

Cabinet Appointments in the Howard Government 1996 – 2007

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October 2012

Abstract

The purpose of this paper is to examine the factors that were associated with cabinet appointment in the Howard Government 1996 – 2007. Broadly, the factors that are cited as important in cabinet appointment in general fall into two categories: the representational and the personal. The representational factors are those that are associated related to an individual's role as a "representative". The personal factors are those that are associated with an individual's personal qualities. Thus, an individual who impresses the electorate with her oratorical or technical skills may stand a higher chance of being selected than another individual who does not have such skills. In this paper I will demonstrate that the representational factors provide negligible explanation for cabinet appointments in the Howard government. In contrast, the personal factors were significantly more important. In particular, I identify the level of concreteness/abstractness in a parliamentarian's first speech in parliament as an important factor.

Keywords: Australian politics; Howard government; Cabinet appointment; Data mining; Text analysis.

Introduction

The question as to who is likely to be appointed to the highest level of political office is a major source of discussion amongst politicians themselves, academics and the popular press. However, much of the debate, particularly in Australia, is qualitative and therefore lacks predictive or analytical rigour. The central purpose of this paper is to address this by analysing the cabinet appointments in the Howard government over the period 1996-2007.

Why did Peter McGauran become a cabinet minister while his brother and fellow parliamentarian Julian did not? Similarly, David Kemp became a cabinet minister while his brother Rod remained a junior minister. The contention of this paper is that there were personal differences that resulted in Peter and David being regarded as being better suited to the role than their respective brothers. These characteristics had little to do with the standard explanations in the qualitative literature based on representational factors such as region represented, party or house (House of Representatives versus senate). I will argue that personal characteristics are significantly more important than these representational factors. Specifically, I will demonstrate that of the “representational” factors, only geographical region (State/Territory) is useful in determining cabinet appointments. However, geographical region is very much less predictive of cabinet appointment than personal characteristics.

In this paper the representational factors will be taken to mean those factors that the selectorate can use to justify the appointment of an individual on the grounds of the overall makeup of the parliament. Thus, an individual who represents an electorate in Victoria is expected to have a higher probability of being selected for a cabinet position if the overall representation of Victorians in parliament rises. Similarly, if the number of females in

parliament rises, the pressure on the selectorate to appoint more women to cabinet positions would be expected to rise. The idea here is that cabinet appointments are determined by the need to reflect the various competing interests of the parliament in the cabinet.

Empirical Research on Cabinet Appointment

The empirical literature on ministerial selection is actually weighted towards de-selection. Furthermore, although there are many studies that deal with cabinet formation and durability, very few studies attempt to isolate the specific characteristics of individuals who are selected to be ministers.

An example of the de-selection literature is Berlinski, Dewan and Dowding (2007). This study examines the influences on a minister's "risk" of losing their position in cabinet. A Cox proportional hazards framework is used to model the time to the resignation of a minister with the major finding that Oxbridge education and female gender have a significant effect on reducing hazard. Ministerial rank is also significant, having the effect of reducing risk while experience significantly increases risk. Berlinski, Dewan and Dowding (2010) which examines the effect of ministerial performance and that of the government as a whole on the likelihood that a minister will resign. The study uses the number of calls for the resignation of the minister reported in *The Times* as the measure of ministerial performance and the measure of performance for the government is the number of call for the resignation of the other ministers reported in *The Times* (Berlinski et al 2010: 562). Observable traits of ministers controlled for are gender, educational background, rank and nobility as well as whether the

individual had experience in a previous government and whether she received a resignation call in that government. The study shows that, where a minister faces a first resignation call, her hazard rate rises relative to that of a colleague who has not had any call for her resignation. For a second and subsequent resignation call the hazard rate rises again. For a minister who has no calls for his/her resignation, a unit increase in the cumulative calls for resignations of other ministers decreases her hazard rate.

This study gives a good indication of the reasons why a minister might be de-selected but it does not give us an insight into reasons why a parliamentarian who is not a minister might be selected to be a minister.

There is a significant stream of the literature that deals with cabinet durability (Alt 1975; King, Alt, Burns and Laver 1990; Grofman and van Roosendaal 1997). This literature deals with the extent to which cabinets as a whole are likely to change. The variables used to explain cabinet durability are based on the political and institutional factors that influence cabinet formation. Such variables include party strength, ideological composition of parties that form the government coalition, fractionalisation and constraints on the leader to call early elections and a number of similar variables. There is some evidence that these standard factors that are associated with cabinet duration are unrelated to ministerial de-selection (Huber and Martinez-Gallardo 2008).

One of the earliest studies of ministerial selection is Buck (1963) which compares UK MPs who did not rise to CM positions with those who did. The major finding is that the MPs who entered parliament at an earlier age and those who received an early promotion to junior roles such as parliamentary private secretary were more likely to become senior ministers. Buck concludes that it is those who have deliberately chosen a career in politics that become senior

ministers. Such individuals enter the House of Commons at an earlier age and “...seize the opportunity...” for promotion once there (Buck 1963: 631).

One of the few recent studies that directly addresses the issue of personal characteristics associated with cabinet appointment is Kerby (2009). Using data for the period 1935-2008 and a Cox proportional hazards approach, this study uses the time from becoming a member of the government party to the time of appointment to cabinet to model the probability that a given MP will experience an appointment event at time T given that she has “survived” up to that point without the event occurring. Those MPs who cease to be a member of the government party before they are appointed to cabinet are treated as censored. The implicit idea here is that those who are appointed earlier are considered more suitable than those who are not. The two extremes of suitability are represented by the member who is appointed to cabinet but does not yet have a seat in the HOC and the permanent backbencher (Kerby 2009: 596). The independent variables are classified by Kerby as personal and political. The personal variables include those that members bring to parliament as new members such as are gender, university education, legal training and age at appointment. There are also personal factors that vary after becoming members such as previous ministerial experience, margin of victory in the MP’s electorate, and whether the MP has challenged the PM for leadership. Political factors are the share of seats held by the government party in the MP’s region (Western Canada, Ontario, Quebec and Atlantic Canada), the size in percentage of the government party’s majority, a dummy variable for Liberal party status, and prime minister’s term (1-5). The study does not include Senators because senators are not elected in the Canadian system, nor are they generally appointed to cabinet positions (Kerby 2009: 609). The general findings are that female gender, legal education, university education and age up to 42 increase chance of being appointed to cabinet with legal education being the most

influential. Also important are previous ministerial experience is highly significant and being a leadership challenger. For each unit increase in the MP's electoral majority there is a 1% increase in chance of appointment, indicating that there is an advantage for MPs who do well electorally. In contrast to the personal vote share, the government's vote share in the MP's region is slightly negatively associated with chance of appointment, indicating that an MP who wishes to become a CM is at an advantage if her party does not do well in her region. Another finding is that an MP who is not appointed in the PM's first term suffers a significant decrease in their chances of appointment to cabinet in the PM's subsequent terms. Those who are not selected early are highly unlikely to be selected subsequently.

The study shows that possession of a legal education is likely to be a useful indicator of future success as a CM. This supports the idea that education is likely to be an important factor. However, it is worth noting that, in this particular instance, it is not the education per se that is being selected for. Kerby (personal communication, August 1 2011) has pointed out that in an interview with a particular Canadian Prime Minister it emerged that there was a tendency to select lawyers for cabinet positions in the Canadian parliament because individuals who had been screened by the Bar association were less likely to have "skeletons in the closet".

O'Malley (2006) uses logistic regression to analyse the institutional, legal and political influences on the selection of ministers in the Irish Taoisigh. This study explores ministerial selection in a context of a very small pool of potential ministers. Due to the size and nature of the institution, 30 members must be chosen for junior and cabinet roles out of the approximately 80 members who are legally and politically eligible. Furthermore, the pool is such that interpersonal rivalries as well as loyalties to play a significant part in ministerial appointment. Another important factor that differentiates the Taoisigh from other comparable

systems is that the turnover of members of the legislature is quite low. This situation, coupled with the relatively small numbers to draw from, makes it difficult to dismiss CMs because a dismissal is likely to have a significant negative effect on personal relations in the party. All these factors lead to a situation in which reshuffles are less common than in other Westminster systems such as the UK and Canada (O'Malley 2006: 320). Variables included in the models are age, years since first elected, a dummy taking the value of 1 if the member has tertiary ("third level") education, personal vote as a proportion of the electoral quota, a dummy taking the value of 1 if the member had previously been a junior minister, the percentage party vote in the member's constituency, a dummy taking the value of 1 if the member is in the junior government party of a coalition, and a dummy taking the value of 1 if the member is from Dublin and environs. There are three models: a combined parties model and models for the two main parties Fianna Fáil and Fine Gael.

Age is not significant in any of the models and, according to O'Malley, this is because ministers are appointed on the basis of how well known they are (O'Malley 2006: 331). The close personal nature of the small pool means that a member will not be appointed to cabinet unless she is known and the only way to get known is to have experience in parliament. Which explains why the variable representing "Years since first elected" is significantly positively associated with cabinet appointment. Tertiary education is significantly ($p < .001$) associated with increased odds of being a CM. The effect of having a high proportion of personal votes as a proportion of the electoral quota is a powerful influence on cabinet membership. However, the effect of the party vote in the member's constituency is only significant in the Fianna Fáil model (odds ratio = 308.61, $p < .001$). Having held a junior ministerial post is a positive influence on future cabinet membership for the full model (odds

ratio 1.64, $p < .05$) and the Fianna Fáil model (odds ratio 3.26, $p < .001$). It is interesting to note that the geographical variable (Dublin or Environs) is not significant.

Kam, Bianco, Sened and Smyth (2010) uses a cross-sectional approach to examine the appointment of CMs and shadow CMs in the UK parliament over the period 1987-2005 on the basis of the extent to which they represent the ideological position of the other MPs in the broader party. The major finding is that the several variables are significantly associated with appointment to cabinet/shadow cabinet in the UK parliament. These include being promoted in the first term promotion (positive coefficient), parliamentary experience at the start of the term (positive coefficient); parliamentary experience squared at the beginning of the term (negative coefficient), Oxbridge education, being in government (negative coefficient), and dissenting roll call votes in the last term (negative coefficient). Ideological variables derived from a survey of MPs were added into the model. The findings indicate that an MP who is ideologically closer to their party's general ideological position is significantly more likely to be appointed to cabinet even after controlling for the standard ministerial selection variables cited above. The distance between an MP's ideological position and that of their leader was not significant. Furthermore, the coefficients for experience (.409, $p < .01$) and experience squared (-.009, $p < .01$) indicate that there is a negative quadratic relationship between experience and the likelihood of appointment such that the likelihood of appointment rises over the first 23 years and then declines thereafter.

The Analysis of Cabinet Appointments in the Howard Government.

The Independent Variables

The Australian Federal Parliament consists of the House of Representatives (the Lower House) and the Senate (the Upper House). The size of the Houses varies according to changes in the population of Australia. In 1996 the HOR had 148 Members and the Senate had 72. By 2007 These numbers had risen to 150 and 76 respectively. Government is formed by the party or coalition with the majority in the HOR.

For the purposes of determining cabinet minister selection we are only concerned with the numbers of individuals in the government party/coalition because in the Australian system ministers are typically only chosen from the government parliamentarians.

Table 1 shows the number of LNPC members in parliament over the period 1996 – 2007 according to their representational factors.

Table 1 about here

The table shows that the total number of LNPC parliamentarians varied from a low of 114 in 2001 to a high of 131 in 1998. The Senate constituted approximately 30% of LNPC parliamentarians (HOR + Senate). Females constituted a fairly stable number of LNPC parliamentarians with a low of 23 on 1996 and a high of 26 in 2000 – 20003 and 2006 – 2007. Smaller geographical areas such as the Northern Territory and the Australian Capital Territory supplied significantly fewer LNPC parliamentarians than the other states, with NSW supplying the bulk with a high of 35 in 1997 – 8 and a low of 32 in 2005. There was significant variation in the number of Nationals (the junior partner in the LNPC. For the

period 1996 – 2001 the number was relatively high at 23 but declined to a low of 15 in 2005 and remained at 16 for 2006-7.

The importance of the representational factors is that the literature on ministerial appointment emphasises them as important factors in the determination of ministerial appointment. Thus, the theory is that LNPC parliamentarians from the larger states such as NSW and Victoria will have a higher likelihood of becoming ministers than those from the smaller states such as Queensland, South Australia, Western Australia and Tasmania. Furthermore, to the extent that the selectorate emphasises the need to represent women in cabinet, being a female will have an influence on the likelihood of selection. Similar arguments will hold for Senators and Nationals. Thus, I will include in the analysis binary variables for the geographical variables (NSW, Vic, Qld, SA, WA, Tas, NT and ACT), female gender, being a member of the Senate and being a member of the smaller party in the LNPC Coalition, the Nationals.

So far we have considered the representational factors only. However, it is also important to consider the personal factors. The personal factors I will concentrate on are those that have been found to be well supported in the literature as being associated with cabinet appointment. Thus, age and experience will be examined. I will also include a binary variable representing legal education. Kerby (2009) found strong evidence for an association between legal education and the likelihood of cabinet appointment and a weaker association between tertiary education in general and ministerial appointment. Furthermore, there is evidence in the US research that those individuals with a legal education rise faster through the congressional committee system and attain higher overall positions. Thus, it is likely that legal education as opposed to general tertiary education is likely to be the appropriate

approach. The final variable I will consider is a variable that measures the abstractness of a parliamentarian's speech. The idea here is to get a measure of the abstractness/concreteness inherent in a parliamentarian's conception of the world. The level of concreteness revealed in an individual's speech has been found to be associated with cognitive outlook known as the psychological level of construal Trope and Liberman (2010). I will return to a discussion of this concept below. Abstractness/concreteness is measured by scoring speech samples from parliamentarians on the basis of the average concreteness of the nouns in the samples. This process is based on a selection of 925 common nouns which were scored by Paivio Yuille and Madigan (1968) on the extent to which the noun was easily representable to the senses. The speech sample chosen is the first or maiden speech. This is an ideal speech sample because all parliamentarians make this speech in essentially the same circumstances and at the same stage of their career. Furthermore, the speech is highly likely to be substantially prepared by the parliamentarian as it is delivered at a time when they are beginning their parliamentary careers and therefore are unlikely to have the resources available to employ "ghost" writers.

With these representational and personal variables I have covered a substantial number of the types of factors that are likely to be associated with cabinet appointment. Two variables that were discussed in the literature above that we have not included are electoral margin and ideology. I will explain why these have not been included.

The fundamental reason for not including a variable for electoral margin is that the two houses of parliament from which ministers are drawn use fundamentally different electoral systems. The HOR uses the alternative vote in single member local level constituencies while

the Senate uses the single transferable vote in multiple member state level constituencies. What this means is that there is a fundamentally different way of determining the support for members of the HOR as opposed to the Senate. As such it seems difficult to come up with a consistent measure for HOR and Senate parliamentarians.

Kam et al (2010) found that ideology was a significant factor in the allocation of frontbench positions. While it would be ideal to include such a variable in the current study it is not possible because the survey data that was used in Kam et al is not available for the Australian federal cohort.

The Structure of the Data

The study design uses 5 cross sections over the period 1996 -2007. The cross sections are taken at times that reflect changes in parliament due to elections and consequent re-shuffles. The data are taken from the yearly Hansard for the first parliamentary session of the year after an election or, in the case of 2007, after a significant re-shuffle leading up to an election. Thus, the 1996 data show the situation at the first parliamentary session in April 1996 which followed the election of March 1996. For the elections that took place in the middle of the year, the changes in the makeup of parliament are not manifested in the data until the following year. For example, the changes that took place in the October 1998 election are not reflected in the data until the first session for 1999. The same situation exists for the elections in November 2001 and October 2004. In order to get cross sections that represent the situation as it existed after the elections over the period, it is necessary to use the data from 1996, 1999, 2002 and 2005. Also included is the cross section from the first session for 2007 which represents the final reshuffle before the November 2007 election. Thus, we have data

for five cross sections, the analysis of which should capture any patterns in the way cabinet posts were awarded, if any.

The data from all five cross sections illustrates the long-term structure of the parliament as well as that of the cabinet for the period 1996-2007. Table 3.19 summarises the data.

Table 2 about here

The pooled data involves 192 individuals and provides 611 observations of “events” over the five cross sections. Of the 611 events there were 527 non-CM events and 84 CM events. Thus, the overall probability of a cabinet appointment event was 14% (84/611). Clearly, there are some observable trends in the descriptive data. For example, over the five cross sections, the parliamentary proportion of females was .21 (126/611) yet the cabinet proportion of females was only .12 (10/84). Thus, there is some indication that women were under-represented in cabinet. Similarly, Queensland was under-represented given that the Parliamentary proportion of Queenslanders was .22 while their cabinet representation was .11. A similar situation occurred for WA with parliamentary proportion of .12 and a cabinet proportion of .06. NSW was over-represented with a parliamentary proportion of .27 and cabinet proportion of .38. South Australian was similarly over-represented with parliamentary and cabinet proportions of .12 and .2 respectively. The parliamentary and cabinet proportions for the other representational factors seem reasonably close. In the case of the personal factors there seems to be a difference in the proportion of parliamentarians with a legal qualification (.27) and CMs with a legal qualification (.58) indicating that having a legal qualification is a positive influence on cabinet selection. There is evidence that the average CM was older than the average CM at 51.73 and 50.8 respectively. Similarly, the average

experience of CMs was 13.95 years while that of non-CMs was 7.92. Finally, there is a marginal difference in the concreteness of the maiden speeches of CMs (4.34) as opposed to non-CMs (4.54), indicating that CMs use less concrete language.

Given the above dataset the next stage is to use a method of analysing the factors that lead to cabinet appointments. As I will argue, K-Means clustering can be used for this purpose.

Data Mining with K-Means Clustering

Essentially, k-means clustering works by creating 'k' clusters based on the dependent variables. The centres of these clusters are determined by the independent variables. To classify a given case as belonging to one category or another, the geometric distance from that case to the centre of another cluster is determined. The case is classified as a member of the class with the closest cluster.

The choice of K-Means clustering for data mining is by no means a usual choice in data mining. There are several other competing induction methods that have been found to be more accurate than K-Means clustering. Sherrod (2009) found that, of different classification algorithms used on 18 data sets, K-Means clustering provided the best solution for only 1 of these. The choice of K-Means clustering for the current application was made on the basis of practical efficacy: of all other methods including ANNs, SVMs, Random Forests, Logistic Regression and Genetic Programming, K-Means clustering was the best performer. This finding underscores the observation in machine learning that there is no a priori way of determining what induction method will work best with a given data set.

The K-Means clustering was implemented with the Enterprise version of DTREG. The 611 cases were divided into a 306 case training set (TS) and a 305 case external holdout set (EHOS). The HOS was used only for testing the models built using the TS. The procedure was to build a number of models using different combinations of the independent variables and compare the models on the basis of classification accuracy. Two methods of classification accuracy were used: Leave-one-out cross validation was used to test the model created with the TS ($n = 306$). Thus, effectively 306 models were created and tested on each individual case in turn. The reported accuracy is the average accuracy over the 306 models. The model was subsequently validated using the HOSCV ($n = 305$). Given that there is some debate as to which of these is the ideal method of model validation, the classification accuracies for both methods will be reported. Given that each method is tested over 300 times, the summary statistics should provide a good estimate of the accuracies using each method. It should be noted that both methods provide similar accuracy statistics which indicates that there is a high degree of consistency.

The Models

Several different combinations of independent variables were used to create a number of models. It should be noted that in all models the continuous variables were standardised. The idea here is that in K-Means clustering the clusters are created assuming that no particular variable is more important than another. With unstandardized variables those with the highest absolute values have a greater influence on the assignment of cases to clusters. Empirically it has been found that KNN performs better when the continuous variables are standardised so that they are all considered equally.

The Full Model:

The full model consists of all independent variables. The personal variables are Age, Age squared, Parlage, Parlage Squared, Experience, Experience Squared, Conc and Law. The representational variables are Female, Senate, National Party and the eight geographical variables NSW, Vic, Qld, WA, SA, Tas, ACT and NT. Clearly there will be some redundancy in this selection of variables. In the case of the personal variables, Parlage is calculated by subtracting Experience from Age so including all three variables is unlikely to all more information. Similarly, including all geographical variables has the potential to provide more information than required and if the induction method chosen was logistic regression we might need to eliminated one category to prevent over-determination. However, as KNN is being used it is possible that these issues will not be a problem.

Table 3 shows the classification accuracy of the full model.

Table 3 about here

At first glance model seems accurate, with LOOCV and HOSCV accuracies of .90 and .85 respectively. However, the accuracy is largely due to the high specificity of the model. In other words, the model is able to efficiently determine who *is not* a CM but is not able to efficiently determine who *is* a CM. The ability to detect those who are CMs at a given cross section in time, as indicated by the sensitivity, is not above chance with the LOOCV sensitivity at 69% (99% CI = 48% - 86%) and the HOSCV sensitivity at 62% (99% CI = 41% - 80%).

Before moving on to other models it is worthwhile looking at the relative importance of each variable in the model. Table 4 shows the ranking of variable importance with 100 representing the benchmark highest importance and other figures representing lower levels of importance in relation to the top ranking variable. Thus, a variable with a ranking of 50% is of half the importance of a variable with a ranking of 100%.

Table 4 about here

The importance ranking of variables demonstrates a phenomenon that we will see is common to all models – the personal factors are generally more important than the representational factors. The top six variables are personal with importance rankings ranging from 100% for age to 64% for ExpSq. The next variable is a representational variable Senate, with an importance ranking of 47%. Following this is the final personal variable, Law, with an importance of 45%. All variables below law are representational variables. The interesting point about this is that the model provides good evidence that it is the personal factors that are the most important in determining cabinet appointments.

The Representational Model:

A second model was created which consisted of only the representational variables. Classification accuracies for this model are presented in Table 5.

Table 5 about here

Clearly, this model is not efficient because the ability of the model to detect CMs is not apparent. The sensitivities of the LOOCV and the HOSCV are 38% and 24% respectively. The apparent overall accuracy of the model of 75% - 70% is due to the high default specificity. In other words, the unbalanced data set with 86% of the cases being non-CMs results in a seemingly high overall accuracy but this is due to the fact that 86% of the cases would be accurate if we made no attempt to model CM selection and merely assumed that all cases were non-CMs.

Notwithstanding that the classification accuracy of the model is not efficient, the analysis of the importance of the variables in the model gives us another insight into the causal effects of the independent variables. Table 6 shows that the most important variable in this model is Female.

Table 6 about here

In the Full Model, the representational factor with the greatest influence was Senate which in this model is fourth in importance after Female (100%), WA (84%) and SA (57%).

A similarity between this model and the Full Model is that the three smallest geographical regions Tas, NT and ACT are the least important. This makes sense in that Tasmania provided very few CMs over the period while the NT and ACT provided none.

The Optimum Model:

The insights gained from the first two models give us some insights into how we might create an optimum model. There is a clear role for the personal variables so these should be

included in subsequent models. There is a high degree of variability in the importance of two of the non-geographical representational variables, Female and Senate, as between model 1 and 2 so it is difficult to determine whether these variables provide more signal than noise. The remaining non-geographical representational variable, NP, seems to have a low overall influence on the outcome, accounting for only 16% of the influence on the outcome in the first model and 25% in the second. Finally, the smaller geographical representational variables, NT, ACT and Tas seem to have little influence in either model. What this suggests is that a model consisting of the personal variables and the major geographical variables should provide a good solution.

Table 7 shows the classification accuracy of the optimum model which consists of the 8 personal variables and the five major geographical representational variables.

Table 7 about here

This model is clearly efficient at detecting CMs with sensitivities for the LOOCV and HOSCV of 79% (99% CI = 58% - 92%) and 83% (99% CI = 64% - 95%) respectively. The ability to detect non-CMs is also apparent in that the LOOCV and HOSCV accuracies are 72% (99% CI = 64% - 0.79%) and 73% (99% CI = 65% - 0.79%) respectively. The accuracies of the LOOCV 73% and the HOSCV 74% indicate that this model is able to classify both CM and non CM events well beyond chance alone ($p < .01$).

Table # shows the relative importance of the variables in the model. As with the previous models, the personal factors are the most important. The first 7 variables are personal variables. The eighth is geographical, NSW, accounting for 40% of the relative importance

on the outcome. The ninth is the final personal variable, Law, also accounting for 40% of the relative importance . The final four variables are the four remaining geographical variables SA (24%), Vic (16%), WA (11%) and Qld (8%).

Table 8 about here

Discussion

The analysis above shows that there is good evidence that it is the personal attributes that are the most important in determining who will be a CM. All of the personal characteristics other than Law were of more importance than the representational variables in all models. In two of the models Law was preceded by a representational variable but then the remaining representational variables followed Law. In other words, Law was more important than most of the representational variables.

Another finding is that the significant geographical variables are more important than the other representational variables. [Run model with personals and non-geographical variables].

Given the above findings I will now consider the reasons why the important variables are have their influence. The first step in this process is to get an idea of the direction of the influence of each of the variables on the dependent variable. With k-means clustering, as with many data mining methods it is not possible to summarise the directional influence of variables on the dependent variable due to complex interactions and non-linear relationships between the dependent and independent variables. However we can get an idea of the

influence by perturbing each independent variable and determining the influence on the dependent variable. One other complication is that, for each time related variable, a squared value is calculated. Thus, for Age, Experience and Parlage and there are variables for Age Squared, Experience Squared, Parlage Squared respectively. The reason for this is that studies such as Kam et al (2010) show that there is a non-linear relationship between experience and the likelihood of appointment. For the purposes of determining the influence of the time variables on the dependent variable it makes little sense to perturb a variable and its square independently. That is, if an individual's age rises their age squared also rises. For this reason both the original and the squared variables are perturbed simultaneously to determine the directional influences. The results are as presented in Table 9:

Table 9 about here

The Age variables (Age and Age Squared) had no discernible effect on the dependent variable. Nor did NSW, Vic or WA. However, removing any of these from the model resulted in a lowering of the classification accuracy. This suggests that the variables are important but in a non-linear way. As such it is difficult to interpret how these variables should be interpreted. Notwithstanding this finding it is worthwhile noting that in the case of Age it has been found that, where the Age is modelled using a linear equation, there is a negative association between age and the likelihood of cabinet appointment; where Age is modelled as a quadratic equation, there is a negative quadratic association between age and appointment to cabinet with an inflexion point some time in the 40s. Furthermore, this pattern seems to hold for a number of positions in which appointment is dependent on high level performance in authoritative positions. Numerous reasons could be offered as to why this

occurs. For the purposes of the current study it suffices to say that the patterns detected in other jurisdictions and domains seems to be present in the Australian Federal arena.

The Experience variables (Experience and Experience Squared) are positively associated with the dependent variable. O'Malley (2006) found that the number of years since first elected (experience) is positively associated with ministerial appointment in the Irish parliament. Furthermore, retaining individuals with experience seems to be important. In November 2001, a reshuffle was described in *The Canberra Times* in the following terms: "Howard's desire to push his own type of coalition politician, the need for new talent, and the need to retain experience at the highest levels were the forces behind his reshuffle" (Canberra Times November 25 2001, p20). However, there is some evidence that too much experience can be detrimental. For example, Kam et al (2010) found that there was a negative quadratic effect of experience on the likelihood of ministerial promotion such that the probability of appointment rises until a peak of 15 years and then falls off. Similarly, Dalvean (2012) found a negative quadratic relationship between experience and the likelihood of appointment to cabinet. The inflexion point occurred at 17 years indicating that at this level of experience an individual is likely to be deemed to be "too experienced".

There is a negative influence of the Parlage variables (Parlage and Parlage Squared) on the dependent variable. There is a negative association between the age at which an individual arrives in parliament and their likelihood of achieving high political office. This phenomenon has been noted in a number of contexts. In general, the literature finds that those who arrive in parliament earlier are more successful in achieving higher office because they are more ambitious. Buck (1963) pointed out, that in the UK House of commons, "[m]inisterial aspirants seize an early opportunity to begin their advance in the official hierarchy, and in

most cases they have also begun their career in the Commons at a relatively early age” (Buck 1963: 629). Schlesinger (1966: 176) makes the same point: “[t]he younger a man is when he enters politics, the greater the range of his ambitions and the likelihood of his developing a career commitment to politics”. The point here is that arriving in parliament at an earlier age is a proxy for ambition: those who enter parliament at an earlier age have a higher baseline level of ambition and this higher level of ambition plays out over the career of the parliamentarian such that the parliamentarian is more likely to grasp opportunities as they arise.

Having a legal qualification is positively associated with the dependent variable. An association between reaching high political office has been found in a number of different political arenas. Kerby (2009), for example found that having a legal qualification was more strongly associated with cabinet appointment than having a tertiary education in general. Dalvean (2012) found that a legal education was associated with cabinet appointment whereas no other field of education was significantly associated with cabinet appointment. In the USA context it has been found that legally trained individuals are more likely to rise to senior positions in the most prestigious committees than non-legally trained individuals (Miller 1995).

Many reasons have been put forward to explain this phenomenon. Some cite technical skill (Morgan 1966, 156-57, 366, 343-44, cited in Miller 1995: 77). According to Miller, “[t]hese differences [in technical skill] are subtle, but extremely important” (Miller 1995: 77). Another explanation is that those who have legal training are more politically ambitious. On this account, part of the process of attaining a high political rank is to obtain a legal qualification. Thus, there is a correlation between attaining high political office and having a

legal qualification because the underlying cause of both phenomena is ambition. The problem with this explanation is that Dalvean (2012) controls for ambition by using a proxy for ambition (Parlage) and yet having a legal qualification is still significant. This suggests that having a legal qualification is an independent influence on becoming a cabinet minister.

Two studies that cast light on the possible explanation for the positive effects of having a legal qualification are Lehman et al (1988) and Amsel et al (1991). The benefit of these studies is that they specifically examined the cognitive styles of lawyers as opposed to non-lawyers.

Lehman (1988) found that lawyers differ from other groups in that they are less inclined to analyse the world in probabilistic terms. This may be due to their training in legal causation which encourages a world view that is significantly simpler than the more scientific world view (Culhane 1997: 190). The upshot is that the legally trained may have an advantage in discussions with their political colleagues as well as with the media in that they are able to present simplified world views which may be more palatable than the complex realities.

Amsel et al (1991) found that the legally trained are more likely than other groups to use counterfactual reasoning. The major benefit of this is that counterfactual thinking primes individuals to consider alternatives (Galinsky and Moskowitz 2000: 385). Thus, lawyers may be more likely to be able to consider a greater number of alternatives than their non-legally trained colleagues due to their training in counterfactual reasoning. Being able to generate more alternatives may be of benefit in that the cabinet selectorate will note that such individuals are a better source of ideas than those who generate fewer ideas.

Concreteness is negatively associated with CM. What this indicates is that CMs are likely to have a relatively high level of psychological level of construal (Trope and Liberman 2010).

Psychological level of construal (PLC) is the extent to which an individual conceptualises their experience from a global (abstract) as opposed to a local (concrete) point of view. The link between PLC and language use is that those with a higher level of PLC (that is, a more global outlook) tend to use more abstract language than those with a lower PLC.

Concreteness is associated with a proximate level of construal and as the level of construal becomes more distal the details become more abstract and general (Liberman and Trope 2008, p1203). The important point is that concreteness as measured in linguistic samples can be used as a proxy for the level of construal. Liberman and Trope describe the importance of the PLC thus:

“Human history is associated with expanding horizons—traversing greater spatial distances (e.g., discovering new continents, space travel); forming larger social groups (families versus cities versus states versus global institutions); planning and investing in the more distant future; and reaching farther back into the past. Human development in the first years of life involves acquiring the ability to plan for the more distant future, to consider possibilities that are not present, and to consider the perspective of more distant people...”
(Liberman and Trope 2008, p1202).

The implication of this is that CMs, in exhibiting a lower level of concreteness in their speech samples are likely to have higher levels of PLC and are therefore more likely to exhibit the characteristics associated with “expanding horizons”.

Queensland is negatively and South Australia is positively associated with appointment to cabinet. Thus, an LNPC parliamentarian who came from Queensland had a disadvantage in terms of their likelihood of cabinet appointment while a South Australian had an advantage. This seems to reflect long term trends. Table 10 shows the actual number of SA LNPC cabinet members as well as the number that would be expected if cabinet positions were allocated strictly in terms of the representation of SA LNPC parliamentarians.

Table 10 about here

Clearly there was a long term bias in that the actual number of CMs was 3.5 while the expected number was 2.06. In other words, there was a long term trend of including, on average, one more SA individual in cabinet than was warranted by the numbers in parliament. As shown in Table 11, The situation for Queensland was the reverse: on average the number of Queenslanders in cabinet was 1.75 while the number that would be expected given the representation of Queenslanders in parliament was 3.56.

Table 11 about here

Although the case of both SA and Qld the lack of fit of parliamentary representation and cabinet appointment was small, it was consistent enough for the modelling procedure to find. The implication of this for modelling in general is that the major geographical regions should be included in the models because if there is any bias in cabinet appointments, including the major geographical regions in the model will increase classification accuracy however if

there is no bias then including them will not necessarily decrease the classification accuracy of the model.

Summary and Conclusion

In this paper I have presented a model of cabinet selection based on the Howard government 1997-2007. The model consists of variables for age (Age and Age Squared), experience (Experience and Experience Squared), age at the time of entering parliament (Parlage and Parlage Squared), Legal qualification, concreteness of language and five binary variables for the five major geographical areas. Using these variables a model can be created that has a predictive accuracy of 73%-74%. The model is predictive in that, given data on a given coalition parliamentarian who is likely to be appointed as cabinet minister as the result of a re-shuffle in a Coalition government.

However, I have gone beyond creating a merely predictive model in that I have examined the important variables in the model and described why they might be associated with cabinet appointment. Thus, I have pointed out that there are good reasons why experience should be positively associated with cabinet appointment, if only over an initial period in parliament, and why the age at which an individual arrives in parliament should be negatively associated with cabinet appointment. Furthermore, I have explained why concrete language, as a proxy for the PLC should be negatively associated with cabinet appointment. I have also explained why the cognitive habits of the legally trained should be useful for an individual aspiring to a cabinet position, thus explaining what having a legal qualification should be positively associated with cabinet appointment. Finally, I have explained that including geographical variables in the model is useful because the predictive accuracy of the model will be

increased by including them if there is any bias in the selection of cabinet ministers on the basis of geographical origin.

References

- Alt JE (1975), 'Continuity, Turnover, and Experience in the British Cabinet, 1868 – 1970', in V Herman and JE Alt (eds.), *Cabinet Studies: a Reader*, New York: St Martin's Press.
- Amsel E, Langer R and Loutzenhiser M (1991), 'Do Lawyers Reason Differently from Psychologists: A Comparative Design for Studying Expertise', in RJ Sternberg and PA Frensch (eds.), *Complex Problem Solving: Principles and Mechanisms*, Hillsdale NJ : Lawrence Erlbaum Associates.
- Berlinski S, Dewan T and Dowding K (2007), 'The Length of Ministerial Tenure in the United Kingdom, 1945-97', *British Journal of Political Science*, 37(2): 245–262.
- Berlinski S, Dewan T and Dowding K (2010), 'The impact of Individual and Collective Performance on Ministerial Tenure', *Journal of Politics*, 72(2):559–571.
- Buck P (1963), 'The Early Start toward Cabinet Office, 1918-55', *The Western Political Quarterly*, 16(3): 624–632.
- Canberra Times* (2001), November 25, p20
- Culhane JG (1997), 'The Emperor Has No Causation: Exposing a Judicial Misconstruction of Science', *Widener Law Symposium Journal*, 2: 185–193.
- Dalvean (2012), *The Selection of Cabinet Ministers in the Australian Federal Parliament*, PhD thesis, School of Politics and International Relations, Australian National University, <https://digitalcollections.anu.edu.au/handle/1885/9159>, accessed August 28 2012.
- Galinsky AD and Moskowitz GB (2000), 'Counterfactuals as Behavioral Primes: Priming the Simulation Heuristic and Consideration of Alternatives', *Journal of Experimental Social Psychology*, 36(4): 384-409

- Grofman B and van Roozendaal (1997), 'Modelling Cabinet Durability and Termination', *British Journal of Political Science*, 27(3):419–451.
- Huber J and Martinez-Gallardo, C (2008), 'Replacing Cabinet Ministers: Patterns of Ministerial Stability in Parliamentary Democracies', *American Political Science Review*, 102(2):169–180.
- Kam C, Bianco W, Sened I and Smyth R (2010), 'Ministerial Selection and Intraparty Organization in the Contemporary British Parliament', *American Political Science Review*, 104(2):289–306.
- Kerby M (2009), 'Worth the Wait: Determinants of Ministerial Appointment in Canada, 1935–2008', *Canadian Journal of Political Science*, 42(3):593–611.
- King G, Alt J, Burns N and Laver M (1990) 'A Unified Model of Cabinet Dissolution in Parliamentary Democracies' *American Journal of Political Science*, 34(3): 846–871.
- Liberman N and Trope Y (2008), 'The Psychology of Transcending the Here and Now', *Science*, 322(5905):1201–1205.
- Lehman DR, Lempert RO and Nisbett E (1988), 'The Effects of Graduate Training on Reasoning: Formal Discipline and Thinking about Everyday-Life Events', *American Psychologist*, 43(6): 431–442.
- Miller M (1995), *The High Priests of American Politics: The Role of Lawyers in American Political Institutions*, Knoxville, Tennessee: University of Tennessee Press.
- Morgan D (1966) *Congress and the constitution: A study of responsibility*, Cambridge MA: Harvard University Press.
- O'Malley, E. (2006) 'Ministerial Selection in Ireland: Limited Choice in a Political Village', *Irish Political Studies*, 21 (3), 319–36.

Paivio A, Yuille JC and Madigan SA (1968), 'Concreteness, Imagery, and Meaningfulness Values for 925 Nouns', *Journal of Experimental Psychology*, 76(1, Pt. 2): 1-25.

Schlesinger JA (1966), *Ambition and Politics*, Chicago, Rand McNally.

Sherrod P (2010), *DTREG Benchmarks of Predictive Model Methods*,
<http://www.dtreg.com/benchmarks.htm>, accessed July 2011.

Trope Y and Liberman N (2010), 'Construal-Level Theory of Psychological Distance',
Psychological Review, 117(2): 440–463.

Tables

Table 1: LNPC Parliamentarians by Representational Factor 1996 -2007

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
HOR + Senate	129	130	131	117	115	114	117	117	116	122	126	126
Senate	35	36	37	37	35	35	35	35	33	35	39	39
HOR	94	94	94	80	80	79	82	82	83	87	87	87
Female	23	25	27	27	26	26	26	26	25	24	26	26
Vic	27	27	27	24	24	24	23	23	22	24	24	24
NSW	34	35	35	33	32	32	33	33	33	32	33	33
Qld	29	29	29	25	24	23	24	24	24	26	28	28
Tas	7	7	7	5	5	5	5	5	5	7	8	8
SA	16	16	16	15	15	15	15	15	15	14	14	14
WA	13	13	14	13	13	13	14	14	14	16	16	16
ACT	1	1	1	1	1	1	1	1	1	1	1	1
NT	2	2	2	1	1	1	2	2	2	2	2	2
Nationals	23	23	23	21	19	19	16	16	16	15	16	16

Table 2: LNPC Data - Pooled Cross-sections

	n	Sen	Fem	Vic	NSW	Qld	Tas	SA	WA	ACT	NT	NP	Law	Av' Age	Av' Exp	Con
Parl'	611	181	126	122	165	132	32	74	72	5	9	91	167	50.93	8.75	4.51
Non-CMs	527	159	116	103	133	123	30	57	67	5	9	76	118	50.80	7.92	4.54
CMs	84	22	10	19	32	9	2	17	5	0	0	15	49	51.73	13.95	4.34
Parl' Prop'		0.30	0.21	0.20	0.27	0.22	0.05	0.12	0.12	0.01	0.01	0.15	0.27	n/a	n/a	n/a
Cab' Prop'		0.26	0.12	0.23	0.38	0.11	0.02	0.20	0.06	0.00	0.00	0.18	0.58	n/a	n/a	n/a

Table 3: Classification Accuracy of the Full Model

	Sensitivity	Specificity	Accuracy
LOOCV (n = 306)	0.69	0.94	0.90
HOSCV (n = 305)	0.62	0.89	0.85

Table 4: Variable Importance for the Full Model

Variable	Importance %
Age	100
AgeSq	99
Parlage	98
ParlageSq	96
Conc	92
Exp	91
ExpSq	64
Senate	47
Law	45
NSW	42
Female	39
Qld	37
Vic	30
WA	28
SA	27
NP	25
Tas	9
NT	3
ACT	2

Table 5: Classification Accuracy for the Representational Model

	Sensitivity	Specificity	Accuracy
LOOCV (n = 306)	0.38	0.80	0.75
HOSCV (n = 305)	0.24	0.77	0.70

Table 6: Variable Importance for the Representational Model

Variable	Importance %
Female	100
WA	84
SA	57
Senate	55
Vic	51
Qld	23
NP	16
Tas	15
NT	14
ACT	2

Table 7: Classification Accuracy of the Optimum Model

	Sensitivity	Specificity	Accuracy
LOOCV (n = 306)	0.79	0.72	0.73
HOSCV (n = 305)	0.83	0.73	0.74

Table 8: Variable Importance for the Optimum Model

Variable	Importance %
Age	100
AgeSq	99
Parlage	97
ParlageSq	94
Exp	89
Conc	73
ExpSq	70
NSW	40
Law	40
SA	24
Vic	16
WA	11
Qld	8

Table 9: Directional Influence of Independent Variables for the Optimum Model

Variables	Directional Influence
Age Variables (Age and Age Squared)	n/a
Exp' Variables (Exp' and Exp' Squared)	+
Parlage Variables (Parlage and Parlage Squared)	-
Concreteness	-
Law	+
NSW	n/a
Vic	n/a
Qld	-
SA	+
WA	n/a

Table 10: South Australian CM Representation 1996-2007

Yr:	96	97	98	99	00	01	02	03	04	05	06	07	Av'
No. SA CMs	4	4	3	3	3	4	4	4	4	4	3	2	3.5
Exp' No. SA CMs	1.9	1.8	2	2.2	2.2	2.2	2.2	2.2	2.2	2	1.9	2	2.06

Table 11: Queensland CM Representation 1996-2007

Yr:	96	97	98	99	00	01	02	03	04	05	06	07	Av'
No. Qld CMs	1	1	1	1	2	1	2	2	2	2	3	3	1.75
Exp' No. Qld CMs	3.4	3.3	3.5	3.6	3.5	3.4	3.5	3.5	3.5	3.6	3.8	4	3.56