UNIVERSITÄT
BERN

Faculty of Economics and
Social Sciences

**Institute of Political Science
(IPW)**

How representative are published votes for legislative voting behaviour?

Paper presented at the ECPR General Conference
Section No. 6: "National Legislative Arenas in Europe"
Budapest, 8-10 September 2005

Daniel Schwarz

Abstract

Scholars around the world use datasets of published votes to analyse legislative behaviour. The research field is driven by ever more complex statistical methods but still suffers from lacking knowledge about basic facts of data quality regarding selection effects. This paper follows up recent research on the European level and explores the question of selection bias using the dataset of the Swiss National Council. The dataset covers the period 1996-2004 and comprises both all published and unpublished votes. The dataset is further linked with useful context information as regards to vote types and policy fields.

The empirical analysis finds significant effects of the subset of publicised votes on all variables considered (vote types, policy fields, party positions). Thus, and despite the fact that institutional rules in Switzerland require the automatic publication of a substantial part of the votes, published votes cannot be hold representative for general legislative voting behaviour. Moreover, they are also a doubtful base for any comparative cross-national studies.

Berne, August 2005

Lerchenweg 36, P.O. Box
CH-3000 Berne 9
daniel.schwarz@ipw.unibe.ch
www.ipw.unibe.ch

Contents

Illustrations iii
Abbreviations iii

1. Introduction 4

2. Previous research on selection effects 5

3. Potential sources of selection bias 10
3.1 Gate-keeping power of committees and executives 10
3.2 Uncontested issues 11
3.3 Systematic absenteeism 12
3.4 Strategic voting 12
3.5 Multiplied votes 13
3.6 Published and unpublished votes 13
3.7 Strategic non-request of published votes 15
3.8 Changing institutional rules of recording and publication 15

4. Empirical patterns of selection bias 16
4.1 Effects of RCV subsets: published vs. unpublished votes 18
4.1.1 Effects on party unity 18
4.1.2 Effects regarding vote type 18
4.1.3 Effects regarding policy issue coverage 19
4.1.4 Effects regarding relative political positions of party groups 20
4.2 Effects of multiplied votes 21
4.3 Effects of eliminating unanimous votes 22

5. Conclusions 23

6. References 25

7. Annex 30

Illustrations and Tables

Figure 4.1 Effects of RCV subsets (unpublished vs. published votes): deviance in the political distance index, 1999-2003 ... 35
Figure 4.2 Effects of RCV subsets on the political distance index, 1999-2003 ... 36
Figure 4.3 Multiplication effects on the political distance index, 1999-2003 ... 37
Figure 4.4 Effects of eliminating lopsided votes from all published votes: deviance in the political distance index, 1999-2003 ... 42

Table 2.1 Categories of votes in the Swiss National Council (lower house) ... 9
Table 3.1 Motivational factors in published votes on specific request ... 14
Table 4.1 Variables used in the empirical analysis ... 17
Table 4.2 Rice index of party cohesion by party group and RCV type, 1996-2004 ... 30
Table 4.3 Selection effects of RCV subsets on vote types (chi-square test), 1996-2004 ... 31
Table 4.4 Selection effects of RCV subsets on policy areas (chi-square test), 1996-2004 ... 32
Table 4.5 Political distance index (unpublished vs. published votes), 1999-2003 ... 34
Table 4.6 Multiplication effects on the political distance index: final votes vs. other automatically published votes, 1999-2003 ... 38
Table 4.7 Selection effects of subsets of non-lopsided votes on policy areas (chi-square test), 1996-2004 ... 39
Table 4.8 Political distance index (all published votes vs. non-lopsided published votes, and deviance in %), 1999-2003 ... 41

Abbreviations

CVP	Christian-Democratic Party *(Christlich-Demokratische Volkspartei)*
EP	European Parliament (of the European Union)
FDP	Free Democratic Party *(Freisinnig-Demokratische Partei)*
GPS	Green Party *(Grüne Partei der Schweiz)*
LPS	Liberal Party *(Liberale Partei der Schweiz)*
MP	Member of parliament
NC	National Council (lower house of the Swiss Federal Assembly)
PDI	Index of political distance
RCVs	Recorded votes
SPS	Social-Democratic Party *(Sozialdemokratische Partei der Schweiz)*
SVP	Swiss People's Party *(Schweizerische Volkspartei)*

1. Introduction

Using published votes is the standard way to analyse the collective or individual behaviour of parliamentarians (MPs). The sheer amount of studies to the U.S. Congress based on roll-call data[1] has become hardly manageable long ago and is an impressing testimony to the apparent popularity of this data source. Meanwhile, the wave has reached Latin America and Europe which is demonstrated by a rapidly growing number of contributions analysing legislative votes (for a concise overview, see e.g. Hug 2005). And the development in information technologies further increases the easy availability of such data (see Saalfeld 1995; Carey 2004b). The attraction of voting data is highlighted by Kingdon (1989: 10): "This rich body of material, perhaps unique in the field of political science, combines the singular virtues of being 'hard' quantified data, while at the same time being readily accessible in published documents."

Thus, the validity of analyses of published votes for the overall voting and coalition behaviour in parliaments is often taken for granted, despite the fact that legislative datasets are often incomplete or selective in a non-random manner, due to institutional or motivational reasons. Analytic results based on published votes thus are most likely biased. Two basic factors are often disregarded: first, scholars often treat the available subsets of recorded and/or published votes as if they had the complete set of all parliamentary decisions at hand. Second, even if we were in the privileged position to have a set of "all votes" available, it might be nevertheless problematic to use it without having in-depth knowledge about the effects of country-specific institutional and procedural rules of parliamentary voting. These sampling problems will become even more relevant the more popular comparative studies based on voting data become (see e.g. Carey 2002, 2004a).

The primary research questions of the paper are: How "representative" (i.e., non-biased) are often-used subsets of recorded and/or published parliamentary votes with regard to different kinds of decisions and policy fields? What effects can be empirically observed in terms of the party groups' internal unity and relative policy positions? The paper has a clearly explorative character and proceeds as follows: Chapter 2 provides an overview to previous research efforts to the issue of selection effects in legislative voting data. Chapter 3 provides a list of *potential* sources of non-random selection and incomplete datasets - often with a primary focus to the Swiss case considered here. Chapter 4 presents some additional information on the dataset used in this paper

[1] The use of different labels for disclosed parliamentary votes is sometimes confusing, especially in a cross-national context. Many authors use the traditional term "roll-call votes" as being tantamount to "recorded and published votes" since in the U.S. Congress until the 1970s the roll-call technique was the standard way to record the voting behaviour. Today the term seems to be outdated because electronic systems have replaced roll calls largely. Moreover, other legislatures have always used different rules of recording und disclosing votes so that recorded votes do not have to be identical to published votes (for details, see chapters 2 and 3; an overview of the various types of recording votes is presents in Saalfeld 1995). The paper is anxious to reduce confusion and to use a clear wording. It thus uses the term "recorded votes" (RCVs) and specifies if necessary whether "published" or "unpublished" RCVs are dealt with.

and explores the effects of three sources of bias: RCVs subsets of published and unpublished votes, “multiplied votes”, and the elimination of unanimous votes. Chapter 5 concludes.

2. Previous research on selection effects

Scholars are generally aware of the problematic aspects in the analysis of published parliamentary votes. An indicator for this are the frequent side notes to the issue in legislative studies. But lacking empirical data on unpublished votes often prompt most scholars either to ignore the problem (e.g., Hix 2002) or to promise that the shortcomings would be kept in mind when interpreting the results in the concluding chapter - what then is not done, however (e.g., Faas 2002). The potential consequences of significantly biased datasets may not only be unpleasant, they are also more complex than they seem on first sight. For instance, the empirical relevance of selection effects varies a great deal across countries (and, given bicameralism, sometimes even within a country between chambers if they apply different rules of recording and/or releasing votes). And countries that record and publicise “all” legislative votes by default presumably are far less affected by selection effects than countries where only a non-random sample (defined by some fixed institutional rules and/or motivational factors) is released.

According to a list of 92 countries considered by Hug (2005), the selection problem seems to be close to irrelevant in 20 countries - among them the U.S., UK, Ireland, Finland, Sweden, Hungary, Romania - because they record and publish all parliamentary votes by default. However, even the publication of what is called “all votes” does not guarantee a bias-free dataset. As VanDoren (1990) argued, even for the well-documented U.S. Congress some serious sources of bias can be detected: first, the unusually strong congressional committee system exclusively decides what, when and under which procedural rules an issue is brought to the floor; second, issues are quite often decided by the unrecorded voice vote procedure. The relevance of voice votes in U.S. Congress still is largely unexplored (admittedly a time-consuming task) and therefore overwhelmingly ignored by congressional roll-call analysts (for a rare counter-example, see Arnold 1990: 270). While VanDoren’s concerns were explicitly taken into account by Snyder (1992), in their seminal work on U.S. Congress roll-call voting behaviour since 1789, Poole and Rosenthal (1997: 56) argue that VanDoren’s objections are “logically correct but empirically irrelevant”. Their basic argument is that the high number of published congressional votes would ensure a sufficient coverage of all thematic aspects, rendering existing selection effects minor and practically insignificant. Compared with recent work on parliaments in Latin America and Europe which only

publish selected votes, like e.g. the European Parliament or the Swiss National Council, Poole and Rosenthal's view certainly is not unjustified, albeit unproven in empirical terms.[2]

Regarding the European Parliament (EP), studies of Hix (2002), Hix, Noury and Roland (2005), Kreppel and Tsebelis (1999), Kreppel (2002), and Faas (2002) all raise the question of bias in the dataset. They acknowledge that the EP voting dataset most likely is "contaminated" by non-random bias since the EP only records and publicises votes upon specific request by any EP party group or a minimum of 32 MPs. Such requests follow strategic motivations and are therefore of a non-random kind. Potential strategic grounds leading to a call for a recorded vote (RCV) are thoroughly discussed by Kreppel (2002), for instance. In contrast, and despite his obvious awareness of the problem, Hix (2002: 693) states: "[W]ithout empirical evidence to prove that roll-call voting is systematically biased towards a particular EP party or set of issues, it is reasonable to assume that these votes should produce a fairly accurate picture of voting behaviour in the EP." Meanwhile, the demanded empirical evidence has been provided by Carrubba et al. (2004) and Gabel and Carubba (2004) for the EP's 1999-2000 legislative year. But the precise detection of selection effects in RCVs remains difficult because the EP does not record votes at all unless a RCV is requested (i.e., there is no category of "recorded but unpublished votes").

Nevertheless, the pioneering work of the research group around Carrubba and Gabel has brought the debate some important steps forward. They explored the representation of RCVs in the EP regarding:

- the different types of motion (thereby assessing the question if the subset of RCVs in the EP is representative of votes with legislating character, and if all important votes are also recorded);
- the committees of origin (as a proxy for the representation of RCVs by policy areas);
- the party groups that request RCVs (thereby assessing if RCVs are demanded proportionately by all party groups).

The results are clear-cut and shed an unfavourable light on previous studies using RCVs in the EP context. First, the authors found that the less important the vote, the more likely is the call for a RCV. This means that RCVs are over-represented in votes with non-legislating character and in votes that are legislating but subject to the weak consultation procedure of EP law-making rules (as opposed to the more influential assent and co-decision procedures). Second, RCVs in the EP are biased towards particular issue areas. For instance, there was not a single RCV on legislation which had passed through the "Women's Rights and Equal Opportunities" committee although the authors counted a total of 50 floor votes on the committee's legislation proposals. In Gabel and

[2] The relative completeness of the U.S. roll-call database notwithstanding, it seems striking that non-random selection effects is almost a non-issue among U.S. scholars that otherwise engage themselves in developing and applying ever more complex empirical models of legislative decision-making. For an admittedly arbitrary example for this allegation, see the Special Issue of Political Analysis, No.3, 2001, on "Estimating Legislators' Preferences with Roll Call Data".

Carrubba's (2004) interpretation, this bias most likely severely affects the analysis of the EP's political dimensions as well as measures of internal unity and external interactions of the party groups. A third point is that RCVs are not requested equally by the EP party groups. Instead, they are using RCVs for different purposes: some parties call for RCVs mainly in the course of amendment votes while others concentrate their requests on final votes. The overall picture of the analysis of Carrubba et al. (2004) therefore severely undermines central assumptions and findings in previous studies on EP legislative behaviour.

But the analysis of selection effects by Carrubba et al. (2004) may itself be subject to a sampling problem because it was restricted to a single legislative year as well as to the use of proxies and indirect contextual data. Moreover, since there is no unpublished dataset of "all" EP votes (and knowledge about unrecorded votes thus must be limited to the fact that they have taken place), the authors were barred from exploring some farther-reaching research questions like, e.g., the impact of poor representation of some issue areas in recorded voting data on party unity or on the relative political positions of EP party groups.

Awareness of the sampling problem has also been strong among Swiss scholars who dealt with the voting behaviour of the lower chamber of the Swiss Federal Assembly, the National Council (NC).[3] Until 1995, the NC applied a similar roll-call system like the EP today: At that time, RCVs had to be specifically requested by at least 30 MPs (= 15 percent of all MPs), and only these votes had been published in the Official Bulletin. Compared to the bulk of parliamentary votes, RCVs then were a quite rare event although their use had become increasingly popular from the 1980s onwards. The four studies of Vasella (1956), Lüthi et al. (1991), and Lanfranchi and Lüthi (1995, 1999) all raised the question of the limits of roll-call analysis in the Swiss context. Lanfranchi and Lüthi (1999: 106), analysing voting data up to 1995, wrote:

> "The specific political significance of requesting a roll call vote has effects on our empirical findings, in the sense that our database predetermines in some ways the results that we obtain. Because we do not have data on all floor votes in the National Council, and because roll call voting is usually demanded in cases of important and contested issues, our findings are biased. We would get lower indices of party cohesion as well as less evidence of interparty conflict if we had data on all the votes at our disposal because the bulk of the unpublished votes concern minor issues or issues on which the parties do not oppose one another."

[3] There are two main reasons why we find voting behaviour analysis only for the lower chamber while the upper chamber (Council of States) in this respect remains a blind spot (for details, see von Wyss 2003): 1. The upper chamber repeatedly refused to introduce an electronic voting system, i.e., similar to the EP recorded votes must be specifically requested and are held in the old-fashioned roll-call procedure; 2. Such RCVs are very rare in the upper chamber because the Councillors often think of themselves as representing the more "civilised" chamber that would be less affected by party politics and which therefore would make the roll-call instrument dispensable.

The introduction of the electronic voting system in the NC in 1994/95 prompted the parliament to change the general rules for RCVs. From 1995 onwards, the MPs invariably vote electronically and all votes are recorded by the Parliamentary Services. But still not all of the votes are disclosed. Today, there are three categories of recorded votes in the NC (see also table 2.1):

1. *Automatically published by default because of institutional rules* are
    - final votes,
    - common votes[4], and
    - votes that require the absolute majority of all MPs for adoption. This supermajority requirement applies to the declaration of urgency of a bill and to the adoption of bills with severe fiscal implications.[5]
2. *Votes whose publication is specifically requested* by 30 MPs.
3. The residual category of *recorded, but unpublished votes*.

The new rules since 1995 resulted in a sharp increase of recorded and published votes. The electronic availability of these data attracted Swiss scholars to carry out (mainly positional) analyses of voting behaviour in the NC (see Jeitziner and Hohl 1997; Jegher 1999; Hermann et al. 1999; Hermann and Leuthold 2003; Kriesi 2001; Hug and Schulz 2004).[6]

In 2004, the Parliamentary Services for the first time released the complete dataset of all electronically recorded votes since 1995 (including the previously unpublished ones) to be scientifically analysed. This enabled Hug (2005) to explore and analyse the selection effects by comparing the three different vote categories (see above and table 2.1) with regard to the Rice index of party group unity. The study found interesting differences in the level of party unity depending on the type of vote. Overall, highest party group cohesiveness is detected in automatically published votes (i.e., mainly common and final votes), while cohesion is significantly lower in unpublished RCVs, and lowest in published votes on specific request. According to Hug (2005), these discrepancies in party unity illustrate that relying on a subset of voting data does not give an accurate picture of the chamber's voting behaviour.

[4] "Common votes" are votes on the entire bill as it is resulting from deliberations in one chamber before the item is sent either to the second chamber for scrutinising or to the stage of final vote in both chambers (if both chambers already have eliminated all remaining differences).

[5] Votes that have severe fiscal implications belong to the category of automatically published votes only since December 2003.

[6] Improved data quality also encouraged two research teams to develop websites aimed at rating and visualising parliamentary voting behaviour: www.parlarating.ch (by Tobias Hohl and Bruno Jeitziner, University of Fribourg), and www.parlamentsspiegel.ch as well as www.sotomo.geo.unizh.ch/spider (by Michael Hermann and Heiri Leuthold, University of Zurich).

Table 2.1 Categories of votes in the Swiss National Council (lower house)

	Published votes	**Recorded votes**	**Unrecorded decisions**
until 1995	Roll-call votes on request by ≥30 MPs *n < 3 / year (until 1983)* *n = approx. 25 / year (1983-1994)*	*like published votes*	Default category *n = unknown*
1995 onwards[7]	1. Automatic publication of: - common votes - final votes - votes on declaration of urgency - votes on bills with severe fiscal implications 2. Publication specifically requested by ≥ 30 MPs *n = approx. 300 / year*	All votes electronically recorded *n = approx. 900 / year*	Uncontested decisions *n = unknown*

Furthermore, Hug (2005: 15) concludes that the result also shows that "MPs request roll call votes if party groups are divided" because cohesion is lowest in those votes which are published on request. Unfortunately, the dataset does not contain information about which party requested the publication of a vote[8], but according to informed staff members of the Parliamentary Services specific requests for published votes usually originate either in the group of the Social-Democrats (SPS) (together with the Greens, GPS) or in the group of the national-conservative People's Party (SVP), and only seldom in one of the two big parties in the political centre (i.e., Christian-Democrats, CVP, and the liberal Free Democrats, FDP). This is also mirrored in Hug's analysis since only Christian-Democrats and Free Democrats show substantially lower cohesion values for published votes on specific request while the level of party unity among the Social-Democrats, the Greens and the MPs of the People's Party is hardly varying across all three vote categories (see Hug 2005: 14). Thus, one would rather conclude that specific requests for published votes are primarily a means of the big non-centrist parties to embarrass or influence the voting behaviour of the hard-fought political centre.[9]

[7] Reliable data of all votes available since November 1996.

[8] And this information also cannot be added ex post because the Official Bulletin does not consistently state who exactly requested the publication of a vote. In this respect the contextual data of the EP dataset certainly is more precise than our Swiss NC database.

[9] At this point it might be an illuminative information for readers who are not familiar with the Swiss political system that the bicameral parliament (Federal Assembly) and the executive (Federal Council) are functioning quite independently from each other, despite the fact that the Federal Assembly is the electoral body for the Federal Council (as usual in parliamentary democracies). However, once elected, the executive enjoys independence from the parliament for four years because there is no parliamentary vote of no confidence, as well as the Federal Council is not allowed to dissolve the parliament. Consequently, voting behaviour in the Swiss parliament is characterised by instable and changing coalitions, irrespective of which parties are

Nonetheless, Hug's study was the first to analyse some important aspects of selection effects in the Swiss context. Due to the fact that the Swiss Parliamentary Services are recording all votes irrespective of later publication, he was able to explore the research question by directly comparing the data across all three different categories of publication. But the original dataset is lacking important contextual information, as e.g. the issue areas of the individual votes. This made necessary some additional treatment of the dataset in order to gain extended insights to the sampling problem. Meanwhile, and related to a legislative research project at the University of Berne, the original data set has been revised and further expanded with additional context information. Before the paper provides further information on the dataset used in chapter 4, the following section focuses on potential sources of non-random voting data selection and incomplete datasets - often with a view to the specific Swiss case considered here.

3. Potential sources of selection bias

Legislative datasets never give a "true" or "full" picture of individual and collective decisions in parliaments. They are exposed to multiple sources of bias. The relevance of sampling problems varies a great deal across countries and is dependent of many factors, like e.g., the institutional rules that steer the occurrence and recording of floor votes, the presence of deputies, and specific patterns of strategic behaviour. With a view to the existing literature, the following non-exhaustive compilation shall give an idea of potential sources of bias and how they might affect the results of legislative studies.

3.1 Gate-keeping power of committees and executives

Some authors directed their primary attention to the gate-keeping role of committees (e.g. VanDoren 1990; Snyder 1992; Londregan 2000) and argued that the power to hold back issues from the floor, to push issues through, or to link them with other issues shapes the voting pattern on the floor in many ways, usually in favour of the majority party, as well as in favour of salient or popular issues. Under the premise of a strong committee system with a strong position of the parliamentary majority therein, the selection of issues voted on the floor therefore will be biased in favour of the majority's agenda-setting priorities. An especially striking example for this is the Philippine Congress as reported by Carey (2002). In the Philippines, virtually all controversial legislative action takes place at committee level, the subsequent votes on the floor are mostly unanimous.

---

forming the government. In essence, we see something like an "incomplete" (or weakened) form of a U.S.-style checks-and-balances system.

Moreover, and especially relevant for cross-national comparisons, the assumption that all legislatures are entitled to deal with the same range of items is misconceived. There are great institutional differences as to the law-making authority of parliaments, most obvious with regard to a parliament's authority to amend governmental budget proposals, or regarding foreign policy issues (see Döring 1995, as well as the country-specific contributions in a recent ECPR workshop, e.g. by Schwarz et al. 2005; Zucchini 2005; Brouard 2005; Rasch 2005; Sieberer 2005). Regarding Switzerland, the parliamentary committees do not have the power to permanently hold off an issue from the floor and the standing orders of both chambers are quite friendly to minority positions which can be brought to the floor without noteworthy restrictions (see Schwarz et al. 2005). The biasing effects of the gate-keeping role of committees or governments thus seem to be less problematic here, compared to other countries.

3.2 Uncontested issues

Some issues do not require a floor vote. For instance, there may be provisions that issues which are uncontested at committee level do not need an additional floor approval. On the other hand, provisions may exist that issues which are dealt with on the floor can be adopted without a vote unless a specific vote is requested.[10] In such cases the (virtual) unanimity remains unrecorded. The biasing effects are twofold: First, there may be a inconsistent application of these rules, i.e., sometimes votes are held even if they are unanimous because the rule is only applied if the vote is of minor issue or if unanimity is beyond any doubt. Second, it could happen that votes which are not held because they are (presumably) uncontested would not have been fully unanimous, but "only" heavily lopsided. MPs who would have voted against their unanimous colleagues if the vote had taken place might just have waived their rights to call for a vote (due to many possible reasons).

The standard way by scholars to cope with the "problem" of unanimous votes is the concentration on non-unanimous votes, excluding all unanimous or heavily lopsided votes (see e.g. Poole and Rosenthal 1997; Rosenthal and Voeten 2004; Mainwaring and Liñán 1997; Figueiredo and Limongi 2000; Shaffer 1991). This practice neglects that unanimous or lopsided votes carry a lot of valuable information for legislative behaviour. First, one can assume that unanimous votes are not randomly distributed over all policy areas, for instance, and therefore omitting them may indeed bias the analysis (besides, it ignores consensual decision-making and the positive effects of deliberative democracy). Leaving unanimous votes out certainly is a nice way to spice up the results since the cutting lines between the parties and the ideological differences are much more sticking out. But it does not mirror parliamentary realities. Second, the informational value of lopsided votes is convincingly demonstrated by Snyder and Groseclose (2000) who use this data source for an

[10] E.g., the Swiss Federal Statute on the Federal Assembly says in Art. 78 para. 4: "There is no vote on uncontested issues."

analysis of individual voting behaviour when the external forces of party discipline are absent – what in their view is the case the more lopsided the result of a vote is.

Some statistical effects of the exclusion of heavily lopsided votes on the representation of policy issues and party positions will be empirically tested in chapter 4.

3.3 Systematic absenteeism

Depending on the political system, there may be cases of systematic absenteeism. For instance, Clinton et al. (2004) report of difficulties to assess the voting behaviour of U.S. presidential candidates during election campaigns since the aspirants are often absent in the chamber during this period. In addition, they hasten back for votes on important issues if narrow margins are expected or when position-taking seems to be important for the ongoing campaign.

Systematic absenteeism may also derive from a parliamentary schedule, for instance, when uninspiring debates and irrelevant votes on off-chance petitions or motions with no direct impact on legislation are concentrated on a single day. Attendance in such cases will be significantly poorer and the composition of the attending MPs most likely is of a non-random nature. Tracing the relevance of systematic absenteeism in the Swiss case would be interesting, but this track is not pursued further in this paper.

3.4 Strategic voting

At least theoretically, strategic voting behaviour poses a problem for roll-call analysts, and for once the expected selection effects may be more serious in countries where all votes are published than in cases where only final votes are available (see Londregan 2000). This because strategic voting is usually a characteristic of the amendment procedure (Rasch 2000; but see also Margolis 2001). Therefore, assemblies applying the elimination procedure would be more likely affected than those using the successive procedure. Moreover, strategic voting behaviour would affect mainly the analysis of individual or collective policy positions, i.e., individual MPs with opposite political preferences may vote identically in the short run, until all MPs reveal their sincere preferences in the last voting round. Yet, the empirical relevance of strategic behaviour for positional analyses is still an issue for controversial debate because in this field of research, the empirics could not follow the theoretical progress (see for the U.S. Congress, Poole and Rosenthal 1997; for the Swiss parliament, Senti 1998; Jöhr 1975). Whether the issue of strategic behaviour indeed constitutes a relevant source of bias must thus remain an open question. It also will not further tested here, but should be kept in mind, especially when comparing parliaments which apply different legislative voting procedures.

3.5 Multiplied votes

Sometimes the same (or nearly the same) item comes several times to the floor for a vote. In Switzerland this systematically happens in three cases: First, when a bill that reached final passage is subject to some constitutional provisions to curb public spending excesses or when the enactment of a bill shall be declared urgent. In these cases a majority of all MPs (instead of only those voting) is necessary for adoption. This means that the plenary in a short sequence votes two times on exactly the same issue, once for final passage and once in order to jump the additional constitutional hurdle. Obviously, in such cases the voting result is substantially identical in both votes. The effect is a duplication of a specific voting pattern to a specific issue in contrast to bills which do not require this "double vote".

Second, similar multiplication effects can be caused by bicameralism, if remaining differences are settled in a shuttle procedure between the two chambers. The problem of multiplied votes particularly arises when the second chamber makes insignificant changes to the wording of a bill which nonetheless makes it necessary for the first chamber to arrange an additional common vote in order to give its blessing. In such cases the chamber is answering a nearly identical political question several times which means that the voting pattern to the specific issue is again multiplied.

Third, multiplied votes also occur between a chamber's last common vote and the concluding final vote because the content of both votes is absolutely identical.[11] In unicameral parliaments, an analogical effect may arise when bills are deliberated in several readings.

Some statistical effects of multiplied votes will be empirically tested in chapter 4.

3.6 Published and unpublished votes

Published votes are usually only a subset of all parliamentary votes. According to Hug (2005), only 20 out of the 93 parliaments considered are disclosing all votes (although "all votes" may be misleading, too, as the aforementioned example of the U.S. Congress showed). 49 parliaments only publish a selective subset while 23 bodies do not publish any information about the voting behaviour of their deputies. In the 49 countries that publish only parts of the parliamentary votes the relevance of the expected bias will be highly dependent on the institutional rules for recording and publication.

One can distinguish bias effects based on *institutional selection* or effects based on *motivational factors*. The former arise when the institutional rules for publication are systematically selecting specific types of votes and ignore other ones. An example is the Swiss provision which selects

[11] For the difference between common and final votes, see chapter 2.

common votes, final votes, votes on the declaration of urgency of a bill, and votes to jump the hurdle established for bills with severe fiscal implications. Institutionally unpublished - unless specifically requested by 30 MPs - remain all votes in the amendment procedure as well as votes on parliamentary motions and initiatives (i.e., so-called “non-legislating votes” because they do not have immediate legislative consequences).

Motivational factors, on the other hand, are a main problem of the set of votes whose publication is specifically requested. Strategic invocation is very likely here. Party groups (or individual MPs) are usually motivated to request a published vote if they want to send signals to the own MPs, to other party groups, and/or to the general public. Depending on what the specific targets are, the intended purpose of the request varies (see table 3.1, and also Kreppel 2002; Carrubba et al. 2004; Corbett et al. 2000).

It seems likely that the selection effects vary according to the target groups and the intended purpose. For instance, a party group can request a published vote if the issue is specifically salient to itself (in order to influence the parliamentary decision or to send signals to the electorate) or if the issue is salient to rival party groups, e.g. in order to unmask non-cohesive behaviour. As well, a party may demand a published vote in order to supervise and increase the unity among own MPs if there is a risk of non-cohesive behaviour. Alternatively, the request can also be used strategically when the group leaders know of the party’s unanimity on a popular topic, thus sending a firm signal to the electorate.

Table 3.1 Motivational factors in published votes on specific request

Target	Intended purpose
Own party group	- Information gathering and supervision of own MPs - Influencing collective decision-making results - Increasing party cohesiveness
Other party group(s)	- Information gathering about other MPs - Influencing collective decision-making results
Electorate / general public	- Position-taking on popular issues - Demonstrating cohesiveness and firmness - Unmasking non-cohesive or unpopular positions of other parties

However, the use of requested publication as a way to discipline MPs and raise party cohesiveness is only as effective as the institutional setting allows to be. Switzerland is a good example for this argument because national party organisations are generally rather weak and heterogeneous (see Ladner 2001). Party organisation in Switzerland thus is a mirror of the non-centralised structure of the country, and pressure from the national party leadership on individual

MPs to adhere to the "party opinion" is often not tolerated. The independent institutional position of the parliament (which cannot be resolved by the executive; see Schwarz et al. 2005) and a weak legal basis for enforcing strict party discipline (constitutional prohibition of instructed mandates) are further elements that deprive the instrument of published votes of its teeth and claws in the Swiss context. The specifically requested publication of parliamentary votes in Switzerland is therefore not so much a means to discipline own MPs but is mainly used to send signals to the electorate – either about the salvations of own policy positions or the calamitous attitudes of other parties.

The statistical differences between published and unpublished votes as well as other subsets of recorded votes will be the main issue of chapter 4.

3.7 Strategic non-request of published votes

Strategic behaviour is sometimes weird, particularly when the train of thoughts is running around many corners. For instance, occasionally it may be cleverer for an MP (or party group) in Switzerland's parliament to refrain from demanding ex ante the publication of a vote and instead to pick up ex post a hardcopy sheet of the individual voting behaviour from the Parliamentary Services (as the Standing Orders of the National Council entitle any MP to demand a separate hardcopy of any electronically recorded vote, even if unpublished). This circumvents undesired strategic behaviour of others which may occur in published votes (see above). According to the Parliamentary Services strategic non-request happens once in a while, but a statistically significant effect is rather unlikely.

3.8 Changing institutional rules of recording and publication

The situation is further complicated and unsettled when the institutional provisions that govern the recording and publication of the voting behaviour are changing over time. Taking the case of Switzerland, this happened twice in the last ten years. Before 1995, when there was no electronic voting system in neither chamber, the parliament only recorded and published specifically requested roll-call votes in the Official Bulletin. The introduction of electronic voting in the National Council in 1995 altered this rule for a first time. From then on, additionally to the specifically requested publication, all common and final votes, as well as decisions on the declaration of urgency of bills were automatically published. All other votes had been electronically recorded but remained unpublished. In 2003, a second revision of the rules took place with the effect that votes on the fiscal implications of a bill are automatically published, too. Thus, published votes not only constitute a selective subset of all parliamentary votes, the composition of this subset may also vary over time, causing an additional source of bias.

4. Empirical patterns of selection bias

Chapter 4 provides at first some additional information on the dataset used here. It further tests the effects of three potential sources of bias: published vs. unpublished votes (4.1), multiplication effects (4.2), and the effects of excluding lopsided votes (4.3).

Basic empirical source is a database of all recorded votes in the Swiss lower house between November 1996 and October 2004, which is further linked to additional contextual data about the type and the issue area of the individual votes.[12] Compared to pervious studies by Carrubba et al. (2004) and Hug (2005), the data analysed here feature the following elements:

- The dataset comprises eight years of legislative voting and thus a longer time period than the EP study by the research group of Carrubba and Gabel.[13]
- The dataset is unique in the sense that it contains both published and unpublished votes (other datasets usually only provide data on published votes).
- While using the same coarse data as Hug (2005), the analysis here benefits from richer contextual data attached.[14]

In order to trace the sampling biases the following empirical sections use standard statistical techniques of chi-square tests and comparisons of means. Basic criteria for the evaluation and interpretation of the results are the usual levels of significance, and most tests indeed show significant outcomes. However, due to the large number of cases and the fact that the study analyses the complete inventory of all recorded votes in the Swiss lower house, the tests of significance may be of smaller relevance for the interpretation of the findings. Yet, following Broscheid and Geschwend 2003, even under such conditions significance tests do not render meaningless at all if any non-eliminable stochastic elements which also form a part of complete datasets shall be captured.

The following sections focus on selections effects regarding:

1. published vs. unpublished votes (chapter 4.1),
2. multiplied votes (chapter 4.2), and
3. the exclusion of lopsided/unanimous votes (chapter 4.3).

[12] The reason why the database starts in 1996 only - although recorded votes are available since 1995 - is that the Parliamentary Services cannot guarantee data reliability before winter 1996 since the system was at test stage in the first year of operation and thus not constantly used.

[13] The Swiss dataset comprises a full legislature period (1999-2003) and parts of two periods (1996-1999; 2003-2004). In order to avoid heterogeneity, the analysis is sometimes restricted to the four years of 1999-2003.

[14] The compilation and validation of the coarse dataset and the linking with additional contextual information are part of a research mandate by the Parliamentary Services of the Swiss Federal Assembly.

The integrated context variables are listed below in table 4.1, indicating the range of values they can obtain. Regarding the party groups only the six internally homogenous groups - which at the same time are the most important ones - are taken into account. The issue areas follow the 20 categories of the Parliamentary Services' official thesaurus.

Table 4.1 Variables used in the empirical analysis

Variable	Values
Party group	- Christian-democrats (CVP) - Free democrats (FDP) - Greens (GPS) - Liberals (only until 2003) (LPS) - People's Party (SVP) - Social-democrats (SPS)
Vote type	- Votes on entry - Amendment votes - Votes on motions/postulates/petitions - Votes on parliamentary initiatives/cantonal initiatives - Procedural votes/other - Common votes - Final votes - Fiscal restraint votes - Votes on declaration of urgency
RCV type	- All recorded votes - All published votes (further separated into automatically published votes and published votes on request) - All unpublished votes (further separated into legislating unpublished votes and other unpublished votes)
Issue area	- Agriculture - Culture/Religion - Economy - Education - Energy - Environment - Finances - Health - Institutional setting - International affairs - Legal affairs - Media/Communication - Migration/Asylum policy - Parliamentary affairs - Relations with Europe - Science/Research - Security policy - Social questions - Spatial planning/Housing - Transport

4.1 Effects of RCV subsets: published vs. unpublished votes

4.1.1 Effects on party unity

First, some results of Hug (2005) are reproduced in table 4.2 which displays the unequal effects of seven RCV subsets on the mean Rice index of party cohesion[15] for the six party groups considered.[16] The figures already give a fairly good idea that there are relevant differences between the subsets. The general picture shows that:

- party cohesion is higher with published than with unpublished votes;
- within published votes, the Rice values are higher with automatically published votes than with published votes on specific request;
- among unpublished votes, those having a legislating character are showing more cohesive effects on party groups than other unpublished votes.

Interestingly enough, four party groups (CVP, LPS, FDP, SVP) show higher Rice values with unpublished votes that have a legislating nature than with published votes on request. In some cases, unpublished legislating votes even come pretty close to the Rice index level of all published votes, indicating *that the legislating nature of a vote irrespective of the publication status has a positive effect on party unity*.

The effects of the publication status on party unity are varying across party groups, however. For instance, the results in table 4.2 show no overall substantial effects regarding the Green Party (GPS), and with respect to the People's Party (SVP) the same can be said as regards the three subsets of unpublished votes. When comparing the two categories "all published votes" and "all unpublished votes", which are the most important ones for the purpose of detecting overall selection effects, a separate test of difference in means (not shown in table 4.2) reveals significant differences at .01 level in the cases of CVP, LPS, FDP and SPS party groups, and differences at .05 level in the case of the GPS, but no such significant effects with the SVP group.

[table 4.2 here; see annex]

4.1.2 Effects regarding vote type

What effects of the RCV status can be expected on the *representation of the vote type in the dataset*? Because of the institutional rules which require automatically published votes in the cases of common votes, final votes, votes on the declaration of urgency of a bill, and - since December 2003 - also in the case of bills with severe fiscal implications, we are quite safe to hypothesise that

[15] According to Rice (1925) the index is calculated as: $RICE_{ij} = | \%Yes_{ij} - \%No_{ij} |$ for party i on vote j.

[16] However, other than in Hug's study, the paper does not distinguish between legislatures because it is not interested in the development of party cohesiveness over time, but in selection effects.

significant differences in the representations can be found. On the other hand, one can expect all other vote types as being biased towards the subset of unpublished votes, especially with regard to the large group of amendment votes. Table 4.3 presents the results of the related chi-square test. The institutionally defined, automatically published vote types all show the expected selection pattern: they of course are all heavily biased towards published votes.

Less obvious, and more interesting, are the results regarding the vote types that are not affected by this institutional bias, i.e., amendment votes, procedural votes and also votes on weaker forms of parliamentary activities (like motions, postulates, petitions). These vote types are significantly biased towards the subset of unpublished votes (this is also true for fiscal restraint votes, but due to the fact that they have to be automatically published since 2003, this picture will certainly change in the near future). The only two categories whose distribution is not significantly biased are entry votes (which stand at the very beginning of the legislative floor process) and votes on parliamentary (and cantonal) initiatives, i.e. strong forms of parliamentary legislating activities.

[table 4.3 here; see annex)

4.1.3 Effects regarding policy issue coverage

The question of what selection effects can be found in terms of *policy area coverage* may have enormous consequences for legislative research. Do all RCV subsets cover all issue areas proportionally or is the distribution seriously biased? One can hypothesise that due to the automatic coverage of common and final votes, the unequal distribution across policy areas will be less dramatic than seen across vote types. Furthermore, the least accurate representation can be expected within the field of international affairs because international agreements are subject to common and final votes, but never to the amendment procedure.

The chi-square test in table 4.4 largely confirms these assertions. Out of the 20 policy areas only one shows a strong bias (.001 level) towards published votes, and as expected this is the field of international affairs. Additionally, bias at .01 level show the areas of energy policy (towards unpublished votes) and transport policy (towards published votes). Only weak significant effects at .05 level are detected in votes that deal with the institutional setting and relations with Europe (in both cases towards published votes), and votes on financial issues (less published votes than expected).

[table 4.4 here; see annex]

4.1.4 Effects regarding relative political positions of party groups

Proponents of spatial models and positional analyses will be highly interested in the statistical effects of the different RCV subsets *on the positioning of the objects in the political space*. The aim of this section is to trace and display some basic effects which would affect any spatial analysis. For this purpose a simple "index of relative political distance" for every possible two-party combination of the six party groups considered is calculated (i.e., 15 coalitional combinations). The formula of the political distance index (PDI) is:

$PDI\ (A,B)_j = |\ \%Yes_{Aj} - \%Yes_{Bj}\ |$ for parties A and B on vote j.[17]

The index is logically equivalent to the "index of likeness between groups" as proposed by Rice (1925). As the Rice index of party unity, the PDI does not account for abstentions and absent legislators, and it is also calculated only for the 1999-2003 legislature in order to exclude external effects of changing coalitional party behaviour after elections. A zero PDI value in a single vote j would mean that two party groups show exactly the same proportions between "yes" and "no" votes while PDI=1.0 would mean that one party unanimously voted in favour of an issue and the other one unanimously against. Or, in other words: the lower the PDI value, the more congruent are the policy positions of the two parties.

The results in table 4.5 show that published votes do not only provoke a higher intra-party coherence level (as demonstrated by the mean Rice indices in table 4.2), but that they also have a *strong unifying effect on inter-party relations*. In all but two cases, inter-party conflicts in non-RCVs are at a significantly higher level. The two exceptions concern on the one hand the relations between the two left-wing party groups, the Greens (GPS) and the Social-Democrats (SPS), and on the other hand coalitions between the Free Democrats (FDP) and the Liberals (LPS). It is these two combinations that generally also have the highest inter-party agreement levels among the 15 positional two-party comparisons considered here.

[table 4.5 here; see annex]

The effects of the RCV status on inter-party relations are clearly demonstrated in figures 4.1 and 4.2. Both charts highlight the magnitude of the effects on the representation of the political distances and reveal an interesting empirical pattern: the "de-escalation effect" of published votes is more powerful in relations across traditional party blocs (i.e., relations that involve one left-wing and one bourgeois party) than in cases where both parties originate from the same ideological corner. As an example for this assertion, see the unambiguous increase in deviance from the "ideal line" among bloc-crossing coalitions, while deviance in "ideologically pure" coalitions is less severe.

[17] The formula is equivalent to: $|\ \%No_{Aj} - \%No_{Bj}\ |$ for parties A and B on vote j, because abstentions and absent MPs are not taken into account.

In effect, this means that restricting any positional analysis to the subset of published votes distorts the findings in a way that the level of inter-party conflicts in bloc-crossing relations is estimated disproportionately low (or alternatively, distance levels of homogeneous coalitions are mapped disproportionately high). Thus, the overall level of political distance between ideologically dissimilar parties is higher than what can be expected from analysing the set of published votes only.

[figure 4.1 here; see annex]

As was seen in table 4.2 in the previous chapter, the Rice index of party unity is usually highest when it is based on automatically published votes. This pattern is interpreted as automatically published votes come at a stage of the law-making process when the internal political battles - which often show up in the amendment procedure - are fought, and when parties are closing ranks for the final votes (see also Hug 2005). Unresolved is still the question if there is a parallel pattern in inter-party relations. Figure 4.2 is very insightful in this respect as it demonstrates the enormous differences in PDI values caused by different RCV subsets. With the notable exception of the ideologically homogeneous GPS-SPS relationship, all other 14 two-party comparisons show a considerably lower level of political conflict in automatically published votes (black bars in figure 4.2) than in votes which are either unpublished or disclosed on specific request (white/grey bars). Thus, the empirical pattern of intra-party cohesion is perfectly mirrored in the inter-party relations, too, as the conflict level between parties is considerably lower in final and common votes than in amendment votes. This also hints that the final wording of a bill often is more acceptable to bloc-crossing party coalitions than the previous amendment votes had been.

[figure 4.2 here; see annex]

4.2 Effects of multiplied votes

The paper is now going somewhat deeper into the issue of automatically published votes in the National Council in order to explore the amplifying effect of multiple votes to the same issue (see chapter 3.5 for an illustration of “multiplication effects”). Because final votes by definition are held only once for each bill and therefore exempt from multiplication effects, they are used here as the reference set. The paper compares in the following the set of automatically published votes (excluding final votes) with the smaller subset of final votes. The focus is directed to *the effects on inter-party relations* (i.e., the index of political distance), while other effects on the representation of votes types or policy areas are not specifically tested here.

Deriving from the results in the previous sections one can expect the following results: First, a limitation to final votes would show an additional homogenising effect on inter-party relations, mainly because the bulk of common votes is located at an earlier (and therefore more controversial) stage of the legislative process (see chapter 4.1). Second, and admittedly more to

the point of multiplication effects, having excluded all votes with multiplying effects and comparing the original set of all recorded votes with this reduced set of "all" votes, we could expect an increased level of inter-party conflict. This simply due to the fact that a substantial part of relatively uncontroversial, automatically published votes (compared to the conflict level in unpublished votes) is missing now in the analysed dataset, i.e., the share of controversial types of vote has increased.

Figure 4.3 displays the political distance index of four different voting data subsets for the 15 two-party coalitions. At first glance, two aspects are striking: first, the huge gap in all but two coalitional constellations (GPS-SPS and FDP-SVP) between the different sets comprising automatically published votes (black and dotted bars) on the one hand, and the more inclusive sets (grey and white bars) on the other. This is just another perspective on what we have already seen in chapter 4.1. Second, and somewhat in contrast to the first point, the multiplication effects proposed here seem to be less relevant than assumed. For instance, the proposed "de-escalating" effect on inter-party relations when final votes are extracted from the bulk of all automatically published votes is non-significant in seven out of the 15 cases. In the remaining eight cases, the proposed direction of the effect is even disproved altogether (compare black and dotted bars in figure 4.3 and see also table 4.6). There is another interesting point in this result: even if non-significant, figure 4.3 shows the expected effect in all intra-bloc coalitions, but the effect switches to the opposite as soon as cross-ideological coalitions are considered. This suggests that cross-ideological relations are subject to a more conciliatory behaviour in common votes, but reclaim again stronger position-taking behaviour in final votes.

[figure 4.3 here; see annex]

[table 4.6 here; see annex]

4.3 Effects of eliminating unanimous votes

As reported in chapter 3.2 it is a common practice to exclude unanimous or heavily lopsided votes from the analysis of voting datasets, mainly because unanimous votes are regarded as useless or even as a distorting factor. The question is what effect the restriction to non-lopsided votes on the selection of policy areas and on the representation of the political distance index shows.

Are there policy issues that are more often decided by unanimity and therefore disproportionately affected by a restriction to contentious votes? Table 4.7 contains the related chi-square test to the representation of lopsided and non-lopsided votes over the 20 policy fields. "Lopsided" is defined here as the percent share of "yes" (or "no") votes being either ≤ 5% or ≥ 95%. The test finds overall significant differences. More specifically, when we exclude all lopsided votes from the analysis, the remaining sample contains a significantly lower proportion of foreign policy issues, and a significantly higher proportion of issues in the fields of energy and migration/asylum policy.

[table 4.7 here; see annex]

A last focus rests on the impact of the elimination of lopsided votes on inter-party relations. The general consequence is obvious: sorting out unanimous votes should increase inter-party conflict levels. Positional analyses solely based on parliamentary votes with a minimum conflict level therefore draw a too contentious picture of parliamentary behaviour, both across and within parties or party blocs. For instance, as regards the political distance index, the elimination of lopsided votes from the set of all published votes increases the calculated PDI values by up to 50 percent (see table 4.8)! A notable exception is the coalition between Social-Democrats and the Greens which is affected by an increase of "only" 24 percent. Thus, relative party positions are affected disproportionately. Figure 4.4 additionally visualises the distorting effects of sorting out lopsided votes.

[table 4.8 here; see annex]

[figure 4.4 here; see annex]

5. Conclusions

The paper asked the question of how much biased often-used subsets of published parliamentary votes are and went into the matter by exploring a recently released dataset of the Swiss National Council (lower house) which covers the period 1996-2004. The statistical analysis was directed at tracing the distorting effects of three shortcomings: the limitation to publicised votes, the occurrence of "multiplied votes" to the same issue, and the often applied self-restriction to a set of non-lopsided votes. The effects have been explored by looking at the representations of four variables: type of vote, policy issues, internal party unity (Rice index), and political distance between two-party coalitions (political distance index, PDI).

The paper clearly demonstrates that there are significant and substantially relevant selection effects in two of the three cases under consideration. The strongest distorting effects have been detected with regard to the *difference between published and unpublished votes*. Not only did we find higher party unity levels in published votes, we also saw significantly differences in the representation of published and unpublished votes across policy fields. For instance, votes concerning international affairs, relations with Europe, and transport policy are significantly over-represented in the set of published votes, while financial and economic policy are under-represented in the same sample. Significant deviance has also been detected as regards the

relative policy positions of the party groups. The PDI values of 13 out of the 15 two-party coalitions considered here showed significant differences in means (the exceptions being the two ideologically most homogeneous coalitional combinations of the Social-Democrats and the Greens on the one hand, and the liberal Free Democrats and the Swiss People's Party on the other). Moreover, the extent of the sampling effects is shifting, depending on the ideological composition of the coalition: the difference in the PDI between published and unpublished votes is substantially smaller when both parties in the coalition belong to the same ideological corner. The analysis also showed another effect: it is not only the question of whether a vote gets published or not which is determining the level of intra- and inter-party relations, but also 1) whether the vote has a legislating character, i.e. if it is part of an ongoing law-making process, and 2) at what stage in the law-making process the vote is taking place. Particularly the latter causes serious selection effects because the decisive battles are fought during the (often unpublished) amendment procedure while the final votes show a considerably lower level of inter-party conflicts.

The paper explored two further types of sampling effects. *"Multiplication effects"* are multiple votes to the same issue, which is fairly common in the Swiss context between common votes, final votes, votes on the declaration of urgency of a bill, and votes to jump the constitutional hurdle for bills with severe fiscal implications. But the assumed effects did not show up, at least regarding the political distance between the 15 two-party combinations (there might be some more serious effects on the representation of policy fields which has not been tested here, however). We can therefore conclude that the proposed multiplication effects are irrelevant for selection effects. In contrast, the *elimination of heavily lopsided votes* showed the expected bias. As regards the policy issue representation, the restriction to non-lopsided votes affects those issues which in parliamentary reality are disproportionately often decided either by unanimity (like, e.g., international affairs), or by narrow margins (like, e.g., energy or migration/asylum policy). This selection effect is also visible in the relative positions of the parties in the political space. There we found that the exclusion of lopsided votes increases inter-party conflict levels up to 50 percent, while the individual party coalitions are disproportionately affected (e.g., the combination of Social-Democrats and the Greens by "only" 24 percent). At any rate, the elimination of lopsided votes from the dataset draws an unduly controversial picture of parliamentary voting behaviour.

Compared to research to the EP, the results of this paper seem somewhat less dramatic. For sure, significant selection effects which almost certainly bias any analysis of the dataset, could be identified. But the distorting effects in the Swiss context are less spectacular than with regard to other countries' assemblies because Switzerland's institutional rules require the automatic publication of a substantial part of all parliamentary votes – at least with regard to the lower house. This provision deprives the MPs and party groups of deciding on strategic grounds alone which votes should be made public. On the other hand, the difference between Swiss and European results sheds light on a major problem of future research in the legislative field: the adequate modelling of inter-parliamentary comparisons across countries. No matter whether the focus is on

simple Rice index comparisons or more complex models of parliamentary behaviour, scholars will be confronted with the challenge to inventory, estimate, and adjust a variety of selection sources if they plan to get meaningful results.

6. References

-- 2001. Estimating Legislators' Preferences with Roll Call Data. Special Issue of Political Analysis 9 (3). Westview Press.

Arnold, R. Douglas (1990). The Logic of Congressional Action. New Haven/London: Yale University Press.

Broscheid, Andreas and Thomas Gschwend (2003). Augäpfel, Murmeltiere und Bayes: Zur Auswertung stochastischer Daten aus Vollerhebungen. MPIfG Working Paper 03/7, Juli 2003. Köln: Max-Planck-Institut für Gesellschaftsforschung.

Brouard, Sylvain (2005). The Role of French Governments in Legislative Agenda Setting. Paper presented at the ECPR Joint Sessions, Granada, 14-19 April 2005. Workshop 22 : The Role of Government in Legislative Agenda Setting. Paris: CEVIPOF.

Carey, John M. (2002). Getting Their Way, or Getting in the Way? Presidents and Party Unity in Legislative Voting. Paper presented at the American Political Science Association meetings, August 2002. Washington University.

Carey, John M. (2004a). Political institutions, competing principals, and party unity in legislative voting. Dartmouth College, Department of Government.

Carey, John M. (2004b). Visible Votes: Recorded Voting and Legislative Accountability in the Americas. Hanover, NH: Dartmouth College, Department of Government.

Carrubba, Clifford J., Matthew Gabel, Lacey Murrah, Ryan Clough, Elizabeth Montgomery and Rebecca Schambach (2004). A Second Look at Legislative Behavior in the European Parliament. Roll-Call Votes and the Party System. Wien, Institut für Höhere Studien (IHS).

Clinton, Joshua D., Simon Jackman and Doug Rivers (2004). "'The Most Liberal Senator'? Analyzing and Interpreting Congressional Roll Calls." PS: Political Science and Politics XXXVII(3).

Corbett, Richard, Francis Jacobs and Michael Shackleton (2000). The European Parliament. London: John Harper.

Döring, Herbert (1995). “Time as a Scarce Resource: Government Control of the Agenda”. In: ibid. (ed.), Parliaments and Majority Rule in Western Europe. Frankfurt: Campus Verlag, 225-246.

Faas, Thorsten (2002). "Why Do MEPs Defect? An Analysis of Party Group Cohesion in the 5th European Parliament." European Integration online Papers (EIoP) 6(2).

Figuereido, Argelina Cheibub and Fernando Limongi (2000). “Presidential Power, Legislative Organization, and Party Behavior in Brazil.” Comparative Politics 32(2): 151-170.

Gabel, Matthew and Clifford Carrubba (2004). “The European Parliament and Transnational Political Representation: Party Groups and Political Conflict.” Europäische Politik 03/2004, Friedrich-Ebert-Stiftung.

Hermann, Michael and Heiri Leuthold (2003). Die SVP setzt sich rechts von FDP und CVP ab. Tages-Anzeiger. Zürich.

Hermann, Michael, Heiri Leuthold and Hanspeter Kriesi (1999). Die politische Landkarte des Nationalrates. Das Magazin. Wochenendbeilage des Tages-Anzeigers: 18-30.

Hix, Simon (2002). "Parliamentary Behavior with Two Principals: Preferences, Parties, and Voting in the European Parliament." American Journal of Political Science 46(3): 688-698.

Hix, Simon, Abdul Noury and Gérard Roland (2005). “Power to the Parties: Cohesion and Competition in the European Parliament, 1979–2001.” British Journal of Political Science 35(2): 209-234.

Hug, Simon (2005). Selection Effects in Roll Call Votes. Paper prepared for presentation at the ECPR Joint Sessions of Workshops, Granada, 14-19 April 2005. Zürich; IPZ, Universität Zürich.

Hug, Simon and Tobias Schulz (2004). Left-right Positions of Political Parties in Switzerland. IPW, University of St. Gallen.

Jegher, Annina (1999). Bundesversammlung und Gesetzgebung. Der Einfluss von institutionellen, politischen und inhaltlichen Faktoren auf die Gesetzgebungstätigkeit der Eidgenössischen Räte. Bern, Verlag Paul Haupt.

Jeitziner, Bruno and Tobias Hohl (1997). "Measuring Political Preferences. Ratings for Members of the Swiss National Council." Swiss Political Science Review 3(4): 1-27.

Jöhr, Walter A. (1975). Das Abstimmungsproblem bei Initiativen. St. Gallen, Schweizerisches Institut für Verwaltungskurse an der Hochschule St. Gallen.

Kingdon, John W. (1989). Congressmen's Voting Decisions (Third Edition). Ann Arbor, University of Michigan Press.

Kreppel, Amie (2002). The European Parliament and Supranational Party System. A Study in Institutional Development. Cambridge, Cambridge University Press.

Kreppel, Amie and George Tsebelis (1999). "Coalition Formation in the European Parliament." Comparative Political Studies 32(8): 933-966.

Kriesi, Hanspeter (2001). "The Federal Parliament: The Limits of Institutional Reform." West European Politics 24(2): 59-76.

Ladner, Andreas (2001). "Swiss Political Parties: Between Persistence and Change." West European Politics 24(2): 123-144.

Lanfranchi, Prisca and Ruth Lüthi (1995). Cohesion of party groups and interparty conflict in the Swiss Parliament: Roll call voting in the National Council. Paper presented at the ECPR Joint Sessions at Bordeaux, April 27 - May 2nd 1995. Institute of Political Science, University of Bern.

Lanfranchi, Prisca and Ruth Lüthi (1999). “Cohesion of Party Groups and Interparty Conflict in the Swiss Parliament: Roll Call Voting in the National Council.” In: Shaun Bowler, David M. Farrel and Richard S. Katz (eds.), Party Discipline and Parliamentary Government. Columbus, Ohio State University Press: 99-120.

Londregan, John B. (2000). Legislative Institutions and Ideology in Chile. Cambridge/New York, Cambridge University Press.

Lüthi, Ruth, Luzius Meyer and Hans Hirter (1991). “Fraktionsdisziplin und die Vertretung von Partikulärinteressen im Nationalrat.“ In: Parlamentsdienste (ed.), Das Parlament - "Oberste Gewalt des Bundes"? Festschrift der Bundesversammlung zur 700-Jahr-Feier der Eidgenossenschaft. Bern/Stuttgart, Verlag Paul Haupt: 53-71.

Mainwaring Scott P. and Aníbal Pérez Liñán (1997). “Party Discipline in the Brazilian Constitutional Congress.” Legislative Studies Quarterly 22(4): 453-483.

Margolis, Howard (2001). “Pivotal Voting.” Journal of Theoretical Politics 13(1): 111–116.

Poole, Keith T. and Howard Rosenthal (1997). Congress: A Political-Economic History of Roll Call Voting. Oxford/New York, Oxford University Press.

Rasch, Bjørn Erik (2000). "Parliamentary Floor Voting Procedures and Agenda Setting in Europe." Legislative Studies Quarterly XXV(1): 3-23.

Rasch, Bjørn Erik (2005). Do Parliamentary Governments Control the Legislative Agenda? The Case of Norway. Paper for presentation at the ECPR Joint Sessions of Workshops Granada, Spain, 14-19 April 2005. Workshop: “The Role of Governments in Legislative Agenda Setting”. University of Oslo.

Rice, Stuart A. (1925). "The Behavior of Legislative Groups: A Method of Measurement." Political Science Quarterly 40(1): 60-72.

Rosenthal, Howard and Erik Voeten (2004). "Analyzing Roll Calls with Perfect Spatial Voting: France 1946-1958." American Journal of Political Science 48(3): 620-632.

Saalfeld, Thomas (1995). “On Dogs and Whips: Recorded Votes.” In: Herbert Döring (ed.), Parliaments and Majority Rule in Western Europe. Frankfurt/New York, Campus Verlag/St. Martin's Press: 528-565.

Schwarz, Daniel, André Bächtiger and Georg Lutz (2005). Informal Agenda-Setting Power of Governments: The Swiss Case. Paper presented at the ECPR Workshop “The Role of Governments in Legislative Agenda Setting”, Granada, 14-19 April 2005. University of Berne.

Senti, Martin (1998). "Strategisches Abstimmungsverhalten in legislativen Entscheidungsprozessen. Ein Fallbeispiel." Swiss Political Science Review 4(2): 1-24.

Shaffer, William R. (1991). "Interparty Spatial Relationships in Norwegian Storting Roll Call Votes." *Scandinavian Political Studies* 14(1): 59-83.

Sieberer, Ulrich (2005). Agenda Setting in the German Bundestag: a Weak Government in a Consensus Democracy. Paper presented to the workshop “The Role of Governments in Legislative Agenda Setting”. Joint Session of the ECPR Granada, April 14-19, 2005. Universität Mannheim.

Snyder, James M., Jr. (1992). “Committee Power, Structure-Induced Equilibria, and Roll Call Votes.” American Journal of Political Science 36(1): 1-30.

Snyder, James M., Jr. and Tim Groseclose (2000). “Estimating Party Influence in Congressional Roll-Call Voting.” American Journal of Political Science 44(2): 193-211.

VanDoren, Peter M. (1990). "Can We Learn the Causes Of Congressional Decisions From Roll-Call Data?" Legislative Studies Quarterly 15(3): 311-340.

Vasella, Marco (1956). Die Partei- und Fraktionsdisziplin als staatsrechtliches Problem. Winterthur, Verlag P.G. Keller.

von Wyss, Moritz (2003). “Die Namensabstimmung im Ständerat. Untersuchung eines parlamentarischen Mythos.“ In: Isabelle Häner (ed.), Nachdenken über den demokratischen Staat und seine Geschichte. Beiträge für Alfred Kölz. Zürich, Schulthess: 23-47.

Zucchini, Franceso (2005). The legislative agenda setting power in a changing parliamentary democracy: the Italian puzzle. Paper presented to the workshop “The Role of Governments in Legislative Agenda Setting” Joint Session of the ECPR Granada, April 14-19, 2005. Università degli studi di Milano.

7. Annex

Table 4.2 Rice index of party cohesion by party group and RCV type, 1996-2004

		All recorded votes	All published votes	Autom. published votes	Published votes on request	All unpubl. votes	Legislating unpubl. votes	Other unpubl. votes
CVP	Mean	.791	.843	.966	.666	.765	.778	.701
	Std. Dev.	.286	.275	.123	.324	.290	.292	.317
		N=7181	N=2400	N=1417	N=983	N=4781	N=3921	N=860
GPS	Mean	.956	.961	.961	.962	.953	.956	.943
	Std. Dev.	.154	.145	.146	.143	.158	.152	.174
		N=7155	N=2388	N=1404	N=984	N=4767	N=3906	N=861
LPS	Mean	.915	.930	.960	.886	.907	.911	.887
	Std. Dev.	.215	.191	.148	.234	.226	.221	.255
		N=6012	N=2108	N=1244	N=864	N=3904	N=3164	N=740
FDP	Mean	.816	.848	.941	.713	.800	.806	.775
	Std. Dev.	.268	.260	.173	.301	.271	.276	.288
		N=7184	N=2403	N=1417	N=986	N=4781	N=3919	N=862
SPS	Mean	.944	.955	.950	.962	.939	.943	.921
	Std. Dev.	.165	.149	.157	.137	.172	.161	.188
		N=7175	N=2401	N=1416	N=985	N=4774	N=3912	N=862
SVP	Mean	.874	.869	.873	.864	.877	.877	.877
	Std. Dev.	.221	.229	.238	.217	.217	.218	.213
		N=7186	N=2403	N=1417	N=986	N=4783	N=3921	N=862

Table 4.3 Selection effects of RCV subsets on vote types (chi-square test), 1996-2004

Vote type		Unpublished votes	Published votes	Total
fiscal restraint votes	N	225	35	260
	Expected N	173.1	86.9	260.0
	% within vote type	86.5%	13.5%	100.0%
	Std. Sq. Residual	15.591***	31.034***	
amendment votes	N	3500	700	4200
	Expected N	2795.5	1404.5	4200.0
	% within vote type	83.3%	16.7%	100.0%
	Std. Sq. Residual	177.532***	353.364***	
votes on declaration of urgency	N	0	29	29
	Expected N	19.3	9.7	29.0
	% within vote type	.0%	100.0%	100.0%
	Std. Sq. Residual	19.302***	38.420***	
votes on entry	N	107	58	165
	Expected N	109.8	55.2	165.0
	% within vote type	64.8%	35.2%	100.0%
	Std. Sq. Residual	0.073	0.145	
common votes	N	0	929	929
	Expected N	618.3	310.7	929.0
	% within vote type	.0%	100.0%	100.0%
	Std. Sq. Residual	618.342***	1230.766***	
procedural votes/other	N	274	55	329
	Expected N	219.0	110.0	329.0
	% within vote type	83.3%	16.7%	100.0%
	Std. Sq. Residual	13.823***	27.513***	
final votes	N	0	446	446
	Expected N	296.9	149.1	446.0
	% within vote type	.0%	100.0%	100.0%
	Std. Sq. Residual	296.858***	590.874***	
votes on motions/postulates/petitions	N	473	66	539
	Expected N	358.8	180.2	539.0
	% within vote type	87.8%	12.2%	100.0%
	Std. Sq. Residual	36.379***	72.409***	
votes on parliamentary initiatives/ cantonal initiatives	N	204	85	289
	Expected N	192.4	96.6	289.0
	% within vote type	70.6%	29.4%	100.0%
	Std. Sq. Residual	0.705	1.402	
Total	N	4783	2403	7186
	% within vote type	66.6%	33.4%	100.0%
	Pearson Chi-Square	*3524.531*		
	df	*8*		
	Asymp. Sig. (2-sided)	*.000*		

***= significant at .001 level

Table 4.4 Selection effects of RCV subsets on policy areas (chi-square test), 1996-2004

Policy field		Unpublished votes	Published votes	Total
Institutional setting	N	1304	608	1912
	Expected N	1244.7	667.3	1912.0
	% within policy field	68.2%	31.8%	100.0%
	Std. Sq. Residual	2.825	5.270*	
International affairs	N	253	299	552
	Expected N	359.3	192.7	552.0
	% within policy field	45.8%	54.2%	100.0%
	Std. Sq. Residual	31.449***	58.639***	
Security policy	N	387	187	574
	Expected N	373.7	200.3	574.0
	% within policy field	67.4%	32.6%	100.0%
	Std. Sq. Residual	0.473	0.883	
Relations with Europe	N	234	161	395
	Expected N	257.1	137.9	395.0
	% within policy field	59.2%	40.8%	100.0%
	Std. Sq. Residual	2.075	3.870*	
Legal affairs	N	1826	911	2737
	Expected N	1781.8	955.2	2737.0
	% within policy field	66.7%	33.3%	100.0%
	Std. Sq. Residual	1.096	2.045	
Economy	N	1147	648	1795
	Expected N	1168.5	626.5	1795.0
	% within policy field	63.9%	36.1%	100.0%
	Std. Sq. Residual	0.396	0.738	
Finances	N	1750	841	2591
	Expected N	1686.7	904.3	2591.0
	% within policy field	67.5%	32.5%	100.0%
	Std. Sq. Residual	2.376	4.431*	
Social questions	N	905	506	1411
	Expected N	918.5	492.5	1411.0
	% within policy field	64.1%	35.9%	100.0%
	Std. Sq. Residual	0.198	0.370	
Education	N	269	154	423
	Expected N	275.4	147.6	423.0
	% within policy field	63.6%	36.4%	100.0%
	Std. Sq. Residual	0.149	0.278	
Media/Communication	N	400	180	580
	Expected N	377.6	202.4	580.0
	% within policy field	69.0%	31.0%	100.0%
	Std. Sq. Residual	1.329	2.479	
Science/Research	N	294	177	471
	Expected N	306.6	164.4	471.0
	% within policy field	62.4%	37.6%	100.0%
	Std. Sq. Residual	0.518	0.966	
Transport	N	455	311	766
	Expected N	498.7	267.3	766.0
	% within policy field	59.4%	40.6%	100.0%
	Std. Sq. Residual	3.829	7.144**	

(to be continued on next page)

Table 4.4 (continued)

Environment	N	300	169	469
	Expected N	305.3	163.7	469.0
	% within policy field	64.0%	36.0%	100.0%
	Std. Sq. Residual	0.092	0.172	
Agriculture	N	353	179	532
	Expected N	346.3	185.7	532.0
	% within policy field	66.4%	33.6%	100.0%
	Std. Sq. Residual	0.130	0.242	
Energy	N	359	131	490
	Expected N	319.0	171.0	490.0
	% within policy field	73.3%	26.7%	100.0%
	Std. Sq. Residual	5.016*	9.357**	
Parliamentary affairs	N	187	101	288
	Expected N	187.5	100.5	288.0
	% within policy field	64.9%	35.1%	100.0%
	Std. Sq. Residual	0.001	0.002	
Migration/Asylum policy	N	335	157	492
	Expected N	320.3	171.7	492.0
	% within policy field	68.1%	31.9%	100.0%
	Std. Sq. Residual	0.675	1.259	
Culture/Religion	N	79	57	136
	Expected N	88.5	47.5	136.0
	% within policy field	58.1%	41.9%	100.0%
	Std. Sq. Residual	1.020	1.900	
Health	N	347	216	563
	Expected N	366.5	196.5	563.0
	% within policy field	61.6%	38.4%	100.0%
	Std. Sq. Residual	1.038	1.935	
Spatial planning/Housing	N	360	196	556
	Expected N	362.0	194.0	556.0
	% within policy field	64.7%	35.3%	100.0%
	Std. Sq. Residual	0.011	0.021	
Total	N	11544	6189	17733
	% within policy field	65.1%	34.9%	100.0%
	Pearson Chi-Square	*156.844*		
	df	*19*		
	Asymp. Sig. (2-sided)	*.000*		

*= significant at .05 level; **= significant at .01 level; ***= significant at .001 level

Table 4.5 Political distance index (unpublished vs. published votes), 1999-2003

Party combination		Unpublished votes	Published votes	t-test for equality of means Sig. (2-tailed)
CVP-FDP	Meais less	.2082	.1445	.000
	Std Deviation	.2403	.2150	
		N=2083	N=1179	
CVP-GPS	Mean	.5232	.3443	.000
	Std Deviation	.3858	.3769	
		N=2083	N=1179	
CVP-LPS	Mean	.2441	.1786	.000
	Std Deviation	.2928	.2646	
		N=2077	N=1177	
CVP-SPS	Mean	.4894	.2936	.000
	Std Deviation	.3769	.3516	
		N=2083	N=1179	
CVP-SVP	Mean	.3517	.2902	.000
	Std Deviation	.3327	.3214	
		N=2083	N=1179	
FDP-SPS	Mean	.6366	.3976	.000
	Std Deviation	.3765	.4066	
		N=2083	N=1179	
FDP-SVP	Mean	.2064	.1882	.066
	Std Deviation	.2759	.2651	
		N=2083	N=1179	
GPS-FDP	Mean	.6720	.4491	.000
	Std Deviation	.3727	.4192	
		N=2083	N=1179	
GPS-LPS	Mean	.6365	.4510	.000
	Std Deviation	.4285	.4466	
		N=2077	N=1177	
GPS-SPS	Mean	.0789	.0726	.370
	Std Deviation	.1977	.1839	
		N=2083	N=1179	
GPS-SVP	Mean	.7924	.5477	.000
	Std Deviation	.3201	.4221	
		N=2083	N=1179	
LPS-FDP	Mean	.1836	.1229	.000
	Std Deviation	.2602	.2087	
		N=2077	N=1177	
LPS-SPS	Mean	.6094	.4056	.000
	Std Deviation	.4261	.4362	
		N=2077	N=1177	
LPS-SVP	Mean	.2766	.2175	.000
	Std Deviation	.3578	.3165	
		N=2077	N=1177	
SPS-SVP	Mean	.7772	.5271	.000
	Std Deviation	.3197	.4244	
		N=2083	N=1179	

Figure 4.1 Effects of RCV subsets (unpublished vs. published votes): deviance in the political distance index, 1999-2003

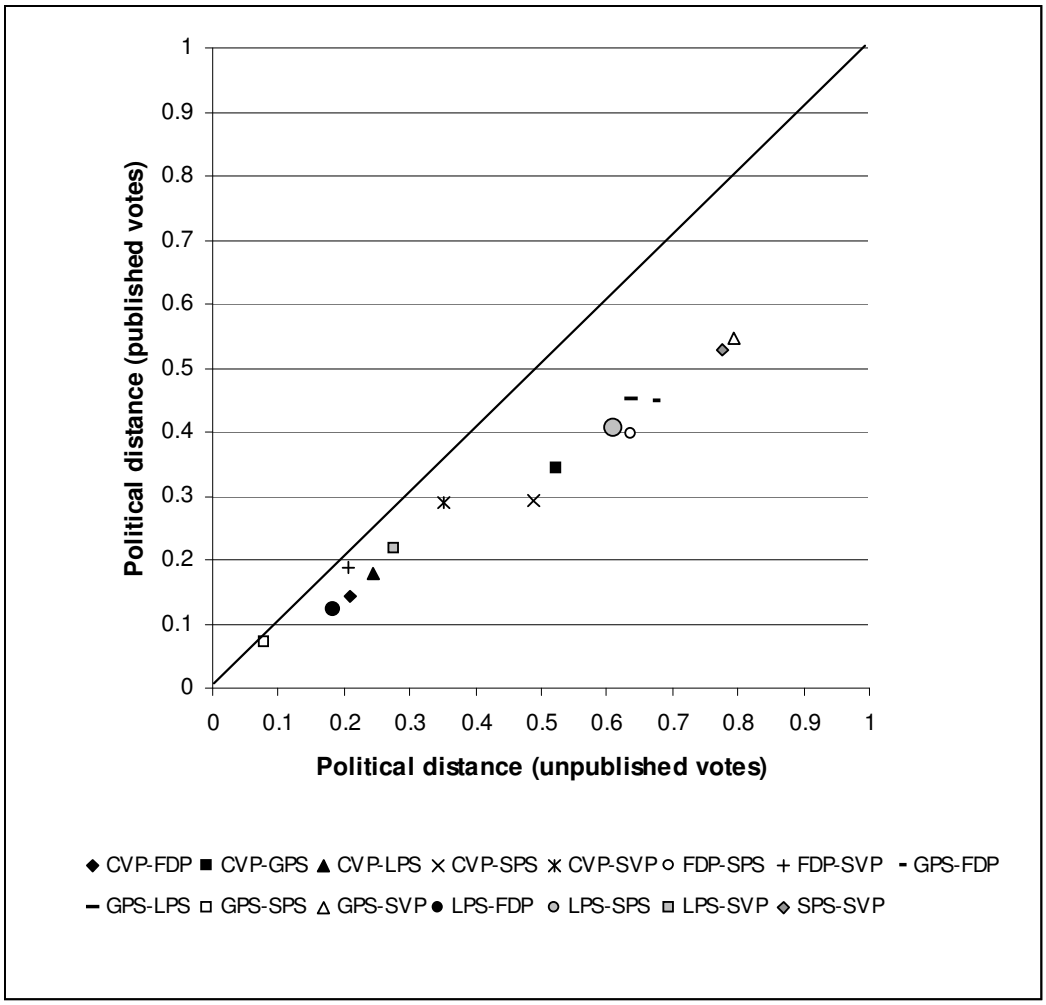

Figure 4.2 Effects of RCV subsets on the political distance index, 1999-2003

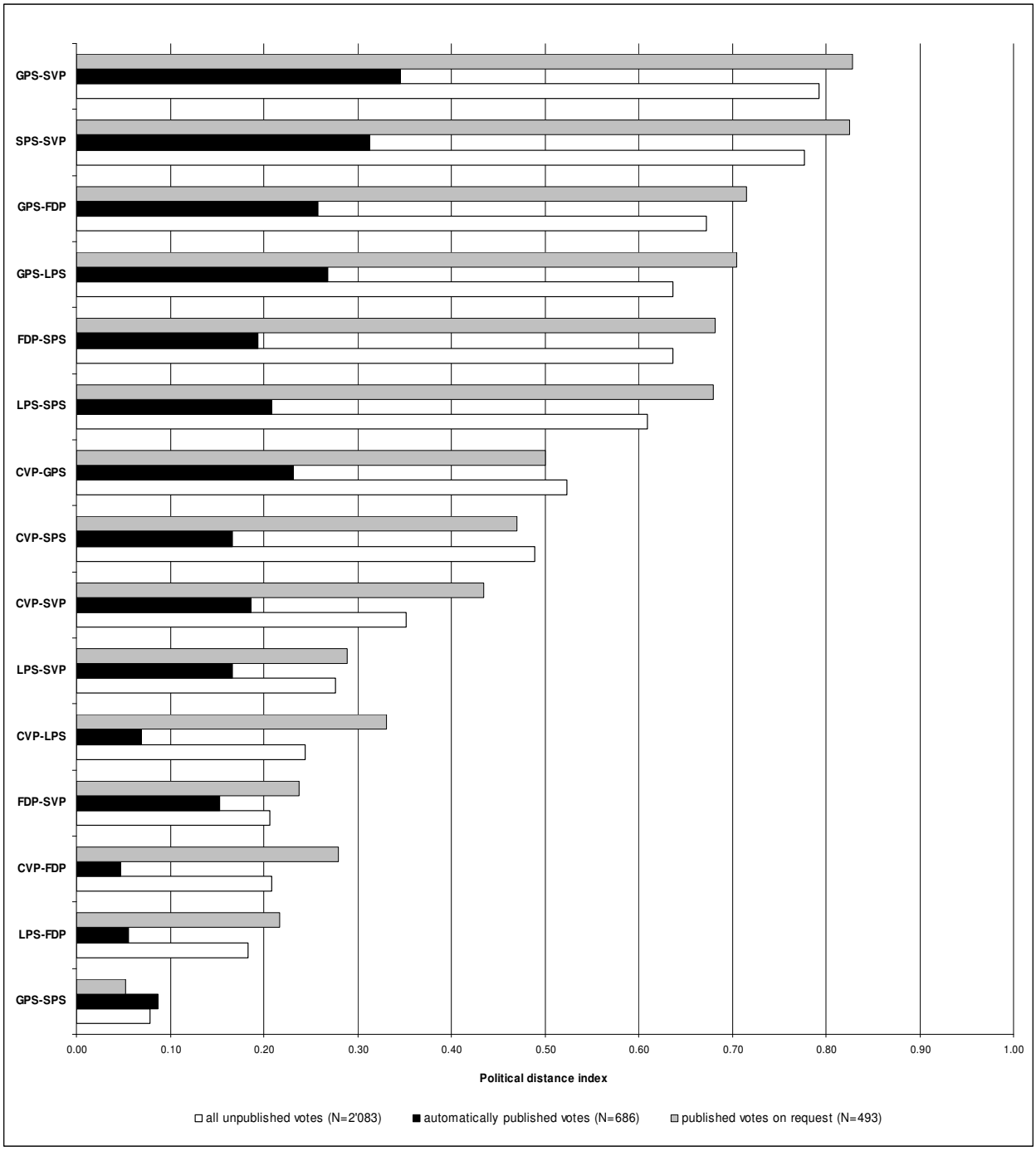

Figure 4.3 Multiplication effects on the political distance index, 1999-2003

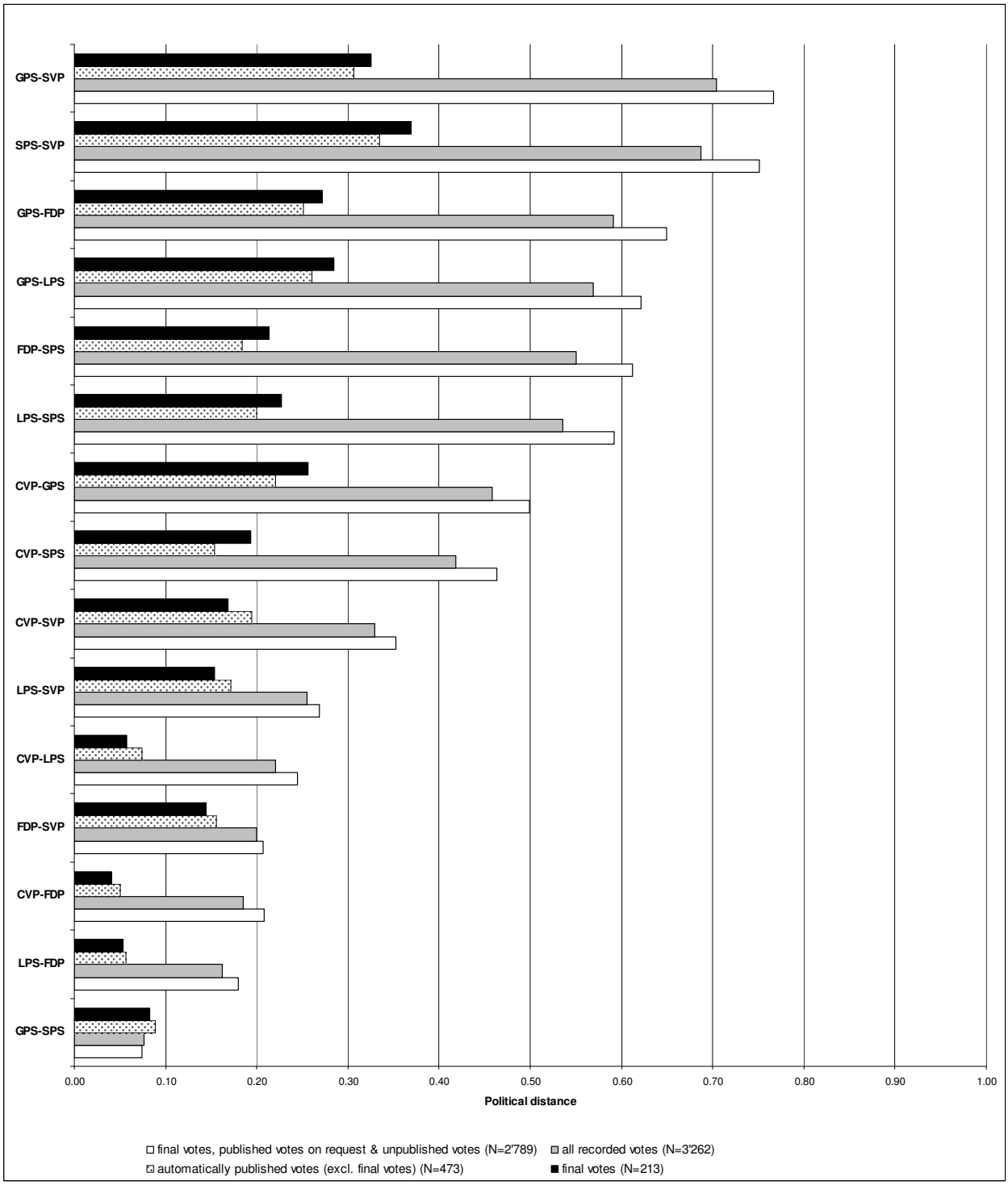

Table 4.6 Multiplication effects on the political distance index: final votes vs. other automatically published votes, 1999-2003

		final votes	other automatically published votes	t-test for equality of means Sig. (2-tailed)
CVP-FDP	Mean	.0409	.0503	.342
	Std. Deviation	.0985	.1283	
	N	213	473	
CVP-GPS	Mean	.2560	.2210	.242
	Std. Deviation	.3799	.3530	
	N	213	473	
CVP-LPS	Mean	.0574	.0742	.232
	Std. Deviation	.1276	.1865	
	N	213	471	
CVP-SPS	Mean	.1940	.1542	.113
	Std. Deviation	.3273	.2928	
	N	213	473	
CVP-SVP	Mean	.1687	.1945	.279
	Std. Deviation	.2772	.2942	
	N	213	473	
FDP-SPS	Mean	.2134	.1845	.285
	Std. Deviation	.3426	.3213	
	N	213	473	
FDP-SVP	Mean	.1446	.1560	.592
	Std. Deviation	.2544	.2585	
	N	213	473	
GPS-FDP	Mean	.2724	.2510	.493
	Std. Deviation	.3908	.3714	
	N	213	473	
GPS-LPS	Mean	.2848	.2609	.456
	Std. Deviation	.3972	.3852	
	N	213	471	
GPS-SPS	Mean	.0824	.0891	.670
	Std. Deviation	.1766	.1992	
	N	213	473	
GPS-SVP	Mean	.3691	.3352	.297
	Std. Deviation	.4072	.3864	
	N	213	473	
LPS-FDP	Mean	.0532	.0567	.752
	Std. Deviation	.1193	.1402	
	N	213	471	
LPS-SPS	Mean	.2265	.2000	.351
	Std. Deviation	.3493	.3421	
	N	213	471	
LPS-SVP	Mean	.1534	.1718	.418
	Std. Deviation	.2686	.2784	
	N	213	471	
SPS-SVP	Mean	.3256	.3068	.548
	Std. Deviation	.3896	.3752	
	N	213	473	

Table 4.7 Selection effects of subsets of non-lopsided votes on policy areas (chi-square test), 1996-2004

Policy field		Non-lopsided votes	Lopsided votes	Total
Institutional setting	N	1703	209	1912
	Expected N	1631.3	280.7	1912.0
	% within Issue area	89.1%	10.9%	100.0%
	Std. Sq. Residual	3.148	18.297***	
International affairs	N	327	225	552
	Expected N	471.0	81.0	552.0
	% within Issue area	59.2%	40.8%	100.0%
	Std. Sq. Residual	44.011***	255.817***	
Security policy	N	515	59	574
	Expected N	489.7	84.3	574.0
	% within Issue area	89.7%	10.3%	100.0%
	Std. Sq. Residual	1.303	7.571**	
Relations with Europe	N	305	90	395
	Expected N	337.0	58.0	395.0
	% within Issue area	77.2%	22.8%	100.0%
	Std. Sq. Residual	3.042	17.681***	
Legal affairs	N	2323	414	2737
	Expected N	2335.2	401.8	2737.0
	% within Issue area	84.9%	15.1%	100.0%
	Std. Sq. Residual	0.064	0.373	
Economy	N	1479	316	1795
	Expected N	1531.5	263.5	1795.0
	% within Issue area	82.4%	17.6%	100.0%
	Std. Sq. Residual	1.801	10.467**	
Finances	N	2228	363	2591
	Expected N	2210.7	380.3	2591.0
	% within Issue area	86.0%	14.0%	100.0%
	Std. Sq. Residual	0.136	0.790	
Social questions	N	1236	175	1411
	Expected N	1203.9	207.1	1411.0
	% within Issue area	87.6%	12.4%	100.0%
	Std. Sq. Residual	0.857	4.981*	
Education	N	330	93	423
	Expected N	360.9	62.1	423.0
	% within Issue area	78.0%	22.0%	100.0%
	Std. Sq. Residual	2.647	15.386***	
Media/Communication	N	489	91	580
	Expected N	494.9	85.1	580.0
	% within Issue area	84.3%	15.7%	100.0%
	Std. Sq. Residual	0.069	0.404	
Science/Research	N	377	94	471
	Expected N	401.9	69.1	471.0
	% within Issue area	80.0%	20.0%	100.0%
	Std. Sq. Residual	1.538	8.941**	

(to be continued on next page)

Table 4.7 (continued)

Transport	N	658	108	766
	Expected N	653.6	112.4	766.0
	% within Issue area	85.9%	14.1%	100.0%
	Std. Sq. Residual	0.030	0.175	
Environment	N	412	57	469
	Expected N	400.2	68.8	469.0
	% within Issue area	87.8%	12.2%	100.0%
	Std. Sq. Residual	0.351	2.038	
Agriculture	N	447	85	532
	Expected N	453.9	78.1	532.0
	% within Issue area	84.0%	16.0%	100.0%
	Std. Sq. Residual	0.105	0.611	
Energy	N	467	23	490
	Expected N	418.1	71.9	490.0
	% within Issue area	95.3%	4.7%	100.0%
	Std. Sq. Residual	5.726*	33.281***	
Parliamentary affairs	N	233	55	288
	Expected N	245.7	42.3	288.0
	% within Issue area	80.9%	19.1%	100.0%
	Std. Sq. Residual	0.659	3.830	
Migration/Asylum policy	N	471	21	492
	Expected N	419.8	72.2	492.0
	% within Issue area	95.7%	4.3%	100.0%
	Std. Sq. Residual	6.250*	36.326***	
Culture/Religion	N	114	22	136
	Expected N	116.0	20.0	136.0
	% within Issue area	83.8%	16.2%	100.0%
	Std. Sq. Residual	0.036	0.208	
Health	N	510	53	563
	Expected N	480.4	82.6	563.0
	% within Issue area	90.6%	9.4%	100.0%
	Std. Sq. Residual	1.829	10.632**	
Spatial planning/Housing	N	506	50	556
	Expected N	474.4	81.6	556.0
	% within Issue area	91.0%	9.0%	100.0%
	Std. Sq. Residual	2.107	12.246***	
Total	N	15130	2603	17733
	% within Issue area	85.3%	14.7%	100.0%
	Pearson Chi-Square	*515.762*		
	df	*19*		
	Asymp. Sig. (2-sided)	*0.000*		

*= significant at .05 level; **= significant at .01 level; ***= significant at .001 level

Table 4.8 Political distance index (all published votes vs. non-lopsided published votes, and deviance in %), 1999-2003

	Political distance index		
	all published votes (N=1'179)	non-lopsided published votes (N=775)	Increase in political distance (in %)
CVP-FDP	0.1445	0.2168	50.0
CVP-GPS	0.3443	0.4996	45.1
CVP-LPS	0.1786	0.2610	46.1
CVP-SPS	0.2936	0.4371	48.9
CVP-SVP	0.2902	0.4290	47.8
FDP-SPS	0.3976	0.5950	49.7
FDP-SVP	0.1882	0.2747	46.0
GPS-FDP	0.4491	0.6594	46.8
GPS-LPS	0.4510	0.6570	45.7
GPS-SPS	0.0726	0.0900	24.0
GPS-SVP	0.5477	0.8021	46.5
LPS-FDP	0.1229	0.1760	43.3
LPS-SPS	0.4056	0.5998	47.9
LPS-SVP	0.2175	0.3118	43.4
SPS-SVP	0.5271	0.7837	48.7
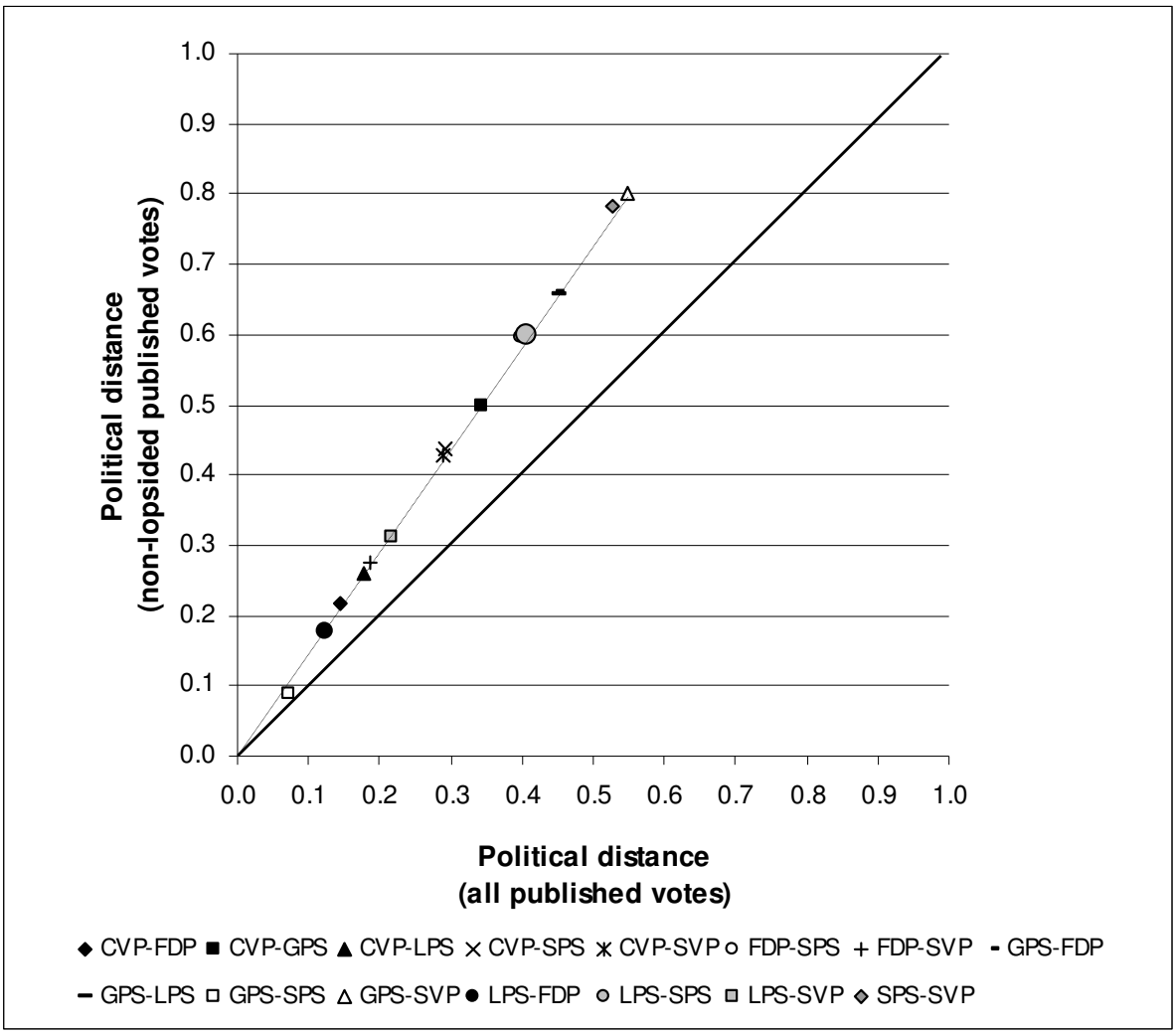
Figure 4.4 Effects of eliminating lopsided votes from all published votes: deviance in the political distance index, 1999-2003