

The extent and causes of spatial variations at post-war Australian federal elections: a multilevel study of influences on voting behaviour

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Abstract

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In this paper I make use of the techniques of multilevel modelling to provide a detailed discussion of spatial variations in major party voting at Australian federal elections during most of the post-WWII period.

I begin by outlining the overall extent of spatial variations at the level of states and electoral divisions and show how these are influenced by institutional factors and contemporary political events. I then examine how much of the localised variation at the level of electoral divisions can be straightforwardly explained by social compositional differences in individual level characteristics such as occupation and religion. Following this, I study the extent to which contextual effects have influenced voting behaviour. Finally, I give a detailed discussion of how the significance of particular contextual effects has changed during the period, finding both surprising and anticipated aspects, for which I offer explanations.

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Introduction

The study of spatial variations in voting is important both in its own right and also for what it can tell us about a range of factors underlying voting behaviour. Until relatively recently, though, analysis of the topic has been subject to some technical difficulties. However, the statistical techniques of multilevel modelling that have been developed as a way of accounting for the effects of data structures that are composed of different levels of units of analysis can overcome these problems. In the area of political science, an example relevant to the study of spatial variations is individual voters, located within constituencies, located in turn within regions such as states. If data are available for each of the levels in the data structures, then the effects at the various levels can be studied simultaneously using multilevel models. The levels are usually hierarchically structured and it is this structure that most multilevel methods attempt to model¹.

While the use of multilevel models for data structures like these is sometimes mainly motivated by the technical statistical considerations², the models are naturally of most interest when there are substantive reasons for believing that individual behaviour or attitudes might be linked to the group context. In the voting example mentioned above, an often posited such influence is a contextual effect of the social class composition of an area: for example, that living in a predominantly working class area makes voters more likely to vote for a party such as the ALP than would otherwise be the case. In the electoral setting, the inclusion of constituency level variables in addition to individual level ones allows contextual effects at the constituency level to be investigated without them being confounded with corresponding compositional differences at the individual level.

Potentially, moreover, the individual level effect could even work in the opposite direction to the corresponding contextual effect, something that could create some interesting policy dilemmas for political parties. Two examples of this in Australia seemed to occur at the 1996 election (Charnock 1997). First, being personally

unemployed increased the chances of voting for the Liberal-National coalition whereas, in contrast, the contextual effect of having higher unemployment rates locally was to increase the chances of voting for the ALP. Second, the contextual effect of living in areas with higher proportions of people born in Southeast Asia was to reduce the chances of voting ALP, whereas a corresponding individual level effect increased the chances of voting for the ALP.

As relatively ‘user friendly’ computer software for estimating multilevel models has become available, the techniques have become more widely used and there are now several expository texts, requiring different levels of statistical and mathematical background³. The earliest application in the area of voting behaviour of which I am aware was to British voting (Jones et al 1992) and in Australia similar methods were subsequently applied to studies of federal voting at the 1993 and 1996 House of Representatives elections (Charnock 1996, 1997).

To date, almost all published multilevel research in the area of politics has been concerned with studying effects at different levels defined geographically (Andersen and Heath 2002; Charnock 1996, 1997; Fisher 2000; Heath et al 1996; Jones et al 1992). However, the potential range of applications is broader than this (see Steenbergen and Jones (2002) for a very clear discussion of these). Several of the individual chapters in Franklin and Wlezien (2002) address related issues involving contextual effects and the linkage of micro- and macro-level phenomena, and it is clear that the study of multilevel data structures will play an increasingly large role in political science.

In the area of electoral studies, most applications of multilevel modelling methods have involved studies of single elections (Andersen and Heath 2002 and Heath et al 1996 are notable exceptions in the British context). Although these have provided some valuable conclusions that could not reliably have been drawn from the more common single-level analyses, it is difficult to know from studies of individual elections how many of the findings are specifically related to the circumstances of those elections.

I deal with this problem in this paper by presenting results from an extensive survey-based study of post-World War II federal elections for the Australian House of Representatives and discussing the main conclusions that can be drawn from the multilevel analyses. The use of a long series of elections allows variations over time to be studied and related to social trends or political events. My focus throughout will be on situations where the various levels in the multilevel data structure are defined geographically.

I shall address two kind of questions in particular. The first involves assessing the relative importance of variations at the various levels and attempting to understand the general nature of the underlying factors that contribute to such variations. The second explores in more depth the nature of detailed changes in the significance of particular factors at elections held during the majority of the post-war period, and what conclusions about voting behaviour in Australia can be drawn from these changes.

Data and Methods

One basic requirement for carrying out these sort of analyses is that data must be available that identify the geographic areas in which each of the individual sample respondents is located. There are, however, no publicly available Australian survey data that allow the most extensive analyses to be carried out for the entire post-war period, largely because the geographic identifiers included in the early Morgan Gallup Poll data sets are more limited than those in later surveys. In particular, while they identify the state of residence, they do not include an identifier for electoral divisions. Many do, however, include one for the ‘political complexion’ of the electoral division that can be used to construct a reasonably detailed alternative that is useful for some purposes⁴.

The presence of geographic identifiers is enough to allow certain sorts of problems to be studied by multilevel methods, but by itself is not sufficient for studying the nature of contextual effects in detail. For this, data on the characteristics of the ‘contexts’ are also required. Although it would sometimes be possible to gather such information at the same time as that of individual respondents, this is almost never done in practice and the main data sources used in levels defined geographically are population

censuses, which usually provide information on a range of social, economic and demographic aspects. Most countries hold such censuses every 10 years (and so the data can sometimes be quite distant from elections), but Australia has the advantage in this respect of censuses having been held every 5 years since 1961. However, census data availability at the level of electoral divisions is a little more recent, and geographic identifiers that allow survey data to be linked to census data at that level are only available from the 1971 census onwards⁵. As a result of these restrictions on data availability, my analyses of divisional level variations deal only with the period from the mid- to late-1960s onwards.

It can be argued that having to base contextual analyses on census data for electoral divisions is not an ideal way of measuring relevant features of the local social environment⁶. However, as observed by Andersen and Heath (2002: 127), although "...constituency is not an intimate level of community...it should still allow us to tap some of the effects of social milieu." Furthermore, it probably gives an underestimate of the size of contextual effects because "...[i]t is likely that a more localized measure of community would show stronger contextual effects."

In order to be consistent throughout the period under study, only ALP and Liberal-National (Country) Party coalition voters are included. Because of the changing nature over the post-war period of the significant minor parties and the small numbers of survey respondents voting for them, this is the approach generally adopted in studies of Australian voting and with only a few exceptions (mainly since 1990) includes over 90 per cent of voters. Analytical techniques used are all based on logistic regressions for ALP vote v Liberal-National (Country) Party coalition vote, and multilevel estimation was carried out using the MLwiN program (Rasbash et al 2000)⁷.

Results

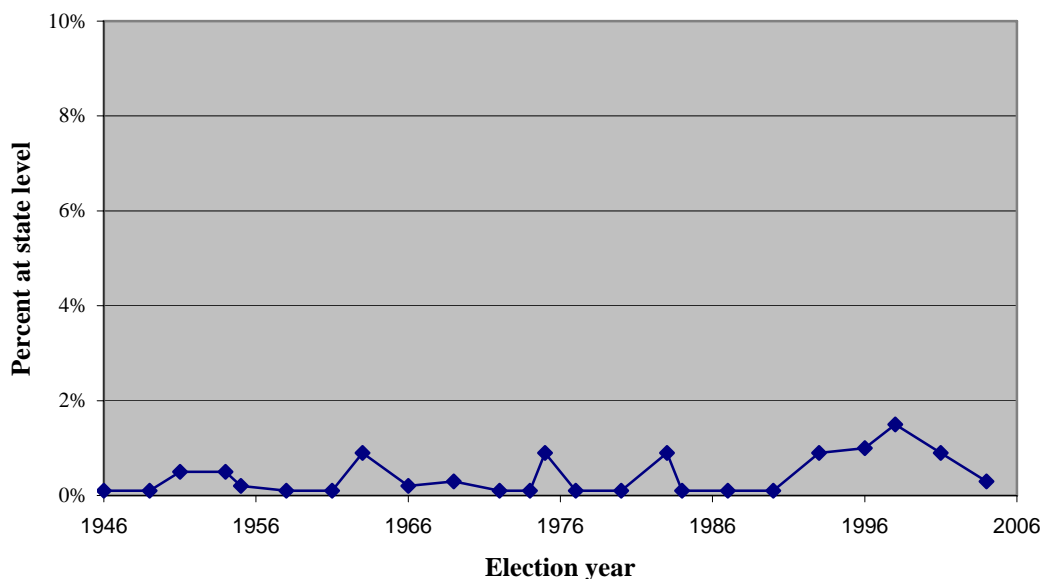
The relative importance for voting of influences at different geographic levels

Studying this question was the main rationale for the original Jones et al (1992) article that used multilevel analysis methods to study voting in Britain, and they found quite

large effects at both the constituency and the regional level. There are, of course, various possible explanations for such observed effects, including the existence of both social compositional variations and contextual effects.

In the case of Australia, the presence of a federal system of government has meant that much of the debate on the topic of geographic variations has been focussed on the size and importance of state level variations. However, multilevel analysis has been used previously to show quite conclusively that throughout the post-war period such state level variations have been consistently very small (see Figure 1), and there is strong evidence to indicate that institutional factors related to the federal structure play a large part in explaining this fact (Charnock 2003).

Figure 1: State level variation in ALP voting 1946-2004



Note: quantities plotted are the percentages of total variance that are located at the state level in two level logistic regression null models for ALP voting, with individuals as level 1 and states as level 2. An alternative analysis, treating state as a fixed effect in single level models, shows very similar results.

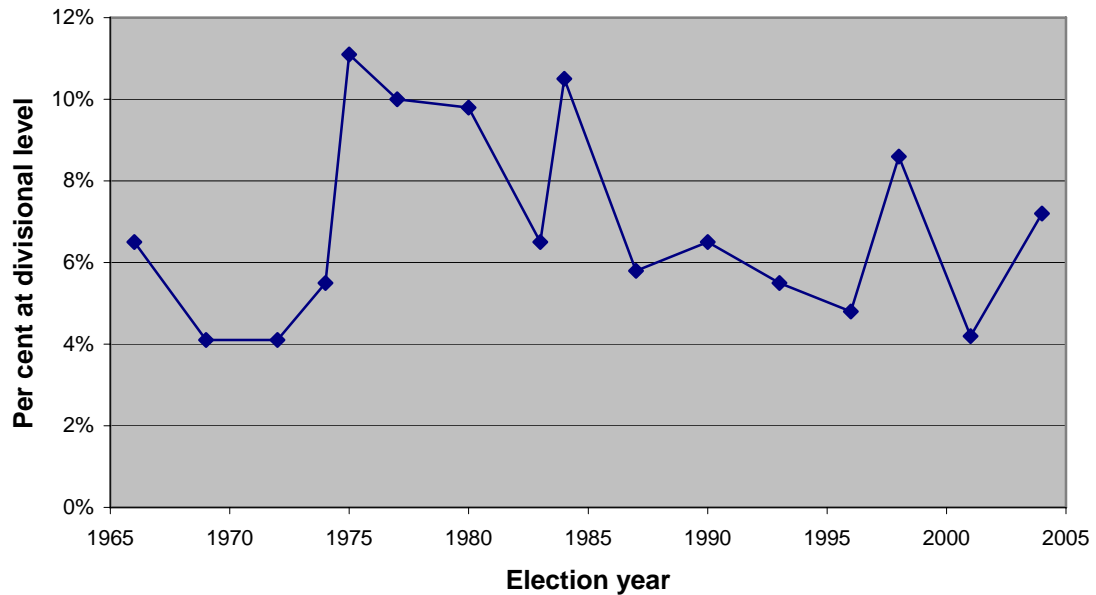
Source: Charnock (2003), updated to 2004.

The main argument is that the relative representation entitlements in the House of Representatives of the small number of states (six) are such that neither major political party could afford to let state level variations be anything other than small,

because otherwise they could not expect to win a majority of seats⁸. This situation is quite different from that prevailing in either the USA (with its much larger number of states) or in Britain, with its much less formally organised sub-national political structure, and this helps to explain why regional variations in those countries are larger than in Australia.

At a more local level than that of regions or states, one of the findings of Andersen and Heath (2002) in their multilevel study of the significance of contextual social class in the period from 1964 to 1997 in Britain was that constituency level variances for Labour voting in the second half of that period were generally considerably higher than in the first half, something they associated with political factors. The Australian equivalent is the level of electoral divisions, but here there is no corresponding pattern of an increase in the second half of the period (see Figure 2).

**Figure 2: Divisional level variations in ALP voting
1966-2004**



Note: quantities plotted are the percentages of total variance that are located at the divisional level in two level logistic regression null models for ALP voting, with individuals as level 1 and divisions as level 2.

However, the pattern of fluctuations over time is one that is nevertheless strongly associated with political factors: at periods around the entry into the party system of a significant new minor party, divisional level variation became noticeably larger. In Figure 2, this is very apparent at the elections around the formations of both the Australian Democrats (1977) and Pauline Hanson's One Nation Party (1998). This kind of reaction to an important new minor party had also happened at an earlier time. As mentioned previously (see note 4), although separate divisional identifiers are not available for the earlier Gallup Polls, further confirmation of the impact of political factors can be obtained by making use of the divisional 'political complexion' variable for the earlier period. Analyses (not shown here) based on a level derived from this variable show a similar pattern to that of Figure 2, with a noticeable increase in the importance of this more localised variation at the 1958 election (the election following the formation of the Democratic Labor Party).

This relationship of increased amounts of divisional level variation to new parties is readily understandable, because a new party would either not draw support from the ALP and Coalition in a geographically uniform manner at the divisional level, or else may not run candidates in all divisions. However, the major parties have clearly been able to adapt very quickly to the new parties, because at other times the unexplained divisional level component is generally relatively small. The main exception to this pattern occurred at the 1984 election. However, it is almost certain that this can also be attributed to political factors. The size of the House of Representatives was expanded from 125 to 148 members between the 1983 and 1984 elections, and many of the new divisional boundaries were finalised only very close to the 1984 election date, with resulting disruptions to local party organization and any local incumbency factors.

As mentioned above, Andersen and Heath (2002) argue that political factors in Britain help to explain the increase over time they found in the constituency level variance for Labour voting, linking it to changes in the policies and candidate nomination patterns of the Liberal Party and the Liberal Democrats. Similar consequences did not, however, result from the presence of either the DLP or the Australian Democrats in Australia. Given that the two countries have gone through many similar social and economic policy changes, this suggests that the different institutional framework

(particularly compulsory and exhaustive preferential voting and the existence of two, almost equally powerful, legislative chambers with different electoral systems) must again be considered to be a powerful mediating influence. The voting system here, for example, means there is no need (unlike in Britain) to consider voting tactically if a third party might otherwise 'split the vote'.

Some additional evidence about this is provided by Leithner's (1997) analyses of aggregate voting data. While these do not examine individual elections, they do show quite consistent levels of divisional level variation decade by decade from the 1960s to the 1980s for Australia. For the USA, on the other hand, he finds a sharp increase in the constituency component over that period and, following Kawato (1987), attributes this mainly to increasing levels of partisan dealignment (the argument being that this has led to an increase in the importance of local candidates).

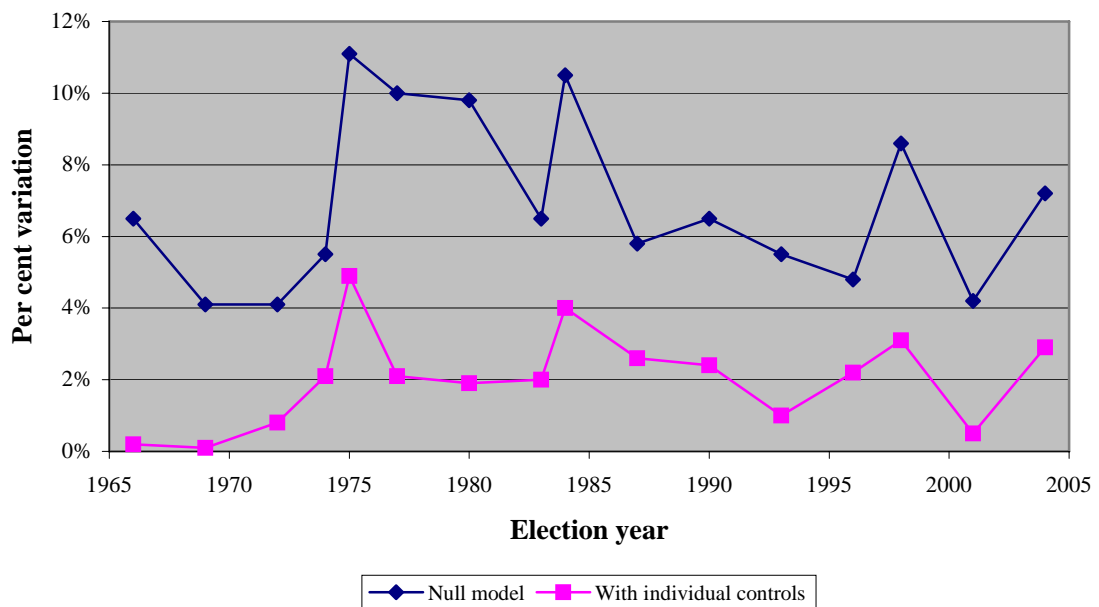
In contrast, the extent of partisan dealignment in Australia has been comparatively small (see McAllister 1997, for example). Among the strongest explanations that have been offered for this are institutional ones, again relating to the existence of compulsory voting and exhaustive preferential voting (though see Smith (2001: 56) for a contrary view). Therefore, Leithner's work also supports (albeit through an indirect route) the argument that the institutional framework plays an important role in changes in the size of the divisional level component. He also finds that the divisional level variance component in Australia is much larger than the state level one and this is consistent with my findings.

Following on from this last observation, despite the fairly small overall size of divisional level variations, because of the small margins in many Australian divisions it is still important to understand the factors underlying those divisional variations that are present. Social compositional differences between divisions are usually thought to offer the main explanation. Indeed, although this is not a common view, it has been argued by King (1996) that the differential distribution of individual level characteristics should be the only explanation to be considered. In this case, over the period 1966 to 2004, models that control for a group of important individual level socio-demographic characteristics (see Figure 3) account on average for about 70 per

cent of the divisional level variations, thus illustrating the primary importance of these factors in understanding variations in voting behaviour at that level.

A further significant finding that sheds light on an important political dynamic is obtained by close inspection of the fluctuations over time in Figure 3 (which shows the residual divisional level variation that remains after such compositional differences are controlled for). There is a very interesting difference between the periods of ALP government (1972-75 and 1983-1996) and those of Coalition government. In the former, the proportion of divisional level variation accounted for by these variables tends to be considerably smaller (an average of just over 60 per cent) than in the latter (an average of almost 80 per cent).

Figure 3: Divisional level variations in ALP voting 1966-2004, with and without individual controls



Note: quantities plotted are the percentages of total variance that are located at the divisional level in two level logistic regression models for ALP voting, with individuals as level 1 and divisions as level 2. Individual level variables controlled for are age, sex, labour force status, social class, occupation, religious denomination, religious attendance, state of residence and country of birth.

This provides strong support for the contention that one impact of changes to social structure has been to make it very difficult for the ALP to hold government by appealing only to its traditional social structural base. Revealingly, the only election among those when the ALP was in government where the social compositional

variables explained over 65 per cent of the divisional level variation was one (in 1993) that revolved around radical and polarising policy alternatives that encouraged increased levels of support for the ALP from its traditional social base⁹.

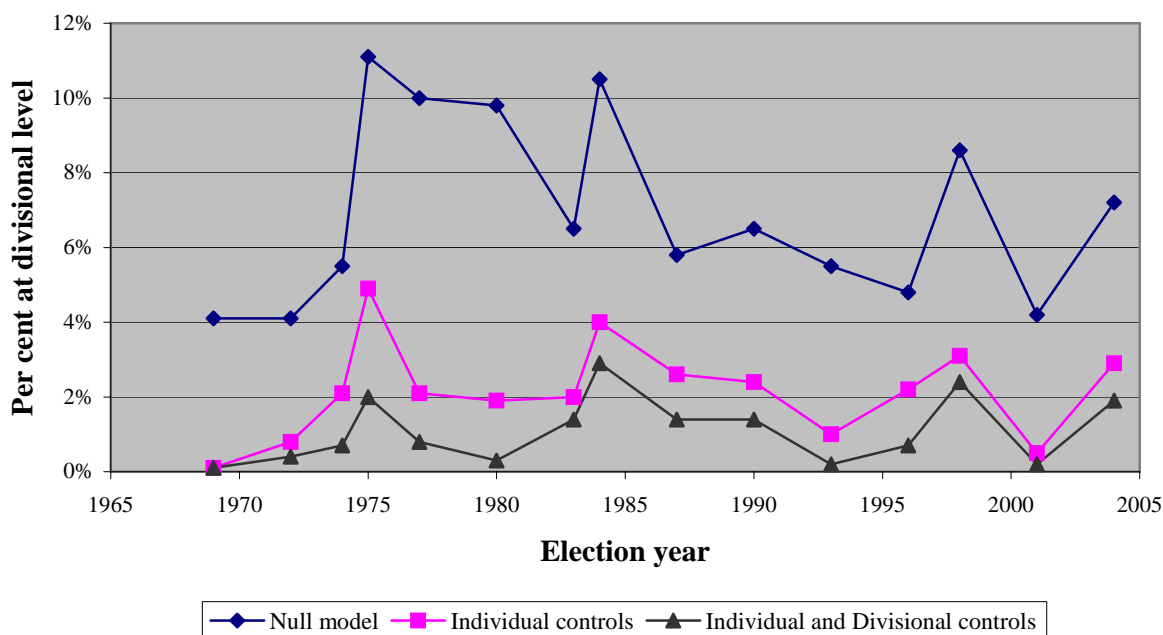
While differing social composition provides the largest contribution, contextual effects provide another possible source of divisional level variation. In the British case, all of Jones et al (1992), Fisher (2000) and Andersen and Heath (2002) conclude from their multilevel analyses that contextual effects have a significant effect on voting. Jones et al (1992) studied the influence of local context on voting at the 1987 election, as measured by local unemployment rates and changes in these, and also by the extent of the workforce in the mining industry. They found significant effects for the first two of these variables, which they interpreted as reflecting levels of local economic prosperity. Fisher (2000) studied the 1983 election and found that both local unemployment rates and contextual occupational class composition had significant effects. Andersen and Heath (2002) showed that contextual social class (as measured by Goldthorpe's occupational class schema) had a significant effect throughout the period from 1964 to 1997 and that there had been little change in the size of the effect during the period.

For Australia, a number of possible contextual factors for the 1993 and 1996 elections were investigated in Charnock (1996, 1997). Significant effects for all of local unemployment rates, rurality and local ethnic context were found at both elections, and the inclusion of these variables noticeably reduced the amount of divisional level variation that remained unexplained.

	TABLE 1: Divisional level Census variables included
DIVUNEMP	Divisional unemployment rate (%)
DIVAGRFF	Divisional % employed in Agriculture, Fishing and Forestry
DIVOSEAS	Divisional % born overseas
DIVMOBIL	Divisional mobility rate (% resident in different address from 5 years earlier)
DIV2PARS	Divisional % of families with two parents and offspring

Figure 4 shows the result of extending this to cover the period from 1969 to 2004 (roughly comparable to that studied for Britain by Andersen and Heath). The incorporation of divisional level variables (see Table 1) in addition to the individual level ones generally explains a substantial proportion of the remaining divisional level variation (about half of it, on average) and these more extensive models have very small amounts of unexplained variation at the divisional level. These individual and divisional level factors, therefore, go a very long way towards helping us understand the factors that underlie divisional level variations in the ALP v Coalition electoral contest.

Figure 4: Divisional level variations in ALP voting 1969-2004, under different models



Note: quantities plotted are the percentages of total variance that are located at the divisional level in two level logistic regression models for ALP voting, with individuals as level 1 and divisions as level 2. Individual level variables controlled for are age, sex, labour force status, social class, occupation, religious denomination, religious attendance, state of residence and country of birth. Divisional level variables controlled for are as listed in Table 1.

Changes over time in the significance of individual factors

As mentioned earlier, when underlying data structures are actually multilevel in nature but this aspect is not taken into account in the estimation process, the standard formulas for assessing significance of variables are inappropriate. The most likely effect of nevertheless using these formulas to assess significance is that ‘false positives’ will be found i.e. some variables will incorrectly be identified as significant.

Because of this, it is possible in principle that some of the previous conclusions drawn by researchers about influential individual level factors might require modification. However, previous uses of multilevel techniques with Australian voting data have not shown a large difference in this respect (Charnock 1996, 1997), with the significant effects identified being very similar to those identified by other authors (e.g. McAllister 1992) using traditional analytical methods.

My analyses show that the same is also generally the case for the longer period studied here and I will therefore concentrate, not on individual level factors, but on a detailed discussion of how the sizes of divisional level contextual effects have varied from the late 1960s onwards. As in previous analyses of the 1993 and 1996 elections, the divisional level variables investigated (see Table 1) related to the urban-rural cleavage, and to aspects of the socio-economic, family and ethnic structure of the divisions¹⁰.

At the 1993 and 1996 elections, the main findings about divisional level variables were that both the unemployment rate and the proportion engaged in agriculture, fishing and forestry had significant effects at both elections, while the proportion born overseas had a significant effect at the 1993 election only¹¹. Other variables were not significant. The respective directions of the effects were that higher unemployment rates were associated with increased odds of voting for the ALP, while higher values of the two other variables were both associated with decreased odds of voting ALP.

These findings were in accord with widely held beliefs about the nature of influences on Australian voting behaviour, and one might have expected that they would have held true fairly consistently during the longer period from 1969 to 2004. In some

cases this is approximately so, but in others the results show some noteworthy alterations over time (see Table 2).

Of the variables that were significant in 1993 and 1996, the one showing the most consistent effect over the longer period was the unemployment rate, which was usually significant from 1980 onwards (but only once earlier), with higher rates always favouring the ALP. Somewhat similarly, the ‘countrymindedness’ contextual estimated effect (as measured by DIVAGRFF) favoured the Coalition at every election, though was large enough to be statistically significant much less often than DIVUNEMP. Interestingly, it was easily at its largest in 1974 and 1975, the last two elections at which Gough Whitlam was ALP Prime Minister. The overseas-born effect was only intermittently significant (1974/77/80/93) and its direction was not consistent, favouring the ALP and the Coalition on two occasions each.

TABLE 2: Significance of divisional level variables 1969-2004

	DIVUNEMP	DIVAGRFF	DIVOSEAS	DIVMOBIL	DIV2PARS
1969	0.47	-0.91	0.29	-2.06*	
1972	0.60	-1.57	0.20	-1.80*	
1974	1.30	-3.37**	-2.09*	-1.93*	
1975	1.84*	-4.63**	0.32	-2.27*	
1977	1.20	-0.41	2.87**	-2.67**	2.50*
1980	3.38**	-0.64	2.90**	-2.06*	2.76**
1983	2.58**	-1.01	0.54	-1.86*	1.27
1984	2.86**	-1.58	1.50	-0.54	0.79
1987	1.51	-1.63	0.75	-2.01*	0.64
1990	3.28**	-0.26	0.40	-0.98	0.54
1993	5.45**	-1.95*	-1.98*	-1.07	1.30
1996	2.46**	-2.45**	-0.50	0.49	0.47
1998	2.53**	-0.28	-0.02	0.05	-0.22
2001	1.75*	-1.86*	-0.16	0.04	0.64
2004	0.42	-0.44	1.38	-0.69	-2.18*

Note: * significant at 5% level; ** significant at 1% level. Entries in the table are t-values (estimated coefficients divided by their standard errors). Estimates are based on two-level logistic regression models as in Fig. 4. Positive values indicate increased odds of voting for the ALP. DIVUNEMP, DIVAGRFF and DIVMOBIL tests are one-sided; DIVOSEAS AND DIV2PARS tests are two-sided.

The two variables that were not significant in either 1993 or 1996 were, though, influential at earlier times and this is of some interest. The pattern for the effects of the residential mobility rate shows it was significant at almost every election up to 1987 (higher mobility consistently favouring the Coalition), but not significant thereafter. Finally, the 'traditional family structure' variable (DIV2PARS) is significant in 1977 and 1980 (higher values favouring the ALP) but not thereafter for a period of over two decades (until 2004, when its direction had also changed and favoured the Coalition). Unfortunately, data on this variable was not available for linking to elections earlier than 1977 and so there is no way of knowing whether there had been a previously consistent theme that ended in 1980, or whether 1977 and 1980 were unusual in some way.

Discussion

In attempting to understand these Australian findings, it will be necessary to draw on institutional features, contemporary political events and changing social and economic factors. If a variety of international comparisons were possible, they would probably be able to offer some useful additional insights, but there is a paucity of comparable research on other countries and only some comparisons with Britain are available at present.

The federal political structure of Australia inevitably places the states in a special position. The main political parties are organised on federal lines and essentially the same parties are involved in contesting both federal and state elections. The conflicts between state and federal governments over finance and over their respective powers have also made the interplay of state and federal election issues and voting a matter of debate, of historically varying degrees of vigour. State variations in federal voting are therefore topics of some importance, and are quite a popular theme of comment for both academics and journalists.

The multilevel results, however, demonstrate conclusively that the overall levels of variation attributable to the state level are relatively very small, and have been so throughout the post-war period. Institutional factors go a long way towards explaining this finding, with the respective representation entitlements of the states in the House

of Representatives forcing the main political parties to work to avoid large or ongoing variations at the state level (Charnock 2003). In respect of one of the most frequently argued reasons as to why there should be an observed state level effect on federal voting, Bean (2003: 473) used data from the 2001 election to study the hypothesis that state leaders may influence federal voting and concluded that his results ‘...generally tend not to support the hypothesis.’

Unfortunately, there is no directly comparable published series of multilevel analyses for other countries, so a directly comparative approach is not possible. The single election multilevel studies of British voting in Jones et al (1992) and Fisher (2000) do, however, both suggest that regional variations in Britain are considerably larger (even after controlling for some individual level social characteristics) than the Australian state level ones and this is certainly what would be expected from the institutional argument. Using different techniques, based on analyses of aggregate votes, Leithner (1997) demonstrates that by the 1980s the state level variance components in both Australia and the USA were very small but that, whereas this had been true for all of the post-war period in Australia, there had been a large drop over the post-war period in the USA. The finding of only small changes over time in Australia is also consistent with the institutional argument above.

All of these results, therefore, suggest that several aspects of Australia’s unusual institutional framework play an important role in keeping the extent of state level components small.

As far as understanding the factors underlying divisional level variation is concerned, the most obvious place to begin is to assess the extent to which it results from the spatially heterogeneous distribution of some of the important socio-economic and demographic individual attributes that are known to be related to voting behaviour. Many of these are also influential in determining residential location at a quite local scale and, when a group of these attributes is controlled for, less than 30 per cent of the divisional level variation on average remains unaccounted for¹².

The addition of some divisional level factors reduces the unexplained divisional level variation even further (on average to below 15 per cent of its original size in the null

model) and it is clear that the overall extent of the influence of other local factors (such as popularity of local candidates and incumbency effects) cannot have been large at most elections. Of course, as suggested by Jackman's (2005) analysis of the role of incumbency in voting swings at the 2004 election, it could still have been important in some particular divisional contests, and could also have been practically significant because of the small margins present in a large proportion of divisions.

The nature of the significant divisional level effects is very interesting, and in some instances somewhat surprising. The most consistently significant is the local unemployment rate. With only two exceptions, this is significant at all elections from 1980 onwards. At first glance, this might seem inconsistent with the fact that the aggregate relationship between vote and unemployment rate at a national level is very weak in Australia (Jackman 1995; Charnock 1995). However, it is probably better seen as a good illustration of the value of multilevel modelling in being able to identify effects at various levels. It is also consistent with some research both here and in Britain that made use of direct evaluations of economic and financial conditions at different levels to show that voters' evaluations at both personal (or household) and regional (or national) levels were significant influences on voting (Goot and Watson 2007; Pattie and Johnston 1995).

The question of how to interpret the significance of local unemployment rates is not, however, completely straightforward. Previously it has generally been regarded (e.g. Charnock 1996; Fisher 2000; Jones et al 1992) as an indicator of local economic prosperity, without much discussion of how that might influence voting behaviour. The most obvious suggestion would probably be that the link would work via reactions to the incumbent government (more prosperous areas favouring the government). However, this cannot be the explanation in Australia, since the effect has always favoured the ALP (irrespective of whether the ALP was in government or opposition).

There are, I think, two plausible alternative explanations of the finding. They are not independent of each other and it is not possible with the available data to conclusively choose between them. The first takes the unemployment rate as being an indicator of local economic prosperity and argues that the reason for higher unemployment rates

favouring the ALP is that the ALP has been a much stronger supporter of welfare benefits and state intervention generally than have the coalition parties. The fact that the largest effect for this variable was in 1993, despite this being the election at which unemployment was at a post-war high of 11 per cent and the ALP had then been in office for a decade, provides support for this interpretation (also see note 9).

Some studies of British voting place significant emphasis on contextual social class. Most recently, Andersen and Heath (2002: 125) have concluded that the importance of contextual social class (at the constituency level) over the period 1964-97 in Britain has been ‘...consistently significant and fairly constant throughout the period.’ This type of argument suggests a second possible explanation for the significance of local unemployment rates, one that focuses on understanding the results in terms of differences in the social class composition of electoral divisions, with the contextual effect of living in an area with higher proportions of working class residents being to increase the chances of voting ALP.

This explanation obviously assumes the existence of an association between social class composition and unemployment rates (at least at times when the divisional unemployment rate is statistically significant). While the Goldthorpe contextual class schema based on occupation used by Andersen and Heath cannot be replicated in Australia for the full period, there is evidence derived from Census data that provides a reasonable degree of support for this assumption for parts of the period under question. From the mid-1970s until the mid-1980s, the ecological correlations between divisional unemployment rates and occupational structure variables that are quite similar to some of the extremes of the Goldthorpe schema were generally in the range from 0.3 to 0.4. In the later years these correlations were larger (0.5 to 0.6). There was very little correlation between unemployment rates and occupational structure at the level of electoral divisions in the earliest part of the period (before the mid-1970s). However, since this also corresponds with a period when the divisional unemployment rate was not significant in the multilevel models, this is not evidence against the contextual social class interpretation.

Prior to the mid-1970s, unemployment rates were very low (generally less than 2.5 per cent). Under those circumstances, the non-significance of the divisional

unemployment rate then is unsurprising. The same is the case for the 2004 election, at which the unemployment rate (of just over 5 per cent) was at its lowest level for almost 30 years. Overall, then, the evidence is fairly consistent with both interpretations of the divisional level effect of unemployment rates and, indeed, I think a fuller understanding is probably to be obtained by incorporating both.

Since the existence of a rurality effect in Australia is so widely accepted, the main surprise in the pattern of contextual effects in Table 2 is the finding that a ‘countrymindedness’ effect favouring the Liberal-National Coalition (indicated by the presence of significant effects for DIVAGRFF) appears only intermittently. One way of explaining this might be to suggest that a rurality effect does exist, but that it is largely manifested in an institutional manner (by the continued existence of the National Party, whose federal support is almost entirely restricted to non-metropolitan regions), rather than always reflected in the overall ALP v Coalition contest.

As far as the overall ALP-Coalition contest is concerned, with the exception of 2001, the significant DIVAGRFF effects all occurred during periods when the ALP was in government and I think it is reasonable to conclude that it has predominantly been policies and/or personalities of ALP governments that have led to this effect being activated in an important way. Ultimately, the large defeats of the Whitlam and Keating governments (1975 and 1996, respectively) both coincided with this effect being at its highest point in the respective periods.

It is possible that one can take this argument even further and suggest that since it was the Hawke elections as Prime Minister that showed the weakest corresponding estimated effects during periods of ALP government (none are quite statistically significant), having an ALP government led by a Prime Minister with strong centralising tendencies (a description that applies to both Whitlam and Keating but not to Hawke) has been a recipe for eventual serious failure associated with bringing this contextual effect into play strongly. If so, there is not only a cautionary tale here for the ALP, but also an important extra consideration to add to our understanding of Australian electoral history.

That the overseas-born effect was inconsistent in direction and only sporadically significant is probably unsurprising, given the large changes in the balance of source countries for immigrants that have occurred over the period. In the mid-1960s, a common pattern was for over half of arriving settlers to be from the UK or Ireland, with about another quarter being from Southern Europe and very few from Asia. By the late 1980s and early 1990s this had radically altered, with around 40-50 per cent being from Asia and less than 20 per cent from the UK and Ireland.

To capture any corresponding contextual effects, this means it would probably be necessary to use more specific, regionally defined measures of ethnic composition and, moreover, to use different ones at different times. McAllister and Kelley (1983), for example, found it necessary to use three such measures, all of which at that time were related to Europe and the Middle East. Because of the lengthy period covered in this study, it was not practical to do this here although, as noted previously, some earlier research (Charnock 1997: 247 ff) did find what appeared to be an anti-Asian contextual effect at both of the 1993 and 1996 elections (though not a similar anti-aboriginal one), which could be seen as a precursor to the foundation of ONP.

The fact that the effect of higher residential mobility rates at a divisional level consistently worked against the ALP until 1987, but was thereafter non-significant, helps in clarifying previous debates about voting behaviour in the earlier period. Kemp (1978: chapter 4) argued for the existence of a politically conservative 'suburban effect' and suggested that this might be a contextual effect. My results here are certainly consistent with this, because many studies of urban residential differentiation at the time (see, for example, Logan et al 1975) showed that higher residential mobility was associated with suburbanization. However, since lack of suitable data meant it was not possible to include an individual level variable for residential mobility in my analyses, it is also possible that some or all of the effect results from compositional differences at the individual level. Kemp himself appears to confuse the two types of effect in places e.g. "...the new suburbs are disproportionately populated by voters who see themselves as being upwardly mobile socially" (Kemp 1978: 125). This is an argument in favour of an effect arising from compositional differences at the individual level, not for a contextual effect.

One argument that is more properly directed at the role of the social context would suggest that the association of higher residential mobility with more diffuse social networks (which would have been accentuated at times of extensive suburbanization) would mean that the effect of local social milieu would be different from that in more stable communities, but that the impact might be more significant for the working class than for the middle class (whose social networks already tended to be more diffuse). In Britain, Andersen and Heath (2002) did in fact find that the effect of contextual social class on voting Conservative was stronger for manual workers than for non-manual ones until the late 1970s. Changes in the strength of the relationship between class and vote (see Goot 1994; Weakliem and Western 1999) and in the nature of support for the ALP as it modified or discarded many of its traditional policies (see Jaensch 1989) could explain why this effect became non-significant in Australia after the late 1980s.

The friendship networks and associations that develop through children and schools offer prima facie evidence that significance of the 'traditional family structure' variable (DIV2PARS) could indicate the existence of a contextual effect. However, as with the residential mobility rate, no equivalent individual level data are available and so it is not possible to be sure if an observed significant effect for DIV2PARS results from individual level compositional differences or from a genuine contextual effect (or both). The unavailability of this variable for the census data before 1976 makes it even harder to interpret the fact that it was significant in 1977 and 1980 but not again until 2004, because we do not know if this reflects isolated events or whether it represents the end of a pattern that had been present earlier. It is possible that it reflects a favourable reaction to the education, health and welfare policies introduced by the ALP governments under the leadership of Gough Whitlam (1972-75), especially when contrasted with those of the subsequent Coalition governments headed by Malcolm Fraser (see Patience and Head 1979, for example). One could speculate that the substantial changes in family structures and fertility rates that have occurred since then would help explain why it was not found to be significant in the following two decades. Its reappearance in 2004 (but with a change of direction, to favouring the Coalition) can plausibly be explained by the fact that so called 'family friendly' policies were a major feature at the 2004 election.

Conclusions

This series of multilevel analyses adds considerably to our knowledge of the size, significance and causes of spatial variations in post-war Australian federal voting behaviour. Perhaps one of the most interesting aspects is the way in which it has illuminated the important role of the institutional framework, something that has not tended to be given much prominence in previous discussions of voting behaviour.

Divisional level variations are of much more importance than those at the state level, on average being larger by a factor of about ten. While the size of this component has fluctuated over time, there has been no consistent trend. Rather, it has tended to increase at periods around the entry into the party system of significant minor parties but has also generally decreased again very quickly. This gives a strong indication that the major parties have been flexible enough over a lengthy period to succeed in incorporating the elements represented by such minor parties into the pattern of competition between themselves¹³.

As well as establishing the association with institutional and political factors, the analyses have also allowed me to examine most of the main ways in which the divisional level variation can be accounted for. The majority is a fairly straightforward reflection of the differential distribution between electoral divisions of long-studied individual level characteristics such as social class and religion. On average, for the period from 1969 to 2004 these account for over 70 per cent of the divisional level variation. An important discovery is that they accounted for considerably less during periods of ALP government than they did in periods of Coalition government, thus illustrating the difficulties faced by the ALP in holding on to government as it adapted to social and economic changes. Reliance on its traditional social base was apparently less possible for the ALP than for the Coalition. The recent consolidation of the Australian Greens as a party to the left of the ALP (Charnock and Ellis 2003; 2004) can probably also be seen as an outcome of the strains imposed by this, one that seems to have counterparts in some other western democracies such as Germany and New Zealand.

The nature of the divisional effects that were found was partly as expected, but also contained some surprising and very interesting aspects. The most long-standing one was for the local unemployment rate. This has always favoured the ALP and is consistent with either of two related interpretations, one regarding it as indicating a 'local economic prosperity' effect that works indirectly through perceptions of differences in the major parties' stances on government intervention and social welfare provisions, and the other as indicating a contextual social class effect. The second of these would be the equivalent of Andersen and Heath's (2002) argument for the presence in Britain of an on-going contextual effect of social class, but the first interpretation also obviously involves a class element.

The most surprising result (and one of some potential electoral importance) is that a significant 'countrymindedness' or rurality effect (favouring the Coalition) was found at only a minority of elections, and primarily during periods of ALP government. Moreover, it was strongest at times when those governments were headed by Prime Ministers with strong centralist tendencies. In these situations it eventually appears to have had very important political consequences, since such periods have concluded with the very large electoral defeats of ALP governments in 1975 and 1996.

The fact that inclusion of these individual and divisional characteristics explains such a large proportion of divisional level variations (over 85 per cent, on average) means that there is relatively little scope for other influences to be of major overall importance. Probably the main such ones that have not been examined here are local incumbency effects and the popularity of local candidates. These are almost certainly important in some electorates at each election (but not necessarily the same ones at different elections), especially in a system that has such a large proportion of fairly marginal seats. However, it is not possible to investigate such factors using data from national surveys with sample sizes of around 2000 respondents.

It is also apparent that there has been no trend over the period from 1969 to 2004 in the proportion of divisional level variation unexplained by the complete model used here. This suggests that, unlike in the USA, the overall importance of local candidate effects has not increased in this period. This could be seen to be a consequence of the much smaller degree of partisan dealignment that has occurred in Australia. A number

of the most powerful explanations for this, such as the presence of compulsory, exhaustive preferential voting, involve aspects of the electoral system and so institutional factors seem to play a significant role here too.

The international comparisons available are few, but nevertheless instructive, and some impacts of the ‘Washminster mutation’ are apparent. The similarities with Britain illustrated by the existence of a major historically class-based party in each country, working within a parliamentary system, result in a significant role in both countries for individual level factors reflecting social structural position, as well as a class-related contextual effect. However, differences in the institutional frameworks also appear to have an impact, with the federal nature of the governmental structure and several aspects of the electoral system all playing important roles.

Although there is debate internationally about the impact of contextual effects on voting behaviour, the evidence found here for the existence of some such effects is very convincing. It is, for example, difficult to think of an equally satisfactory explanation for the longstanding significant effect of divisional unemployment rates in addition to the equivalent individual level variable. Although not present as often, the same is true for the rurality effect and the ethnicity effect found on occasions. In all these instances, there are revealing and convincing political explanations and/or concomitants. Because of the marginal nature of many Australian electorates, the practical impact of the influence on voting of such effects can be quite significant. If only for this reason, I would argue that multilevel analyses of influences on voting should become part of standard practice, because such divisional level effects cannot be reliably studied otherwise.

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ENDNOTES

¹ Most authors, in fact, use the term ‘multilevel’ to refer specifically to hierarchical data, although some kinds of non-hierarchically structured data can also be analysed by multilevel methods (see, for example, Goldstein 2003 or Hox 2002 for details).

² This is since some of the standard statistical formulas used for testing for significant effects are not valid when data clustering is present (for example, see Skinner et al 1989) and incorrect conclusions can be reached if this is not allowed for.

³ In descending order of difficulty the main ones are Goldstein 2003; Raudenbush and Bryk 2002; Snijders and Bosker 1999; Hox 2002; Kreft and De Leeuw 1998.

⁴ The resulting aggregations of divisions with similar political complexions contain an average of about three electoral divisions and so do not give directly comparable analyses to those with levels based on individual divisions.

⁵ The practical impact of this is not large, since it was only in Aitkin’s 1967 survey (with a second wave in 1969) that data on electoral division first began to be recorded in surveys. The National Social Science Surveys began in 1984 and the series of Australian Election Studies commenced in 1987. The gaps can be reasonably covered by using data for Age Polls.

⁶ There are also some potential effects that might relate directly to the electoral division, such as the popularity of local candidates, but no corresponding data are available.

⁷ All results presented here are derived from random intercept models. Several findings are presented in terms of a pseudo r-squared measure that represents the percentage of variance in ALP voting at different levels and explained (or, by subtraction, unexplained) by the various models. The measure is described by Snijders and Bosker (1999) and is the multilevel analogue of the measure that DeMaris (2002) indicates is the best one for bivariate logistic regressions.

⁸ The relatively similar socio-demographic structures of the states are a further significant aspect. The existence of specific effects of having different parties in office at state and federal levels was not investigated directly, but Table 2 in Charnock (2003: 129) suggests that any such effects are, at most, very limited in extent.

⁹ The coalition parties based their campaign around an extensive set of radical policies, detailed in a package known as *Fightback!* These included extensive taxation reform and other major changes to the industrial relations system and to Medicare (the universal health insurance and hospital treatment scheme). Another interesting tactical aspect of the 1993 election is that, by attracting extra support from its more traditional voting base, the ALP reverted to the situation that had prevailed prior to the electoral system changes of 1983-4, a position in which it was disadvantaged by the spatial over-concentration of its vote (see Charnock 1994: 487).

¹⁰ Elections from 1969 to 1975 were linked to 1971 census data; the 1977 election to the 1976 census; the 1980 and 1983 elections to the 1981 census; the elections from 1984 to 1990 to the 1986 census; the 1993 election to the 1991 census; the 1996 and 1998 elections to the 1996 census; and the 2001 and 2004 elections to the 2001 census.

¹¹ However, a variable measuring only the proportion born in south-east Asia was significant at both elections, apparently indicating a specifically anti-Asian effect.

¹² This is rather less than in Andersen and Heath’s (2002) British analyses, but drawing reliable conclusions from this comparison is not possible, because my analyses control for more individual factors than do theirs.

¹³ At this stage it is difficult to judge whether the performance and positioning of the Australian Greens at recent elections indicates this situation has (or is about to) change somewhat.