

The Sincerity of Political Speech in Parliamentary Systems: A Comparison of Ideal Points Scaling Using Legislative Speech and Votes*

Kenneth Benoit

Daniel Schwarz

Denise Traber

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Abstract

The vast majority of previous efforts to estimate the policy preferences of individual legislators has relied on inductive scaling of roll-call votes. Yet roll call votes in most parliamentary systems suffer from a number of problems: many votes are not recorded, resulting in selection bias caused by the strategic use of roll call votes. More importantly, strong party discipline tends to make votes strategic rather than sincere indications of preference. What legislators say, however, is relatively unconstrained by comparison, since party leaders are less likely to punish legislators for speaking sincerely as long as they vote with the party line. Yet this conventional wisdom remains essentially untested, despite the growing application of automated and statistical analysis of textual data in political science to measure policy preferences. Switzerland forms an ideal case for comparing speech- versus vote-based scaling estimates because every vote is recorded as a roll call, and because previous estimates of the Swiss policy space suggest that it consists primarily of a single left-right dimension. Our analysis examines four debates from this collection, comparing scalings of legislative “ideal points” from voting versus speaking. We find that spoken positions display a considerably larger range of preferences than are expressed through voting. Our analysis also illustrates the many challenges of working with automated text scaling methods in a multi-language context.

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1 Introduction and theoretical background

Accurately estimating the policy preferences of individual legislators has long formed a key part of efforts to model intra-party politics. To date, the vast majority of work in this area has relied on inductive scaling of roll-call votes, using either discriminant (NOMINATE, Poole and Rosenthal, 1997) or Bayesian statistical methods (Clinton, Jackman and Rivers, 2004). Yet roll call votes in parliamentary systems suffer from a number of problems that prevent them from forming a reliable basis for estimating legislators ideal points. First, in most settings a significant part of the votes is unrecorded, resulting in biased data selection caused by the strategic use of roll call votes as opposed to those that go unrecorded (VanDoren, 1990; Carrubba et al., 2006; Carrubba, Gabel and Hug, 2008; Hug, 2010). Perhaps more significantly, voting in most parliamentary systems is tightly controlled through party discipline, meaning that legislators vote with their party possibly in spite of their preferences not to (Laver, Kenneth and Garry, 2003; Proksch and Slapin, 2010).

What legislators say, however, is relatively unconstrained by comparison, and a growing subfield devoted to estimating legislator preferences using text as data has made good use of this information (e.g. Slapin and Proksch, 2010; Monroe and Maeda, 2004; Laver and Benoit, 2002). Party leaders are less likely to punish legislators based on what they may say in a debate on a controversial bill, as long as they vote with the party line. Yet this conventional wisdom remains essentially untested. One barrier to a systematic comparison of preferences estimated by scaling text versus that from scaling roll call votes has to do with the selection bias in roll call votes: Most parliamentary systems record only limited selections of legislative votes as roll calls, limiting the potential for comparison.

But also legislative speeches are prone to selection effects as Proksch and Slapin (2012) point out. According to their model, the stronger the institutional incentives (electoral system, regime type, candidate selection) for party leaders to protect the party label, the less likely legislative speeches are to reflect true party cohesion since party leaders prevent potentially dissident backbenchers from taking the floor. Thus, as with roll calls, speeches may, in fact, also underestimate the ideological differences within parties, and most likely so if the electoral system is party-centered.

The paper directly addresses the comparison of political positions estimated through roll call votes vs. those estimated through legislative speeches by using the example of four selected debates from the Swiss legislature between 2001 and 2011. Switzerland's parliament forms an ideal case because they record complete accounts of legislative speeches as well as complete sets of all votes taken during each floor debate. Since every vote is recorded as a roll call, each of the four selected debates comprises between 32 and 86 votes which can be compared with the text scalings.

The current state of the paper constitutes a first, and partly tentative, step. The RCV analysis as well as the analysis of speaker selection confirm our expectation that in the selected Swiss debates votes and speeches take place in a relatively unconstrained institutional environment. We also find that spoken positions display a considerably larger range of preferences than those expressed through voting. However, the main challenge of our research project proves to be the scaling of text from a multi-lingual body without official translations.

The paper proceeds as follows: The next section describes the institutional environment and the relevant rules and procedures in Swiss parliament. Section 3.2 analyzes and compares the roll calls of the selected debates (ideal point estimation and party agreement rates). Turning to the analysis of legislative speech, section 3.3 first addresses the question of speaker selection (Proksch and Slapin, 2012). It follows the text scaling results and the comparison to the RCV ideal point estimates. Before we come to a rather preliminary conclusion, some particularly challenging aspects of the multi-lingual context in the Swiss legislature are addressed in section 4.

2 Institutional context

Switzerland's institutions are soaked by the idea of power sharing (Lijphart, 1999; Linder, 2010; Iff and Töpperwien, 2008). Powers are widely dispersed which is reflected in the rules and procedures of the Federal Assembly, the country's bicameral legislature. Due to a number of peculiarities in executive-legislative relations¹, the bottom-up structure of political parties

¹Members of the executive (Federal Council) are elected by parliament following every general election on a fixed four-year term; there are no constitutional instruments which tie parliamentary majority to the government

(Ladner, 2007) and the high degree of direct-democratic involvement of the people (Linder, 2010), there is no stable parliamentary majority or stable government coalition that would permanently outnumber parties in opposition (Hertig, 1978; Lanfranchi and Lüthi, 1999). Parliamentary rules and procedures provide for relatively strong minority and individual rights for MPs (Damgaard, 1995; Döring, 1995; Schwarz, Bächtiger and Lutz, 2011) and flat internal hierarchies. According to Neidhart (2007), the Swiss legislature has retained to some degree the original spirit of 'council democracy' (*Rätedemokratie*). It constitutes, in Polsby's (1975) terms, a 'transformative legislature' rather than a literal 'parliament' (see also Kreppel, 2008).

Formal and informal agenda-setting powers of the parliamentary elite (senior MPs like committee chairs, parliamentary presidents, or party leaders), which in many legislatures lead to 'incomplete' floor debates and roll-call votes because legislative procedures are controlled by partisan actors (Proksch and Slapin, 2012), are in many ways curbed in the Swiss case. The rules of procedure in the Swiss parliament empower each individual MP to file, alone or together with other MPs, petitions (amendments)² to any lawmaking proposal. Each petition ensures the submitting MP the right to present and defend it during the floor debate (see below), and there is a vote on every petition. Therefore, every lawmaking project is accompanied by detailed debates about disputed aspects with separate votes taken on each of these aspects – in addition to the vote(s) on the entire lawmaking project (like final passage). Access to the debate agenda and access to the voting agenda are thus not independent but closely related.

Party leaders are lacking strong and immediately effective instruments to enforce discipline and avoid unwanted debates. The institutionalized role of the whip is alien to the Swiss legislature, and due to the bottom-up structure of party organizations with candidate nominations taking place at district level (cantons), national party leaders' legitimacy to take disciplinary action is weak. Apart from expulsion from the party group – which is very rare – the withdrawal or non-allocation of preferred committee seats (which give access to policy influence and supplementary financial resources) is the toughest measure to bring defiant MPs in line.

(like no confidence motions or early dissolution of parliament). Since there is no institutional need to support the own government party unity scores in Swiss parliament lie somewhere between what is known from Westminster-style parliamentary systems and separation-of-powers frameworks like the U.S. (Schwarz, Bächtiger and Lutz, 2011).

²Throughout this paper we use 'petition' as generic term for all kinds of parliamentary requests.

However, even this measure is weakened by the fact that 1. committee seats once allocated to an MP cannot be removed until the next general election and, 2. decision making on this issue involves the entire party group, not just the inner circle of party leaders. Thus, committee members are not necessarily those who best represent the party line, but often MPs with some expertise (or special interest) in a particular policy field.

Before a government bill reaches the floor, it is debated, as in most parliaments, in a legislative committee. Committee decisions, however, do not bar opposing party groups or MPs from later filing petitions to re-write specific parts of the bill (see also Schwarz, Bächtiger and Lutz, 2011). The usual procedure is portrayed in Figures 1 and 2 on the example of the second pension reform bill: 1. Committee majority speakers (rapporteurs) present a general introduction to the matter. 2. Party group speakers³ display the official party position to the proposed bill. 3. The government lays down its position. Next, a vote is taken whether the chamber shall refuse the bill or enter a detailed (i.e., article-by-article) debate. If the outcome is positive, all disputed parts of the bill (i.e. where petitions have been filed in the run-up to the floor debate) are then separately discussed with opinions given by the originator(s) of the petition, the committee rapporteur(s), party group speakers, and the government. Having all petitions discussed and voted on, the chamber then takes an overall vote on the wording of the entire bill and refers it to the second chamber where the whole game starts anew. If the outcome from the second chamber is different, bicameral conflict resolution (navette procedure) takes effect. After agreement on a common wording has been reached, a separate final passage vote is taken in each chamber.

[Figures 1 and 2 about here]

As in any legislative institution, speaking time is procedurally restricted in Swiss parliament. There are six debate categories ranging from 'free debate' to 'written procedure.'⁴ Table

³This is not a permanent, institutionalized role (like that of the party group leader) but changes according to the topic under consideration. Usually, party groups have assigned a number of MPs (mostly members of the related committee) as spokesperson for specific policy areas.

⁴See art. 47-50 of National Council's rules of procedure, GRN (http://www.admin.ch/ch/d/sr/171_13/index.html). Quite confusingly, the 'free' debate is neither unrestricted nor does the 'written' debate come without speeches. 'Free' and 'written' have to be taken in relative terms: 'Free' just means that there are no additional restrictions (as compared to the 'default speaking time' according to art. 44 GRN).

2 (see section 3.1) specifies how speaking time is assigned to the different actors and what category the four selected debates belong to.

[Table 2 about here]

The rules of procedure determine who is eligible for how long to speak. The question arises if – within these rules – there is a systematic selection of the individual speakers. From the description of the institutional context we can assume that the role and thus direct influence of party leaders is relatively weak (compared to conventional parliamentary systems). The role of the party group speaker is usually assigned to MPs who are members of the related committee (but committee members are not party speakers by default). Moreover, as any MP is entitled to file any petition to re-write a lawmaking proposal, which then allows her to present and defend it on the floor, control of access to the microphone by party leaders has to take informal ways, e.g. by appealing to preserve the party brand and apply self-constraint, or by exerting peer pressure (Cox and McCubbins, 1993; Owens, 2006).⁵ We will explore the question of systematic selection of speakers in section 3.3. Prior to this, the next section provides a brief description of the four analyzed debates.

3 Empirical analysis

3.1 Selected debates and speeches

In this paper we analyze four legislative debates: Two of them deal with energy production strategies, the other ones with pension reform issues (see Table 1). The selected debates meet three criteria: First, within each policy field, the selected cases deal with virtually identical issues. More specifically, the energy policy debates are concerned with the question of nuclear phaseout and with state subsidies for renewable energies. The two pension reform debates

⁵Similar to the U.S. context, there are strong incentives for Swiss MPs to favor constituency interests over those of national party leaders (Hertig, 1980; Schwarz, 2009). The big difference, however, is the fragmented multi-party system (ten parties are currently represented in Swiss parliament) in which parties are realistic enough not to pursue electoral catch-all strategies. Thus Swiss parties are ideologically more cohesive than their U.S. counterparts.

deal with issues of retirement age and state subsidies for early retirement schemes. Second, between the two policy fields, we find great differences in the way the issues developed between 2001-03 (when the first debate in each policy field took place) and 2008-11, the period of the second debates: While the two issues in 2001/02 were comparable in the sense that they dealt with much-debated, long-standing political problems in need of far-reaching, future-proof decisions, at the time when the second debates took place the situation had dramatically changed in the energy policy field due to the nuclear disaster in Japan, but not so in the pension reform issue where the second debate revealed predominantly the same positions to the same unsolved problems in a largely unchanged pension policy environment. And third, all four selected debates took place in the same two legislative periods: The first pension reform and energy debates in the 46th legislature (1999-2003), the second debates of each topic in the 48th legislature (2007-11) of the Swiss parliament. None of the debates took more than one legislature (which would have been possible in the Swiss context since bills do not die with the end of a legislative period). Thus there is a coherent and stable political environment within each selected debate.

Between 32 and 86 votes were taken in the four debates.⁶ While the two pension reform debates and the first energy debate dealt with government bills and closely related popular initiatives, the second energy case constituted a fundamental debate in the aftermath of the nuclear disaster in Japan. Unlike the other three debates there was no government bill or popular initiative on the agenda, but the speakers presented their general as well as some specific views on the topic after the government had declared that it prepared a nuclear phase-out plan. The votes taken during this debate centered on a great number of parliamentary motions, which were introduced by individual MPs and party groups and aimed at framing future government policy.

In the analyzed texts we excluded specific speeches based on the roles the speakers had. First, we excluded all speeches from parliamentary presidents because their speeches are always purely procedural.⁷ Moreover we eliminated all speeches of government members. Gov-

⁶The type of the votes varies from those in which the project in its entirety is at stake (i.e., vote on entry into detailed deliberation at the beginning of the debate, overall vote on the bill after first reading, and final passage vote after agreement between the two chambers is reached) to those on detailed aspects (MP petitions).

⁷The president of a parliamentary chamber plays a nonpartisan role in Switzerland. He does not participate in

ernment members (Federal Councilors) are not member of parliament; they neither vote nor do their speeches purely represent the interest of their respective parties since the government is organized as a collegial body. And as a last group we also excluded committee rapporteurs from the analyzed debates. There are two reasons for this: First, committee rapporteurs are speakers of the committee majority position, with which they mostly, but not necessarily always absolutely, agree. Second, rapporteurs in the entry debate usually present a balanced assessment of the committee debates and the reasoning that stands behind some of the most important decisions. Speeches of committee rapporteurs thus are hard to classify as personal or party-induced position-taking.

Apart from the exclusion of parliamentary presidents, committee rapporteurs and government members, we further eliminated purely procedural speeches (e.g. when an MP asks for the adjournment of the debate), as well as spontaneous interactions among MPs (see also section 3.4). After each speech any MP or government member has the opportunity – if the orator permits – to ask a ‘concise interposed question’ to a specific point in the preceding speech (art. 42 GRN). Substantial statements, explanations or justifications are not allowed, neither in the question nor in the answer which the speaker is urged to provide in an ‘immediate and concise’ manner. This is the reason why we excluded them from our analysis. The number of eliminated speeches per debate is shown in Table 3).

Moreover the Swiss parliament is a multilingual body. Most MPs speak German or French, some Italian (and in specific situations like inaugural addresses of newly elected government members or in debates on cultural subjects parts of some speeches may be even in Rhaeto-Romanic language). Unlike the European Parliament (Proksch and Slapin, 2010) there is no official translation of the speeches. Thus there remain two research options: To translate the speeches (preferably automatically using systems like Google Translate) or to start with language-specific scalings. In what follows, we employ both methods (section 3.4), and illustrate some of the challenges in translating texts using automated methods prior to scaling texts (section 4).

roll calls except as a tie-breaker.

3.2 Roll-call vote analysis

Expert surveys, party manifesto research and roll-call analysis unequivocally characterize Swiss politics as predominantly uni-dimensional on a classical left-right axis (Benoit and Laver, 2006; Hug and Schulz, 2007). Separate roll-call analyses for the four selected debates and the two legislative periods in which they took place confirm this. In the one-dimensional representation of ideal points⁸ the line-up of the major parties in the four debates is in the expected order and identical to the full picture of the 46th/48th legislative period (see ideal point histograms in Figure 3): In all cases, Social-democrats (red) and the Greens form the left (i.e., pro-state pension, pro-renewables) position, the Christian-democrats (orange), in part with the FDP-Liberals (blue) form the center- to center-right positions while the Swiss People's Party (dark green) is at the right end of the scale.

The ranking order on the first dimension remains basically the same when we add a second dimension (not shown in figures). However, the extension to a two-dimensional policy space does not add meaningful information to the analysis. We thus conclude that, from an RCV perspective, the selected debates are predominantly uni-dimensional. This is important because our comparison of roll-call estimates and text scaling estimates in section 3.5 is carried out on a one-dimensional basis. Moreover, despite the fact that the nuclear disaster in Japan represented an external shock to party positions in energy policy issues, legislative voting behavior in the second energy debate remained shaped along the expected left-right dimension. The events in Japan have not led to a fundamental regrouping of political dimensions, the energy policy space has remained the same between the two energy debates. The events in Japan just made some formerly pro-nuclear MPs, particularly among the FDP-Liberals, to approach the moderate center. This, too, is an important information regarding comparability of RCV and speeches.

Figure 3 suggests that within the four selected debates quite large differences in party unity can be found. The relatively homogeneous left camp (Greens and Social-democrats) faces a far less united bourgeois camp on the center-right. But how often do MPs actually vote in accordance or against the majority of their party in our four selected cases? The box plots

⁸For ideal-point estimation we applied a one-dimensional item response theory model (R MCMCpack with parameters burnin=50.000, mcmc=1.000.000, thin=1.000).

in Figure 4 show the distribution of MP agreement rates per party.⁹ As expected, we find the lowest agreement average and the highest dispersion of MP agreement rates among the two moderate center-right parties (CVP, FDP-Liberale), but also other parties do have some outliers within their ranks. Also as expected (when we consider the ideal point estimations), the agreement rates generally seem to be somewhat higher in the pension reform cases than in the energy cases (note the different scale range between the upper and the lower part of Figure 4).

All in all, the distribution of the RCV ideal point estimates and the agreement rates in the four selected debates point to the relatively low capabilities among many Swiss party leaders to enforce party discipline. Individual voting behavior is only weakly restricted.

[Figure 3 about here]

[Figure 4 about here]

3.3 Who speaks?

While even in highly disciplined parties all MPs are usually allowed to vote independently and (at least potentially) against the declared party line, there is an additional threshold built in to parliamentary speeches since the rules of procedure normally do not grant free access to the microphone. The question of 'Who speaks?' and the analysis of the effects of different institutional rules which define whom the authority for speaker selection is lent, is at the center of a recently developed theory of legislative speech (Proksch and Slapin, 2012). Proksch and Slapin (2012) suggest that the selection of speakers is biased. Depending on the institutional context, access to floor debate is granted more favorably to party leaders or backbenchers. In this model, the primary function of legislative speeches is signaling positions to voters. Depending on whether the political system favors individual relations between MPs and the constituency or whether this relation is mediated by the party, MPs are allowed to publicly oppose the party line, or expression of dissent on the parliamentary floor is prohibited by the

⁹The agreement rate is calculated as follows: If an MP agrees with the majority of his or her party, the assigned value per vote is +1, if she disagrees it is -1, if she abstains the assigned value is 0. The box plots are based on the average agreement rate per MP. The scale potentially ranges from -1 to +1.

party leadership. According to Proksch and Slapin (2012), these selection effects lead to a distribution of preferences that does not reflect the true distribution of preferences in parliament, and the scaling of speeches therefore encounters similar problems found in the analysis of roll call votes.

Compared to the parliamentary rules in Britain or Germany as described in Proksch and Slapin (2012), however, the rules in the Swiss parliament are hardly restrictive, as we have seen in section 2. Basically, if you are unhappy with your party's majority position and for some reason you would like to make your disagreement public, all you have to do is to file in advance a personal petition to change the unwanted part of the proposed bill and you will get your 5 minutes to defend your view. In fact, the right of the submitters of minority petitions to have their say is never restricted under any debate category according to Table 2. Thus, all disagreeing interests in the subject are given the opportunity to voice their concerns, which favors the notion of speech data showing more intra-party disparities than roll call data.

We ran a couple of models to detect possible selection bias in speeches. The results are displayed in Table 4. We estimated two models for each debate: First, a logistic regression model that analyzes whether certain MPs have higher probability to speak, based on a number of individual characteristics, such as role within the party, policy position and language. Second, a linear model that estimates whether the length of an MPs speech is determined by these characteristics.¹⁰ The most important result in Table 4 is that committee members appear to speak more often and much longer than their fellow MPs. Apart from committee membership, however, none of the other MP attributes consistently determines legislative speech. In two of the four debates (Pension reform 2 and Energy 1), we find an effect of ideological position:¹¹ Left MPs are more likely to speak than right MPs. Besides, more senior MPs spoke more often during the second pension reform debate, but again, this pattern seems to be case-specific. Most importantly, we find no evidence that party leaders and party group leaders would speak systematically more often than backbenchers. Even though the party group leaders delivered more speeches during the first pension reform debate and the first energy policy debate, this

¹⁰Note that Table 4 shows odds ratios (and corresponding 95% confidence intervals) for the logistic models (Model 1, 3, 5, 7).

¹¹Ideological position is measured by ideal point estimates calculated on the basis of all votes within each debate (see section 3.2).

result does not apply to the other cases.¹²

Thus, contrary to Proksch and Slapin (2012), we find no support for systematic selection effects in the choice of speakers in the Swiss parliament. Swiss MPs participate in debates according to their interest and without institutional constraints. Moreover, their participation does not seem to be related to a specific role within the party.

All in all, as we do not expect any strong selection bias, neither in votes nor in debates, we should be able to compare these measures in a straight-forward, unrestricted manner.

[Table 4 about here]

3.4 Text scaling estimates

Our text-scaling method was to fit the Poisson scaling model of Slapin and Proksch (2008), which estimates the position of each text θ_i on a single latent dimension. Except for the translation of some of the texts described below, we did not perform any pre-processing of the texts, except to exclude those that were purely procedural¹³ or that represented short interactions, or instructions¹⁴ (see also section 2). The resulting exclusions are shown in Table 3.

Our text estimates are based on scaling all of the text of each debate, aggregated by legislator. The Swiss parliament is a multi-lingual setting, where deputies in the debates we examined spoke in German, French, and Italian (see also section 2). For the results shown in this section, however, we report only the results of scaling the original language German speeches. Each debate was scaled separately.

The results for each debate are portrayed in Figures 5–8. The plots show roughly similar party groupings, for instance among the SVP, the SP, and the GPS for the first energy bill (Figure 5). There are also significant intra-party differences, however, such as the split between CVP members in that same bill. While this could be evidence of intra-party differences in preferences toward each bill, we have to view these results as tentative pending a deeper

¹²Not included in the models as separate independent variable is whether an MP has filed a petition since all petitioners are granted access to the floor and thus speak (see section 2).

¹³For instance, “Herr Fischer, ich habe versucht, mich zu erklären, und habe gesagt: zuerst die normale Abstimmung Mehrheit gegen Minderheit.”

¹⁴e.g., “Sie müssen nicht erklären, dass Sie keine Frage stellen wollen.”

investigation into the texts themselves.¹⁵ Some deputies appear twice—for instance the FDP-Liberale deputy Pelli in Figure 6—something that requires further investigation. It is difficult from the text scaling estimates alone to gauge whether the differences reflect genuine expressions of divergent preferences, or instead reflect anomalies in the text or the text processing to which texts of these short lengths might be sensitive in our scaling procedure.

We can gain some leverage on this question by turning to a direct comparison of the text scaling estimates with those scaled from roll call votes, something to which we turn in the next section.

3.5 Comparing Vote Scaling to Text Scaling

If the conventional wisdom about censorship in roll call votes is true—a well known result attributed to both party discipline in parliamentary voting and RCV selection bias (Carrubba et al., 2006)—then scaled positions from roll call votes will significantly underestimate the true degree of intraparty differences. Text, however, is far more likely to be sincere and far less amenable to punishment by party leaders. In their speeches during a debate, legislators who are forced to vote with their party may seize the opportunity to voice their differences with their party’s official position, as a signal to their constituents or as a signal to fellow party members. The differences we would expect to observe in positions scaled from speech should be much more diverse than those scaled from votes.

To compare positions scaled from each source, we first converted all of the speeches—including those in French and Italian—into English, using Google Translate.¹⁶ We then scaled all combined speeches for each legislator separately for the four debates. The results are plotted against the roll call vote positional estimates in Figure 9.

Each comparison shows relative homogeneity in position along the y-axis, as is to be expected according to the results in section 3.2. Within each party, however there are significant intra-party differences in positioning through speeches. The Social-democratic Party (SP) deputies in red, for instance, were relatively left on the two energy bills, although several

¹⁵This would also constitute a prerequisite before we can deal with further research questions like e.g. trying to explain the larger intra-party differences in text scalings.

¹⁶Details of this procedure are provided in the next section.

deputies, according to text scaling, expressed positions along the other extreme of this scale (as in the Energy 1 Bill scaling, for instance, where the most extreme right position was expressed by an SP deputy). Interesting, the Green party speakers (the green dots in the Energy plots) were hardly consistent in their positions expressed through speech, although this diversity was also expressed through their votes. In Pension Bill 2, both the Greens and the Social-democrats remained staunchly left in their voting patterns, but displayed a range of positioning in their spoken texts.

Once again, however, we regard these results as requiring further investigation. One issue may concern the translation into English, a matter we describe in a bit more detail in our final section.

4 The Challenges of Text Analysis in a Multi-lingual Context

Nearly all deputies vote, but not all speak. Among those who speak, not all Swiss legislators spoke in the same language. Unlike some multi-lingual contexts (such as the European Parliament), Swiss speeches are not officially translated into all of the state languages. This meant for our text scaling that we had to detect and translate the languages ourselves, if we wished to scale the texts of speakers of different languages.¹⁷ In keeping with our approach to automated text analysis, we used automated methods to detect and translate each speech into a target language. Using the Google Translate API¹⁸, we were able to send text chunks directly from our computer processing of the texts, and have the translation returned in a target language of our choosing. Accordingly, after detecting and recording the language of each of the 1,219 speeches from the four debates we studied, we performed three sets of translations: all texts to German, all texts to French, and all texts to English. For the translations to German, the texts already in German (approximately two-thirds) did not receive additional treatment, but the French and Italian texts were returned as translations. The equivalent processing took place for the approximately one-third French texts and the handful (fewer than 10) speeches in Italian.

¹⁷This problem is even more complex, since some legislators switched languages for different speeches, and some even switched languages in the middle of the same speech event.

¹⁸See <https://developers.google.com/translate/> for details.

We also translated all texts into English, in order to “smooth” out differences caused by the peculiar method that Google Translate handled very debate-specific words, such as *Beschäftigungsentwicklung* from the German-language pension debates, that might have been translated from French into many alternative versions such as *Entwicklung der Beschäftigung* or *Förderung der Beschäftigungslage*. No standard approach to stemming can handle this sort of lexically specific use of language, although these are precisely the words whose relative usage most affects scaling. As a workaround, we translated both into English whose use of compound words tends to be much less, and in this case (for example) much more likely to contain both “employment” and “services”, rather than a set of tokens that signal the same content yet are lexically distinct.

Figure 10 plots the results of translating all of the texts into German versus translating all of the texts into English. The solid squares indicate the texts that are not originally German—in other words, the solid squares are texts that were translated on both axes, while the hollow circles have been translated only into English.

The biggest “success” story appears to be for the Energy 1 bill debates, where few differences appear, and those that were originally non-German—the handful of red solid squares indicating SP deputies—did not markedly change position in either translation. Interesting, the English translation also appears to have improved the scaling of some original German texts. The hollow circle (an SP deputy) that appears the most extreme when scaled in its original German (in the lower right of the Energy 1 Bill plot) returns to an extreme left position with the rest of the SP when translated into English. It appears that the problems of translating compound German words (like *Beschäftigungsentwicklung*) is not only one of translation, but also one of same-language speakers using lexically distinct tokens to express the same ideas. Translating these different tokens into English words may convert them into the same word types, improving scaling.

5 Discussion and conclusion

Our analysis of legislative speeches has shown that significant differences exist between estimates from roll-call votes and estimates from texts. The estimates from roll-call votes display some heterogeneity within party, but their most distinctive feature is a relative similarity between legislators of the same party. Far more heterogeneity, by contrast, appears in positions taken in legislative speeches during the debates on these bills, possibly reflecting more accurately the true positions of the speakers when expressing themselves in a means not subject to party discipline.

There also exist significant procedural and substantive challenges in working with multi-language texts, however. There appear to be significant lexical differences in some of the technical debates, especially those related to specific economic and financial provisions of the pension reform bills. Even in the same language, some deputies, especially those speaking in German, may use language tokens that are different in form yet identical in meaning. This poses a special challenge for text scaling based on the relative frequencies of word types that warrants more detailed investigation, since it has implications for all methods that treat words as data, not just those that translate words prior to using them as data.

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Table 1: The four selected debates

Debate	Debate IDs ¹	Start/end date	Legislative period	# votes	# speeches/speakers ²
Pension reform 1	00.014 ³	7 May 2001 - 3 Oct 2003	46th	71	202/ 46
Energy 1	01.022 ⁴	20 Jun 2002 - 21 Mar 2003	46th	66	256/ 49
Pension reform 2	05.093, 05.094, 06.107 ⁵	17 Mar 2008 - 1 Oct 2010	48th	32	131/ 51
Energy 2	11.9008 ⁶	8-9 Jun 2011	48th	86	39/ 38

¹ According to <http://www.parlament.ch/e/suche/pages/amtliches-bulletin.aspx>.

² After exclusion of some speakers/speeches (see details in sections 3.1 and 3.4).

³ *11. AHV-Revision / 11e révision de l'AVS.*

⁴ *Moratorium plus und Strom ohne Atom. Volksinitiativen. Kernenergiegesetz / Moratoire plus et Sortir du nucléaire. Initiatives populaires. Loi sur l'énergie nucléaire.*

⁵ *11. AHV-Revision (Neufassung). Leistungsseitige Massnahmen / 11e révision de l'AVS (nouvelle version). Mesures relatives aux prestations (05.093); 11. AHV-Revision (Neufassung). Einführung einer Vorruhestandsleistung / 11e révision de l'AVS (nouvelle version). Introduction d'une prestation de préretraite (05.094); Für ein flexibles AHV-Alter. Volksinitiative / Pour un âge de l'AVS flexible. Initiative populaire (06.107).*

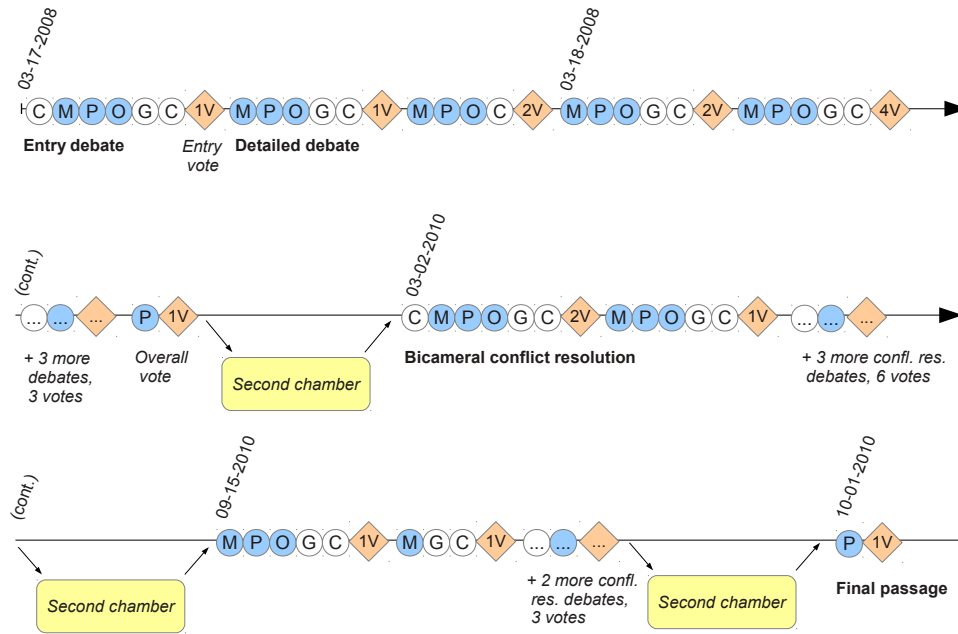
⁶ *Ausserordentliche Session. Kernenergie und alternative Energien / Session extraordinaire. Energie nucléaire et énergies renouvelables.*

Figure 1: Example: Course of pension reform debate 2 (debate ID 05.093)

A) Government proposal			
B) First chamber's committee proposal		V	Overall vote on the entire bill as it resulted from the detailed debate [Result: draft bill accepted]
C) Floor debate (basis: committee proposal)			... (Bill is now sent to the second chamber where whole game, beginning with the committee stage, starts anew. Afterward, the bill, in the version of the second chamber, is sent back to the first chamber for conflict resolution) ...
	C1) Entry debate:		D) Bicameral conflict resolution
s	Committee rapporteurs (German & French)	s	Procedural intervention by a single MP to schedule conflict resolution debates earlier [rejected]
S	Minority speakers (defending their petitions a) not to enter into detailed debate, b) to support a related popular initiative)	s	Art. 2: Committee rapporteurs adhere to the second chamber's version [Undisputed – no debate, no formal vote]
S	Party group speakers (giving their positions)		<u>Conflict resolution debate on art. 5:</u>
S	Other MPs with an interest in the subject	S	Minority speaker (defending his petition to keep first chamber's version of art. 5)
s	Government member (is not an MP in Switzerland)	S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 5)
s	Committee rapporteurs	s	Government member
V	Vote on entry into detailed debate [Result: entry accepted without rejection to the government]	s	Committee rapporteurs
	C2) Detailed debate:	V	2 votes on art. 5 [2 minority petitions, 1 accepted]
	<u>Debate on art. 5 of the proposed bill:</u>		<u>Conflict resolution debate on art. 30:</u>
S	Minority speakers (defending their petition to art. 5)	S	Minority speaker (defending his petition to keep the previous version of art. 30)
S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 5)	S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 30)
s	Government member	s	Government member
s	Committee rapporteurs	s	Committee rapporteurs
V	Vote on art. 5 [minority petition rejected]	V	Vote on art. 30 [minority petition rejected]
	<u>Debate on art. 8 of the proposed bill:</u>	(S, V)	... (3 more conflict resolution debates on art. 30, 33ter, 40ter) [6 votes taken incl. 1 to lift the constitutional expenditure cap, all of them rejected] ...
S	Minority speakers (defending their petitions to art. 8)		... (Bill is sent again to the second chamber to resolve remaining conflicts. Afterward it is sent back to the first chamber again for further conflict resolution) ...
S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 8)		<u>Conflict resolution debate on art. 33Ter, sections 1-3:</u>
s	Committee rapporteurs	S	Minority speaker (defending his petition regarding art. 33Ter, sections 1-3)
V	2 votes on art. 8 (because there are 2 minority petitions plus the committee majority proposal) [both minority petitions rejected]	S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 33Ter)
	<u>Debate on art. 33ter of the proposed bill:</u>	s	Government member
S	Minority speakers (defending their petitions to art. 33ter)	s	Committee rapporteurs
S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 33ter)	V	Vote on art. 33Ter, sections 1-3 [minority petition rejected]
s	Government member		<u>Conflict resolution debate on art. 33Ter, section 4:</u>
s	Committee rapporteurs	S	Minority speaker (defending his petition regarding art. 33Ter, section 4)
V	2 votes on art. 33Ter [2 minority petitions, both rejected]	s	Government member
	<u>Debate on art. 40, 40ter and 43bis of the proposed bill:</u>	s	Committee rapporteur
S	Minority speakers (defending their petitions to art. 40-43bis)	s	Brief interaction (short question - short answer) between petitioner and committee rapporteur
S	Party group speakers and other MPs with an interest in the subject (giving their positions on art. 33ter)	V	Vote on art. 33Ter, section 4 [minority petition rejected]
s	Government member	(S, V)	... (2 more conflict resolution debates on art. 40Ter and para. II of the temporary provisions) [3 votes taken, all minority petitions rejected] ...
s	Committee rapporteurs		... (Bill is sent again to the second chamber to resolve remaining conflicts. Since all issues could be solved there, no joint conciliation committee of both chambers was required) ...
V	4 votes on art. 40-43bis [4 minority petitions, all of them rejected]		E) Final passage
(S, V)	... (3 more debates on individual articles: 3 votes taken in which 2x the minority petition is accepted) ...	S	Brief position taking by party group speakers before final passage vote
S	Very brief position taking by party group speakers before overall vote after first-chamber reading	V	Final passage vote [Result: entire bill rejected (!)]

Legend: S,s=Speech(es), V=Vote(s). Capitalization: Speech(es) considered (uppercase) / not considered (lowercase) for analysis.

Figure 2: Example: Timeline of pension reform debate 2 (debate ID 05.093)



Legend: C=Committee rapporteurs, M=Minority speakers, P=Party group speakers, O=Other MPs, G=Government members, V=Vote(s) taken.
 Colors: Speeches considered (blue) / not considered (white) for analysis.

Table 2: Allocation of speaking time by debate category

Category	Speaking time rules	Assigned debates
I. Free debate	<p>Default category; speaking time according to art. 44 GRN</p> <p>In entry debates:</p> <ul style="list-style-type: none"> – Committee rapporteur: 20’ in total (in practice often 10’ each for German-/French-speaking rapporteur) – Party group speaker: 10’ each (also often shared between German-/French-speaking party group members) – Originator of a motion: 5’ – Any MP: 5’ – Government member: 20’ <p>In other debates:</p> <ul style="list-style-type: none"> – Committee rapporteur: no restrictions defined – Party group speaker: 5’ each – Originator of a motion: 5’ – Any MP: 5’ – Government member: no restrictions defined <p>Before final passage vote:</p> <ul style="list-style-type: none"> – Party group speaker: brief statement allowed (but rarely used) 	Energy debate 1; energy debate 2 (as ‘other debate’)
II. Organized debate	Sometimes used for entry debates, debates on parliamentary interpellations ¹ and on government reports: Fixed total time which is adequately allocated to rapporteurs, government members and party groups. The originators of interpellations still have their usual 5’.	
IIIa. Party group debate	No speaking time for individual MPs who are not originators of a motion/amendment. Otherwise like cat. I.	Pension reform 1; pension reform 2
IIIb. Reduced party group debate	Like cat. IIIa., but halved speaking time with respect to cat. I.	
IV. Short-time debate	No speaking time for individual MPs who are not originators of a motion (i.e., also no speaking time for originators of amendments) and for party group speakers. Beside committee rapporteurs, government members and originators of parliamentary motions, only committee minority speakers can present their position (speaking time according to cat. I).	
V. Written procedure	No speaking time except for committee rapporteurs, government members, and originators of parliamentary motions (but no speaking time for originators of amendments). Speaking time according to cat. I.	

¹ An ‘interpellation’ commits the government merely to provide information on some issue. See also art. 118 ff. of the Swiss Parliament Act, http://www.admin.ch/ch/d/sr/171_10/index.html.

Table 3: Number of excluded speeches per debate

Debate	Excluded because of speaker context	Excluded because of speech context
Pension reform 1	Parl. president (vice president): 75 Committee rapporteur: 65 Government member: 12	Procedural: 5 Interaction: 38
Energy 1	Parl. president (vice president): 42 Committee rapporteur: 66 Government member: 42	Procedural: 21 Interaction: 42
Pension reform 2	Parl. president (vice president): 29 Committee rapporteur: 34 Government member: 14	Procedural: 2 Interaction: 26
Energy 2	Parl. president (vice president): 5 Committee rapporteur: 0 Government member: 14	Procedural: 0 Interaction: 65

Figure 3: Histograms of MPs' one-dimensional ideal points in the four selected debates and the entire 46th/48th legislature (MCMC estimation based on IRT model)

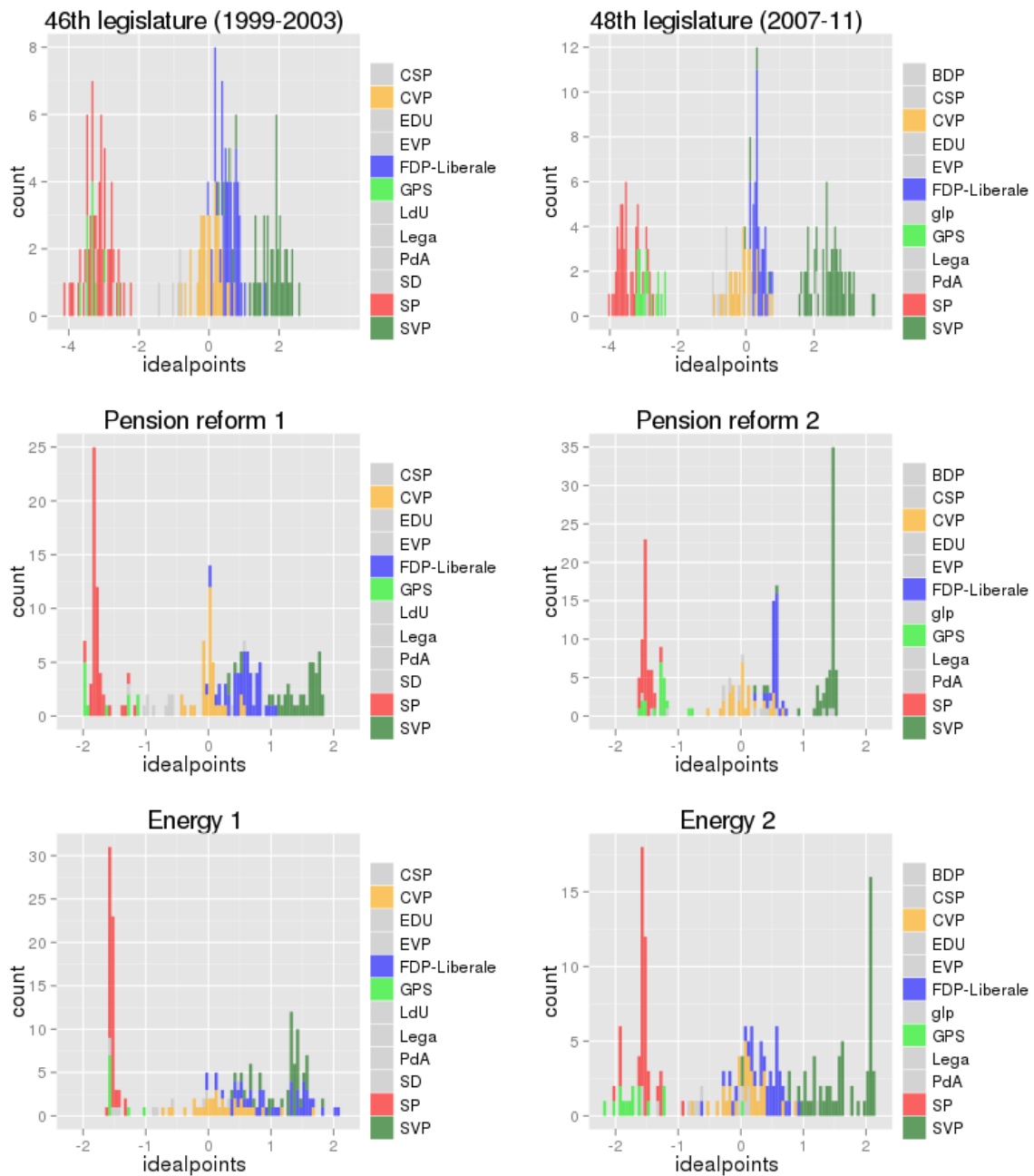


Figure 4: Box plots of MP agreement rates with own party in the four selected debates

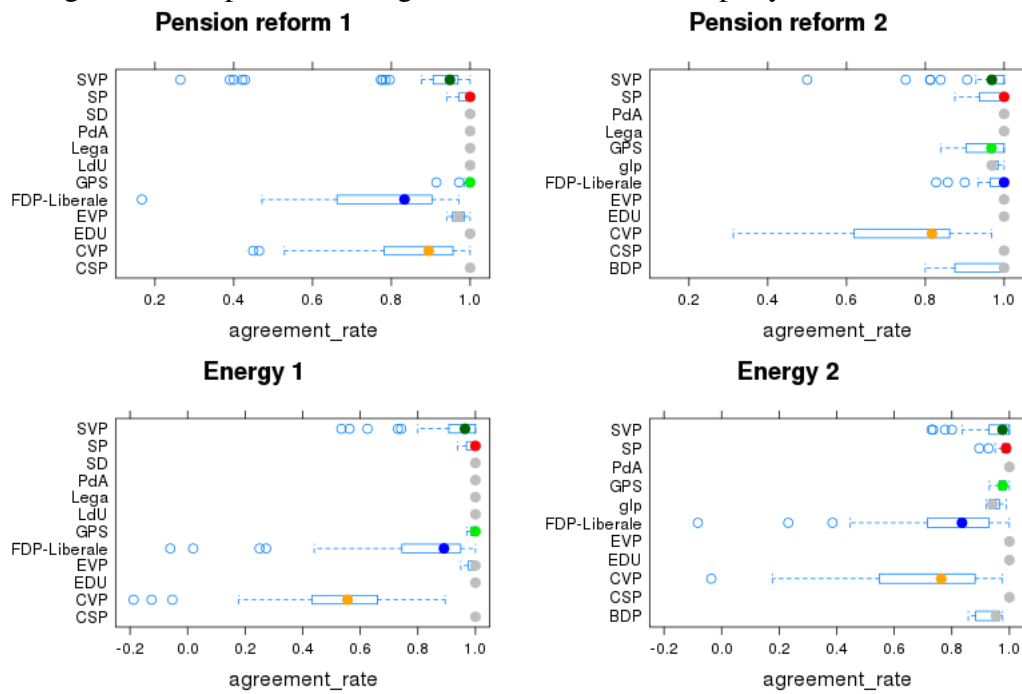


Table 4: Models to predict speech act and speech length

	Pension reform 1			Pension reform 2			Energy 1			Energy 2								
	Speech act	Speech length	Model 1	Speech act	Speech length	Model 4	Speech act	Speech length	Model 5	Speech act	Speech length	Model 6	Speech act	Speech length	Model 7	Speech act	Speech length	Model 8
	Model 1	Model 2	Model 1	Model 3	Model 4	Model 4	Model 5	Model 6	Model 5	Model 7	Model 6	Model 7	Model 8					
Partygroup leader	4.883*	0.124	-0.685*	7.640	-0.685*													
	[0.870, 24.929]	[-1.070, 1.319]	[-1.420, 0.050]	[1.117, 66.356]	[-1.420, 0.050]													
Party leader	2.401	0.793	-0.927*	1.493**	-0.927*													
	[0.115, 20.145]	[-1.210, 2.797]	[-2.000, 0.150]	[0.149, 9.582]	[-2.000, 0.150]													
Language = french or italian	2.181	0.043	0.299	0.820	0.299													
	[0.851, 5.609]	[-0.588, 0.675]	[-0.220, 0.820]	[0.328, 1.949]	[-0.220, 0.820]													
Sex: male	0.659	-0.402	-0.187	0.719	-0.187													
	[0.232, 1.909]	[-1.070, 0.265]	[-0.620, 0.240]	[0.308, 1.696]	[-0.620, 0.240]													
Seniority (log weeks)	1.406	0.265	0.338**	2.024***	0.338**													
	[0.825, 2.429]	[-0.220, 0.750]	[0.040, 0.640]	[1.262, 3.426]	[0.040, 0.640]													
Committee member	44.875***	1.325***	0.675***	10.575***	0.675***													
	[14.428, 180.063]	[0.738, 1.913]	[0.220, 1.130]	[4.145, 28.806]	[0.220, 1.130]													
Agreement Rate	1.057	-0.022	0.212	5.970	0.212													
	[0.074, 21.991]	[-1.625, 1.580]	[-1.770, 2.190]	[0.192, 336.661]	[-1.770, 2.190]													
Idealpoints	0.983	-0.075	-0.054	0.546***	-0.054													
	[0.659, 1.471]	[-0.346, 0.196]	[-0.240, 0.140]	[0.382, 0.764]	[-0.240, 0.140]													
Region: nuclear energy																		
Region: water energy																		
Intercept	0.019*	5.090**	4.329**	0.001***	4.329**													
	[0.000, 1.115]	[1.846, 8.335]	[1.540, 7.110]	[0.000, 0.059]	[1.540, 7.110]													
Log-likelihood	-79.706			-90.045														
adj. R ²	0.295		0.247	0.247														
N	209	46	51	214	51													

Note: The models were estimated using the Zelig package (Imai, King, and Lau 2007). Models 1, 3, 5, and 7 include all MPs and predict *who* speaks. The table displays odds-ratios and corresponding 95%-confidence intervals. Models 2, 4, 6, and 8 predict MP's speech length (log of number of words spoken during one debate) and include only MPs who spoke during the respective debate. The table displays OLS coefficients and corresponding 95%- confidence intervals. Model 5 and Model 6 omit partygroup leaders, due to perfect prediction. P-values: $p \leq 0.01$ ***, $p \leq 0.05$ ***, $p \leq 0.1$ *.

Figure 5: Text Scaling Results for First Energy Bill Debates. Original German language texts only.

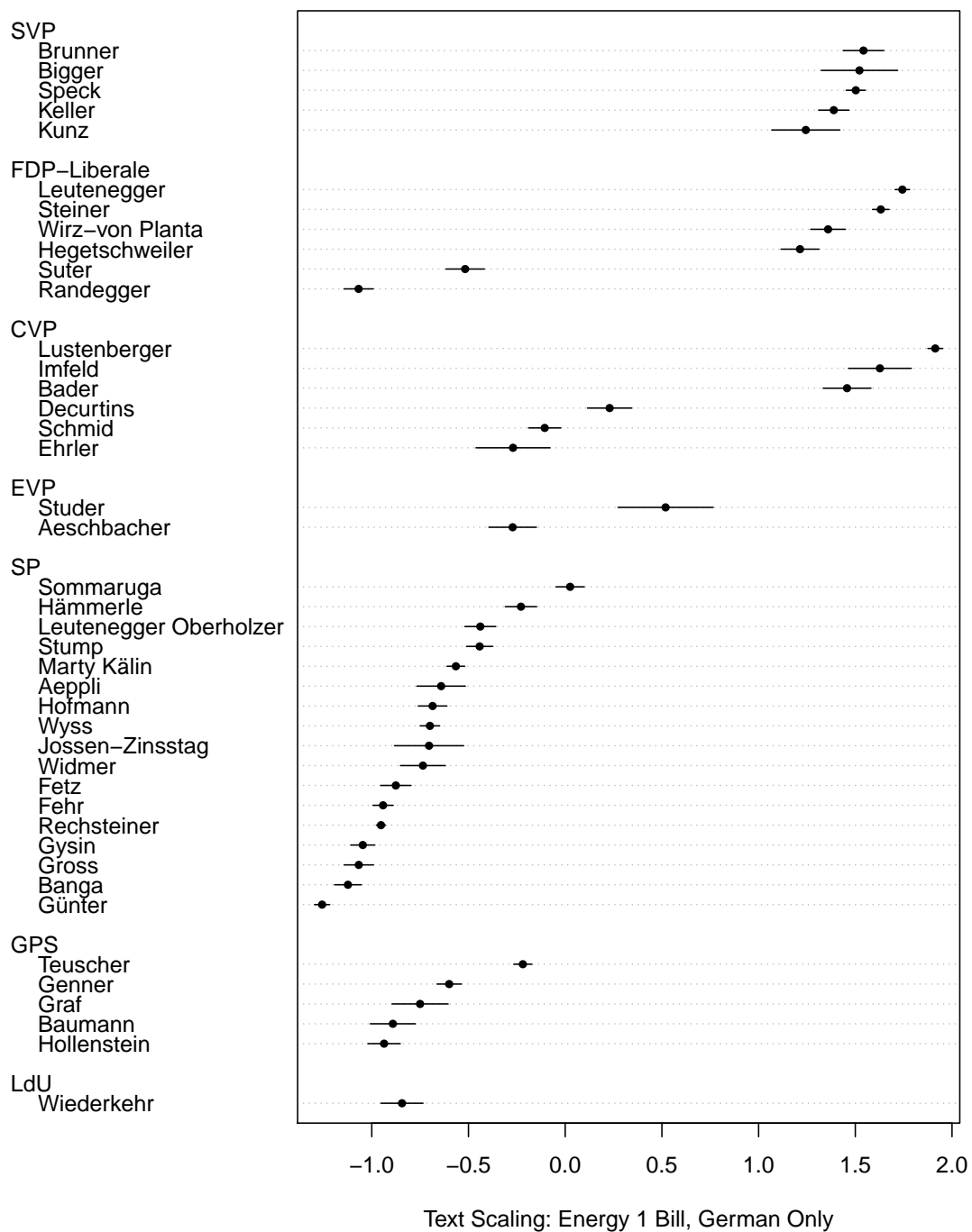


Figure 6: Text Scaling Results for Second Energy Bill Debates. Original German language texts only.

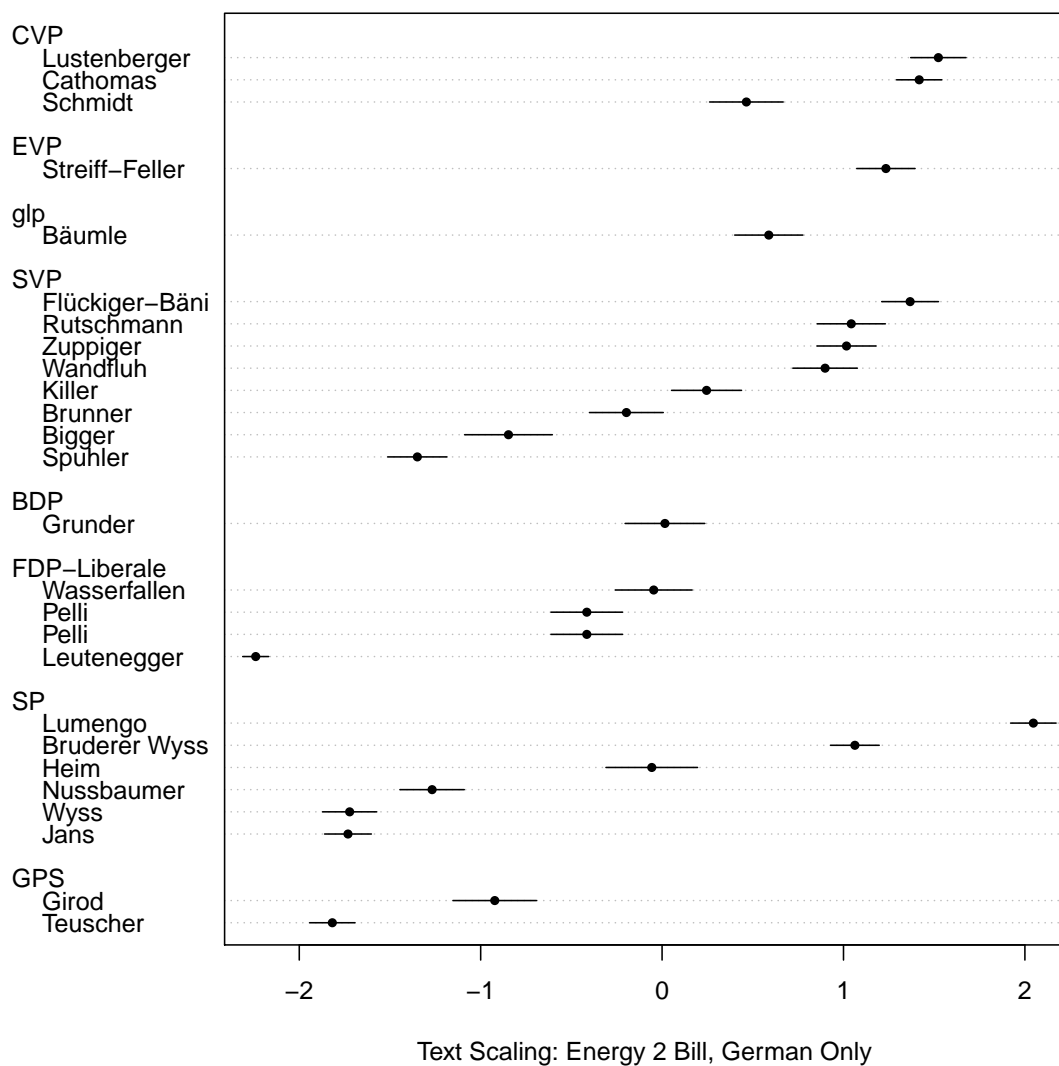


Figure 7: Text Scaling Results for First Pension Bill Debates. Original German language texts only.

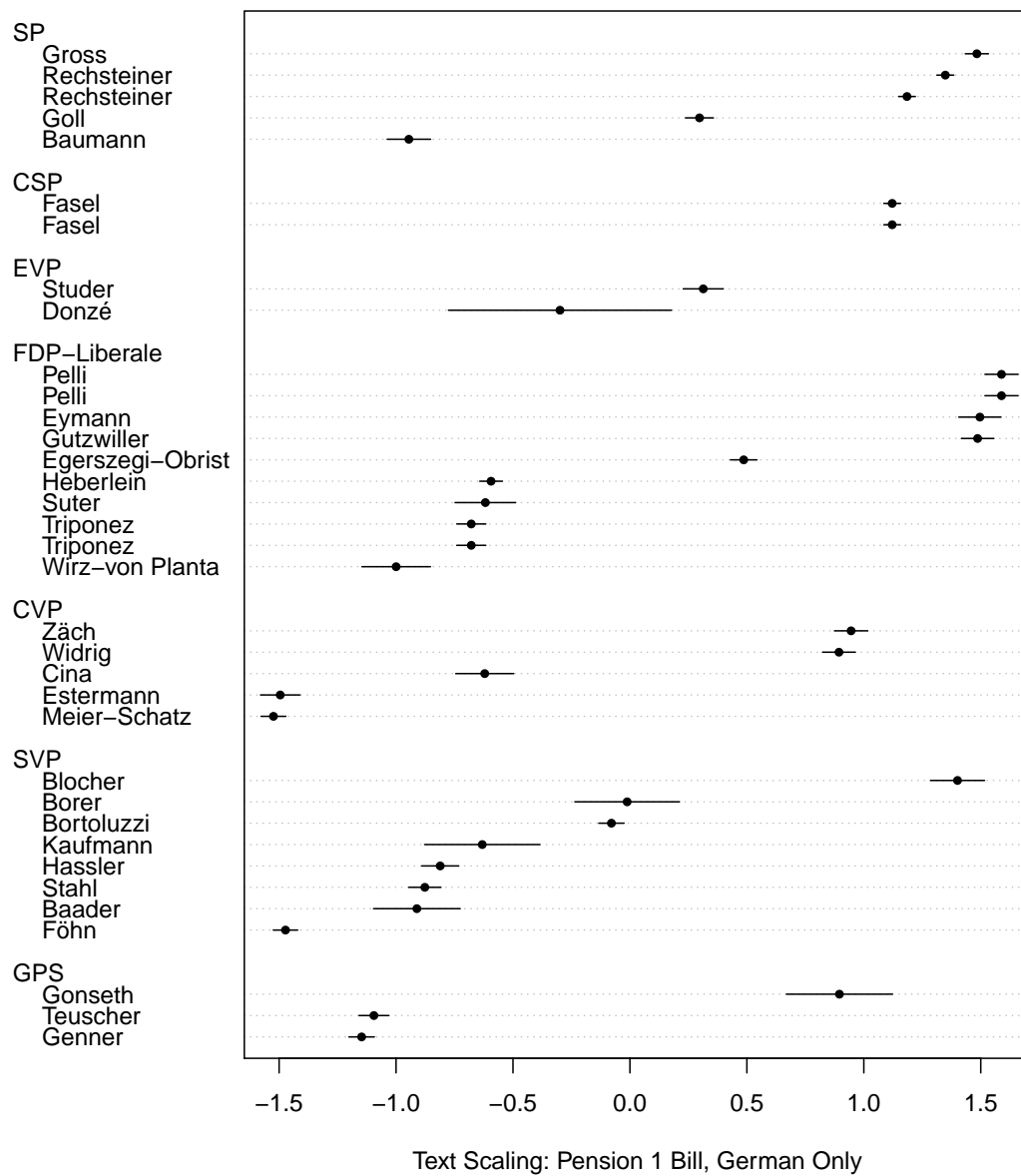


Figure 8: Text Scaling Results for Second Pension Bill Debates. Original German language texts only.

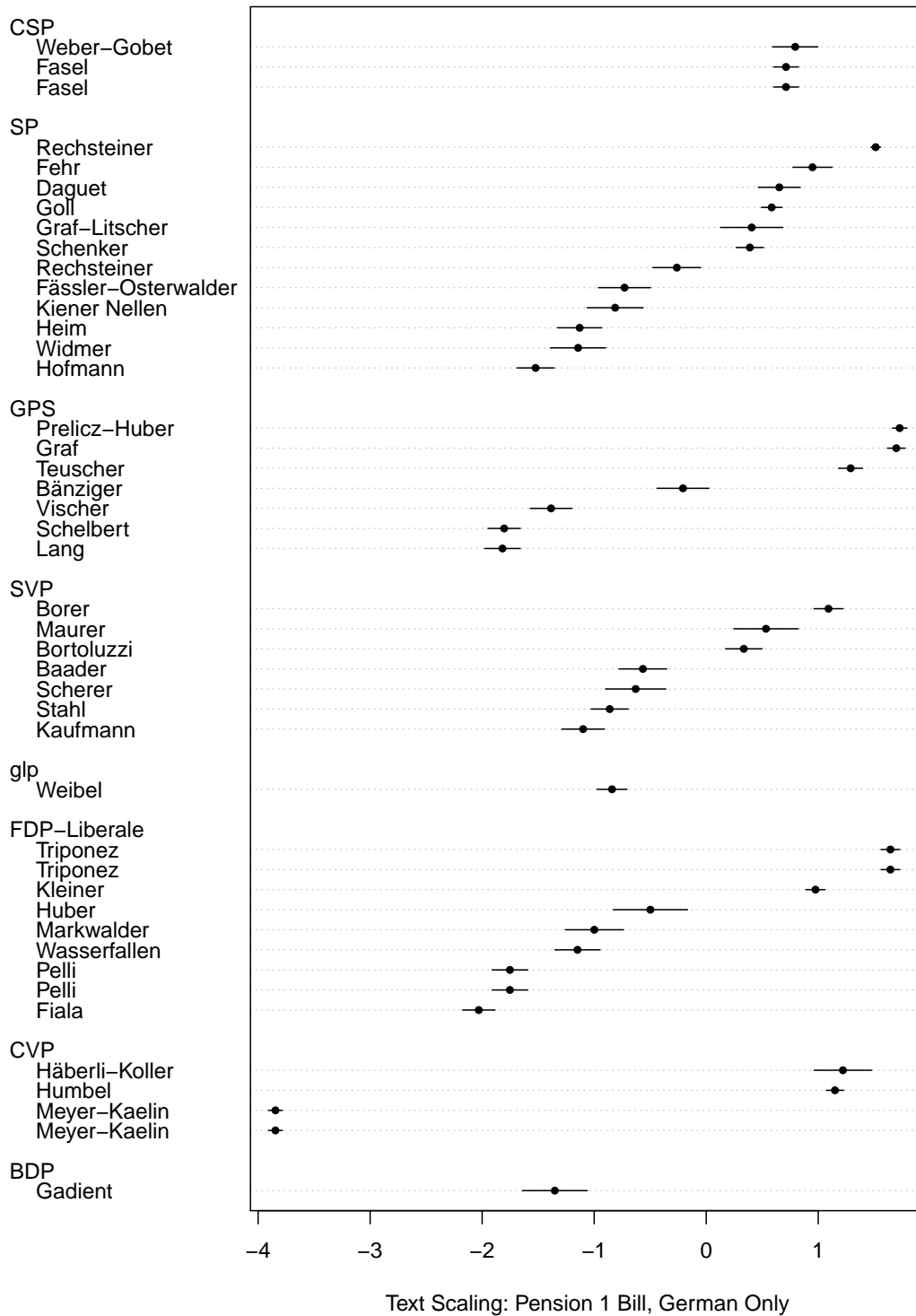


Figure 9: Text Scaling versus Roll Call Vote Scaling. All texts have been translated into English. The colors of each speaker's plotting symbol matches the party colors from Figure 3.

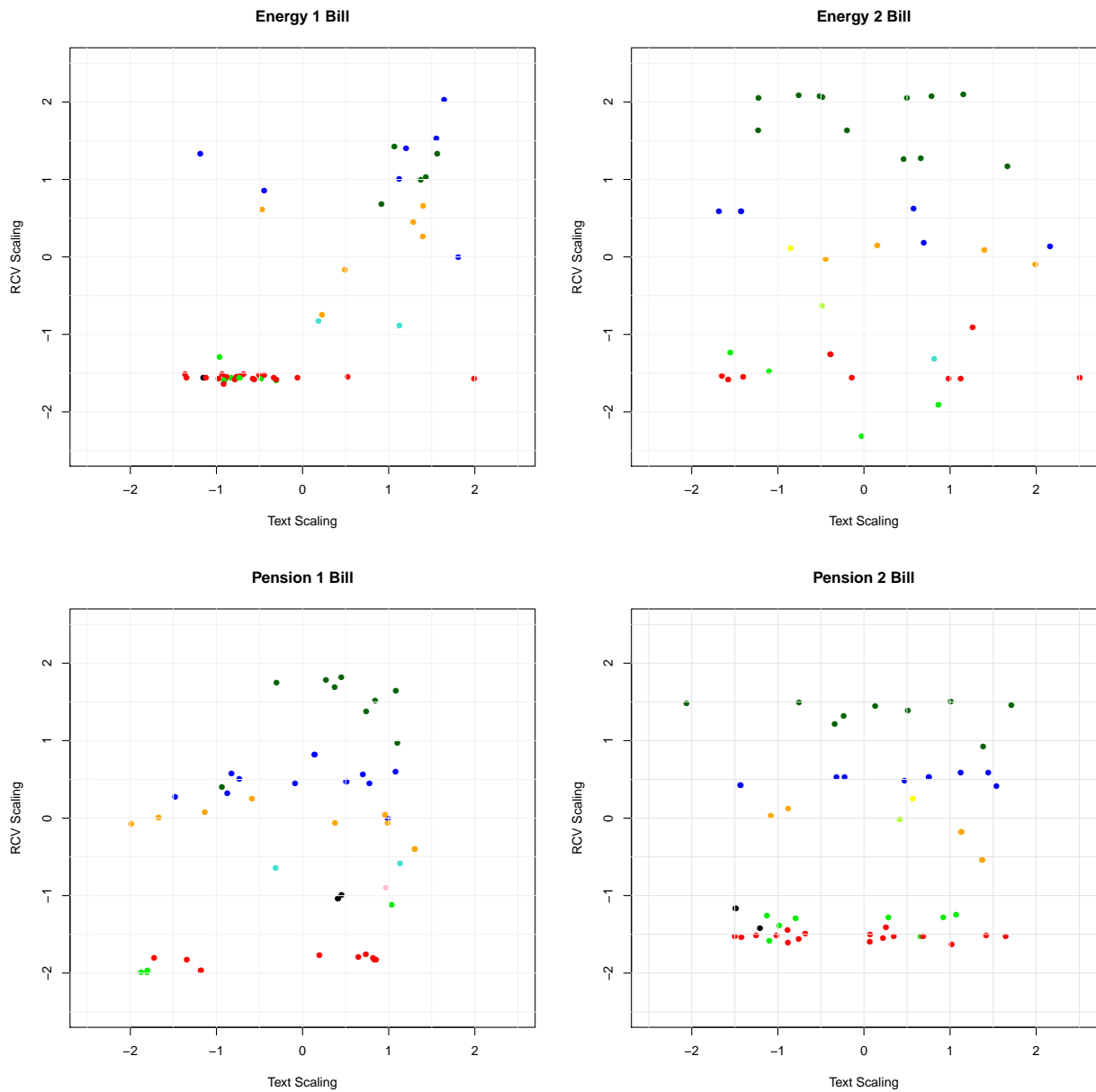


Figure 10: Text Scaling of the German v. English Translations. Solid squares indicate speeches that were originally in a non-German language (so that hollow circles did not require translation into German as they were already in that language). The colors of each speaker's plotting symbol matches the party colors from Figure 3.

