

Coding Without Humans:

A 'real-time' database of the European Parliament

Bjorn Hoyland

University of Oslo

Email: bjorn.hoyland@stv.uio.no

and

Indraneel Sircar

University College Dublin

Email: Indraneel.Sircar@ucd.ie

Abstract

The paper presents the first “real-time” database to the European Parliament (EP) research community. Quantitative research on the European Parliament has until now been associated with large start-up costs as an informative dataset about the Members of the European Parliament (MEPs) has not been available. We offer a drastic reduction of these start-up costs through an online resource with updated information about membership of party groups, committee assignments and posts in the EP leadership since the first direct elections in 1979 until the present day. As a demonstration of the dataset, we conduct a natural experiment on the effect of party groups, comparing the voting behaviour of MEPs pre and post party switching.

Draft paper.

Please do not cite without permission from the authors.

Comments very welcome.

Paper presented at the European Union Studies Association (EUSA) Tenth Biennial International Conference, Montreal, Canada * May 17-May 19, 2007

The use of advanced statistical methods to analyze US legislative politics has become commonplace (Cox and McCubbins 2005; Krehbiel 1998; Clinton and Meirowitz 2003). Research on legislative politics in the European Parliament has benefitted from borrowing from the US literature (e.g. Bowler and Farrell 1995; Hix et al. 2007). However, with some notable exceptions, much of the research on politics in the European Union is suffering from a case study bias (Franchino 2005). This is partly due to the fact that good datasets for anything but roll-call votes are unavailable. Although the European Parliament provides a lot of information about individual members or pieces of legislation, it is not trivial to convert this type of information into a clean dataset suitable for statistical analysis. This means that individual researchers have to spend substantive resources just to obtain a dataset. Replication datasets are often not made available to the research community. This has limited the progress in our discipline (Gabel et al. 2002).

To address this problem we present a “real-time” dataset of MEPs positions, party-group membership, and committee assignments for all MEPs since 1979 until the present day. The dataset will be kept updated as long as the EP continues the current practice of making information about individual MEPs available online. The first section of this note presents the technology behind this approach to data-collection. It also describes the database. The second section uses the database in order to address a long-standing question in the literature, to what extent do party group affiliation influence voting behaviour. In other words, where is the party (Krehbiel 1993)?

A “real-time” database

Calls for transparency and accountability have led the European Parliament to upload information about their day-to-day activities on their internet pages. However, while this information offers great details about individual decisions, it is not suitable for statistical

investigation. A common strategy is to hire research assistants to get the information off the web and enter it into a spreadsheet for statistical manipulation. While this approach is common, it is both inefficient and prone to mistakes. The coding exercise is repetitive and costly. As research assistants move on, updating the data-set implies training new people. Replication is essential for a cumulative research programme (King 1995). Access to data is essential for replication studies. Codebooks are often not available. When they are they are often not sufficiently detailed to get a clear idea of how the data was actually coded. Furthermore, the codebook is usually written by the researcher, not the research assistant. It is hence not clear whether it is a perfect representation of how the data actually were coded.

A substantive advantage of writing computer scripts to collect and maintain the database is that the quality of the scripts can be independently evaluated. Detected weaknesses can easily be corrected by amending and re-running the scripts. Collecting new data in light of identified problems becomes trivial, as does updating the dataset. The advantage of using computer scripts to code data is perhaps greatest when the repetitive element of the task at hand is high, and the coding challenge trivial. This is also where we would expect human coders to make most mistakes due to boredom and for scripts to produce most accurate results. The coding of MEPs' background information is one such task. We have written computer scripts for the collection and maintenance of a complete database of all directly elected members of the European Parliament since 1979. The database is available at <http://folk.uio.no/bjornkho/MEP>. The database is password protected. Guidelines for use of the dataset and instructions for how to obtain the password are provided on the webpage.

It should be noted that we do not claim to present a new technology to the political science community. This technology is for example used by Jeff Lewis and Keith Poole to provide updated roll-call data from the US Congress and House of Representatives (<http://adric.sscnet.ucla.edu/rollcall/>) (Lewis and Poole 2004). The use of computer scripts to extract information from electronic sources is well known to students of international conflicts (King and Lowe 2003). Jackman (forthcoming) presents instructions for how this can be done in R, the leading open sources statistical analysis environment.

The European Parliament website is a good repository for data on both the MEPs and the activities of the EP. However, although the information is updated regularly, the data is only available on an individual basis. There is no useful aggregated data for EP researchers to download. It is in order to provide such data to the EP research community we have written a series of Perl scripts. This is how it works:

The URLs containing information about individual MEPs have unique identifiers. For example: the biographic data for Georg Jarzembowski can be found at:

<http://www.europarl.europa.eu/members/archive/alphaOrder/view.do?language=EN&id=1>

The id number for Jarzembowski is “1”. The identifier will in the future be additions of the webpage be used to merge the biographical data with data on rapporteurships, votes and debates. We use utilities in the standard Perl LWP library to download the web-pages. The scripts then parse out the birth date, country, most recent national party as well as the history of party-group, committee and delegation memberships. This process is repeated for all MEPs. We then replace all non-ASCII characters. The script is automatically updated weekly.

The database is set up as event-history data. As it is straightforward to identify the day of joining or leaving a post, there is little ambiguity about when an event is occurring. We record both the start and stop dates for each event at the level of individual MEPs. It is straightforward to extract the information related to the different types of offices in the EP, e.g. party group, committees or delegations. The front-end of the database allows the user to select search the webpage by data and type of office.

Let's say that a researcher is interested in party groups on the 20th April 1988. Until now, the researcher would have to look up the data for party group formation after the 1984 elections and track the changes as reported in the official journal. Alternatively, the researcher could go through all the individual web-pages at <http://www.europarl.europa.eu/members/archive> for the second EP and code the party affiliation as of this date. Needless to say, this exercise is both time consuming and prone to mistakes. Collecting this information from our database would only take a few seconds. After accessing the database, the researcher would have to:

- 1) Enter the password.
- 2) Select the correct date-range (in this case both to and from would be 18 April 1988).
- 3) Select Party Group in the pop down menu.
- 4) Click ok.
- 5) Save the output as a text file.
- 6) Read it into a statistical software as a semi-colon separated file.

Figure 1 is a screenshot of the webpage with the above options indicated.

[Figure 1 About Here]

The first 20 lines of the output, with appropriate variable names would look like Table 1 if read into Excel as a semi-colon separated file:

[Table 1 About Here].

This section has described the database and presented an example of how the database could be useful for researchers interested in the composition of the party groups at a particular date. In the next section, we use the database to investigate one of the key debates in the research on the European Parliament, the power of the transnational party groups to influence voting decisions.

Power to the Parties?

There is a long-standing debate in legislative politics of the role of political parties (Rohde 1991; McCarty et al. 2001; Cox and McCubbins 1993). Krehbiel (1993) questions the conventional wisdom that parties are powerful just because voting behaviour correlates highly with party affiliation. If representatives join parties of “likeminded” people they will vote

similarly to the other members of the party even if the party play virtually no role in deciding how representatives vote.

Research into voting behaviour in the European Parliament has concluded with “power to the parties” (Hix, Noury and Roland 2007). Party groups have been able to form cohesive voting coalitions. There are larger differences between the expressed policy preferences of MEPs from the same party group than can be found in the voting pattern in roll call votes. However, to the extent that party leaders control the agenda in the EP, they can ensure that only issues that separate between members are voted on. Issues on which the parties split are kept off the agenda, or at least not voted on by roll call votes. In order to isolate the party effect from the agenda effect, we utilizing the data on party group membership we address the following question: When an MEP switches party group, does her voting behaviour change? If voting behaviour changes, party group affiliation matter.

Poole (2005: 162-6) suggests a procedure for estimating the effect of party switch. First, include a party switcher as a new member. Second, estimate the spatial model. Measure the distance in the position of that member pre and post party switching. Third, repeat for all members that change party group affiliation. Fourth, repeat the procedure for all MEPs whose party group affiliation stayed the same. Compare the distance in the period for those that switched party with those that did not. This method is rather cumbersome as it amounts to estimating one ideal point model for every member.

We chose a slightly less computationally intensive approach. In line with Poole, we enter each MEPs who change party as different individuals in a roll-call matrix. We only

enter party switcher in each matrix. This means that we create a separate matrix for each MEP that changes party group affiliation. We depart from Poole when it comes to the MEPs that do not change party group. Instead of creating pseudo-party group changes and calculate the difference on an individual basis, we divide the roll-call matrix into three subsets of votes and estimates separate models on the subsets. The only common factor is the normalization constraint (mean 0 and standard deviation 1) and a directional constraint. We then calculate the difference between the differences in MEPs location on these three subsets. This procedure allow all MEPs to change their position. In particular, it allows the MEPs that do not change party group to change their position twice, while only allowing the MEPs that change party to change their position when changing party. As such it bias the results against finding effects of party group change. We report both the overall mean difference and the mean difference between any two of the subsets. For the MEPs that did change party group affiliation, we report the mean difference in location pre and post the change.

There were 42 party group switchers during the 1999-2004 EP. 13 shifted from TDI to NI due to the collapse of the TDI in October 2001. However, as neither the TDI nor NI can be considered “real” party groups, we do not estimate the effects of these changes. The list of “real” party switchers is given in table 2.

[Table 2 About Here]

There are 29 “real” party switchers. Some other members change party group too late for us to have enough votes to get a good estimate of their new position (e.g. Hans-Peter

Martin). Others left soon after the party group change, resulting in too few votes to reliably estimate a new position. We estimate a Bayesian one-dimensional ideal point model with normalization constraints for each of the data-sets (Jackman 2006). The estimation was conducted in parallel on a cluster of 32 computers (Nilsen et al. 2007). We let the model run for 500,000 iterations to ensure convergence, disregarding the first 250,000 and keeping the results from each subsequent 250th iteration. The results are hence summary statistics from 1,000 independent draws from the posterior distribution.¹ After ensuring that the directionality is the same across the models, the average difference in location and the standard deviation around the estimate are calculated for all members that did not change party group affiliation. These differences are then compared to the differences in the location for the members that did change for the periods where their affiliation actually shifted. The differences are presented in Figure 2.

[Figure 2 About Here]

MEPs are sorted in descending order according to the amount of difference in their estimated mean position over the three models. It shows that most members that do not change party group display fairly little variation in their estimated location over the subsets of votes. However, there are some MEPs who do not change party group, yet display considerably variation in their estimated position. Closer inspection reveals that this group consist almost exclusively of members from the British Conservative Party. It is well known

¹ Due to an upgrade of the computer cluster these results were not ready in time for the submission of the paper to the conference. We hope to have the results from these runs ready in time for the conference. The results reported here are from relatively short runs, only 2000 iterations, discarding the first 1000 as burn in keeping the results of every 10th iteration thereafter.

that this party sits rather uneasily amongst the rest of the EPP. Their new party leader, David Cameron, has even promised to take them out of the group. These MEPs hence have to trade off the need to please the party group leaders in order to obtain favours within the EPP, but must also ensure that the national party leadership is happy with their behaviour. The need to please one or the other may vary across different periods of the electoral cycle. This may explain the large variation in the estimated position of these members. A more technical issue also explain why there is so much variation in the estimated position of these members. They are extreme on the estimated dimension. The model is not able to estimate the upper limit of their position very well. We simply do not know how conservative some of the members of the British Conservative Party are.

We now turn our attention to the MEPs that did switch party groups. It is clear that most of the party switchers' display a substantively larger shift in their position than most other MEPs (excluding the extreme members of the British Conservative Party). It is also evident that the size of the change depends on both the size of the party group involved and the relative location of the party groups vis-à-vis each other.

Richard Balfe (UK) changed from the PSE to the EPP. His change in policy position is only matched by his new fellow countrymen that were already member of the EPP. The second biggest change in policy position as a result of shifting party group is that of Bill Newton Dull (UK) who left the EPP 28.11.2000 to join the ELDR. The change in position does not match that of Balfe, but the difference in the position the EPP and the ELDR is also smaller than the difference between PSE and EPP. Ozan Ceyhun (Gr) left the V/ALE to join

the PSE on the 23 October 2000. Gerard Caudron (Fr) left the PSE to join the GUE/NGL in 1st July 2002. Sami Nair (Fr) left the PSE to sit the GUE/NGL. All of these party switches represent a change in the policy position of more than one standard deviation. These changes are substantive. It is only amongst the extreme outliers we find differences of a similar magnitude. These changes where all instances where at least one of the two largest party groups were involved. This seem to suggest that at least the amongst the bigger party groups, voting behaviour is not only due to similar preferences. There is indeed a party effect.

As we move down the figure, we see that MEPs switching between smaller party-groups start to dominate. The smaller parties do not have the capacity to control the voting behaviour of their member. Switching from one such group to another hence has very few implications for the voting behaviour of the MEP.

In sum, the investigation of the effect of party switching on behaviour in roll-call votes suggest that there is a party effect, in particular for the larger parties. Most members that left the EPP or the PES changed their position substantively. The changes were smaller for MEPs changing between the minor party groups. While the results is in line with an argument of power to the big parties, it would be useful to extend the time period covered in the analysis in order to get a bigger picture of the effect of party group switching.

Summary

In this note we present a new database to the European Parliament research community. It offers the researcher instant access to updated information about party group membership, committee affiliation, EP leadership and delegations. The database is searchable by data-range, covering the whole history of membership in the European Parliament since the first direct elections in 1979. This means that a researcher interested in the composition of the committees or parties at a particular data, can easily download the dataset from our webpage. The format is semi-colon separated, which means that it is easily readable by any statistical package. We hope that this data-base will lower the bar for researchers to conduct quantitative research on the European Parliament. In line with this spirit, we will extent the type of data available on the webpage.

As a demonstration of the advantage of using this database, we investigated the effect of party switching on voting behaviour in roll call votes. The database allowed us to easily identify who changes and when then change occurred. Using the already publicly available dataset on roll-call votes (Hix et al. 2005) we calculated to what extent changing the party group affiliation changed the voting behaviour of MEPs. Evidence of such party effects would strengthen the claim that the party groups structure the voting behaviour of the MEPs. We found moderate support for this claim. Party changes involving large party groups normally also imply substantive shifts in the estimated position of the MEP. Shifts between smaller groups involves less of a policy switch. This would support the claim that it is only the larger party groups that controls the voting behaviour of MEPs. There is however a big caveat to this argument. MEPs from the British Conservative Party changed their position more than any of the party switchers during the 5th Parliament. This may suggest that it is

national parties, not transnational party groups, that dictates voting behaviour. To investigate this claim we need data on national party versus individual level party group switching. This is not currently available from the EP, but we are in the process of including this in our database. This is left for future research.

Bibliography

- Bowler, Shaun, and David M. Farrell. 1995. "The Organization of the European Parliament: Committees, Specialization and Co-ordination." In *British Journal of Political Science*.
- Clinton, Joshua D., and Meirowitz. 2003. "Integrating Voting Theory and Roll Call Analysis: A Framework." *Political Analysis* 11 (4):381-96.
- Cox, Gary W., and Mathew D. McCubbins. 1993. *Legislative Leviathan: Party Government in the House*. Berkeley: University of California Press.
- . 2005. *Setting the Agenda: Responsible Party Government in the US House of Representatives*. Cambridge: Cambridge University Press.
- Franchino, Fabio. 2005. "The Study of EU Public Policy: Results of a Survey." In *European Union Politics*.
- Gabel, Matthew, Simon Hix, and Gerald Schneider. 2002. "Who is Afraid of Cumulative Research? Improving Data on EU Politics." *European Union Politics* 3 (4):481-500.
- Hix, Simon, Abdul Noury, and Gerard Roland. 2005. "Power to the Parties: Cohesion and Competition in the European Parliament, 1979-2001." *British Journal of Political Science* 35 (2):209--34.
- . 2007. *Democratic Politics in the European Parliament*: Cambridge University Press.
- Jackman, Simon. 2006. "pscl: classes and methods for R developed in the Political Science Computational Laboratory, Stanford University." Stanford, California: Department of Political Science, Stanford University.
- . forthcoming. "Data from the Web into R." *The Political Methodologist*.
- King, Gary. 1995. "Replication, Replication." In *PS: Political Science and Politics*.
- King, Gary, and Will Lowe. 2003. "An Automated Information Extraction Tool For International Conflict Data with Performance as Good as Human Coders: A Rare Events Evaluation Design." *International Organization* 57 (3):617-42.
- Krehbiel, Keith. 1993. "Where's the Party?" In *British Journal of Political Science*.
- . 1998. *Pivotal politics: a theory of U.S. lawmaking*. Chicago & London: The University of Chicago Press.
- Lewis, Jeffery B., and Keith Poole. 2004. "Measuring Bias and Uncertainty in Ideal Point Estimates via the Parametric Bootstrap." In *Political Analysis*.
- McCarty, Nolan, Keith Poole, and Howard Rosenthal. 2001. "The Hunt for Party Discipline in Congress." In *American Political Science Review*.
- Nilsen, Jon Kristian, Xing Cai, and Bjorn Hoyland. 2007. "Parallel Computing in Natural and Political Sciences via Python Scripts." In *Typescript*. University of Oslo.
- Poole, Keith T. 2005. *Spatial Models of Parliamentary Voting*: Cambridge University Press.
- Rohde, David W. 1991. *Parties and Leaders in the Postreform House*. Chicago: University of Chicago Press.

Figure 1

Coding Without Humans - v1.0
Home Data Graphs Bio Reports Rollcall

coding without humans_

If the correct key is entered below, the requested data are returned as a semicolon-separated ASCII text file.

For the current biographical data, the following information will be displayed:

- MEP ID number used on the European Parliament website
- Surname
- First and other names (including titles)
- Country
- National party
- Birthdate
- President/Vice-President/Chairperson/Vice-Chairperson/Member/Substitute
- Committee/Party Group/Delegation/EP Leadership

For the past biographical data, the following information will be displayed:

- MEP ID number used on the European Parliament website
- Surname
- First and other names (including titles)
- Country
- Birthdate
- Start and end dates in dd.mm.yyyy format
- President/Vice-President/Chairperson/Vice-Chairperson/Member/Substitute
- Committee/Party Group/Delegation/EP Leadership

The Key:

Current MEP data: OR

Date Range: to

Filter:

Table 1

ID	Last name	First	Country	Born	Joins	Leaves	Role	Party
2	LAFUENTE LOPEZ	Jose Maria	Spain	18.03.1921	20.04.1988	20.04.1988	Member	ED
233	PARODI	Eolo	Italy	21.05.1926	20.04.1988	20.04.1988	Member	PPE
433	FANTON	Andre	France	31.03.1928	20.04.1988	20.04.1988	Member	RDE
799	LECANUET	Jean A.F.	France	04.03.1920	20.04.1988	20.04.1988	Member	PPE
941	BRAUN-MOSER	Ursula	Germany	25.05.1937	20.04.1988	20.04.1988	Member	PPE
945	FONTAINE	Nicole	France	16.01.1942	20.04.1988	20.04.1988	Member	PPE
946	MARTIN	Simone M.M.	France	14.04.1943	20.04.1988	20.04.1988	Member	LDR
947	CASTELLINA	Luciana	Italy	09.08.1929	20.04.1988	20.04.1988	Member	CG
949	CASSANMAGNAGO CERRETTI	Maria Luisa	Italy	07.04.1929	20.04.1988	20.04.1988	Member	PPE
955	EPHREMIDIS	Vassilis	Greece	31.12.1915	20.04.1988	20.04.1988	Vice- Chairman	CG
960	MUSSO	Francois	France	01.10.1935	20.04.1988	20.04.1988	Vice- Chairman	RDE
961	ESCUDERO	Jose Antonio	Spain	12.10.1936	20.04.1988	20.04.1988	Member	NI
969	IODICE	Antonio	Italy	28.10.1941	20.04.1988	20.04.1988	Member	PPE
971	MICHELINI	Alberto	Italy	25.07.1941	20.04.1988	20.04.1988	Member	PPE
974	de la MALENE	Christian	France	05.12.1920	20.04.1988	20.04.1988	Chairman	RDE
975	SABY	Henri	France	08.08.1933	20.04.1988	20.04.1988	Vice- Chairman	S
976	THAREAU	Bernard	France	02.09.1936	20.04.1988	20.04.1988	Member	S
977	BETTIZA	Vincenzo	Italy	07.06.1927	20.04.1988	20.04.1988	Member	LDR
983	PISONI	Nino	Italy	05.05.1927	20.04.1988	20.04.1988	Member	PPE
987	ESTGEN	Nicolas	Luxembourg	28.02.1930	20.04.1988	20.04.1988	Member	PPE

Table 2. List of party switchers during the 5th EP

ID	Lastname	Firstname	Country	Born	Joins	Leaves	Party
1175	CAUDRON	Gerard	France	27.02.1945	01.08.1999	26.06.2002	PSE
1175	CAUDRON	Gerard	France	27.02.1945	26.06.2002	30.06.2002	NI
1175	CAUDRON	Gerard	France	27.02.1945	01.07.2002	30.04.2004	GUE/NGL
1194	NORDMANN	Jean-Thomas	France	16.02.1946	03.07.2002	15.12.2002	PPE-DE
1194	NORDMANN	Jean-Thomas	France	16.02.1946	16.12.2002	05.03.2003	ELDR
1274	BLAK	Freddy	Denmark	08.03.1945	01.08.1999	18.12.2001	PSE
1274	BLAK	Freddy	Denmark	08.03.1945	19.12.2001	30.04.2004	GUE/NGL
1394	NEWTON DUNN	Bill	United Kingdom	03.10.1941	01.08.1999	28.11.2000	PPE-DE
1394	NEWTON DUNN	Bill	United Kingdom	03.10.1941	29.11.2000	30.04.2004	ELDR
1428	BALFE	Richard A.	United Kingdom	14.05.1944	01.08.1999	18.12.2001	PSE
1428	BALFE	Richard A.	United Kingdom	14.05.1944	19.12.2001	05.03.2002	NI
1428	BALFE	Richard A.	United Kingdom	14.05.1944	06.03.2002	30.04.2004	PPE-DE
1602	MARTELLI	Claudio	Italy	24.09.1943	01.08.1999	29.08.2000	PSE
1602	MARTELLI	Claudio	Italy	24.09.1943	30.08.2000	18.12.2001	NI/TDI
1602	MARTELLI	Claudio	Italy	24.09.1943	19.12.2001	30.04.2004	ELDR
1919	KRARUP	Ole	Denmark	17.03.1935	01.08.1999	30.06.2002	EDD
1919	KRARUP	Ole	Denmark	17.03.1935	01.07.2002	30.04.2004	GUE/NGL
1959	DARY	Michel J.M.	France	20.09.1945	01.08.1999	26.06.2002	PSE
1959	DARY	Michel J.M.	France	20.09.1945	01.07.2002	30.04.2004	GUE/NGL
2038	FORMENTINI	Marco	Italy	14.04.1930	01.08.1999	04.10.1999	NI
2038	FORMENTINI	Marco	Italy	14.04.1930	05.10.1999	30.04.2004	ELDR
2217	BERTHU	Georges	France	14.05.1950	01.08.1999	30.01.2001	UEN
2217	BERTHU	Georges	France	14.05.1950	31.01.2001	30.04.2004	NI
2219	SOUCHET	Dominique F.C.	France	09.07.1946	01.08.1999	30.01.2001	UEN
2219	SOUCHET	Dominique F.C.	France	09.07.1946	31.01.2001	30.04.2004	NI
2312	SCARBONCHI	Michel-Ange	France	24.07.1950	05.04.2001	26.06.2002	PSE
2312	SCARBONCHI	Michel-Ange	France	24.07.1950	01.07.2002	30.04.2004	GUE/NGL
2337	CEYHUN	Ozan	Germany	10.10.1960	01.08.1999	22.10.2000	Verts/ALE
2337	CEYHUN	Ozan	Germany	10.10.1960	23.10.2000	30.04.2004	PSE
4238	MARTIN	Hans-Peter	Austria	11.08.1957	01.08.1999	11.02.2004	PSE
4238	MARTIN	Hans-Peter	Austria	11.08.1957	12.02.2004	30.04.2004	NI
4241	VAN HECKE	Johan	Belgium	02.12.1954	01.08.1999	17.09.2002	PPE-DE
4241	VAN HECKE	Johan	Belgium	02.12.1954	18.09.2002	30.04.2004	ELDR
4287	NAIR	Sami	France	23.08.1946	01.08.1999	26.06.2002	PSE
4287	NAIR	Sami	France	23.08.1946	01.07.2002	30.04.2004	GUE/NGL
4296	SCHRODER	Ilka	Germany	22.01.1978	01.08.1999	27.09.2001	Verts/ALE
4296	SCHRODER	Ilka	Germany	22.01.1978	28.09.2001	30.04.2004	GUE/NGL
4357	NOVELLI	Herve	France	06.03.1949	01.08.1999	04.02.2002	PPE-DE
4357	NOVELLI	Herve	France	06.03.1949	05.02.2002	16.06.2002	ELDR
4361	ABITBOL	William	France	06.09.1949	01.08.1999	14.03.2001	UEN
4361	ABITBOL	William	France	06.09.1949	15.03.2001	30.04.2004	EDD
4362	MONTFORT	Elizabeth	France	29.06.1954	01.08.1999	30.01.2001	UEN

4362	MONTFORT	Elizabeth	France	29.06.1954	31.01.2001	01.06.2003	NI
4362	MONTFORT	Elizabeth	France	29.06.1954	02.06.2003	30.04.2004	PPE-DE
4365	de LA PERRIERE	Thierry	France	01.01.1953	01.08.1999	30.01.2001	UEN
4365	de LA PERRIERE	Thierry	France	01.01.1953	31.01.2001	30.04.2004	NI
4366	KUNTZ	Florence	France	09.06.1969	01.08.1999	14.03.2001	UEN
4366	KUNTZ	Florence	France	09.06.1969	15.03.2001	30.04.2004	EDD
4383	COUTEAUX	Paul Marie	France	31.07.1956	01.08.1999	14.03.2001	UEN
4383	COUTEAUX	Paul Marie	France	31.07.1956	15.03.2001	30.04.2004	EDD
4438	OKKING	Jens Dyhr	Denmark	18.12.1939	01.08.1999	30.06.2002	EDD
4438	OKKING	Jens Dyhr	Denmark	18.12.1939	01.07.2002	28.02.2003	GUE/NGL
4468	BIGLIARDO	Roberto Felice	Italy	28.01.1952	01.08.1999	30.09.2001	TDI
4468	BIGLIARDO	Roberto Felice	Italy	28.01.1952	01.10.2001	30.04.2004	UEN
4530	HOLMES	Michael John	United Kingdom	06.06.1938	01.08.1999	01.07.2001	EDD
4530	HOLMES	Michael John	United Kingdom	06.06.1938	02.07.2001	15.12.2002	NI
4711	MENNEA	Pietro-Paolo	Italy	28.06.1952	01.08.1999	03.02.2002	ELDR
4711	MENNEA	Pietro-Paolo	Italy	28.06.1952	04.02.2002	07.07.2003	PPE-DE
4711	MENNEA	Pietro-Paolo	Italy	28.06.1952	08.07.2003	30.04.2004	NI
4752	BEYSEN	Ward	Belgium	26.06.1941	01.08.1999	10.02.2003	ELDR
4752	BEYSEN	Ward	Belgium	26.06.1941	11.02.2003	30.04.2004	NI
5736	VARAUT	Alexandre	France	18.01.1966	17.12.1999	30.01.2001	UEN
5736	VARAUT	Alexandre	France	18.01.1966	31.01.2001	30.04.2004	NI

Figure 2

Effect of party switch on voting behaviour

