B.J.Pol.S. **36,** 691–704 *Copyright © 2006 Cambridge University Press*
doi:10.1017/S0007123406000366 *Printed in the United Kingdom*

Off the Record: Unrecorded Legislative Votes, Selection Bias and Roll-Call Vote Analysis

CLIFFORD J. CARRUBBA, MATTHEW GABEL, LACEY MURRAH, RYAN CLOUGH, ELIZABETH MONTGOMERY AND REBECCA SCHAMBACH*

Scholars often use roll-call votes to study legislative behaviour. However, many legislatures only conclude a minority of decisions by roll call. Thus, if these votes are not a random sample of the universe of votes cast, scholars may be drawing misleading inferences. In fact, theories over why roll-call votes are requested would predict selection bias based on exactly the characteristics of legislative voting that scholars have most heavily studied. This article demonstrates the character and severity of this sampling problem empirically by examining European Parliament vote data for a whole year. Given that many legislatures decided only a fraction of their legislation by roll call, these findings have potentially important implications for the general study of legislative behaviour.

The study of legislative behaviour in democracies relies fundamentally on the analysis of recorded, or roll-call, votes.[1] Most prominently, scholars of the United States Congress have used roll-call votes (RCVs) to explore how parties organize and influence legislative behaviour, test theories of internal legislative organization and characterize the dimensionality of the US legislative policy space.[2] These tools of RCV analysis are increasingly applied in other legislative settings, be they other national assemblies or subnational legislatures.[3]

However, the value of traditional RCV analysis outside the US Congress is dubious. The contemporary US Congress differs from many other legislatures in that almost all legislative votes are by roll call. For example, the French National Assembly, German

* Department of Political Science, University of Kentucky. The authors are grateful to George Krauss, Ken Scheve, Bob Pahre, Geoff Evans, Robert Rohrschneider, Richard Fording, Berthold Rittberger and particularly Simon Hix for advice and suggestions. We also benefited from discussion with seminar participants at the University of South Carolina, the International University (Bremen), Nuffield College, Indiana University, Yale University, the University of Illinois, the Institute for Advance Studies (Vienna) and Trinity College, Dublin.

[1] Melissa Collie, 'Voting Behavior in Legislatures', in Gerhard Lowenberg, Samuel Patterson and Malcolm Jewell, *Handbook of Legislative Research* (Cambridge, Mass.: Harvard University Press, 1985), pp. 471–518.

[2] For the use of RCVs to examine how parties organize and influence legislative behaviour, see James Snyder and Tim Groseclose, 'Estimating Party Influence on Congressional Roll-Call Voting', *American Journal of Political Science*, 44 (2000), 193–211. For the use of RCVs to test theories of internal legislative organization, see Keith Krehbiel, *Information and Legislative Organization* (Ann Arbor: University of Michigan Press, 1991). For the use of RCVs to characterize the dimensionality of the US legislative policy space, see Keith T. Poole and Howard Rosenthal, *Congress: A Political-Economic History of Roll Call Voting* (New York: Oxford University Press, 1997).

[3] For example, Gerald C. Wright and Brian F. Schaffner, 'The Influence of Party: Evidence from the State Legislatures', *American Political Science Review*, 96 (2002), 367–79; Moshe Haspel, Thomas Remmington and Steven Smith, 'Electoral Institutions and Party Cohesion in the Russian Duma', *Journal of Politics*, 60 (1998), 417–39; Scott Desposato, 'Legislative Politics in Authoritarian Brazil', *Legislative Studies Quarterly*, 26 (2001), 287–318; John Carey, 'Getting Their Way or Getting in the Way? Presidents and Party Unity in Legislative Voting' (paper presented at the annual meeting of the American Political Science Association, Boston, 2002).

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Bundestag, Dutch Parliament, the Swiss National Council, Brazilian Chamber of Deputies, Argentine Chamber of Deputies and various US state legislatures decide only a fraction of legislation by RCVs.[4] In these contexts, the quality of our inferences about voting behaviour depends crucially on the sampling properties of RCVs. If roll calls are not a random sample of legislative votes, we would need to account explicitly for the selection process before drawing accurate inferences about legislative behaviour.

Why might the selection of votes for roll call be non-random? For one, it is widely argued that political party leaders, who normally control the selection of RCVs, choose roll calls based on their expectations regarding the level of party cohesiveness and the character of political conflict that a vote would present.[5] If this is true, then the selection of RCVs would be endogenous to two of the most commonly studied aspects of legislative behaviour: party cohesion and the dimensionality of legislative competition. This potential sampling problem has long been recognized.[6] However, subsequent studies have generally ignored the issue and no study has yet examined or addressed it.

The purpose of this study is to answer three questions: (1) is there evidence that RCVs are requested strategically? (2) If so, what is the substantive effect? And (3) is this effect consequential for our conclusions about legislative voting behaviour? To answer these questions, we focus on a single legislative chamber: the European Parliament (EP). We examine the EP for three reasons. Less than a third of all votes are by roll call. There is reason to believe that the legislative parties – called 'party groups' – are using RCVs in a fashion that would introduce selection bias into the RCV sample. And, a large and growing literature uses RCVs to study legislative behaviour in the EP. Thus, the EP is a chamber in which RCVs may be a biased sample of votes, and we shall be able to evaluate the substantive significance of this bias by re-examining a well-developed body of literature. Furthermore, the EP is very similar to many other parliaments in terms of the methods of voting and the prevalence of RCVs.[7] Thus, lessons learned from the EP should provide insight into problems common to other legislatures.

[4] Thomas Saalfeld, 'On Dogs and Whips: Recorded Votes', in H. Döring, ed., *Parliaments and Majority Rule in Western Europe* (New York: St Martin's Press, 1995), pp. 528–65; John Carey, 'Discipline, Accountability, and Legislative Voting in Latin America', *Comparative Politics*, 35 (2003), 191–211.

[5] Saalfeld, 'On Dogs and Whips'.

[6] Fred Greenstein and Elton Jackson, 'A Second Look at the Validity of Roll-Call Analysis', *Midwest Journal of Political Science,* 7 (1963), 156–66. However, several studies have recognized the selection bias problem (e.g., Prisca Lanfranchi and Ruth Lüthi, 'Cohesion of Party Groups and Interparty Conflict in the Swiss Parliament: Roll Call Voting in the National Council', in Shaun Bowler, David Farrell and Richard Katz, eds, *Party Discipline and Parliamentary Government* (Columbus: Ohio State University Press, 1999), pp. 99–120, at p. 106; Jacques Thomassen, Abdul Noury and Erik Voeten, 'Political Competition in the European Parliament: Evidence from Roll Call and Survey Analyses', in Gary Marks and Marco Steunbergen, eds, *Dimensions of Contestation in the European Union* (Cambridge: Cambridge University Press, 2004), pp. 141–61; Luciano Bardi, 'Transitional Trends: The Evolution of the European Party System', in Bernard Steunenberg and Jacques Thomassen, eds., *The European Parliament: Moving Toward Democracy in the EU* (Oxford: Roman and Littlefield, 2002), pp. 63–86; Simon Hix, 'Legislative Behaviour and Party Competition in the European Parliament: An Application of Nominate to the EU', *Journal of Common Market Studies*, 39 (2001), 663–88; Simon Hix, 'Parliamentary Behavior with Two Principals: Legislator Preferences, Parties and Voting in the European Parliament', *American Journal of Political Science*, 46 (2002), 688–98; Simon Hix, Abdul Noury and Gerald Roland, 'Power to the Parties: Cohesion and Competition in the European Parliament 1979–2001', *British Journal of Political Science*, 35 (2002), 203–34).

[7] Saalfeld, 'On Dogs and Whips'.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

VOTING BEHAVIOUR, PARTY GROUP COHESION AND PARTY GROUP COMPETITION

A long research tradition in comparative legislative behaviour has focused on evaluating the importance of parties to legislative behaviour. Specifically, scholars used summary statistics of the similarity of voting patterns among members of parties to evaluate party cohesion and the dissimilarity of voting patterns across legislative parties to define the character of inter-party policy conflict.[8] EU scholars have applied this analytic approach to the study of transnational coalitions of national party delegations in the EP, known as party groups (PGs).

In many regards, these PGs resemble national legislative parties. They are generally organized according to traditional party families – for example, national Socialist party delegations comprise the Party of European Socialists. They are considered important to the internal organization of the legislative chamber – for example, speaking time, committee assignments and other valuable roles and resources in the EP are distributed via PGs. And they often instruct their membership on how to vote on particular issues. Consequently, many scholars have been interested in evaluating the importance of PG to the legislative behaviour of their members.

These studies of voting behaviour by members of the EP (MEPs) have generally converged on two conclusions. First, PG cohesion is higher than cohesion by nationality, is objectively high for the major PGs and has generally increased over time.[9] Studies based on more recent and comprehensive data confirm these findings.[10]

Secondly, legislative politics in the EP is competitive along one main ideological dimension that reflects the traditional left–right political conflict found at the domestic level. This conclusion is based on several analyses of vote patterns among MEPs across a variety of issue areas.[11] More recent studies using NOMINATE to estimate the political space generally support the same finding.[12]

[8] Collie, 'Voting Behavior in Legislatures', p. 475.

[9] Fulvio Attina, 'The Voting Behavior of the European Parliament Members and the Problem of the Europarties', *European Journal of Political Research*, 18 (1990), 557–79; Tapio Raunio, 'Aggregating Interests Within and Between Party Groups in the European Parliament: MEP Voting Behaviour, 1989–1994', in *The European Perspective: The Transnational Party Groups in the 1989–1994 European Parliament* (Aldershot, Hants.: Ashgate, 1997); Amie Kreppel and George Tsebelis, 'Coalition Formation in the European Parliament', *Comparative Political Studies*, 32 (1999), 933–66.

[10] Abdul Noury, 'Ideology, Nationality, and Euro-Parliamentarians', *European Union Politics*, 3 (2002), 33–58; Thomassen *et al*., 'Political Competition in the European Parliament'; Hix *et al.*, 'Power to the Parties: Cohesion and Competition in the European Parliament 1979–2001'.

[11] Raunio, 'Aggregating Interests Within and Between Party Groups in the European Parliament'; Kreppel and Tsebelis, 'Coalition Formation in the European Parliament'; Amie Kreppel, 'Rules, Ideology and Coalition Formation in the European Parliament: Past, Present and Future', *European Union Politics*, 1 (2000), 340–62.

[12] Some scholars identify four dimensions to competition in the EP, but show that the dominant dimension is left–right, e.g. Noury, 'Ideology, Nationality and Euro-Parliamentarians'; Thomassen *et al.*, 'Political Competition in the European Parliament'. Other scholars show that inter-PG competition in the EP has been along a single left–right ideological dimension. See Hix, 'Legislative Behaviour and Party Competition in the European Parliament', and Hix *et al*., Power to the Parties'. See Mikko Mattila, 'Contested Decisions: Empirical Analysis of Voting in the European Union Council of Ministers', *European Journal of Political Research*, 43 (2004), 29–50, for similar results using recorded votes for the European Council of Ministers (but see Torsten J Selk, 'On the Dimensionality of European Union Legislative Decision-making', *Journal of Theoretical Politics*, 16 (2004), 203–22, for findings of multi-dimensionality). The voting records of the Council are also only a sample of the votes cast.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Reconsidering RCVs

If RCVs are a random sample of the universe of legislative votes cast in the EP, these studies and their conclusions are unproblematic. However, there is good reason to believe that RCVs are not a random sample, because there is good reason to believe that RCVs are not randomly requested.

A vote in the EP is designated for roll call if any party group or a group of thirty-two members of the EP request it prior to the day of the vote.[13] In practice, PGs request the vast majority of roll calls. Scholars have identified two primary motivations for PG leaders to request RCVs: disciplining and signalling. The disciplining argument claims that PGs may use RCVs to influence legislative outcomes. PG leaders have the ability to reward or punish their membership by various means.[14] However, PG leaders cannot exercise party discipline without some way of monitoring their membership. Thus, PG leaders have an incentive to request RCVs when they want to enforce party discipline. The signalling argument posits that PGs use RCVs to signal their or other groups' policy positions to a third party, such as a national electorate or another EU institution.[15] In particular, a PG may want to publicize its policy agenda, to embarrass a rival PG by revealing its low cohesion on a particular policy, or to distinguish itself publicly from other PGs on particular policies it deems significant.

If these arguments are right, RCV data should be biased in ways that directly relate to the literature's two core issues: party-group cohesion and the dimensionality of policy conflict. The decision to request is endogenous to the expected level of cohesion if PG leaders request RCVs to induce party discipline. And, if PG leaders request RCVs in order to signal their positions on specific issues, the decision to request is endogenous to the policy area of the vote. As a result, the revealed dimensionality of conflict might tell us more about the areas of conflict parties want to highlight than the true dimensions of conflict in the legislature.

Research Design

To address this issue, we evaluate the sampling properties of RCVs with respect to three vote characteristics: (1) the identity of the RCV requesting party group, (2) the issue area of the vote, and (3) the legislative importance of the vote. The first characteristic provides a direct test of strategic behaviour. The more we observe certain party groups tending to make RCV requests, the stronger the evidence that PGs are making conscious choices over the decision to call RCVs.

The second two characteristics allow us to test whether strategic PG behaviour is biasing the data in two substantively important ways. Examining votes by their issue area provides direct evidence of whether there is bias in how RCVs characterize the dimensions of policy conflict. The more RCVs tend to over-represent certain issue areas, the more likely RCVs are incorrectly characterizing that dimensionality. Examining votes by their legislative importance provides direct evidence of whether RCV samples accurately represent

[13] A small number of votes require a RCV. The thirty-two member minimum was true for the period of our study, but has been modified more recently to accommodate enlargement, among other things.

[14] See Amie Kreppel, *The European Parliament and Supranational Party System* (Cambridge: Cambridge University Press, 2002).

[15] Kreppel, *The European Parliament and Supranational Party System*, p. 128.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

legislatively consequential behaviour. Since most literature is interested in the legislative consequences of voting behaviour, this characteristic of the data is particularly important to the findings of past research.[16]

Data

To evaluate these three characteristics of RCVs, we collected and analysed a novel dataset including all votes in the EP plenary sessions from July 1999 to June 2000 – the first year of the fifth directly elected EP.[17] This year allows comparison with previous RCV analyses.[18]

Here we focus on four attributes of these votes: (1) the method of vote; (2) the requesting group for each RCV; (3) the responsible committee for each legislative motion; and (4) the type of motion. The *method of vote* indicates whether the vote was by roll call or not.[19] The *requesting group* indicates which EP party group(s), if any, requested the RCV. The *responsible committee* indicates the name of the committee responsible for reporting the motion to the floor. And the *type of motion* indicates whether the vote was on a resolution or a legislative proposal, which we distinguish according to legislative procedure: Assent, Consultation or Codecision (round I, II or III).

Each of these attributes represents one of the three vote characteristics discussed above. First, requesting group obviously allows us to evaluate which groups tend to request RCVs. Secondly, each responsible committee in the EP has jurisdiction over specific sets of policy areas. Thus, examining which responsible committees' legislative texts are voted on by roll call provides one reasonable standard by which to evaluate whether some issue areas tend to be over-represented or under-represented in RCVs.

Finally, the type of motion allows us to evaluate whether the vote is legislatively consequential. The EP makes decisions using several different legislative procedures, some of which allow for multiple rounds of votes. Resolutions and consultation votes are primarily symbolic. Resolutions are EP motions not directly associated with any piece of legislation, while consultation votes are non-binding opinions on legislative proposals. In contrast, votes under the assent and co-decision procedures can have a direct and substantial impact on legislative outcomes. Under the assent procedure, the EP can veto the motion under consideration. Under the codecision procedure, the effect of an EP vote depends on the round. Codecision I is similar to the consultation procedure in that the EP issues an opinion. However, if the EP and Council of Ministers do not reach an agreement, a second round of deliberation occurs. At that point, the EP can amend or reject the Council's common position. If agreement is still not reached, then Codecision III begins with the bill being referred to a conciliation committee. If the EP rejects the resulting proposal, the text fails. Thus, assent and

[16] These three RCV attributes closely map to the three characteristics that Hix, Noury and Roland, 'Power to the Parties', use to justify their RCVs analysis. They assume that RCVs are requested proportionately among party groups, cover the most important legislative decisions and cover the full range of issues.

[17] See 'Minutes of the Proceedings of Plenary Sessions', *Europarl: The European Union On-Line* (www.europarl.eu.int/plenary/default_en.htm).

[18] Hix, 'Legislative Behaviour and Party Competition in the European Parliament'; Hix, 'Parliamentary Behaviour with Two Principals'.

[19] The EP uses four voting methods: (1) voice; (2) hand; (3) electronic; or (4) roll call.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Codecision III votes are clearly consequential. Codecision I and II votes may be consequential.

Methodology

The critical inferential question is whether RCVs represent an unbiased sample of EP votes. We address this issue mainly through standard statistical tests of significance for differences between the sample of votes – the roll-call votes – and the population of votes. The null hypothesis throughout the ensuing analysis is that any deviation in the distribution of RCVs across the relevant categories (such as the type of motion) from that of the population of votes is due to chance. In other words, the null hypothesis is the assumption, sometimes implicit, justifying past RCV analyses.

Note that most of our analysis does not distinguish between votes on amendments and final votes. This is the norm in the literature on RCV analysis in the EP.[20] But the main conclusions from our analysis hold even if one focuses exclusively on final votes.

ANALYSIS

Requesting Group

Table 1 presents the first set of results.[21] Clearly, RCVs are not being requested by any reasonable standard of proportionality, which is a prominent justification for RCV analysis in the EP.[22] RCVs are not randomly distributed across party groups, whether we consider party groups of equal status or we weight them by the size of their membership.[23] This is true whether we consider just final votes, amendments or both.[24] Further, it is apparent that different party groups use RCVs for different purposes. The PPE tend to request RCVs on final votes and they are the source of the bulk of the RCVs on final votes. In comparison, the Verts/ALE, the TDI, and the ELDR primarily request RCVs on amendments, and those votes are the majority of the RCVs on amendments. Thus, these findings provide initial evidence that party groups appear to request RCVs strategically.

[20] Hix, 'Legislative Behaviour and Party Competition in the European Parliament'; Kreppel and Tsebelis, 'Coalition Formation in the European Parliament'; Raunio, 'Aggregating Interests Within and Between Party Groups in the European Parliament'.

[21] Multiple groups can request the same RCV.

[22] Hix, Noury and Roland, 'Power to the Parties'.

[23] A χ^2 test easily rejects the proportionality hypothesis.

[24] These results do not necessarily imply that RCVs are a poor sample of all votes. Party groups can propose amendments and resolutions, and thus we would like to compare these rates of requests with the rates of proposals for amendments and resolutions by party group. This information is not systematically reported in the *Minutes of Proceedings* of the EP. However, because party groups cannot initiate legislation, the pattern of roll-call requests on final votes for legislation is immune to the above concerns. The pattern of these requests supports our general conclusion. Of the seventy-three RCVs on final votes on legislation, fifty-two (71 per cent) were requested by the PPE. This is dramatically disproportionate to the size of the PPE. Given that we are primarily concerned with voting behaviour on legislation, this evidence of request bias is impressive.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

TABLE 1 *RCV Requesting Groups on Final Votes and Amendments**

RCV requesting group	Party group size	Final votes	Amendments	Total votes
Europe of Democracies and Diversity	16	4	48	52
Row percentage	–	*8*	*92*	–
Column percentage	*3*	*2*	*7*	*6*
European Liberal Democratic and Reform (ELDR)	53	17	83	100
Row percentage	–	*17*	*83*	*100*
Column percentage	*8*	*10*	*12*	*11*
Communists	50	10	55	65
Row percentage	–	*15*	*84*	–
Column percentage	*8*	*6*	*8*	*7*
Party of European Socialists	175	29	69	98
Row percentage	–	*30*	*70*	–
Column percentage	*28*	*16*	*10*	*11*
Technical Group of Independent Members (TDI)	32	6	91	97
Row percentage	–	*6*	*94*	–
Column percentage	*5*	*3*	*13*	*11*
Union for a Europe of Nations	22	4	69	73
Row percentage	–	*5*	*95*	–
Column percentage	*4*	*2*	*10*	*8*
Greens (Verts/ALE)	45	21	190	211
Row percentage	–	*10*	*90*	–
Column percentage	*7*	*12*	*27*	*24*
European Peoples' Party (PPE)	233	85	70	155
Row percentage	–	*54*	*46*	–
Column percentage	*37*	*47*	*10*	*18*
Other	–	4	30	34
Row percentage	–	*12*	*88*	–
Column percentage	–	*2*	*4*	*4*
Total number	626	179	705	884
χ^2		110	9,907	10,030

*Row percentage is calculated as the percentage of that party group's RCVs that were in that category of votes. Column percentage is calculated as the percentage of the chamber comprised of a given party group or the RCVs in that category requested by that party group.

Responsible Committee

Table 2 presents the distribution of RCVs by responsible committee.[25] The table reports the number and proportion of votes on legislative texts referred out of each of these committees for RCVs and for all votes. As the χ^2 statistic indicates, the null hypothesis that the sample is representative is easily rejected. More specifically, we see that a majority of RCVs originate in just a few committees. The committees for Citizens' Freedoms

[25] Only votes on legislation are assigned to a responsible committee.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

TABLE 2 *Responsible Committee by All Votes and RCVs (Final Votes and Amendments)*

Committee	All non-RCVs	All RCVs	All votes
Agriculture and Rural Development	147	65	212
Row percentage	*69*	*31*	–
Column percentage	*6*	*6*	*5*
Budgetary Control	53	42	95
Row percentage	*56*	*44*	–
Column percentage	*2*	*4*	*2*
Budgets	361	74	435
Row percentage	*83*	*17*	–
Column percentage	*12*	*7*	*11*
Citizens' Freedoms and Rights, Justice and Home Affairs	359	174	533
Row percentage	*67*	*33*	–
Column percentage	*12*	*16*	*13*
Parliament's delegation to the Conciliation Committee	10	1	11
Row percentage	*91*	*9*	–
Column percentage	*< 1*	*< 1*	*< 1*
Conference of Presidents	8	0	8
Row percentage	*100*	*0*	–
Column percentage	*< 1*	*0*	*< 1*
Constitutional Affairs	13	358	371
Row percentage	*3*	*97*	–
Column percentage	*< 1*	*33*	*9*
Culture, Youth, Education, the Media and Sport	87	0	87
Row percentage	*100*	*0*	–
Column percentage	*3*	*0*	*2*
Development and Cooperation	61	1	62
Row percentage	*98*	*2*	–
Column percentage	*2*	*< 1*	*2*
Economic and Monetary Affairs	78	161	239
Row percentage	*33*	*67*	–
Column percentage	*3*	*15*	*6*
Employment and Social Affairs	88	16	104
Row percentage	*85*	*15*	–
Column percentage	*3*	*1*	*3*
Environment, Public Health and Consumer Policy	761	6	767
Row percentage	*99*	*1*	–
Column percentage	*26*	*< 1*	*19*
Fisheries	118	30	148
Row percentage	*80*	*20*	–
Column percentage	*4*	*3*	*4*
Foreign Affairs, Human Rights, Common Security and Defence Policy	161	30	191
Row percentage	*84*	*16*	–
Column percentage	*5*	*3*	*5*

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Industry, External Trade, Research and Energy	295	63	358
Row percentage	*82*	*18*	–
Column percentage	*10*	*6*	*9*
Legal Affairs and the Internal Market	148	38	186
Row percentage	*80*	*20*	–
Column percentage	*5*	*4*	*5*
Regional Policy, Transport and Tourism	150	26	176
Row percentage	*85*	*15*	–
Column percentage	*5*	*2*	*4*
Women's Rights and Equal Opportunities	50	0	50
Row percentage	*100*	*0*	–
Column percentage	*2*	*0*	*1*
Total	2,948	1,085	4,033

Notes: Row percentage is calculated as the percentage in that category from that committee. Column percentage is calculated as the percentage from that committee (not) roll-call voted. $\chi^2 = 1{,}147.5$ ($p < 0.001$).

and Rights, Home Affairs, Constitutional Affairs, and Economic and Monetary Affairs have a high proportion of their votes by roll call (approximately 33, 97 and 67 per cent, respectively). Consequently, their votes account for only 28.35 per cent of all votes, but 63.88 per cent of all RCVs. That is, their percentage of RCVs is *more than double* their percentage of all votes. Furthermore, we observe very few RCVs on legislation from some committees. For example, there were fifty votes on texts from the committee on Women's Rights and Equal Opportunities, but *none* by roll call.

Type of Motion

Finally, consider the sampling properties of RCVs by type of motion. Table 3 presents the distribution between resolutions and legislative votes and Table 4 presents the distribution among legislative votes. As Table 3 demonstrates, resolutions make up a much larger proportion of RCVs than they do of all votes. Table 4 shows that consultation votes and Codecision I votes comprise a larger percentage of RCVs than they do of all votes, while Codecision II and III and assent votes comprise a much smaller percentage of RCVs than they do of all votes.

Once again, this evidence is consistent with the argument that strategic behaviour is biasing RCV samples. However, more importantly, this evidence also demonstrates that this bias results in the most legislatively consequential votes – Codecision II, III and assent – being massively under-sampled. Out of a total of 646 Codecision II, III and assent votes, only five (or 0.77 per cent) were by roll call. Thus, the PGs are systematically hiding exactly the voting behaviour we are interested in studying.

In sum, this evidence demonstrates that the RCV sample is biased, that this bias is quite severe, and that it is associated with three substantively important characteristics. Thus, this evidence suggests that we should proceed with great caution in interpreting roll-call evidence. Next we consider the substantive impact of this bias on the two main findings in the EP voting behaviour literature.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

TABLE 3 *Percentage and Number of Votes and RCVs by Type of Motion*

Type of motion	All non-RCVs	All RCVs	All votes
Legislation	2,232	173	2,405
Row percentage	*0.93*	*0.07*	–
Column percentage	*0.66*	*0.13*	*0.52*
Resolutions	1,139	1,124	2,263
Row percentage	*0.50*	*0.50*	–
Column percentage	*0.34*	*0.87*	*0.48*
Total	3,371	1,297	4,668

Notes: Row percentage is calculated as the percentage in that category that are of that type of proposal. Column percentageis calculated as the percentage of that type of proposal (not) roll-called. $\chi^2 = 756.3$ ($p < 0.001$).

TABLE 4 *Percentage and Number of Votes and RCVs by Type of Legislative Vote*

Type of motion	All non-RCVs	All RCVs	All votes
Consultation	985	103	1,088
Row percentage	*91*	*9*	–
Column percentage	*34*	*58*	*36*
Assent	15	1	16
Row percentage	*94*	*6*	–
Column percentage	*1*	*1*	*1*
Codecision I	606	65	671
Row percentage	*90*	*10*	–
Column percentage	*21*	*37*	*22*
Codecision II	616	3	619
Row percentage	*99*	*1*	–
Column percentage	*21*	*2*	*20*
Codecision III	10	1	11
Row percentage	*91*	*9*	–
Column percentage	*< 1*	*1*	*< 1*
Codecision II, III, and Assent	641	5	646
Row percentage	*99*	*1*	–
Column percentage	*22*	*3*	*21*
Total	2,873	178	3,051

Notes: Row percentage is calculated as the percentage in that category that are of that type of proposal. Column percentage is calculated as the percentage of that type of proposal (not) roll-called. $\chi^2 = 88.57$ ($p < 0.001$).

IMPLICATIONS FOR MEASURING INTRA-PARTY COHESION

Recall that the extant literature on EP legislative behaviour concludes that intra-party cohesion is objectively high, is high relative to national cohesion and has steadily increased over time. These findings rely upon two critical assumptions: that RCV estimates of PG cohesion are *unbiased* and that these estimates are sufficiently *precise* to make meaningful comparisons over time and across PGs. In fact, neither of these assumptions is valid for the RCV sample.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Consider precision first. Because RCVs are a sample, traditional measures of party cohesion (such as average vote agreement scores) must be treated as sample statistics, which is why one should report standard errors around such estimates. But when the sample is non-random, statistical theory does not provide guidance in calculating sampling error. Indeed, the sampling error associated with non-random samples is potentially much higher than that for random samples. This is a fundamental problem for studying party cohesion in the EP, since we cannot appraise the precision of our estimates of cohesion based on RCVs.

To make matters worse, the evidence suggests that RCV samples are biased towards significantly over-estimating inter-party group cohesion. First, recall that most previous studies pooled RCVs on legislation and on resolutions to calculate PG cohesion or agreement scores. Secondly, note that the composition of PGs on resolution votes is systematically different from the composition of PGs on legislative votes. MEP attendance increases with the legislative import of the motion, which means that we see relatively low attendance on resolutions.[26] Thirdly, we have good reasons to believe those MEPs who are most likely to be absent on resolution votes are the least likely to vote with the PG majority on legislation. Those MEPs holding or seeking PG leadership positions should be more inclined to attend and more likely to vote with the PG majority. If so, then the subset of PG members attending votes should become smaller and more cohesive as the importance of the vote declines. And, since we are interested in inferring the level of PG cohesion on important legislative votes, the pooling of legislative votes with a large number of resolution votes would generate an over-estimation of the level of PG cohesion on legislative votes.

If the above story is accurate, we would expect that MEP absenteeism would be positively related to the frequency of defection from PG majority positions. And, more specifically, the more often the MEP is absent on resolution votes, the more likely the MEP is to defect from the PG majority position on legislative votes. Evidence from the two largest party groups in the chamber, the Party of European Socialists (PES) and the European 'Peoples' Party (EPP), support this claim. For the RCVs in our dataset, we estimated the correlation between the percentage of votes in which MEP voted against the PG majority (i.e., the rate of defection) on all RCVs and the number of absences on all RCVs.[27] The correlations were 0.35 for the PES and 0.51 for the EPP, with both significant at the 0.01 level. We also estimated the correlation between absences on resolution votes and frequency of defection from the PG majority on legislative votes only. The correlation was 0.17 for the PES and 0.46 for the EPP, with both coefficients significant at the 0.02 level. Thus, the MEPs from the PES and EPP who most frequently toe the PG line are the least likely to be absent on resolutions.

We suspect this leads to substantial bias. Recall that 86 per cent of RCVs in our dataset were on resolutions. And the fraction of MEPs absent on resolutions is far from trivial, amounting to almost a third of the chamber on average. Had these resolution votes truly been legislative votes, we would have expected higher attendance and therefore lower PG cohesion than observed on these resolutions. Thus, the compositional differences in PGs across types of motions due to absences serve to inflate cohesion scores.

[26] See Roger Scully, 'Policy Influence and Participation in the European Parliament', *Legislative Studies Quarterly*, 22 (1997), 233–52.

[27] Data publicly available at http://personal.lse.ac.uk/hix/HixNouryRolandEPdata.htm. We deleted from the analysis any MEP who did not serve the complete year. The rate of defection was based only on votes attended.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

Characterizing Policy Conflict

RCV studies have found that policy conflict in the EP is characterized by four dimensions, but with the left–right ideological dimension accounting for the lion's share of the votes.[28] Our findings indicate this conclusion is dubious; RCV studies are most likely incorrectly characterizing the policy space and missing at least one relevant dimension of policy conflict.

First, recall that RCVs are not a representative sample by issue area. This sample will miss or de-emphasize a dimension of conflict if those under-sampled issue areas include policies that engender legislative conflict orthogonal to the dimensions revealed by RCVs. We can show that the selection bias in RCV requests is likely to have exactly this consequence. A recent study assessed the congruence between the dimensionality of MEP attitudes regarding different policies, as reported in surveys, and MEP voting behaviour, as indicated by RCVs.[29] The findings indicate that MEP policy attitudes are structured by three orthogonal issue domains: integration–independence, socio-economic left–right, and libertarian–traditional. Their RCV analysis, however, found a dominant left–right dimension, three other dimensions that provide comparatively little explanatory power,[30] and no libertarian–traditional dimension.

Our analysis provides an explanation for these inconsistent findings. To see why, recall that only the survey data uncovered a libertarian–traditional dimension. One of the key issues that defined this dimension was women's rights – specifically, a woman's freedom to decide on abortion. Now, looking at Table 2, we see that none of the fifty votes on legislation associated with the Women's Rights and Equal Opportunity Committee were by roll call. Consequently, the RCV sample is very likely biased away from finding this type of libertarian–traditional dimension. But, given that the survey of MEPs revealed such a dimension, we might well expect that, had these fifty votes been recorded, an analysis of RCVs would reveal that dimension. The selection bias in RCV requests simply hides it from view.

Secondly, the attendance finding discussed in the previous section also suggests that policy dimensions are being under-weighted or even omitted entirely. Techniques, such as NOMINATE, identify dimensions of policy conflict based upon the observed voting cleavages in the data. The greater the number of different voting cleavages in the data, the greater the number of policy dimensions. Thus, since the inclusion of resolution votes is likely to under-estimate *intra*-party group conflict, RCVs are likely to under-estimate or even miss policy dimensions that are orthogonal to the observed dimension of *inter*-party group conflict.

CONCLUSIONS AND FUTURE RESEARCH

In sum, this study provides evidence of strategic behaviour in the decision to request roll-call votes, demonstrates that this behaviour biases the data in substantively important ways and to a very substantial degree, and casts serious doubt on existing findings in the EP voting behaviour literature. Importantly, however, the implications of these findings apply to the many legislatures around the world where RCVs are only a fraction of

[28] For example, Noury, 'Ideology, Nationality, and Euro-Parliamentarians'.
[29] Thomassen *et al.*, 'Political Competition in the European Parliament'.
[30] This dimensionality is consistent with other RCV studies.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

legislative votes, which includes a large number of legislatures in Europe.[31] It is also true of many legislatures outside Europe: for example, the Chilean Senate, the Argentine Chamber of Deputies and the Brazilian Chamber of Deputies.[32]

Notably, we do not conclude from our study that RCVs are a fatally flawed source of information about legislative behaviour. Rather, this study highlights the need to understand the process that generates RCVs before trying to analyse them. Doing so requires serious theoretical work. While existing substantive work on the EP and other legislatures has already identified two broad motivations for parties to request RCVs, party discipline and signalling, we lack theory to explain the precise conditions under which these motivations would lead to RCVs.[33] Only with discriminating predictions over how observable characteristics of a bill should relate to the decision to request a RCV, if that motivation truly is driving the decision to request a RCV, can we identify the causes of RCVs. For example, a model based on a party discipline motivation would be likely to have clear implications about how the choice of votes for roll call depend on whether the party leadership considers discipline as crucial to deciding the legislative outcome and whether the party members would vote cohesively or not in the absence of discipline. With those predictions in hand, as well as measures of MEP preferences, we would be able to specify a test of that model. Assuming an equivalent elaboration of the signalling argument provides an alternative, discriminating set of predictions, we would then be able to test among these alterative explanations.

This test, once performed, would provide a much fuller understanding of the data generation process. With that knowledge, we could start to consider ways of accounting for the bias in inferring legislative behaviour from RCVs. One option is to use a Heckman-like selection bias model. This approach has both pros and cons. While the standard Heckman model has the advantage of being relatively well-known, it is most easily applied to cases with a common unit of analysis in both parts of the two-step model (such as a vote). This is important since all the variables in the main model need to be in the selection model.[34] In the EP context, this is a problem. The selection step would involve predicting whether a vote is by roll call or not, but many extant models of party-group influence on voting behaviour use some aggregation of votes for a party group (for example the average vote agreement over a six-month period).[35] Also, we are unaware of an obvious Heckman solution for scaling procedures like NOMINATE. Thus, a Heckman-like solution would require some econometric innovation beyond the standard model.

Other options exist as well. For example, for illustrative purposes, suppose that the party discipline theory predicts the use of RCVs extraordinarily well. We could then use the

[31] See Saalfeld, 'On Dogs and Whips'.

[32] For the case of the Chilean Senate, see John Londregan, 'Appointment, Reelection, and Autonomy in the Senate of Chile,' in Scott Morgenstern and Benito Nacif, eds, *Legislative Politics in Latin America* (Cambridge: Cambridge University Press, 2002), pp. 341–76. For the case of the Argentine Chamber of Deputies, see Mark Jones and Wonjae Hwang, 'Party Government in Presidential Democracies: Extending Cartel Theory Beyond the U.S. Congress', *American Journal of Political Science*, 49 (2005), 267–82. For the case of the Brazilian Chamber of Deputies, see Barry Ames, 'Party Discipline in the Chamber of Deputies,' in Scott Morgenstern and Benito Nacif, eds, *Legislative Politics in Latin America* (Cambridge: Cambridge University Press, 2002), pp. 185–221.

[33] For discussion of party discipline and signalling as motivations for parties to seek RCVs, see Saalfeld, 'On Dogs and Whips'.

[34] See Jeffrey Wooldridge, *Introductory Econometrics* (Mason, Ohio: Thomson, 2003).

[35] For extant models of party-group influence, see Hix *et al*., 'Power to the Parties'.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press

specified party discipline theory to generate the unobserved counterfactual; what would have happened if a roll-call vote had been requested on a particular vote? Having uncovered the 'full' record of how every legislator did or would have voted on every vote, analysis of voting behaviour could proceed. While it is impossible to say what approach would prove most productive, we believe three things are clear; we must start to think hard about accounting for selection bias in RCV data, there are a number of plausible avenues to pursue in order to redress this problem, and in fact the problem provides some interesting and fertile ground for new research.

https://doi.org/10.1017/S0007123406000366 Published online by Cambridge University Press