Estimating the Policy Preferences of Legislators in Parliamentary Systems: Comparing Speeches to Votes[*]

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April 5, 2013

Abstract

Well-established methods exist for measuring party positions, but reliable means for estimating intra-party preferences remain underdeveloped. Most efforts focus on estimating the ideal points of individual legislators based on inductive scaling of roll call votes. Yet in most parliaments, roll call data suffer from two problems: selection bias due to unrecorded votes, and strong party discipline which tends to make votes strategic rather than sincere indications of preference. In contrast, legislative speeches are relatively unconstrained, since party leaders are less likely to punish MPs for speaking sincerely as long as they vote with the party line. This conventional wisdom remains essentially untested, despite the growing application of statistical analysis of textual data to measure policy preferences. Our paper addresses this lacuna by exploiting a rich feature of the Swiss legislature: On most bills, legislators both vote and speak many times. Using this data, we compare text-based scaling of ideal points to vote-based scaling from a crucial piece of energy legislation. Our findings confirm that roll call votes underestimate intra-party differences, and vindicate the use of text scaling to measure legislator ideal points. Using regression models we further explain the difference between roll-call and text scalings with energy policy preferences at constituency level.

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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 proportion of legislative votes go 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 not because of their policy preferences, but rather in spite of them (Laver, Benoit 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, it is believed, 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.

Legislative speeches are also 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 under-estimate 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 an energy policy debate from the Swiss legislature in 2002–2003. Switzerland's parliament forms an ideal case for comparing votes to speech because the Swiss parliament records all legislative

speeches as well as complete sets of all votes taken during each floor debate. Since many votes are taken during the debate and passage of most bills, this provides multiple opportunities to observe votes during the debate over a single piece of legislation. In the energy debate we have selected, there were 66 different legislative votes, in addition to 48 separate speakers. To compare the measurement of policy preferences using votes versus speeches, we use one-dimensional IRT-based scaling on the roll call votes (using a logit-based likelihood) and a similar one-dimensional IRT-based scaling procedure on the speeches (using a Poisson-based likelihood). To investigate whether the selection of speakers is systematically related to political variables, we also test a model of speaker selection. This analysis confirms our expectation that in the selected Swiss debates, both 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, particularly within parties with highly unified voting behavior. Furthermore, these divergences in observed behavior—votes versus speeches—can be explained systematically through constituency-level political variables.

1 The Institutional Context of the Swiss Legislature

1.1 Legislative power-sharing

The idea of power sharing runs deeply through Switzerland's political institutions (Lijphart, 1999; Linder, 2010; Iff and Töpperwien, 2008). The wide dispersion of powers is also reflected in the rules and procedures of the Federal Assembly, the country's bicameral legislature. Due to a number of peculiarities in executive-legislative relations[1], the bottom-up structure of political parties (Ladner, 2007) and the high degree of direct-democratic involvement of the people (Linder, 2010), there is no stable parliamentary majority that would permanently outnumber

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[1]Members 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 would tie parliamentary majority to the government (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).

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).

1.2   Strong position of individual MPs and weak party leaders

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' records of 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 like-minded colleagues, 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 section 1.3 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 compulsory votes on the entire lawmaking project (like, e.g., final passage). Access to the debate agenda and access to the voting agenda are thus not independent but closely related.

The position of individual MPs in the Swiss parliament is additionally strengthened by the fact that party leaders lack strong and immediately effective instruments to enforce discipline and avoid unwanted debates. The institutionalized role of the party whip is alien to the Swiss legislature, and due to the bottom-up structure of party organization 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. However,

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

even this measure is weakened by the fact that first, committee seats once allocated to an MP cannot be removed until the next general election; and second, decision making on this issue involves the entire party group, not just the inner circle of party leaders. As a result, committee members are not necessarily those MPs who represent the party line best.

1.3   Rules and procedures during debates

As in most parliaments, a government bill is extensively debated in a legislative committee before it reaches the floor. 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 Table 1 and Figure 1, detailing the stages of a typical parliamentary debate. First, committee majority speakers (rapporteurs) present a general introduction to the matter. Second, party group speakers[3] display the official party position to the proposed bill. Third, the government lays down its position. Next, a vote is taken as to whether the chamber shall refuse the bill from the outset or enter a detailed (i.e., article-by-article) debate about it. If they decide to enter debate, then all disputed parts of the bill (i.e. where petitions have been filed in the run-up to the floor debate) are separately discussed with opinions given by the originator(s) of the petition, the committee rapporteur(s), party group speakers, and the government. Having discussed and voted on all petitions, 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.

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

Figure 1: Example: Timeline of a parliamentary debate
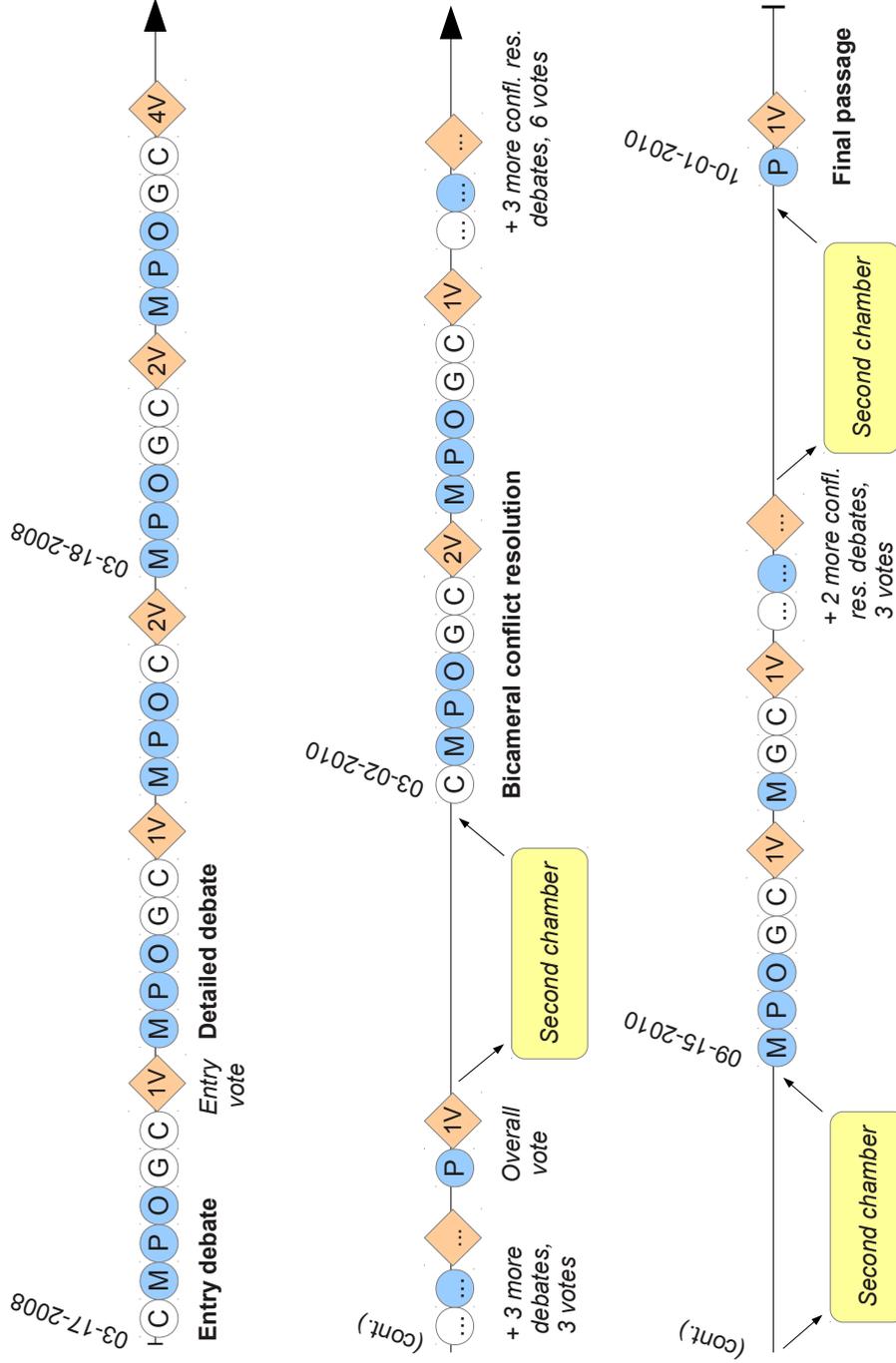
Legend: C=Committee rapporteurs, M=Minority speakers, P=Party group speakers, O=Other MPs, G=Government members, V=Vote(s) taken.
Colors: Speeches considered (blue) / not considered (white) for analysis.

As in most legislatures, speaking time is procedurally restricted in the Swiss National Council. There are six debate categories ranging from 'free debate' to 'written procedure.'[4] Table 2 specifies how speaking time in each category is assigned to MPs and parliamentary roles. The energy policy debate explored here was held under category I (free debate).

The rules of procedure determine who is entitled to speak. The question arises if these rules lead to a systematic selection of speakers. From the description of the institutional context we can assume that, compared to conventional parliamentary systems, the role of party leaders is relatively weak. 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 specific sections of 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. internal appeals to preserve the party brand and apply self-constraint, or exerting peer pressure (Cox and McCubbins, 1993; Owens, 2006)).[5] We explore the question of systematic selection of speakers below, but first we briefly describe the main features of the energy policy debate and outline our data analysis procedure to measure policy preferences of Swiss legislators from both the votes and speeches.

2   Empirical analysis of the energy policy debate

Our analysis in this paper focuses on piece of legislation central to Switzerland's energy policy. The debate took place between June 2002 and March 2003 (see Table 3 for details). It deals with much-debated, long-standing issues of energy policy: whether to phase out nuclear power, as well as strategies to increase the share of renewable energies.[6] In the aftermath of the 1990

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[4]See 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 any speeches. 'Free' and 'written' have to be taken in relative terms: 'Free', for instance, just means that there are no *additional* restrictions (as compared to the 'default speaking time' according to art. 44 GRN).

[5]Similar 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) which is why catch-all or simple median voter strategies fail to be successful in National Council elections. Thus Swiss parties are ideologically more cohesive than their U.S. counterparts.

[6]A formidable summary (in German and French) of the debate can be found under http://www.parlament.ch/d/suche/seiten/legislaturrueckblick.aspx?rb_id=20010022. The full verbatim transcripts of the entire debate in the National Council starts under http://www.parlament.ch/ab/frameset/d/n/4614/62109/

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)		*Conflict resolution debate on art. 5:*
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]
	Debate on art. 5 of the proposed bill:		*Conflict resolution debate on art. 30:*
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]
	Debate on art. 8 of the proposed bill:	(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)		*Conflict resolution debate on art. 33Ter, sections 1-3:*
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)
	Debate on art. 33ter of the proposed bill:	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		*Conflict resolution debate on art. 33Ter, section 4:*
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
	Debate on art. 40, 40ter and 43bis of the proposed bill:	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.

Table 2: Allocation of speaking time by debate category

Category	Speaking time rules
I. Free debate	Default category; speaking time according to art. 44 GRN **In entry debates**: – 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' **In other debates**: – Committee rapporteur: no restrictions defined – Party group speaker: 5' each – Originator of a motion: 5' – Any MP: 5' – Government member: no restrictions defined **Before final passage vote**: – Party group speaker: brief statement allowed (but rarely used)
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.
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`.

Chernobyl disaster, the Swiss voters approved a 10-year ban ('moratorium') on new nuclear plants, but in the same vote rejected a proper nuclear phaseout. The 2002–2003 debate we analyze covers two popular initiatives almost identical to those of 1990: the first demanding a renewal of the 1990 ban and the second again aiming at a nuclear phaseout. The Swiss government disagreed with both but drafted a new Federal Act on Nuclear Energy, which was debated in parliament together with the two initiatives. This law was designed as a so-called 'indirect counter-proposal' to the two initiatives which would automatically take effect if the initiatives were to be rejected. The government's draft took some of the initiatives' concerns into account while at the same time neglecting their main points (ban and/or phaseout). It provided for tougher rules for the construction permit of new plants and the recycling of nuclear materials, as well as an energy tax to promote renewable energies. However, during the sometimes quite heated debates between environmental interests – put forward by the Greens (GPS) and the Social-democrats (SP) alike – and economic interests – a majority of Christian-democrats (CVP), liberal Free Democrats (FDP) and the national-conservative Swiss Peoples Party (SVP) – the Swiss parliament further diluted the government's proposal in favor of nuclear energy suppliers. During these debates, 66 votes were taken in the National Council.[7] In May 2003, two months after the final passage vote in parliament, a popular vote on the two initiatives took place. The rejection of the initiatives by the Swiss citizens paved the way for the rather nuclear-friendly federal act to come into force.

2.1 Measuring legislator positions from roll-call votes

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 66 votes within the selected debate as well as for the entire 46th legislative period (3,194 votes) in which the energy debate took place largely confirm this notion. In the one-dimensional representation of ideal points[8] the

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d_n_4614_62109_62110.htm?DisplayTextOid=62111.

[7]The 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).

[8]For ideal-point estimation we ran a one-dimensional item response theory models using R MCMCpack with parameters burnin=50,000, mcmc=1,000,000, thin=1,000.

Table 3: The analyzed energy debate

Official name	Popular initiatives 'Moratorium plus' and 'Power without Nuclear' and Federal Act on Nuclear Energy. *(Moratorium plus und Strom ohne Atom. Volksinitiativen. Kernenergiegesetz. Moratoire plus et Sortir du nucléaire. Initiatives populaires. Loi sur l'énergie nucléaire.)*
Official ID	01.022
Category	Free debate (cat. I.)
URL	`http://www.parlament.ch/d/suche/seiten/geschaefte.aspx?gesch_id=20010022`
Start/end date	20 June 2002 - 21 March 2003
Legislative period	46th (1999-2003)
# votes	66
# speeches / speakers (total)	466 / 58 (incl. French/Italian texts) 419 / 49 (only German texts)
# speeches / speakers (selected)[1]	228 / 30
# words per speaker (selected)	mean: 2,580.5 / median: 2,000

[1] After exclusion of speakers/speeches according to sections 2.2.1 and 2.2.3.

line-up of all parties represents the expected order and is quite similar to the 'full picture' of the 46th legislative period (see ideal point histograms in Figure 2): In both models, the Social Democrats (red) and the Greens form the left (i.e., environmentalist, anti-nuclear) position, the Christian-democrats (orange) occupy the center while the the FDP-Liberals (blue) and the Swiss People's Party (dark green) take center-right to right-end positions on the scale.

The results of the two IRT models are highly correlated (Pearson's $r = 0.95$). The model for the single debate differs in two respects compared to the entire legislature, tough: we find considerably smaller intra-party variation among the left and a more blended picture among the parties to the right. These differences reflect the fact that party unity is above average on energy-related votes in the (already highly united) left camp while it is below average for CVP, FDP-Liberals and SVP (Schwarz, 2009). While the attitude of all MPs in both left parties is firmly anti-nuclear, there are well-known outliers in all political directions (nuclear hardliners and MPs with moderately anti-nuclear positions) within the bourgeois parties. From Figures 3 and 4, where the positional estimates for all 200 MPs and for our smaller selection of the 30 speaking MPs are plotted, the names e.g. of MP Schmid as an anti-nuclear Christian-democrat and MP Steiner as a distinctively pro-nuclear FDP-Liberal can be singled out as the two far

Figure 2: Histograms of MPs' one-dimensional ideal points in the energy debate and the entire 46th legislature (MCMC-based estimation of IRT models)
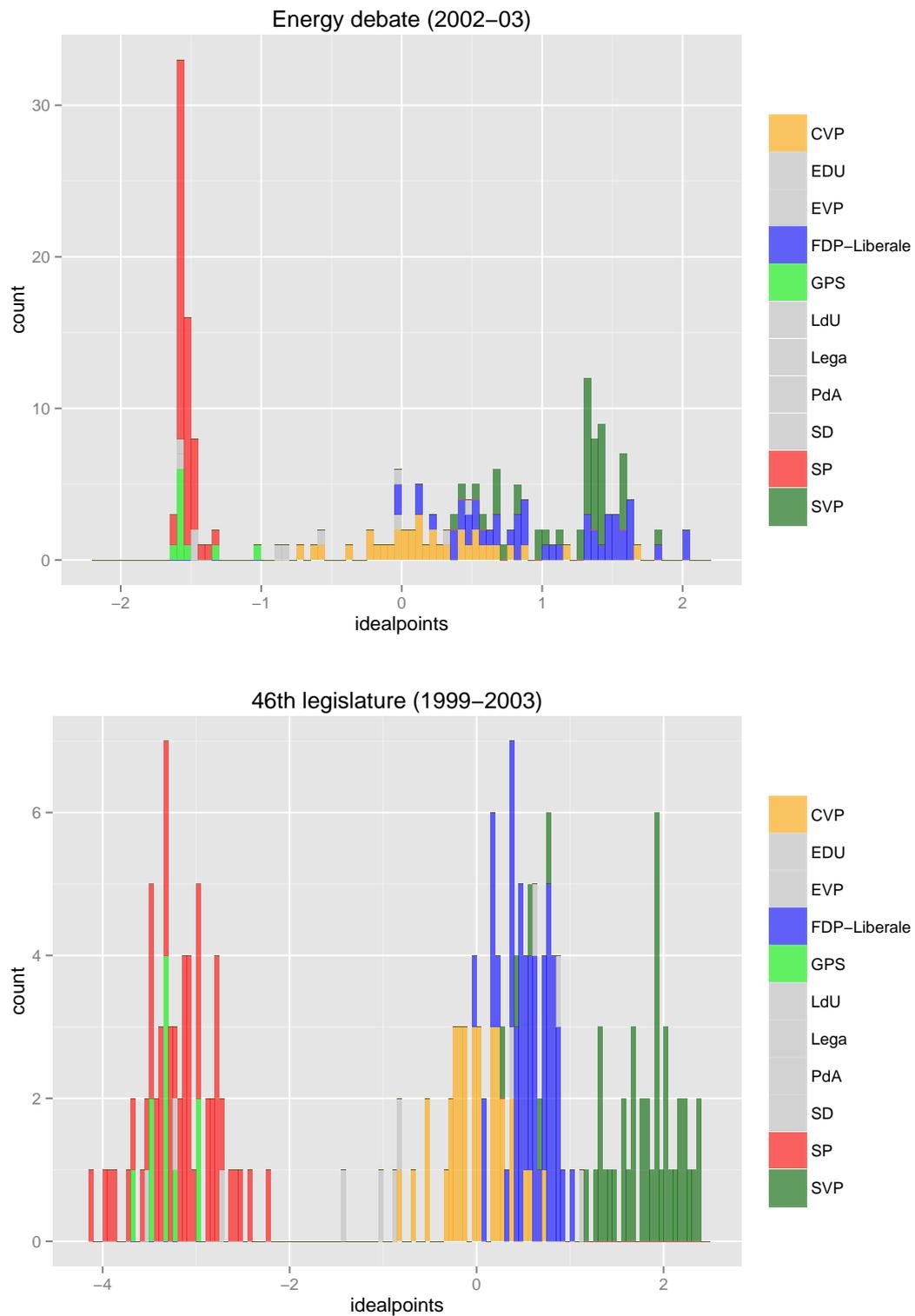
ends (see also Table 7).

The ranking order on the first dimension remains basically the same when we add a second dimension to the energy debate model (not shown here). The extension to a two-dimensional policy space, however, does not add meaningful information to the analysis. It thus seems safe to conclude that, from an RCV perspective, the selected energy debate is predominantly uni-dimensional and given the almost perfect correlation between the two IRT models shown above the dimension found in the energy debate can be roughly labeled as left-right. This is important because the comparison of roll-call estimates and text scaling estimates in section 2.3 is carried out on a one-dimensional basis (due to dimensional limitations in text scaling methods).

Figures 2 and 3 suggest quite large differences in party unity in the selected energy debate. 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? The box plots in Figure 5 visualize the distribution of MP agreement rates per party.[9]

As expected, we find the lowest agreement average and the highest dispersion of MP agreement with a considerable number of outliers within the two center-right parties (CVP, FDP-Liberals), but also the SVP has a number of outliers within their ranks. Moreover, the agreement rates particularly for the CVP and regarding the outliers also for the FDP-Liberale are somewhat lower in the selected energy case than in the entire 46th legislature, while we find the opposite picture for the two parties on the left. This fits well to the ideal point estimations in the various Figures above.

All in all, the distribution of the RCV ideal point estimates and the agreement rates in the selected energy debate point to the relatively low capabilities among center-right parties to enforce party discipline (weakly restricted voting behavior) while party unity among the Social-democrats and the Greens is very high.

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[9]The 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 0, if she abstains the assigned value is 0.5. The box plots show the average MP agreement per party.

Figure 3: MP ideal points in the energy debate (MCMC-based estimation of IRT model with all MPs). Party colors according to Figure 2.
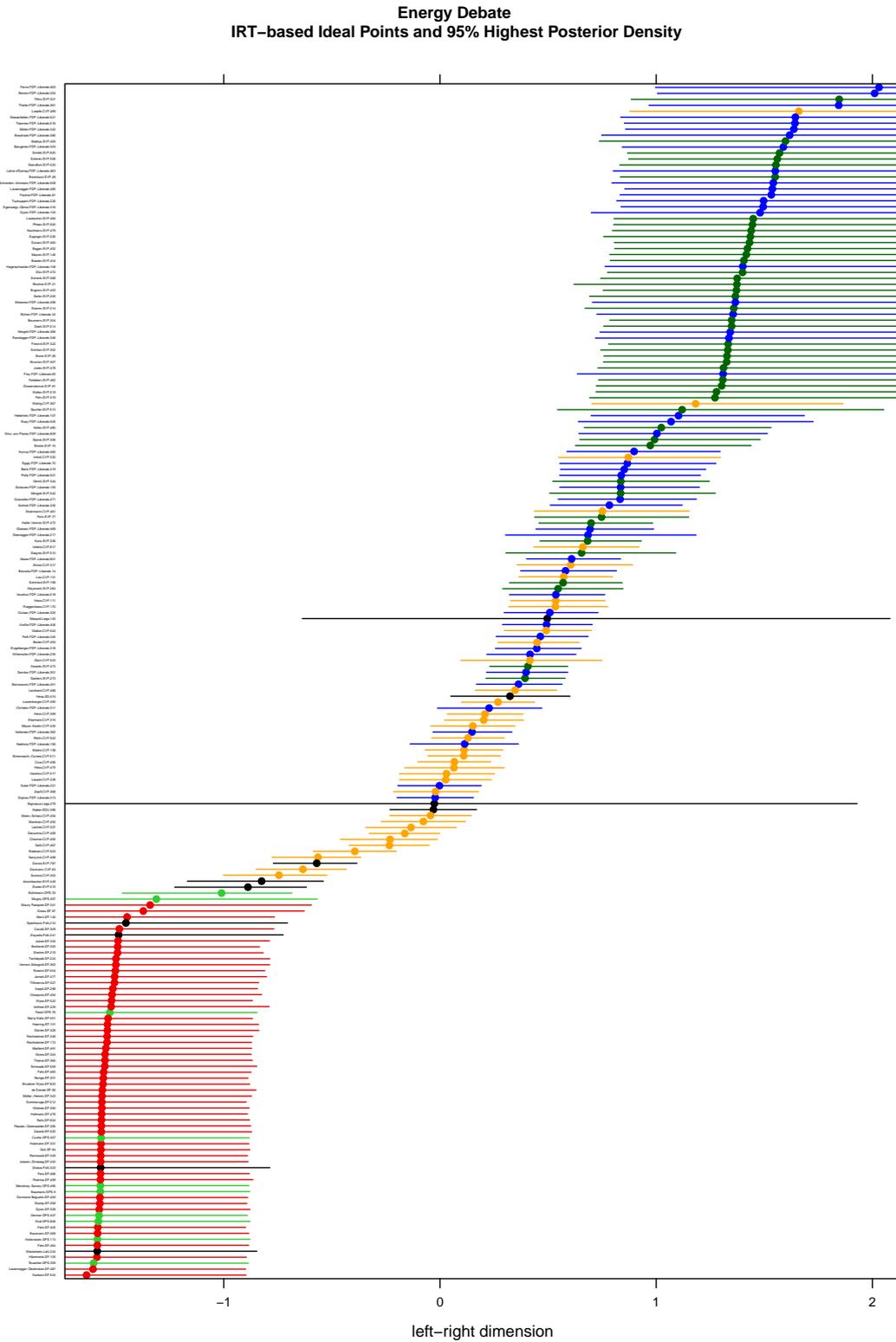

Energy Debate
IRT−based Ideal Points and 95% Highest Posterior Density

left−right dimension

Figure 4: MP ideal points in the energy debate (MCMC-based estimation of IRT model, speaker selection). Party colors according to Figure 2.

Energy Debate (speaking MPs only)
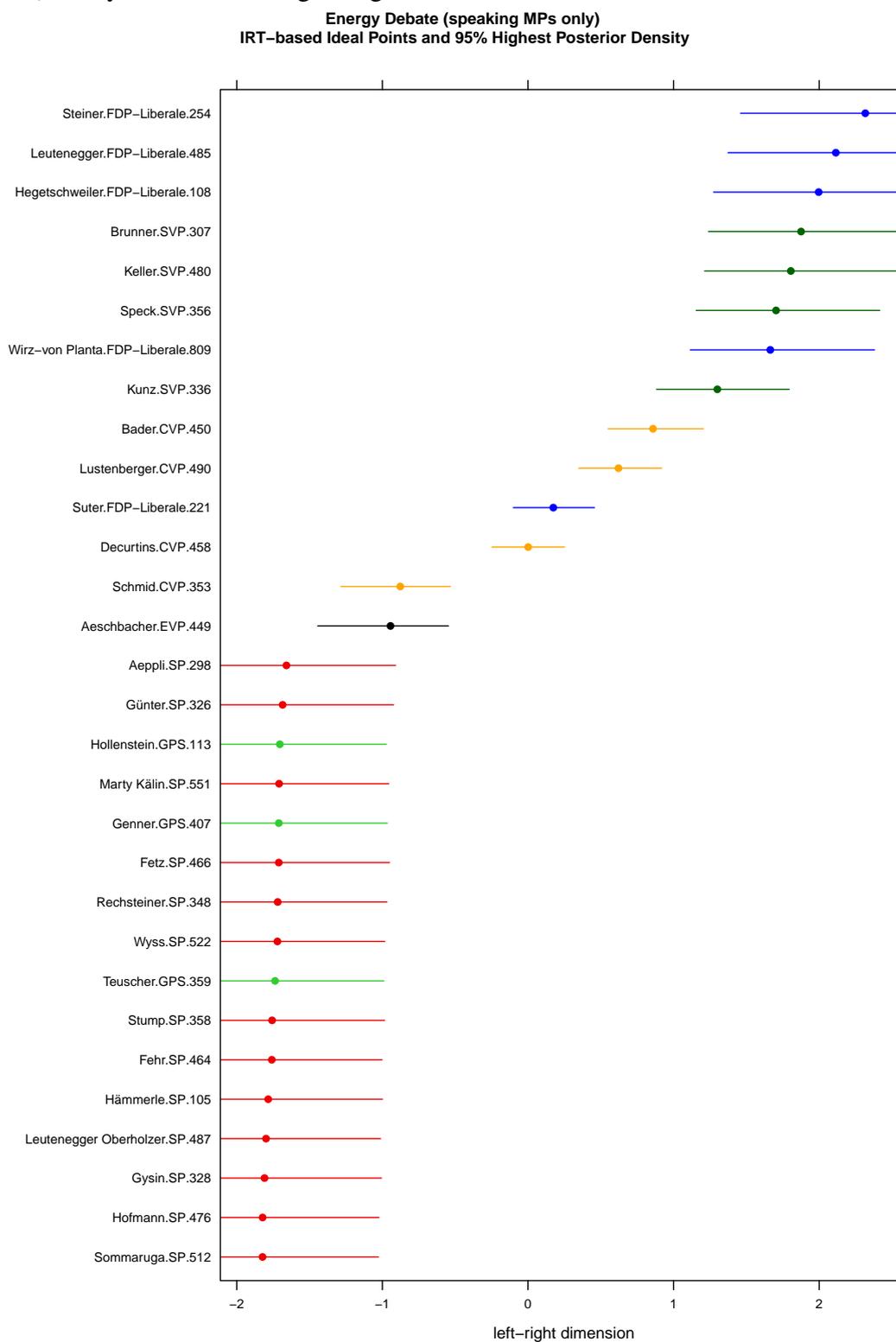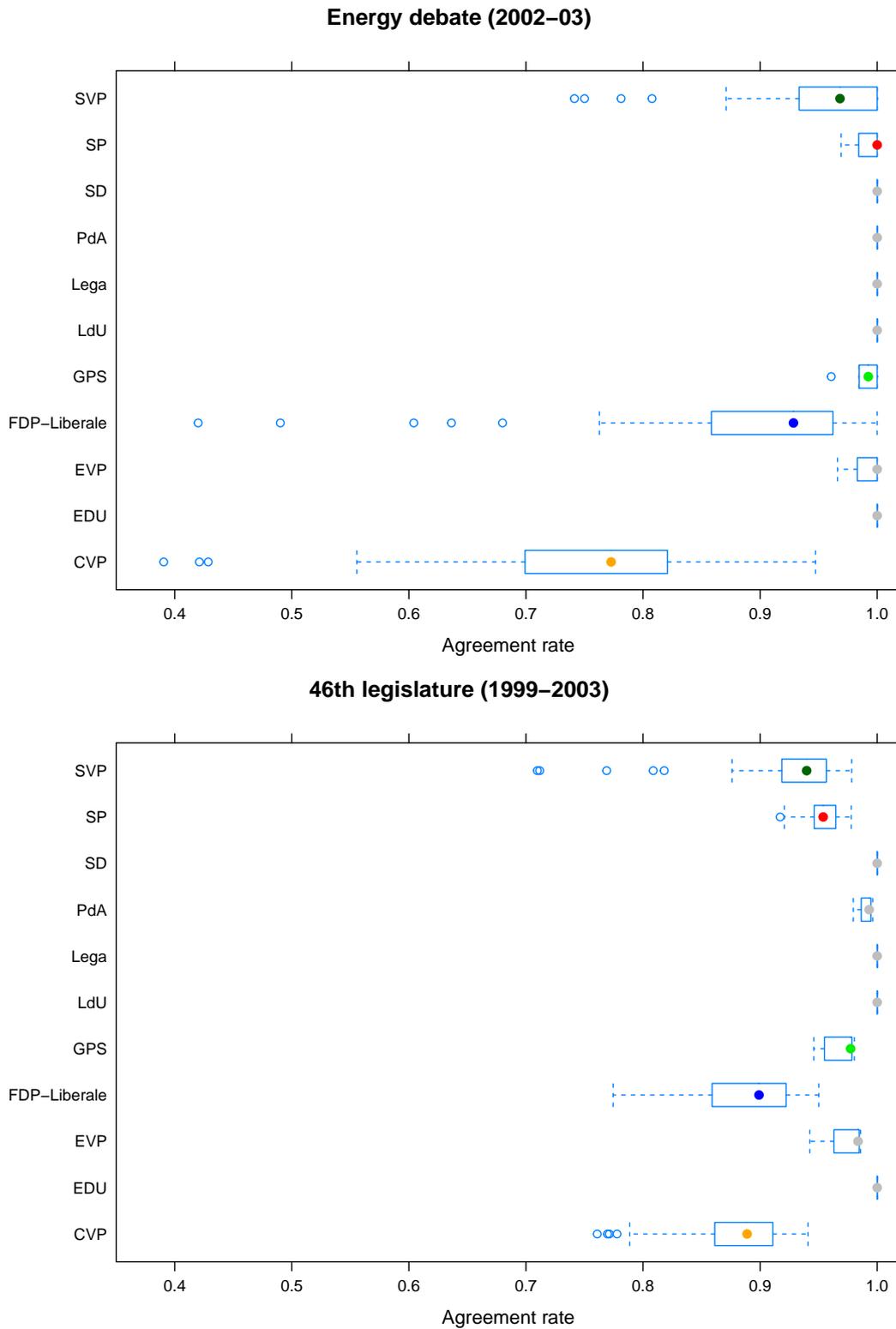**IRT−based Ideal Points and 95% Highest Posterior Density**

Figure 5: Box plots of MP agreement rates with own party (energy debate and entire 46th legislature).

Energy debate (2002–03)

46th legislature (1999–2003)

2.2 Measuring legislator positions from speeches

2.2.1 Speech and speaker selection

Our analysis of speeches made my Swiss MPs during the energy debates includes 30 MPs whose concatenated speeches average 2,580.5 words in length. Table 7 in the Appendix details the 30 speakers we retained, as well as their voting decisions on the final passage votes to the two popular initiatives and the new federal act. More MPs spoke, but our analysis excluded texts from speakers that we had strong *a priori* reasons to believe did not contain substantial information about their policy preferences. This included removing speeches that reflected only specific institutional roles (like the parliamentary president); short speeches that contained only procedural or interactive statements; and speeches that were not made in German. We also removed speeches below a certain minimum length threshold.

Regarding the institutional roles of some speakers we first excluded all speeches from parliamentary presidents because their speeches are always purely procedural.[10] This included cutting 11 speeches from the Parliamentary vice-president. We also eliminated all 42 speeches of the members of government. Government members (Federal Councilors) are not MPs; they neither vote nor do their speeches purely represent the interest of their respective parties since the government is organized as a collegial body. Finally, we also excluded 66 speeches from committee rapporteurs, because these speakers are charged with expressing the committee majority position, which is not necessarily their own, but rather aimed at presenting a balanced assessment of the committee debates and the reasoning that stands behind some of the most important decisions.

Apart from the exclusion of parliamentary presidents, committee rapporteurs and government members, we further eliminated 20 purely procedural speeches, such as when an MP asks for the adjournment of the debate, or when a speaker issues short instructions (e.g. "Herr Fischer, ich habe versucht, mich zu erklären, und habe gesagt: zuerst die normale Abstimmung Mehrheit gegen Minderheit." or "Sie müssen nicht erklären, dass Sie keine Frage stellen wollen."), as well as 36 spontaneous interactions among MPs. After every speech any MP

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[10]The president of a parliamentary chamber plays a nonpartisan role in Switzerland. He does neither participate in the debate nor in votes except as a tie-breaker.

or government member has the opportunity – if the former orator permits – to ask a 'concise interposed question' to a specific point in the preceding speech[11]. 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.

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 some speeches may in parts 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, see Benoit, Schwarz and Traber, 2012) or to start with language-specific scalings. In what follows, we employ the second option, restricting our analysis on the texts in German language. In doing so, we excluded 5 French-speaking MPs from our analysis.

Finally, we removed all MPs from the analysis whose concatenated texts were shorter than 500 words (which is about one letter-size page of German text). The 500-words threshold is purely empirically defined since text scalings with all three methods we employed (Wordscores, Wordfish, and correspondence analysis) tended to produce implausible results for less talkative MPs.

2.2.2 The determinants of speaker selection

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 into 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

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[11]See art. 42 GRN.

this model, the primary function of legislative speeches is signalling 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 the party leadership prohibits expression of dissent on the parliamentary floor. 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 minimally restrictive. Basically, if an MP is unhappy with her party's majority position and for some reason would like to make her disagreement public, all she has to do is to file in advance a personal petition to change the unwanted part of the proposed bill and she will get 5 minutes to defend her view on the floor. 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 two types of models to detect possible selection bias in speeches. The results are displayed in Table 4. The first model is a logistic regression model that tests whether certain MPs have higher probability to speak based on a number of individual characteristics, such as language, role within the party and policy position (ideal points). Besides the general policy position, measured on the basis of all votes in one legislative period [12], we included the distance between the MPs' ideal points in the energy debate, and the party's policy median in this debate. Finally, the model takes account of constituency preferences, that is, the average share of yes votes in the popular vote in May 2003. The second, linear, model includes the same variables to test whether the length of an MPs speech is determined by these characteristics.[13] 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

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[12]Ideological position is measured by ideal point estimates calculated on the basis of the entire 46th legislative period (see section 2.1).

[13]Note that we show odds ratios (and corresponding 95% confidence intervals) for Model 1 in Table 4.

Table 4: Models to predict speech act and speech length

	Speech act (Logit)	Speech length (OLS)
	(1)	(2)
Party leader	2.216	0.566
	[0.198, 24.784]	[-0.610, 1.740]
Language = french or italian	0.132***	-0.149
	[0.032, 0.543]	[-0.890, 0.600]
Sex: female	0.350*	0.061
	[0.108, 1.141]	[-0.530, 0.650]
Seniority (log weeks)	0.599	0.087
	[0.291, 1.234]	[-0.290, 0.470]
Committee member	139.314***	1.405***
	[26.314,737.584]	[0.860, 1.950]
Abs. distance to	0.495	0.523
party median (energy debate)	[0.049, 4.951]	[-0.550, 1.600]
RCV idealpoints	0.481***	-0.118
	[0.343, 0.676]	[-0.280, 0.050]
Share of yes votes in popular	1.051	0.004
referendums (average)	[0.966, 1.143]	[-0.030, 0.030]
Constant	0.505	5.423***
	[0.005, 47.059]	[3.080, 7.770]
Log-likelihood	-59.738	
Adj. R^2		0.397
N	200	48

Note: The models were estimated using the Zelig package (Imai, King, and Lau 2007). Models 1 and 2 include all MPs and predict *who* speaks. The table displays odds-ratios and corresponding 95%-confidence intervals. Models 3 and 4 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. We omit party group leaders, due to perfect prediction. P-values: $p \leq 0.01$=***, $p \leq 0.05$=**, $p \leq 0.1$=*.

MP attributes consistently determines legislative speech. Apparently, leftist MPs are more likely to speak than MPs on the right side of the policy spectrum in this debate, but we find no evidence that party leaders and party group leaders tend to speak systematically more often than backbenchers. Party group leaders are even excluded from the models because they did not participate at all in the debate.[14]

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, meaning that we should be able to compare these measures directly without endogeneity problems caused by censorship of expressed positions by party leaders.

2.2.3 Text scaling estimates

Our main 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.[15] The text estimates are based on texts aggregated by MP, with pre-processing and text selection performed as we have described above.

The Poisson scaling results for the energy debate are shown in Figure 6.[16] The plot shows party groupings that are quite similar to those in the previous roll call analysis in section 2.1, There are also significant intra-party differences, but in contrast to previous roll-call analysis they do not only occur within the center and center-right parties, but also within the parties on the left. This hints at evidence of intra-party differences in preferences which are not revealed in roll call votes.

A comparison of the Wordfish ideal points to the results of alternative text scaling methods like Wordscores (Laver, Benoit and Garry, 2003; Lowe, 2008) in Figure 7 and correspondence

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[14]Not 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 1).

[15]In order to validate the results across different scaling methods we also employed scalings based on Wordscores and correspondence analysis.

[16]For the estimations we used the `wordfish` function in Will Lowe's `austin` library for R.

analysis (Nenadic and Greenacre, 2007) (see Appendix, Figure 11) shows large similarities in the way parties are distributed over the scale, while the precise position of individual MPs may differ (see the direct comparison with Wordfish scores in Figure 8).[17]. Reference documents = MPs Teuscher (GPS) and Steiner (FDP-Liberals). Since we have to deal in the Swiss context with multiple speakers of each party without institutionalized party speaker who would present the pure and official party line, it is hard to define the 'left-most' or 'right-most' speech document. Our pragmatic solution was to try different combinations with MPs of which we knew about their 'extreme' attitudes on the topic and choose one of them.

It is difficult from the text scaling estimates alone to gauge whether the differences reflect genuine (even if subtle) expressions of divergent preferences, or instead reflect anomalies in the texts or the text processing which the scaling procedures might be sensitive to. 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.

2.3   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 we plot the text scaling results against the roll call vote positional estimates from section 2.1. Figure 9 compares IRT-based RCV scalings with results from Wordfish and Wordscores, as well as correspondence analysis both for roll calls and text scalings.[18]

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[17]Wordscores results obtained via `classic.wordscores` function in `austin` library for R. For correspondence analysis we used R `ca` package.

[18]The CA approach to roll-call analysis was not shown in section 2.1. We used here the `R anacor` library because the standard `ca` package does not apply to matrices with missing values.

Figure 6: Text Scaling Results (Wordfish) for Energy Bill Debates. Original German language texts only. (The colors of each speaker's plotting symbol matches the party colors from Figure 2)
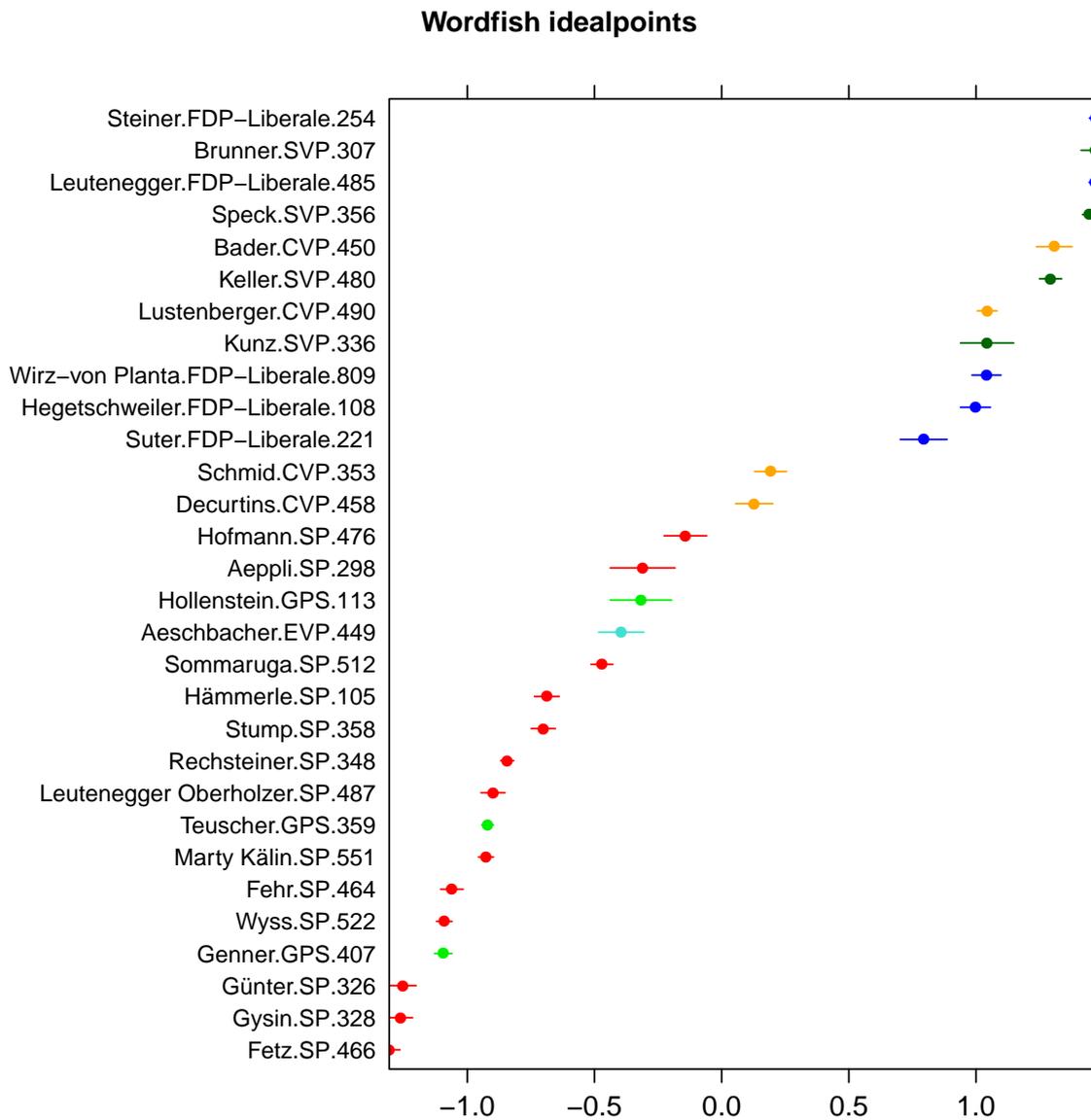

Wordfish idealpoints

Figure 7: Text Scaling Results (Wordscores) for Energy Bill Debates. Original German language texts only. (The colors of each speaker's plotting symbol matches the party colors from Figure 2)

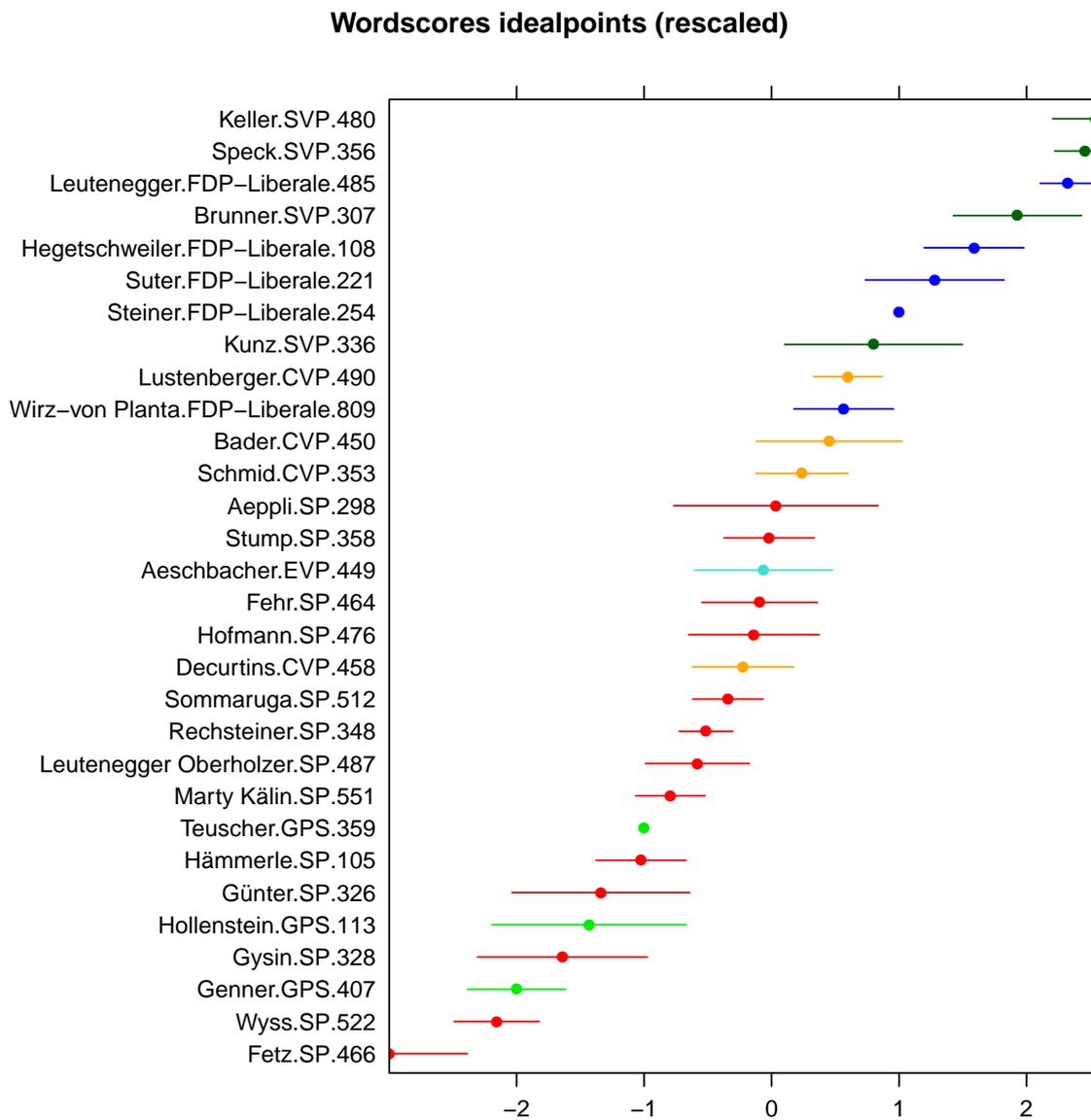**Wordscores idealpoints (rescaled)**

Figure 8: Wordfish Text Scaling versus Wordscores Scaling and Correspondence Analysis. Original German language texts only.
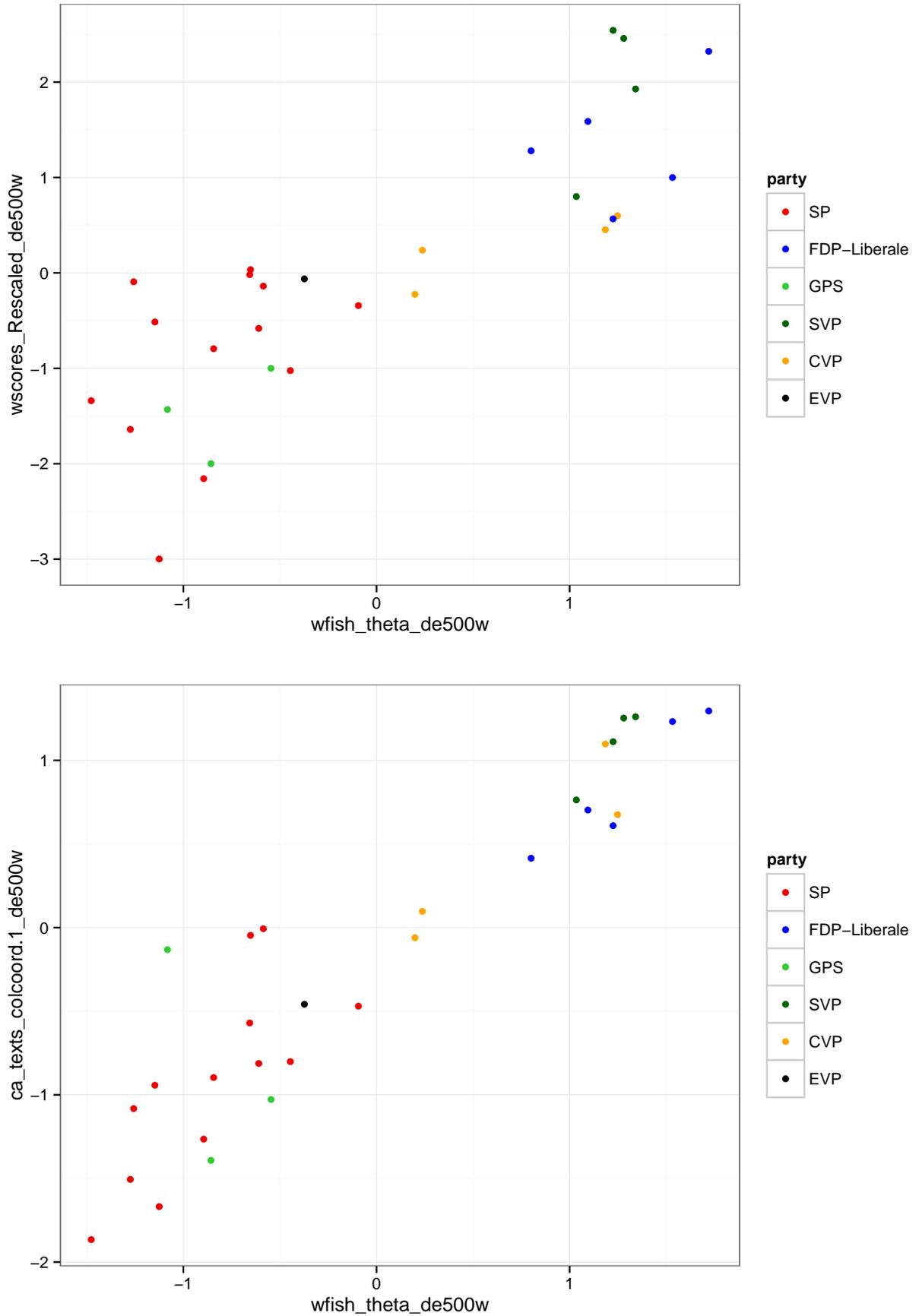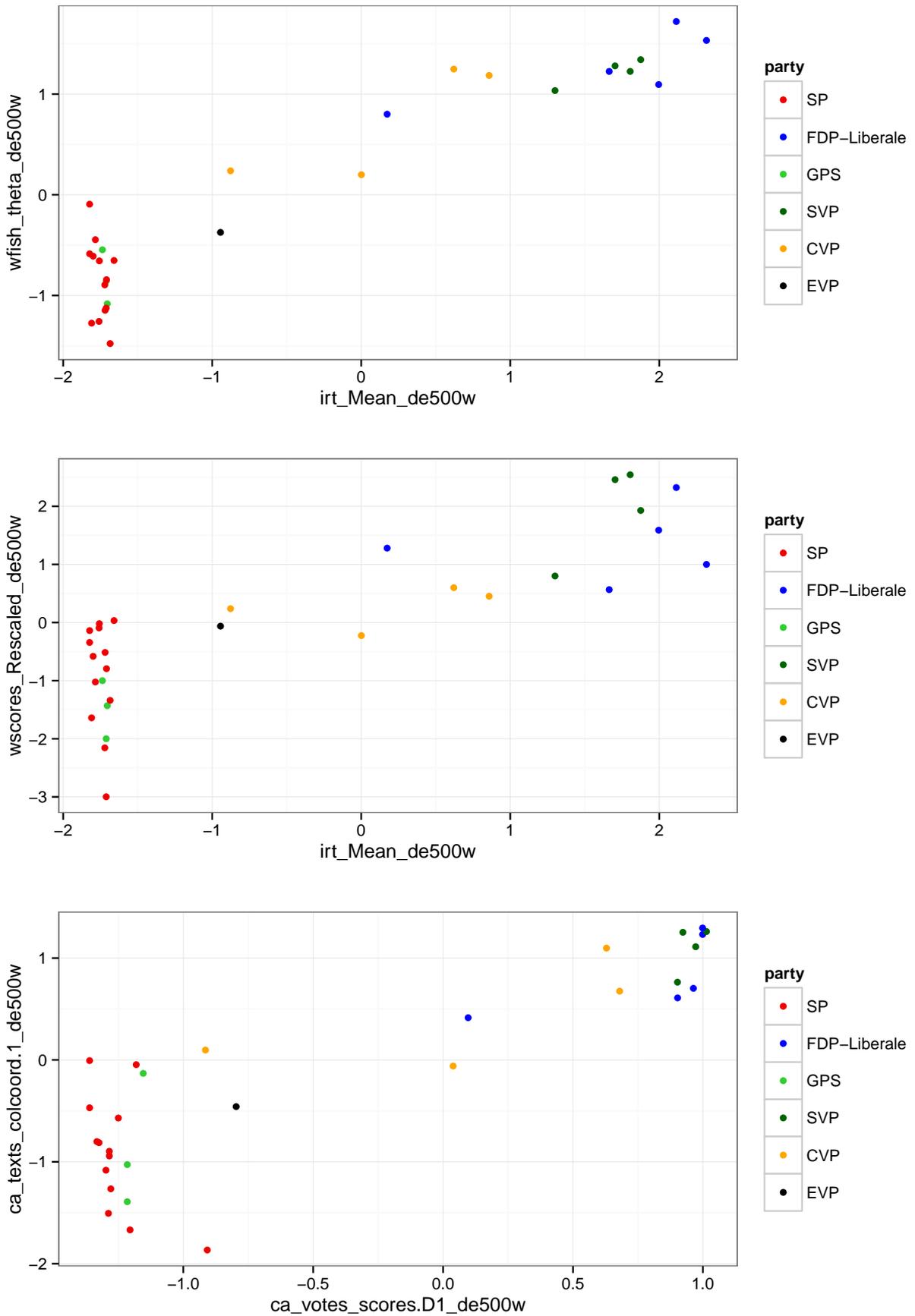
Figure 9: RCV Scaling (IRT, CA) versus Text Scaling (Wordfish, Wordscores, CA). Original German language texts only.

The picture is largely the same in all three Figures. We see different patterns for the center-right and rightist parties (CVP, FDP-Liberals and SVP) on the one hand and the left parties (SP and GPS) on the other hand. While the compared estimates for the bourgeois parties are located around an imaginary diagonal line, the comparison shows for the left camp positional homogeneity along the x-axis (as is to be expected according to the results in section 2.1) but heterogeneity along the y-axis. This is a strong hint that where party discipline is relatively low and thus MPs relatively unconstrained in their voting behavior roll call analysis and text analysis produce quite similar results. Where party discipline is strong and voting behavior constrained – like within the SP and GPS – text analysis picks up differences which are not detected through votes.

However, the intra-party differences revealed through text analysis do not constitute a major shake-up of left positions. Most notably, and very important for the substantive plausibility of the results, despite higher variation within the left parties text scalings do not mix up anti-nuclear and pro-nuclear MPs. As shown above in Figures 6, 7, and 11 according to the Wordfish results they are completely kept to themselves, while Wordscores and correspondence analysis results suggest that anti-nuclear centrist MPs slightly mix with center-leaning MPs from left parties. Thus our text analysis results do not claim that the intra-party difference found within left parties would reveal hidden sympathies for nuclear energy. Such a result would have been highly implausible given the credible engagement of virtually all MPs to the left for the two initiatives in the later referendum campaign. The text scalings point to more subtle differences among left MPs, probably rooted in the type of arguments brought forward and the way the arguments are presented: left MPs in opposition to nuclear energy, but who pick up the technical and economic terms of the advocates of nuclear energy may receive text scaling positions slightly closer to the pro-nuclear camp.

Thus far, our results fit the theoretical expectations pretty well but we regard them as requiring further scrutiny. The litmus test will be if the additional heterogeneity found in text analysis can be meaningfully explained, a matter we will turn to in the next section.

3 Explaining differences between voting and speech-making

The energy debate linked together a new federal act and two anti-nuclear popular initiatives. The results of these referendums provide valuable information about voter preferences, both in general and on the level of MPs' electoral districts (cantons).

Both popular initiatives against nuclear energy – the initiative for nuclear phaseout and the initiative for a 10-year ban on new nuclear plants – were rejected by the Swiss voters on May 18, 2003. However, from a regional perspective the rejection was not univocal: the city canton of Basel-Stadt adopted both initiatives while in surrounding Basel-Landschaft the moratorium initiative received a narrow majority. Moreover, there was substantial variation in the results between cantons. Figure 10 plots the variation by canton in support for both referendum measures. In the case of the phaseout initiative, for example, the share of support varied from 23% in the distinctive pro-nuclear canton of Aargau[19] and 52% in most skeptical canton of Basel-Stadt.

The regional variation is not accidental. Two main patterns can be invoked: First, previous referendum results have shown that people living in rural areas as well as those in the French-speaking (western) part of Switzerland are less likely to share "green" positions. However, the maps in Figure 10 do not reveal a clear-cut picture which would satisfyingly explain the referendum results of 2003 (regarding contrasts between urban and rural areas the depicted regional entities are also too wide-meshed to draw valid conclusions). Furthermore, since our analysis only includes speeches in German language, we are not in a position to test the effect of lingo-cultural variables.

A second pattern combines personal concern and financial federalism. People living in the wider area around the five nuclear plants share more or less the same risks, but for those living in the cantons where the nuclear plants are located the risks are somewhat outweighed by corporate tax revenues of the power plant operators and the income tax revenues of the highly qualified staff working in these sites.[20] Furthermore, the personal concern aspect extents to

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[19]The canton of Aargau hosts 3 of Switzerland's 5 nuclear reactors, the country's interim storage facility for spent fuel elements, and the Paul Scherrer Institute (the nuclear research part of the Swiss Federal Institute of Technology ETHZ/EPFL).

[20]One could even push this argument to the municipal level because Swiss tax competition does not only play between cantons but also between municipalities within each canton which means that the best deal by far –

Figure 10: Regional variation in support for (a) nuclear phaseout and (b) the moratorium initiatives of May 18, 2003, and the locations of Switzerland's 5 active nuclear reactors.
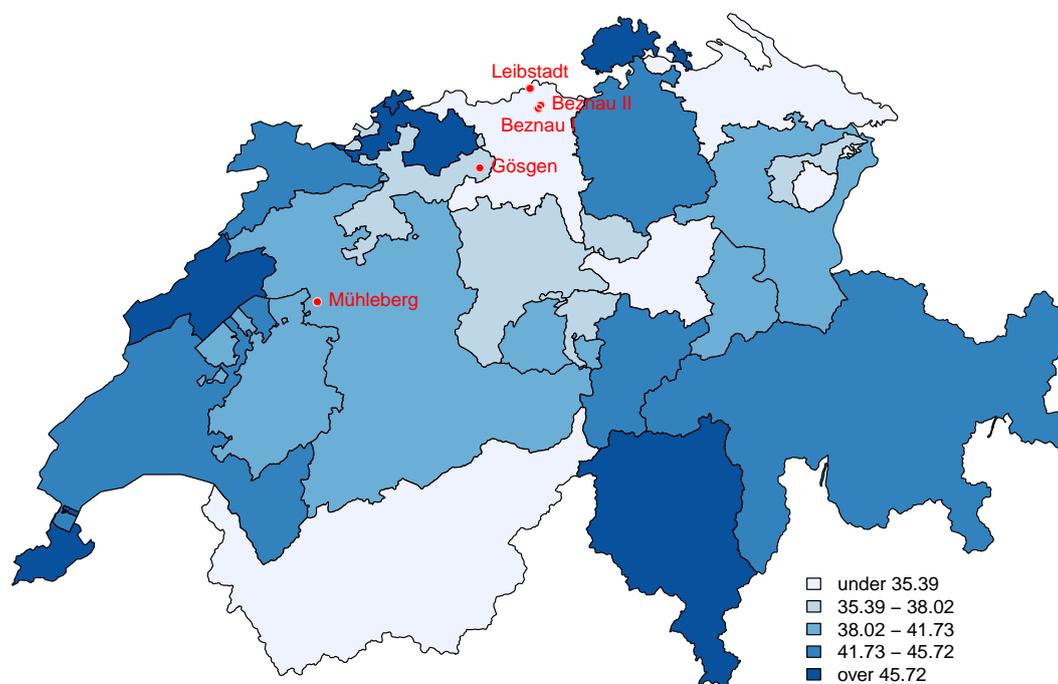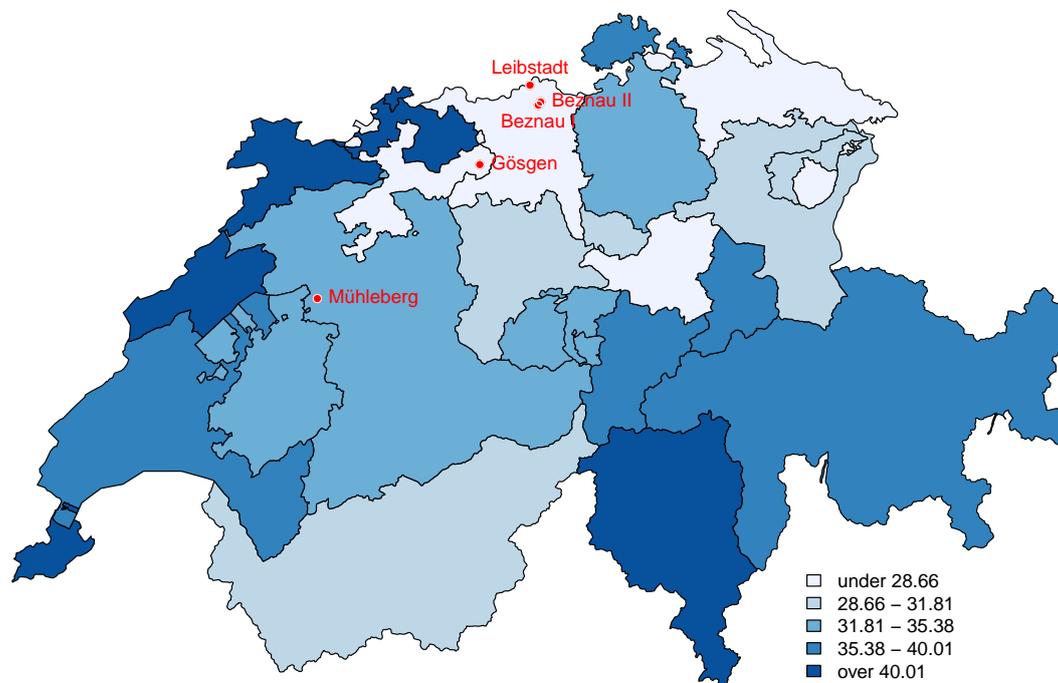
two French nuclear sites close to the Swiss border. The Fessenheim plant is most proximate to the cantons of Basel-Stadt, Basel-Landschaft and Jura (but also to nuclear-friendly canton of Aargau), and until the mid-1990s there used to be seven French nuclear reactors near Geneva.[21]

Thus our theoretical expectation is that the signals MPs send in their speeches to their constituents follow the variation in regional concern (both in terms of health risks and unequal share of economic benefits): MPs from nuclear-friendly cantons or those from nuclear-skeptical cantons adapt their speeches accordingly (even if sometimes in a very subtle way).

Moreover, the post-referendum survey among voters (the so-called VOX analysis, see Blaser et al., 2003) with regard to the two energy-related popular initiatives found significant effects of a voter's age (younger voters) and sex (female voteer) on approval of the two initiatives (apart from obvious variables like political affiliations, e.g. left-wing voters who sympathized with GPS or SP were heavily in favor of the initiatives).

Consequently we tested the explanatory power of the constituency preference measure (share of approval in the anti-nuclear referenda) for the text analysis results with a couple of linear regression models. Additional independent variables were: roll-call vote estimates for the energy debate, party fixed effects (reference category is centrist CVP), MPs' age and sex.

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perhaps apart from the direct view on a cooling tower in some sites – gets the municipality where the nuclear plant is located. In this paper we do not follow further this path but stay at cantonal level.

[21]Two of them, most notably the notoriously insecure Superphénix fast breeder reactor in Creys-Malville, were shut in 1994 and 1997 which partly explains why Geneva and other French-speaking cantons that were in favor of a nuclear phaseout in a 1990 referendum changed their majority position in 2003.

Table 5: OLS Regression Models to Predict Text Scalings (Reduced Models)

	Dependent variable:					
	Wordfish	Wordscores	CA	Wordfish	Wordscores	CA
	(1)	(2)	(3)	(4)	(5)	(6)
RCV idealpoints (IRT)	0.616***	0.722***		0.428***	0.234	
	(0.041)	(0.092)		(0.152)	(0.355)	
RCV idealpoints (CA)			0.854***			0.380
			(0.090)			(0.327)
Party EVP				−0.622	−0.073	−0.567
				(0.414)	(0.969)	(0.644)
Party FDP-Liberals				−0.086	0.734	0.139
				(0.322)	(0.753)	(0.410)
Party GPS				−0.746*	−1.306	−0.808
				(0.384)	(0.899)	(0.579)
Party SP				−0.754**	−0.715	−0.851
				(0.348)	(0.813)	(0.535)
Party SVP				−0.148	1.310	0.324
				(0.333)	(0.779)	(0.455)
Constant	0.280***	0.302*	0.207**	0.653***	0.231	0.411
	(0.066)	(0.150)	(0.097)	(0.171)	(0.400)	(0.258)
Observations	30	30	30	30	30	30
R^2	0.892	0.686	0.762	0.915	0.741	0.787
Adjusted R^2	0.888	0.674	0.754	0.893	0.674	0.732
Residual Std. Error	$0.348(df = 28)$	$0.793(df = 28)$	$0.490(df = 28)$	$0.340(df = 23)$	$0.793(df = 23)$	$0.511(df = 23)$

Note: *p<0.1; **p<0.05; ***p<0.01. The models were estimated using the R `lm` function.

Table 5 contains two reduced models (without constituency measures) for each of the three text scaling methods. Table 6 shows the full models including the district-level measures (approval rates in phaseout and moratorium referenda). The results confirm the theoretical expectations since in every model the effect of district preference on the text scalings is significant at .05 level or better, irrespective of the text or roll-call scaling method used. The higher the support for the initiatives, the more to the left is the MP position in the text scaling. This is strong evidence that individual MPs were speaking to their constituencies, yet voting with their party. Even when controlling for party effects, legislators from constituencies more (or less) supportive of the phaseout and the moratorium adapted their speeches accordingly, regardless of their party's majority position that guided the legislator's vote.

Table 6: OLS Regression Models to Predict Text Scalings (Full Models)

			Dependent variable:			
	Wordfish	Wordscores	CA	Wordfish	Wordscores	CA
	(1)	(2)	(3)	(4)	(5)	(6)
RCV idealpoints (IRT)	0.371**	0.211		0.390***	0.266	
	(0.136)	(0.329)		(0.134)	(0.337)	
RCV idealpoints (CA)			0.326			0.393
			(0.294)			(0.293)
Approval phaseout	−0.016**	−0.046**	−0.032***			
	(0.007)	(0.018)	(0.011)			
Approval moratorium				−0.019**	−0.046**	−0.036***
				(0.008)	(0.020)	(0.012)
Age	−0.007	0.014	−0.003	−0.007	0.014	−0.003
	(0.007)	(0.017)	(0.011)	(0.007)	(0.018)	(0.011)
Female	0.230	−0.153	0.210	0.240	−0.138	0.228
	(0.146)	(0.353)	(0.221)	(0.145)	(0.364)	(0.220)
Party EVP	−0.512	0.005	−0.397	−0.415	0.229	−0.192
	(0.367)	(0.889)	(0.574)	(0.369)	(0.925)	(0.581)
Party FDP-Liberals	0.104	0.957	0.347	0.123	0.964	0.389
	(0.291)	(0.705)	(0.370)	(0.290)	(0.727)	(0.370)
Party GPS	−1.042**	−1.022	−0.988*	−0.960**	−0.813	−0.811
	(0.368)	(0.892)	(0.557)	(0.366)	(0.919)	(0.559)
Party SP	−0.858**	−0.301	−0.781	−0.773**	−0.117	−0.601
	(0.320)	(0.774)	(0.495)	(0.322)	(0.809)	(0.505)
Party SVP	−0.030	1.303*	0.393	−0.020	1.314*	0.409
	(0.303)	(0.734)	(0.417)	(0.301)	(0.754)	(0.415)
Constant	1.489***	0.889	1.502**	1.661***	1.182	1.819**
	(0.468)	(1.133)	(0.708)	(0.493)	(1.238)	(0.751)
Observations	30	30	30	30	30	30
R^2	0.943	0.813	0.855	0.944	0.803	0.857
Adjusted R^2	0.917	0.729	0.790	0.919	0.714	0.792
Residual Std. Error (df = 20)	0.299	0.723	0.452	0.296	0.743	0.450

Note: *p<0.1; **p<0.05; ***p<0.01. The models were estimated using the R `lm` function.

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4   Discussion and conclusion

The direct comparison of roll call votes and speeches requires an institutional setting where MPs can express their preferences on a specific topic relatively unconstrained both in multiple votes and in speeches. Switzerland's legislature comes quite close to this ideal: The debate explored in our analysis involved 66 roll call votes, and we could show that there was relatively unbiased MP access to the microphone.

Our analysis of legislative speeches to a crucial Swiss energy debate in 2002–2003 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, particularly among the highly united left. Far more heterogeneity, by contrast, appears in positions taken in legislative speeches during the debates. The results thus support the hypothesis that MPs are less constrained in speeches than in votes.

Not only are preferences measured from legislative speech more heterogeneous than preferences measured from votes, but also this variation is far from random. Our analysis has found that the vote shares at district level in an energy policy referendum closely linked with the investigated energy debate are significantly related to how legislators spoke about the proposed bill during the parliamentary debates. The higher the support for nuclear-skeptical energy policy in the electoral constituency, the more to left are the positions as measured by text scalings. This result corroborates that the differences found between roll-call and text analysis are not pure methodological artifacts stemming from different data sources (binary roll calls on the one hand and large word frequency tables on the other) or different analytical models (IRT, correspondence analysis, Wordscores, Wordfish), but can be explained in substantive terms confirming the theoretical expectation often associated with parliamentary speeches. Even when controlling for party effects, MPs from constituencies more (or less) supportive of nuclear phaseout and moratorium adapted their speeches accordingly, regardless of their party's majority position that guided the legislator's vote.

Here, we have established first, that speech is more varied and sincere than votes, which tend even in less strongly whipped systems such as Switzerland still to occur largely on party

lines; and second, that speeches tend to be aimed at constituents based on political preferences specific to a legislator's voters. Future research should focus on the difference between legislative voting and expressed positions through speech in systems with greater party discipline, or where speakers themselves may be censored as an extension of party discipline. Our analysis here however is a promising indication that the conventional wisdom about the sincerity of political speech holds true, and that rich information about intra-party policy preferences can be found in the words that policy-makers use, regardless of the outcome of their decisions.

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Appendix

Table 7: Voting behavior in the final passage votes to the two popular initiatives (December 2002) and the federal act (March 2003) (30 speaking MPs, sorted by RCV scalings)

MP	Canton	Phaseout initiative	Moratorium initiative	Federal act
Steiner (FDP-Lib)	Solothurn	no	no	yes
Leutenegger (FDP-Lib)	Zug	no	no	yes
Hegetschweiler (FDP-Lib)	Zurich	no	no	yes
Brunner (SVP)	St. Gallen	no	no	yes
Keller (SVP)	Zurich	no	no	yes
Speck (SVP)	Aargau	no	no	yes
Wirz-von Planta (FDP-Lib)	Basel-Stadt	no	no	yes
Kunz (SVP)	Lucerne	no	no	yes
Bader (CVP)	Solothurn	no	no	yes
Lustenberger(CVP)	Lucerne	no	no	absent[1]
Suter (FDP-Lib)	Bern	absent	absent	abstention[2]
Decurtins (CVP)	Graubünden	no	yes	no
Schmid (CVP)	Valais	yes	yes	no
Aeschbacher (EVP)	Zurich	abstention	yes	no
Aeppli (SP)	Zurich	yes	yes	no
Günter (SP)	Bern	absent[3]	absent	no
Hollenstein (GPS)	St. Gallen	yes	yes	no
Marty Kälin (SP)	Zurich	yes	yes	no
Genner (GPS)	Zurich	yes	yes	no
Fetz (SP)	Basel-Stadt	yes	yes	no
Rechsteiner (SP)	Basel-Stadt	yes	yes	no
Wyss (SP)	Bern	yes	yes	no
Teuscher (GPS)	Bern	yes	yes	no
Stump (SP)	Aargau	yes	yes	no
Fehr (SP)	Schaffhausen	yes	yes	no
Hämmerle (SP)	Graubünden	yes	yes	no
Leutenegger Oberholzer (SP)	Basel-Landschaft	yes	yes	no
Gysin (SP)	Basel-Stadt	yes	yes	no
Hofmann (SP)	Aargau	yes	yes	no
Sommaruga (SP)	Bern	yes	yes	no

[1] Most likely in favor of the federal act as he voted accordingly in the overall vote after first reading in National Council in September 2002.

[2] Quite interestingly, MP Suter was in favor of the federal act and against the two initiatives in the overall vote after first reading in September 2002. Abstention in the final passage vote to the federal act hints at some change of heart. There could be strategic reasons for the miss of the two votes regarding the initiatives.

[3] Most likely in in favor of both initiatives as he voted accordingly in the overall vote after first reading in National Council in September 2002.

Figure 11: Text Scaling Results (Correspondence Analysis) for Energy Bill Debates. Original German language texts only. (The colors of each speaker's plotting symbol matches the party colors from Figure 2)

Correspondence Analysis – 1st Dim