02)
Urban resident			0.054
			(0.05)
Constant	4.193***	4.709***	4.034***
	(0.07)	(0.30)	(0.34)
# of respondents	846	846	846
R-squared	0.002	0.059	0.083
Prob > F	0.163	0.000	0.000

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01.

Table A9: Covariate Balance for Experimental Groups – Cut Overhang Seats

	(1) Mean in control group	(2) Mean in treatment group	(3) t-test for mean difference
Gender (male)	1.522	1.492	-0.029
	(0.505)	(0.509)	
Age in years	47.125	48.873	1.748
	(15.307)	(15.386)	
Education level	2.132	2.105	-0.027
	(0.628)	(0.642)	
Knowledge about status quo	2.418	2.477	0.059
	(1.134)	(1.124)	
Voted in 2021	0.820	0.833	0.013
	(0.385)	(0.373)	
Left-right self-placement	4.892	4.895	0.003
	(1.967)	(1.933)	
Political interest	2.829	2.866	0.037
	(0.927)	(0.854)	
Income	4.971	4.712	-0.259
	(2.849)	(2.817)	
Urban resident	2.553	2.567	0.014
	(1.112)	(1.092)	
# of respondents	416	455	

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01.

Table A10: Covariate Balance for Experimental Groups – Parallel Voting

	(1) Mean in control group	(2) Mean in treatment group	(3) t-test for mean difference
Gender (male)	1.513	1.487	-0.026
	(0.505)	(0.510)	
Age in years	47.748	48.815	1.066
	(15.252)	(15.495)	
Education level	2.113	2.207	0.094*
	(0.677)	(0.619)	
Knowledge about status quo	2.438	2.458	0.021
	(1.087)	(1.096)	
Voted in 2021	0.849	0.876	0.027
	(0.358)	(0.329)	
Left-right self-placement	5.120	4.912	-0.208
	(2.069)	(1.987)	
Political interest	2.859	2.936	0.077
	(0.944)	(0.821)	
Income	4.755	4.888	0.133
	(2.859)	(2.897)	
Urban resident	2.511	2.494	-0.017
	(1.103)	(1.141)	
# of respondents	425	421	

Note: Standard errors in parentheses; * p<0.10, ** p<0.05, *** p<0.01.