Using Sequence Analysis to Understand Career Progression: an Application to the UK House of Commons*

Matia Vannoni† & Peter John‡

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Abstract

We argue that sequence analysis, mainly used in sociology, may be effectively deployed to investigate political careers inside legislatures. Career progression is a classic topic in political science, but political scientists have mainly examined access to legislatures. Although data reduction methods, for instance, can provide insight, we argue that sequence analysis can be used to understand better the career patterns inside parliaments. In this paper, we explain the method. Then we show how it can describe steps in political careers and map different patterns of advancement. We apply sequence analysis to a case study of MPs in the UK House of Commons from 1997 to 2015. We describe the variety of career paths and carry out regression analysis on the determinants of MP career progression.

Keywords: Sequence analysis, legislative careers, elite studies

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†IGIER, Bocconi University, Via Rontgen 1, 20136 Milano, Italy; email: matia.vannoni@unibocconi.it

‡Department of Political Economy, King's College London, Bush House Aldwych, London WC2B 4PH

Introduction

With a few exceptions (Guttsman 1963; Kam et al. 2010; Allen 2012), studies of career progression have focused on access to legislatures. This dependent variable suits regression or duration analysis as what is explained is entry into the elite as a function of ascribed characteristics, such as education and gender. Political scientists, however, have tended to neglect what happens later on during legislators' careers, in particular the various routes legislators take when seeking office once elected, which can offer greater understanding about how political careers reflect different choices and opportunities. Although methods, such as cluster analysis, offer insight into career paths, we suggest that sequence analysis is better able to show how the composition of the elite is a function of the career path that has been followed. Sequence analysis seeks to account for different combinations of paths and offers an alternative set of metrics to analyse the determinants of career progression. So far, sequence analysis has not been utilized very much in political science, nor has it been applied to career progression within legislatures. We seek to remedy this relative neglect of the method and show its advantages for understanding political careers.

In this paper, we first introduce the key methods of elite studies as applied to political careers. Then we set out sequence analysis as a method and explain its elements. In the discussion, which is more fully elaborated in the appendix, we compare sequence analysis to other methods of examining patterns in elite progress, such as cluster analysis. To show the scope and range of the method, we apply sequence analysis to a case study of career progression in the UK House of Commons for the period 1997-2015.

Elite Study Methods

Elite studies have so far treated stages of career at different points in time as independent, usually as separate variables. Becoming Prime Minister, for example, is assumed not to be a function of previously being Chancellor of the Exchequer, or a Minister of State. But

it is likely the Prime Minister has been, say the Home Secretary, in a prior office, or in a senior post on the opposition benches. It likely that there are patterns to career progression, reflecting well-known paths and steps, and a degree of differentiation between the type of politician as to how these steps are taken.

An alternative method of understanding progression in political careers is survival analysis (or event history analysis), which has already been used in elite studies (Curtin, Kerby, and Dowding 2015). The latter predicts the probability of a future state to occur given the presence of past states. Nonetheless, this method focuses more on the transition from a state to another rather than measuring the career paths in their entirety. It focuses on the likelihood that the individual will undergo a transition to a determined career stage taking into consideration previous career steps and their order. This method does not describe or compare career paths.[1] Finally, time series analysis might be appropriate, but is not valid in this context as it best used with continuous variables with a large number of time points while career data are categorical and usually measured at a very few points in time (Blanchard 2011). Furthermore, the requirement that time points need to be equally distant from one another on a temporal scale (unnecessarily) restricts the applications of career path analysis. Like survival analysis, time series analysis is not tailored to measure career paths.

Data reduction can overcome this, by providing a single measure to account for the similarities and differences between career paths, which takes into consideration their entirety and not a single 'jump', like survival analysis. The main idea is that the stages of the career of an individual, what can be labeled career data, should not be treated as independent, but each stage should relate to each other. Massoni, Olteanu, and Rousset (2009) identify two data reduction methods to study careers: factor analysis and cluster analysis. Although they are an improvement on the current methods in elite studies and political economy, there are drawbacks. When used alone, the methods do not take into consideration two crucial aspects in career progression: the duration of careers and the order of career stages. In

1. The same holds true for more recent duration models, such as Markov-transition models, which are used to study conditions that have events that occur repeatedly over time.

the Appendix, using the same data, we compare cluster analysis with the method proposed below, showing that only the latter can account for these two important aspects of careers.

Sequence Analysis: the Method Explained

Brzinsky-Fay, Kohler, and Luniak (2006) explain that 'a sequence is defined as an ordered list of elements, where an element can be a certain status' (p. 436). Sequence data takes the form of categorical time series data, where elements may refer to relative and not absolute points in time (Brzinsky-Fay, Kohler, and Luniak 2006). In contrast to longitudinal data, time points in sequence analysis must meet only one criterion, namely being ordered across the sample, but they do not necessarily need to be equally distant from one another on a temporal scale. Assume that the career of an MP in the House of Commons is measured in six years using the following elements, explained in details below: backbenchers, frontbenchers, and Great Offices of State, the most prestigious positions in the cabinet. Examples of sequences that can be found in the sample are:

1. $BB - BB - BB - FB - FB - GO$
2. $BB - BB - BB - GO - GO - GO$
3. $BB - BB - FB - FB - FB - GO$
4. $BB - BB - BB - FB - BB - GO$

The first two MPs have different career paths: the former has gone from the back-bench through the front-bench to the Great Offices of State while the latter has by-passed the front-bench stage moving directly from the back-bench to the most prestigious positions. The elements that compose the sequences are the first things to look at when analyzing sequences. Nonetheless, two other aspects matter: the order of elements and the duration of episodes. Indeed, the first, the third and the fourth sequences share the same elements.

Yet the first sequence is more similar to the third one than to the fourth one in that they share the same order of elements and they differ only in the duration of episodes. The latter are defined as sections of a sequence that consist of the same elements and in this case they refer to $BB - BB - BB$ and $FB - FB$ in the first sequence and $BB - BB$ and $FB - FB - FB$ in the third one. Sequence analysis takes into consideration the elements which compose a sequence, their order, and the duration of episodes (Blanchard 2011). In doing so, sequence analysis provides descriptive statistics and graphical visualizations as well as a measure of distance between sequences, namely optimal matching, which can be used to make inferences.

Optimal matching (OM) compares sequences on the basis of a complex algorithm, which has already been used in several fields, especially biology.[2] This measure compares sequences by considering substitution costs (Needleman and Wunsch 1970). The algorithm compares sequences by pairs and it associates to each pair a distance index based on the cost of replacement of different elements. In this vein, substitutions take into consideration the differences in elements between sequences.

Optimal matching considers also indel costs, namely the costs of insertions and deletions of elements, to account not only for the differences between elements but also for their order and the duration of episodes (Blanchard 2011; Brzinsky-Fay, Kohler, and Luniak 2006). As seen above, the first sequence differs from the third and the fourth ones for only one element. In this vein, if we consider only substitutions the distance indexes between them will be the same. Nonetheless, as noticed above, the first sequence differs from the third only in the duration of episodes. Accordingly, it suffices to insert a gap before the GO in the first sequence and to insert a gap before the first FB in the third to make those sequences identical:

$BB - BB - BB - FB - FB - XX - GO$

$BB - BB - XX - FB - FB - FB - GO$

2. We acknowledge the existence of other algorithms, such as the Longest Common Prefix and the Longest Common Subsequence (Studer et al. 2011). Yet, optimal matching is the common practice in social research.

It should be noted how the same outcome can be obtained by deleting certain elements from the sequences. Optimal matching takes into consideration also this aspect by differentiating between substitutions and indels.[3]

Sequence analysis is common in sociology (Halpin and Cban 1998; Abbott and Hrycak 1990; Blair–Loy 1999; Stovel, Savage, and Bearman 1996). For instance, it has been used to study the careers of French economic elites (Lemercier 2005) and social movement activists (Blanchard 2005; Fillieule and Blanchard 2011). It has recently started to appear in political science and, more specifically, in elite studies, as reviewed by Blanchard, Bühlmann, and Gauthier (2014) and Blanchard (2011). Some recent applications include the study of the careers of: Spanish junior ministers in Teruel and Real-Dato (2014), German state secretaries in Tepe and Marcinkiewicz (2013), German MPs' in Ohmura et al. (2018), German Federal Constitution Court judges in Jäckle (2016) and in-house lobbyists in companies in Coen and Vannoni (2016). Yet, no application of this method can be found in the analysis of elected politicians inside the parliament, one of the classic topics in elite studies.

Empirical Application of the Method: Careers in the UK House of Commons

This section of the paper applies sequence analysis to the study of careers in the House of Commons. In this case study, we show how the method can allow researchers to test the findings in (British) elite studies and more recent political economy approaches to identify what might be the main determinants of careers in the House of Commons. First, we focus on the social and economic background of politicians. Early writers were keen to map the background of the elite (Domhoff 1967; Miliband 1969; Mills 1956; Guttsman 1963; King 1981; Mellors 1978; Putnam 1976; Czudnowski 1970, 1972). The idea draws from classic elite theory which is concerned about the concentration of people from elite backgrounds

3. A detailed explanation on how optimal matching works is provided in the Appendix.

into positions of power or the circulation of elites, claims that appear in the foundational studies of political science (Hunter 1953; Schattschneider 1975; Michels, Paul, and Paul 1915). The main focus remained on the representativeness of the British political elites—in terms of ascriptive features, such as wealth—across the political hierarchy, namely from voters through activists, local leaders, backbenchers and frontbenchers in Parliament, and across to political parties.

In the 1970s and 1980s attention shifted from the representativeness of political elites in terms of socio-economic factors to ethnic background and sex/gender (Kirkpatrick 1974; Norris and Lovenduski 1995; Studlar and McAllister 1991; Andersen and Thorson 1984; Rosaldo, Lamphere, and Bamberger 1974; Lawless and Theriault 2005). At the same time, writers moved from exploratory analyses to explanations of career progression, concentrating also on exogenous factors, such as party recruitment and the type of election (Eliassen and Pedersen 1978; Seligman 1961; Thurber 1976). In the 1990s and 2000s, career progression attracted the attention of students of political economy. Based on the public choice literature (Stigler 1972; Wittman 1989), which advocated that political competition both inside and outside parties leads to optimal political outcomes, this line of research focused on the quality of political candidates (Diermeier, Keane, and Merlo 2005; Mattozzi and Merlo 2008; Merlo, Landi, and Mattozzi 2009) as well party selection (Galasso and Nannicini 2011), a concern that also appears in comparative elite studies (Best and Cotta 2000; Best et al. 2001; Best and Edinger 2005; Best and Higley 2014; Best, Lengyel, and Verzichelli 2012; Almeida, Pinto, and Bermeo 2003; Ilonszki 1998; Müller-Rommel, Fettelschoss, and Harfst 2004; Semenova, Edinger, and Best 2013; Ștefan-Scalat 2004) and in work on British politics (Denver and Garnett 2014; Fisher and Wlezien 2013; Kavanagh and Cowley 2010; Bennie, Rallings, and Tonge. 2002; Butler and Kavanagh 1980, 1992; McCallum and Readman 1947; Cook and Stevenson 2014).[4]

4. In the US the attention has also been on careers outside legislatures (Maddox 2004).

Data and Measurement

Career progression of British MPs in the House of Commons is analysed with a dedicated dataset that contains data on the demographic characteristics as well as on the educational and professional background of all MPs active in four legislatures of the British House of Commons: 1997-2001, 2001-2005, 2005-2010 and 2010-2015, who entered the House in or after 1997. The data contain membership of the cabinets at secretary level and also on the shadow cabinets—that is the leadership groups of the opposition parties and differentiate ranks within the (shadow) cabinet.

The dataset has a good level of variation in terms of MPs' individual characteristics, the composition of the House of Commons as well as of the (shadow) cabinets. Firstly, it contains all the MPs who have been active in the last four legislatures and who entered the House in or after 1997. Accordingly, data spans over almost 20 years, which is arguably a sufficient time for a generational change to occur in the Parliament thus controlling for a potential cohort effect. Secondly, since 1997 the UK has had two consecutive cabinets led by the Labour party and a coalition cabinet led by the Conservative Party in cooperation with the Liberal Democrats. Thirdly, official cabinets and shadow cabinets have undergone several reshuffles every year during that period: in 2010-2013 the coalition government cabinet underwent ten reshuffles and the Labour shadow cabinet five, roughly a third of which entailed the inclusion of new MPs.

The career paths of MPs inside the House are measured for each year from 1997 to 2014. Three elements are measured: backbench (BB), frontbench (FB) and Great Offices of State (GO). The latter comprises the Prime Minister, the Deputy Prime Minister, the Chancellor of the Exchequer, the Foreign Secretary and the Home Secretary as well as the respective roles in the shadow cabinets of the opposition parties. Frontbench measures all the individuals sitting in the (shadow) cabinet at secretary level and the respective leaders of the House.[5] It should be noted that data are gathered not only for the official opposition

5. Although the Liberal Democrats formed a shadow cabinet after the 1997 general elections, it remained

but also for the party with the third largest share of seats in the House. For instance, in the period 1997-2010 the shadow cabinet of the Liberal Democrat party is considered. This allows to better account for representativeness along the political hierarchy. Although we acknowledge that more fine-grained measures of cabinet offices are present in the literature (Allen 2012), using few categories makes the interpretation of results with the method used here easier. Indeed, rarely do studies using sequence analysis employ more than three or four categories. Moreover, these categories are externally valid, as a similar hierarchy of positions are found in most parliamentary systems.

The educational and professional background of MPs is also included in the dataset. More specifically, we have data on secondary school, university and previous occupation. The first one is measured with a dummy variable with value 1 for state school and 0 for private school (fee paying). The university variable associates value 0 to the non-attendance of university, value 1 for undergraduate education and value 2 for postgraduate education. Finally, previous profession is measured with a dummy variable on whether they had had a 'instrumental' occupation before entering the House. Instrumental jobs are those occupations which according to a well established tradition in elite studies are supposed to make the jump to the political career easier (Allen 2012).[6]

Other variables dealing with individual factors are included in the analysis: gender and age at entry in Parliament. Other actors are also considered: party affiliation and whether the MP was elected in a general election or in a by-election.[7] Lastly, we control for the legislature of entry.[8] Data was drawn from several sources: Dod's Parliamentary Companion

very fluid until 1999 and it was characterised by many reshuffles until 2007. It is crucial to control for the party in the analysis below.

6. For a complete list see Figure 1 in Allen (2012).

7. In this analysis we consider only those MPs which belong to the three main parties in the House. The reason is that only these MPs have a chance to enter the (shadow) cabinet.

8. The categorical variable Legislature is operationalized in order of time, namely value 1 stands for the 1997-2001 legislature and so on and so forth. We do not cluster standard errors on the legislature of entry and instead we use robust standard errors. The reason is that cluster robust standard errors are likely to produce (downward) biased results where the number of clusters is small (Esarey and Menger 2018). Although dependency between observations in clusters might be present in our analysis (hence leading to underestimated standard errors too), the benefits of using robust standard errors arguably outweigh those of clustered standard errors in this analysis.

Guide to the General Election, Who's Who, BBC News, TheyWorkForYou, The Guardian, Politics.co.uk, Gov.uk and MPs' personal websites.[9] Table A1-A3 in the Appendix show the descriptive statistics.[10]

Results

We calculate distances between pairs of sequences in order to cluster those distances and derive ideal-typical sequences (or career paths). We do so with the help of the R package TraMiner (Studer et al. 2011). More information on this package can be found in the Appendix. As this represents the first study of career progression inside the parliament with this method, we are agnostic with respect to the number of career paths we find and their characteristics. In this vein, the approach is entirely data driven. We choose eight career types, which explain 81 per cent of the variation across sequences in the sample. The R package TraMiner has a function which tells the researcher what number of groups has the highest R squared. The other clustering options and the relative R squared values are presented in the Appendix, respectively in Figure A1-A4 and in Table A4. The Appendix also provides an explanation of the clustering functions in the TraMiner package.

Figure 1 shows the eight ideal-typical career paths. The vertical axes of the quadrants in Figure 1 show the frequencies of the states in every cluster (close in spirit to a traditional stacked bar chart). On the horizontal axis we display time. It should be noted that, as it is common practice in sequence analysis, missing values are not treated like separate states but are deleted.[11] Those MPs who stay in the House for a shorter period than that under analysis have shorter sequences. In this particular case, the clustering process groups shorter sequences together, regardless of whether the MP enters the House later or leaves earlier. The reason is that in this particular case shorter sequences tend to be similar with respect to the elements which compose them and their order. As a result, values on the horizontal

9. Data gathering occurred in spring and summer 2014.

10. Future research should also includes less tangible factors, such as MPs' ideology, as done in Kam et al. (2010).

11. An explanation of how missing data are treated can be found in the Appendix.

axes in Figure 1 do not have a substantive meaning: value 1 in the top-left quadrant and in the top-right quadrant do not necessarily refer to the same year.

[Figure 1 here]

The majority of MPs remain in the backbench throughout their careers, but some stay longer in the House (Career 8 in Figure 1) whereas others stay for shorter periods of time (Career 1 and Career 2 in Figure 1). Then, a large number of MPs enter as backbenchers and after some time they make their way to the Great Offices of State, but then leave the house earlier than others (Career 5 in Figure 1). Some MPs gradually reach the frontbench and then eventually occupy the Great Offices of State (Career 4 in Figure 1), while others move to immediately to the frontbench, but then they go back to the backbenches (Career 3 in Figure 1). Then there are MPs who enter the House as frontbenchers and remain so throughout their careers. While some reach the Great Offices of State (Career 7 in Figure 1), others do not (Career 6 in Figure 1). As can be seen in the Appendix, the results from other clustering options, especially those with six and seven groups, are not very different from those presented here.

We now investigate the determinants of MP career progression in the House of Commons. Table 1 shows the results of the multinomial regression analysis with the eight clusters derived above as categories of the dependent variable. For simplicity, we take Career 1 as baseline category. This is a reasonable choice, as we are interested in what affects the different MP career paths with respect to the most frequent path, namely the one composed only by backbencher values. The sample contains MPs active in different legislatures which might influence career progression. It is likely that MPs entering the House in a specific legislative session have something in common, which in turn makes their career progression similar with respect to other MPs. We control also for the session of entry.[12] Table A5 and Table A6 in

12. Our sample is not perfectly balanced and only captures a picture of career progression. Some MPs enter the sample at later stages, because elected in by-elections or simply in one of the general elections held after 1997; and others leave at earlier stages, because they lose elections. Our approach takes this into consideration, by clustering together shorter sequences.

the Appendix show the results with the clustering at six and seven groups, respectively.

First, we find that the gender of the MP does not strongly affect career progression in the House. Indeed, the coefficient of gender is not statistically significant across the different specifications. We find that gender does not affect the political career, once the individual enters the parliament. It might be that the gender bias is strong at the entrance to parliament, but once inside, women enjoy the same career opportunities than men. Second, findings on the social background of MPs show that although access to the high ranks is not completely precluded for those from state schools, they tend to be less associated with those career types with high frequency of Great Offices of State (Career 5 and Career 7 in Figure 1). Individuals from modest backgrounds can make it to the top of the political ladder, even if inequality is present.[13] This finding is in line with the picture of British politics depicted by the media, with people from different backgrounds getting to the top, but with some inequality still present.

Third, having a university degree is not prerequisite for entering the cabinet. Again, this might be because higher education is necessary to enter the parliament but once inside it, other factors matter more. Fourth, the age at which the MP enters the House is negatively related to Career 4 and Career 8, which means that those MPs who enter the House when they are older tend not to have long and gradual careers. Fifth, the professional experience of MPs does not seem to affect their career in the House. Finally, the party and the type of election determine MPs' career progression. Conservative MPs are more likely to make it to the top, but then to go back to the backbench, compared to Labour MPs. However, the results for party might be driven by several factors, such as the number of seats allocated to different parties, the times that party was in power and the structure of its shadow cabinets. We find that a MP elected in a by-election is more likely to make it to the cabinet, which

13. In the Appendix, we take the sub-sample of MPs with a university degree and we check whether having attended Oxford or Cambridge affects the MP's career (Table A7). We find that Oxbridge MPs (which represents roughly the 28 per cent of all the MPs) are less likely to have a career of the type Career 6 and Career 8, where backbench positions are more frequent. This suggests that a sort of elitism is still in place in British politics, also inside the House of Commons.

provides evidence that parties use by-elections as a way to place prominent candidates in office .

To validate our results, we also run what the methodology literature on sequence analysis calls discrepancy analysis. This type of analysis measures the share of the variation of the sequences explained by a variable and also the significance of the association. More specifically, close in spirit with a multivariate ANOVA, it provides for each covariate the effect measured when removing the covariate from the full model with all variables included. More details are provided in the Appendix. Results support the findings, suggesting a strong effect of the age at entry as well as party and legislative session (see Table A8 in the Appendix).

[Table 1 here]

Conclusion

Sequence analysis provides additional insights in the analysis of political careers. It is a valid and reliable way to measure career paths, which can be used to describe and compare them, as well as to identify recurrent ones. Sequence analysis also provides a way to measure the distance between careers and thus to derive valid proxies that can be used in regression analysis. To encourage its wider adoption in the study of political careers, we have explained the method and then applied it to a case study of UK MPs.

In this case study, we find that expected relationships between ascriptive characteristics and career progression were not found. Researchers using sequence analysis could probe the interaction between stages of the political hierarchy, such as entry to the parliament and career progression therein. Selection within disadvantaged groups—in terms of gender and ethnic background, for instance—may be so tough in the earlier stages that those legislators who get through have acquired the necessary skills to rise in the hierarchy. We believe that political scientists who are interested in careers will use sequence analysis as a useful

complement to existing methods.

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Figure 1: State Distribution Plot

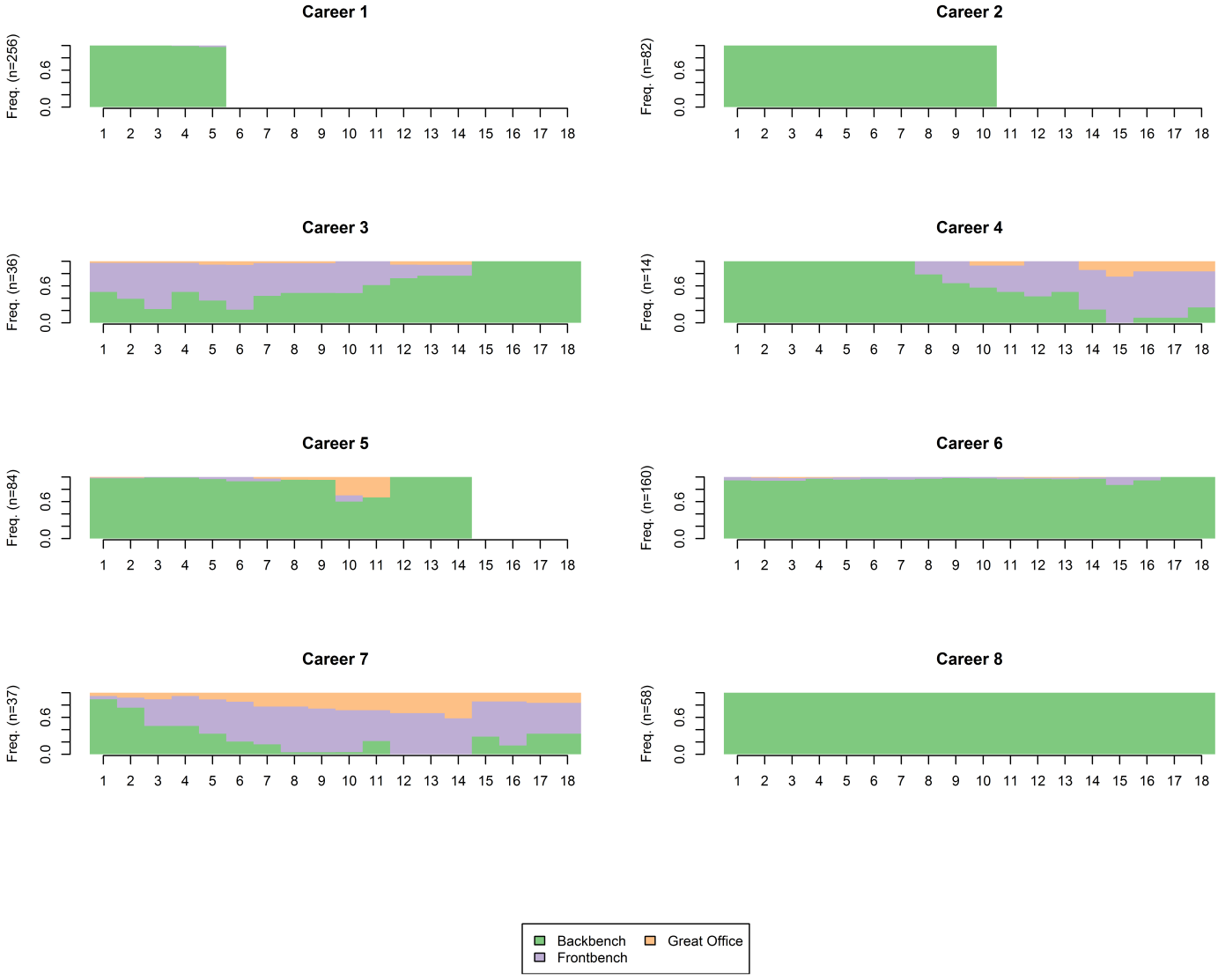

Table 1: Multinomial Analysis

	Career 1	Career 2	Career 3	Career 4	Career 5	Career 6	Career 7	Career 8	Career 1	Career 2	Career 3	Career 4	Career 5	Career 6	Career 7	Career 8	Career 1	Career 2	Career 3	Career 4	Career 5	Career 6	Career 7	Career 8
Gender		-0.252	-0.419	-0.114	-0.197	-0.485**	-0.0101	-0.534		-0.432	0.0911	-0.633	-0.580*	-0.948***	0.0746	-1.017***		-0.518	0.472	-0.391	-0.366	-0.263	0.317	-0.668
		(0.295)	(0.440)	(0.670)	(0.314)	(0.245)	(0.407)	(0.361)		(0.307)	(0.502)	(0.669)	(0.336)	(0.268)	(0.474)	(0.382)		(0.701)	(0.703)	(0.844)	(0.566)	(0.521)	(0.651)	(0.610)
State School		0.191	-0.0972	0.976	0.0184	0.465**	-0.426	-0.0455		0.0313	-0.415	0.308	-0.643**	-0.163	-0.733*	-0.520		-0.296	-0.787	-0.00946	-0.964*	-0.191	-0.967*	-0.583
		(0.262)	(0.383)	(0.681)	(0.279)	(0.221)	(0.370)	(0.309)		(0.285)	(0.465)	(0.688)	(0.324)	(0.244)	(0.417)	(0.334)		(0.576)	(0.612)	(0.805)	(0.501)	(0.457)	(0.556)	(0.532)
Job		-0.480	0.200	-0.435	0.467*	0.0373	-0.0639	0.0904		-0.558*	0.229	-0.540	0.317	-0.142	-0.141	-0.108		-0.0498	0.791	0.352	1.068*	0.610	0.381	0.842
		(0.306)	(0.370)	(0.626)	(0.279)	(0.232)	(0.392)	(0.329)		(0.307)	(0.486)	(0.625)	(0.293)	(0.256)	(0.426)	(0.333)		(0.659)	(0.706)	(0.834)	(0.554)	(0.511)	(0.648)	(0.600)
Age at Entry		-0.0155	0.0186	-0.180***	0.0254	0.0191	-0.0531**	-0.00589		-0.0190	0.00573	-0.177***	0.0233	0.0162	-0.0501**	-0.0103		-0.0519	-0.0437	-0.260***	-0.0425	-0.0426	-0.0980**	-0.0953**
		(0.0155)	(0.0258)	(0.0494)	(0.0193)	(0.0130)	(0.0239)	(0.0165)		(0.0168)	(0.0252)	(0.0458)	(0.0208)	(0.0147)	(0.0225)	(0.0181)		(0.0449)	(0.0407)	(0.0634)	(0.0388)	(0.0354)	(0.0407)	(0.0381)
University Undergraduate		0.248	0.713	-0.656	0.0228	0.511	1.430	-0.0482		0.231	1.047	-0.566	0.0754	0.517	1.543	-0.0593		-0.224	0.467	-0.550	-0.527	-0.120	0.850	-0.680
		(0.402)	(0.633)	(0.906)	(0.403)	(0.353)	(1.046)	(0.475)		(0.416)	(0.745)	(0.865)	(0.423)	(0.366)	(1.005)	(0.486)		(0.928)	(1.019)	(1.242)	(0.803)	(0.799)	(1.205)	(0.852)
University Postgraduate		-0.0291	0.635	-0.414	0.0703	0.989***	1.588	0.585		-0.0702	0.969	-0.569	-0.0477	0.831**	1.639	0.465		-0.749	0.136	-1.112	-1.139	-0.361	0.663	-0.793
		(0.455)	(0.671)	(0.969)	(0.444)	(0.374)	(1.066)	(0.481)		(0.473)	(0.815)	(0.967)	(0.475)	(0.391)	(1.033)	(0.496)		(1.028)	(1.088)	(1.286)	(0.851)	(0.826)	(1.272)	(0.885)
Party - Conservative										0.107	5.146***	-0.847	-1.481**	-1.641***	1.981***	-1.513*		-1.407	4.220***	-1.909	-2.543***	-2.341***	0.818	-2.225**
										(0.500)	(1.050)	(1.099)	(0.692)	(0.565)	(0.557)	(0.800)		(0.913)	(1.133)	(1.178)	(0.875)	(0.725)	(0.816)	(0.895)
Party - LibDem										-0.749**	0.795	-2.488***	-2.249***	-2.115***	-0.665	-1.778***		-0.952	1.640	-1.036	-1.513**	-0.795	-0.266	0.00884
										(0.306)	(1.125)	(0.799)	(0.367)	(0.267)	(0.528)	(0.349)		(0.688)	(1.179)	(1.070)	(0.604)	(0.510)	(0.746)	(0.591)
By-elections										-14.85***	0.281	-0.426	0.800	-0.231	0.971	-15.17***		-17.91***	-0.468	-0.732	0.638	0.0298	0.280	-17.85***
										(0.416)	(1.341)	(1.054)	(0.693)	(0.609)	(0.740)	(0.500)		(1.387)	(1.902)	(1.843)	(1.340)	(1.312)	(1.706)	(1.304)
Legislature 2001-2005																		17.21***	-0.416	-2.334**	-2.335***	-0.318	-0.179	-19.79***
																		(0.558)	(0.638)	(1.177)	(0.768)	(0.509)	(0.696)	(0.536)
Legislature 2005-2010																		21.37***	1.753	-18.00***	2.209**	-17.90***	2.760**	-18.82***
																		(0.987)	(1.217)	(1.158)	(1.046)	(0.993)	(1.143)	(1.016)
Legislature 2010-2015																		-3.594***	-19.87***	-22.44***	-21.63***	-21.94***	-4.873***	-23.02***
																		(0.477)	(0.606)	(0.795)	(0.558)	(0.458)	(1.125)	(0.607)
Constant		-0.450	-3.195**	4.133*	-2.353**	-2.036***	-0.800	-1.188		0.353	-5.286***	5.692***	-0.741	-0.278	-0.907	0.501		-13.21***	-0.482	11.78***	4.923**	4.723**	3.697	7.014***
		(0.836)	(1.270)	(2.179)	(1.034)	(0.704)	(1.436)	(0.906)		(0.929)	(1.740)	(2.129)	(1.109)	(0.813)	(1.507)	(0.979)		(2.435)	(2.366)	(2.806)	(2.013)	(1.837)	(2.328)	(1.988)
Observations	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695	695

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1