Spatial Variations, Contextual and Social Structural Influences on Voting for the ALP at the 1996 Federal Election: Conclusions from Multilevel Analyses

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Multilevel modelling of individual survey data from the 1996 Australian Election Study and aggregate contextual Census data is used to investigate the extent of spatial variations in voting at the 1996 election, and to examine potential explanations for the variations. The size of the variations was about the same as at the 1993 election, and was again mainly at the divisional rather than the state level. However, unlike in 1993, only a small amount of the variations could be explained by differences in the individual sociodemographic compositions of the areas, suggesting that local influences were more important in 1996 than 1993.

The most significant change in the effect of the individual-level variables between the two elections was that the influence of being personally unemployed completely changed direction (working against the ALP in 1996, whereas it had favoured it in 1993), although the estimated strengths of several others also changed. I suggest that the concentration of the 1993 election on the 'Fightback' package might be the main cause of many of these differences.

The nature of the main contextual influences is similar to those at the 1993 election, involving an urban–rural effect, a local economic effect and an ethnic effect, confirming that these are more than short-term factors. However, there also remain somewhat larger unexplained local influences than in 1993. Detailed investigation of the ethnic contextual effect suggests the presence of a specifically anti-Asian influence.

Introduction

Discussions of geographic variations in voting play a prominent role in both academic and popular debates related to electoral matters. For reasons related to political and administrative structures, Australian discussion often refers to differences between states, not infrequently giving rise to interpretations based on the popularity of respective state governments. However, since the major value of studying geographic variations is to see what they can tell us about the nature of

influences on voting behaviour, a broader range of types of geographic variation in voting needs to be considered. Nevertheless, interstate differences are obviously still of major importance, because of their potential for giving information about the workings of federalism and the extent of nationalisation of opinion (as discussed by Kemp 1978). Indeed, presumably for this reason, most Australian research seems to have concentrated on examining interstate differences. The conclusions, though, have been rather varied, on the one hand allowing Jaensch (1995, p. 95) to say that ' … "nationalisation" of patterns of party support … is increasingly difficult to sustain' whereas, in contrast, Leithner (1995) concludes that there has been a '… remarkable degree of electoral nationalisation in Australia'.

More generally, however, potential influences on voting behaviour can often be associated with various scales of spatial variation and so it can be of great value to study such variations with the aim of drawing conclusions about their causes.[1] However, several methodological issues arise (helping to explain the differing conclusions mentioned above): some are specific to the study of geographic differences but others apply to the study of voting more generally. Among the most prominent of the latter type are the questions of whether to use first preference or two-party preferred (2PP) votes (e.g. Bean & Butler 1991; Sharman 1991) and, if first preference votes are used, which party or parties to examine. Difficulties of interpretation arise in national studies if the same parties have not contested all seats; an approach often used to avoid these difficulties is to concentrate on votes for the ALP, since it consistently contests all seats (cf. Sharman 1991; Leithner 1995). However, different strategies can be adopted if more specific questions are being asked (e.g. the effect of having an incumbent member as a candidate). Another question involves that of what kind of data to use: ideally, both individual survey data and aggregate data would be used, since these then allow for the nature and strength of contextual influences on voting to be studied, as well as the usual individual-level influences.

What spatial units might possibly be of interest? Jones *et al.* (1992) and McAllister and Studlar (1992) both provide useful discussion of this question, albeit both these articles are specifically about voting in Britain. In Australia, states would obviously need to be included. Economic regions might be of interest, though there are obvious questions about how they are to be delineated: of course, the commonly considered urban–rural differences in voting are at least partly based on differences in economic interests. Electoral divisions are also likely to be of interest by virtue of such things as 'incumbent member' factors and the targeting of marginal seats: these are more obviously political influences, but economic ones may also clearly operate at this level via such aspects as socioeconomic differences in urban areas and differing industry bases in non-urban areas. Local neighbourhoods are a further possibility (e.g. Miller 1977, 1978; Jones 1981) although their definition may be problematic (cf. Tienda 1991).

The relatively recent development and accessible computer implementation of multilevel models (see Bryk & Raudenbush 1992; Hox & Kreft 1994; Goldstein 1995) make it possible (subject to data limitations) to examine a number of the relevant scales simultaneously. At the same time, they also allow us to consider the

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[1] A recent debate in the journal *Political Geography* contains several different papers examining the role of contextual influences on voting (Agnew 1996a, b; Flint 1996; Brustein 1996; King 1996).

effect of various explanatory variables, at different spatial levels, in order to examine differing explanations for spatial voting variations. Thus they offer a significant advance on previous contextual effect models (cf. Blalock 1984). In a recent paper (Charnock 1996) I used this approach to study the 1993 election and found some important things about spatial variations at that election. First, there was no significant separate state-level effect. Second, there was a divisional-level effect but it was only a relatively small one. Third, about half of the divisional-level effect present was accounted for by social and economic differences in the demographic composition of electorates. Fourth, almost all of the remaining divisional-level effect could be accounted for by local economic influences and an urban–rural cleavage: there was also some evidence for the existence of a contextual effect related to the overseas-born proportion of the population, which might be explained as an 'anti-migrant' effect.

Although the existence of at least the first two of these contextual effects was not unexpected (as one international comparison, see Pattie *et al.* 1995 and Pattie & Johnston 1995 for evidence of the importance of local economic conditions in British voting), the circumstances of the 1993 election were rather unusual, with the opposition coalition parties attempting to win by campaigning on the extensive set of radical policies detailed in the 'Fightback' package (see Bean & Marks 1993). These included extensive taxation reforms based on the introduction of a Goods and Services Tax (GST) and several other major changes, including changes to the industrial relations system and to Medicare, the universal medical insurance and hospital treatment scheme.

Consequently, a similar study of the 1996 election is needed, to help in indicating which of the findings were election-specific ones. Moreover, the prominence of issues related to immigration and ethnicity at (and following) the 1996 election makes a more detailed examination of contextual effects relating to ethnicity very important.

1996 Election Analyses

Although my main aim is to see what conclusions about the 1996 election we can draw from multilevel analyses, for the sake of completeness I have included some information on aggregate interstate voting differences, in Table 1 (two-party preferred) and Table 2 (first-preference). In both cases, the range of votes for the ALP is about 15 percentage points and it is clear that some of the interstate differences deserve consideration.[2] Indeed, some interpretations of the election (beginning with McCrann 1996, only a week after the election) have concentrated on these aspects, with claims that they indicate a reaction in the main peripheral states of Queensland, Western Australia and South Australia against the perceived dominance of central metropolitan elites in influencing ALP policies.

However, I would observe that some of the features (such as the cluster of lower ALP first-preference votes in Queensland, Western Australia and South Australia) were also present in 1993, but were not made much of at the time, as commentators

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[2] Note that comparisons of first-preference votes between 1993 and 1996 in Western Australia are influenced by the fact that three sitting members were re-elected as Independents at the 1996 election after being disendorsed by their parties.

Table 1. ALP two-party preferred vote (%), House of Representatives

	NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUST
1996	47.4	50.3	39.8	44.0	42.7	51.6	55.5	49.6	46.4
1993	54.4	51.8	48.4	46.0	47.3	54.7	61.2	55.3	51.4

Sources
AEC *Electoral Newsfile*, no. 52, January 1996; no. 56, May 1996.

Table 2. First preference votes (%), House of Representatives

		NSW	VIC	QLD	WA	SA	TAS	ACT	NT	AUS
ALP	1996	39.6	42.9	33.2	34.7	34.8	44.3	47.9	43.5	38.8
	1993	48.3	46.5	40.5	39.4	38.8	46.8	53.3	55.3	44.9
LIB	1996	33.5	39.9	39.3	44.0	50.0	44.5	40.9	45.0	39.0
	1993	31.8	40.2	31.3	49.0	45.7	42.0	34.2	44.7	37.1
NP	1996	12.1	4.6	15.9	1.3	—	—	—	—	8.2
	1993	9.8	5.0	14.7	0.2	0.3	—	—	—	7.2
AD	1996	6.5	7.4	6.7	5.6	10.2	4.1	—	—	6.8
	1993	2.8	3.7	4.1	3.3	7.8	2.5	5.8	—	3.8
GRN	1996	2.5	—	2.5	5.3	3.0	6.3	8.7	6.3	2.4
	1993[a]									
Other	1996	5.9	5.2	2.5	9.0	2.0	0.8	2.5	5.2	4.8
	1993	7.3	4.6	9.4	8.1	7.4	8.7	6.7	—	7.1

[a] Included in Other.
Sources
AEC *Electoral Newsfile*, no. 34, May 1993; no. 56, May 1996.

focused on the impact of the GST (more generally, on the 'Fightback' package). In this context, Denemark and Sharman's (1994) finding that there were significant interstate differences at the time of the 1993 election in the levels of trust in state and federal governments is of note; voters in Queensland and Western Australia were more favourably inclined to state government than the national average and those in New South Wales and Victoria were more favourable to the federal government.

However, we need to use more than these aggregate data if we are to offer explanations for these observed differences in overall voting levels for the various parties. For example, they could be due to various states and territories having differing sociodemographic compositions: the ALP's traditionally high vote in the ACT is perhaps the most obvious example of this, but there are other possibilities (e.g. the differing concentrations of some groups of migrants from non-English-speaking backgrounds in different states). In terms of the multilevel model, these kinds of differences would be reflected at the level of individual voters. There might also be effects at the level of electoral divisions (the rural–urban cleavage would be one suggestion). It is only when influences at both these levels (individuals and divisions) are taken into account that we can reasonably refer to state-level effects (i.e. ones that do not simply reflect compositional differences at lower levels).

To facilitate comparisons with voting at the 1993 election, I initially followed a process similar to that described in Charnock (1996). The data used are individual survey data from the 1996 Australian Election Study (Jones *et al.* 1996), combined

with aggregate Census data at the divisional level.[3] Only respondents who voted for the ALP, the Coalition or the Democrats in the House of Representatives are included in the analysis[4] and the dependent variable used is the log-odds of voting for the ALP as opposed to either the Coalition or the Democrats, i.e. the analyses use logistic regression models.

Up to three levels (individual voters, House of Representatives divisions, and states and territories[5]) are used in the analyses. The individual-level explanatory variables used (see Table 3) are initially the same as for the 1993 analyses in Charnock (1996) and cover a fairly standard range of social-structural influences (occupational class, religion, age, sex, etc.).

Although there is no space here to give a detailed explanation of the multilevel modelling technique (see Jones *et al*. 1992 for an explanation of the use of the method in voting research; some explanation is also given in Charnock 1996), for our purposes one of the most important aspects in interpreting the results is the extent of spatial variation in voting which is not explained by the factors included in the models. In the models presented here (all random intercept models: see Jones *et al*. 1992, pp. 347–55), these are represented by the estimates in the level two and level three random parts of the models, which can be regarded as the amount of variation at each level which is not explained by the model. For example, in a three-level model with individuals as level one, electoral divisions as level two and states as level three, the level two random component corresponds to unexplained variations between divisions and the level three random component corresponds to unexplained variations between states.

Analyses and Results

The first models estimated are the null (no explanatory variables) models, which provide baselines for the assessment of more complex models, as well as showing the overall extent of interstate and interdivisional voting differences. As shown in Table 4, the situation at the 1996 election was quite similar to that at the 1993 election. Overall, the extent of effects at the levels of divisions and states is relatively small compared with Britain (Jones *et al*. 1992), and the divisional effect is larger than the state-level effect. However, the estimated state effect was very slightly larger in 1996 than in 1993 (0.05 as against 0.03), whereas the reverse was true for the divisional effect (in model D, 0.14 as against 0.17 in 1993).

How much of these spatial effects can be attributed to variations in the individual-level sociodemographic compositions of the areas? To answer this question, we can examine the effect on the random components of including individual-level explanatory variables in the model. This also allows us to examine how these individual-level factors are associated with voting behaviour. As shown

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[3] These are 1991 data because information from the 1996 Census is not yet available.

[4] This includes 94% of respondents and is necessary because other parties did not contest every seat. Although there were no Democrat candidates in four (out of 148) divisions, this minor deficiency does not seem sufficient reason to omit Democrat voters from the analyses.

[5] In order to make the comparisons with 1993 as direct as possible, the single division in the Northern Territory is included with Queensland and the three ACT divisions are included with NSW, as in Charnock (1996). The results of analyses that keep these separate are, as for the 1993 election, virtually identical to those presented here.

Table 3. Explanatory variables used

Individual level

UNEMP	Unemployed in the previous week
RETIRE	Retired
HOUSEK	Keeping house in the previous week
OCCOTH	Student or 'other' employment in previous week
INCOM1	Family income below $12,000
INCOM2	Family income $12,000–$25,000
INCOM4	Family income $40,000–$70,000
INCOM5	Family income over $70,000
UPPERC	Upper class (self-assessed)
MIDCL	Middle class (self-assessed)
NOCL	No class (self-assessed)
SELFEM	Self employed
GOVEM	Government employee
BIRTHYR	Year of birth
MALE	Male = 1; Female = 0
UKBORN	Born in UK or Ireland
OTHOSEAS	Born overseas (not UK or Ireland)
MANUAL	Manual occupation
FARMING	Farmer, farm manager or farm labourer
UNIONMEM	Trade union member
CATHOLIC	Roman Catholic
UNITING	Uniting/Methodist
OTHRELIG	Other religion
NORELIG	No religion
ATTEND1	Attends religious service at least monthly
ATTEND2	Attends religious service several times per year
ATTEND3	Attends religious service at least once a year

Divisional level

DIVUNEMP	Divisional unemployment rate (%) at 1991 Census
DIVAGRFF	Divisional % employed in agriculture, fishing, forestry and hunting at 1991 Census
DIVOSEAS	Divisional % born overseas at 1991 Census
DIVMOBIL	Divisional residential mobility rate (% resident in 1991 at different address from five years before)
DIV2PARS	Divisional % of families with two parents and offspring at 1991 Census
DIVSHSNG	Divisional % of households resident in state housing at 1991 Census
DIVMINE	Divisional % employed in Mining at 1991 Census

Notes
Other than BIRTHYR, all level one variables are indicators (scored 1 if the respondent possesses the attribute, 0 if not). The base categories (the same as for the 1993 analyses, generally selected because they were the most numerous category in the respective variables) for these individual-level variables are Employed (for labour force status indicators), Family income $25,000–$40,000 (for gross annual family income indicators), Working class (for self-assessed class indicators), Private employee (for employer-type indicators), Australian-born (for country of birth indicators), Non-manual (for occupational class), Anglican (for religious denomination), Attends less than once a year or never (for religious attendance).

Table 4. Null (constant only) two-level and three-level models for 1996 election

	Model A Estim.	Model B Estim.	Model C Estim.	Model D Estim.
FIXED				
CONS	− 0.49	− 0.49	− 0.53	− 0.53
	(0.06)	(0.06)	(0.03)	(0.02)
RANDOM				
Level 3				
CONS	—	—	0.05	0.05
			(0.03)	(0.03)
Level 2				
CONS	0.17	0.18	0.12	0.14
	(0.19)	(0.20)	(0.16)	(0.17)
Level 1				
CONS	1	0.96	1	0.97
	(1)	(0.95)	(1)	(0.95)
Deviance (− 2 log (lh))	2131.3	2128.8	2124.8	2122.6

Notes
Numbers in brackets are for the corresponding analyses of voting at the 1993 election (taken from Table 3 in Charnock 1996).
Model A: two-level null model, individuals (level 1) within divisions (level 2), assuming binomial level 1 variance.
Model B: as Model A, but with unconstrained level 1 variance.
Model C: three-level null model, individuals (level 1) within divisions (level 2) within states (level 3), assuming binomial level 1 variance.
Model D: as Model C, but with unconstrained level 1 variance.
All models in this paper were estimated (by second-order PQL methods) using the MLn program (Rasbash & Woodhouse 1995).

in Table 5, the size of reduction in the deviance from model D to model E (from 2122.6 down to 1800.2) demonstrates that this group of individual-level variables significantly helps to understand voting for the ALP at the 1996 election. However, incorporating them does not have the result of reducing the spatial effects to any significant extent, only decreasing the state-level random component from 0.05 to 0.03 and the divisional-level component from 0.14 to 0.12. This is different from the 1993 election, where the divisional-level component was significantly reduced (from 0.17 to 0.09) by the inclusion of these same individual-level variables. The implication seems to be that local influences were somewhat more important at the 1996 election than at the 1993 election. Perhaps this is not surprising in view of the concentration on the 'Fightback' package during the 1993 campaign, something that provided a strong, common national focus.

I will leave comments about the nature of the estimated individual-level influences until the next section, except to say that some differ in detail from the same ones at the 1993 election. Instead I will continue comparing spatial variations at the 1993 and 1996 elections by introducing the same divisional-level explanatory variables as used in the 1993 analyses (see Table 3). The final results when this is done are shown in Table 6.

Only three of these divisional-level variables are shown (the same ones as appear in the 1993 results in Charnock 1996): none of the others was found to be

Table 5. Three-level model with individual-level explanatory variables: individuals in divisions in states

	Model E	
	Estim.	Z
FIXED		
Level 1		
CONS	− 1.16	—
UNEMP	− 0.70	− 2.09
RETIRE	0.27	1.24
HOUSEK	0.42	2.11
OCCOTH	− 0.49	− 2.20
INCOM1	0.66	3.19
INCOM2	0.19	1.04
INCOM4	0.28	1.64
INCOM5	0.13	0.62
UPPERC	− 1.34	− 2.02
MIDCL	− 0.38	− 2.87
NOCL	− 0.36	− 1.55
SELFEM	− 0.86	− 4.98
GOVEM	0.17	1.12
BIRTHYR	0.011	2.45
MALE	0.28	2.18
UKBORN	0.13	0.62
OTHOSEAS	0.48	2.64
MANUAL	0.27	1.80
FARMING	− 0.22	− 0.60
UNIONMEM	0.75	5.68
CATHOLIC	0.52	3.26
UNITING	− 0.06	− 0.30
OTHRELIG	0.39	2.07
NORELIG	0.62	3.31
ATTEND1	− 0.58	− 3.50
ATTEND2	− 0.21	− 1.13
ATTEND3	− 0.11	− 0.57
RANDOM		
Level 3		
CONS	0.03 (0.02)	
Level 2		
CONS	0.12 (0.09)	
Level 1		
CONS	0.96 (0.97)	
Deviance (− 2 log (lh))	1800.2	

Note
Corresponding random estimates for the 1993 election analysis are given in brackets.

Table 6. Three-level model with both individual-level and divisional-level explanatory variables: individuals in divisions in states

	Model F	
	Estim.	Z
FIXED		
Level 1		
CONS	− 1.19	—
UNEMP	− 0.64	− 1.92
RETIRE	0.25	1.15
HOUSEK	0.42	2.10
OCCOTH	− 0.50	− 2.20
INCOM1	0.64	3.10
INCOM2	0.19	1.04
INCOM4	0.24	1.42
INCOM5	0.14	0.67
UPPERC	− 1.35	− 2.01
MIDCL	− 0.35	− 2.67
NOCL	− 0.32	− 1.37
SELFEM	− 0.86	− 4.97
GOVEM	0.18	1.19
BIRTHYR	0.010	2.34
MALE	0.31	2.38
UKBORN	0.13	0.63
OTHOSEAS	0.41	2.18
MANUAL	0.27	1.80
FARMING	− 0.07	− 0.20
UNIONMEM	0.74	5.61
CATHOLIC	0.50	3.09
UNITING	− 0.10	− 0.46
OTHRELIG	0.36	1.93
NORELIG	0.60	3.20
ATTEND1	− 0.51	− 3.06
ATTEND2	− 0.17	− 0.89
ATTEND3	− 0.07	− 0.37
Level 2		
DIVUNEMP	0.052	2.68
DIVAGRFF	− 0.037	− 2.93
DIVOSEAS	− 0.008	− 0.96
RANDOM		
Level 3		
CONS	0.02 (0.02)	
Level 2		
CONS	0.06 (0.01)	
Level 1		
CONS	0.97 (0.99)	
Deviance (− 2 log (lh))	1781.6	

Notes
Corresponding random estimates for 1993 election analysis are given in brackets. Model F: Model incorporating same explanatory variables as the final 1993 model.

statistically significant.[6] Their inclusion has slightly less impact on the size of the divisional-level random component than in the 1993 analyses: here the reduction is from 0.12 to 0.06, whereas in 1993 it was from 0.09 to 0.01. Thus, there are still some remaining unexplained local variations, though still small by comparison with Britain. As found in 1993, both local economic conditions (as represented by DIVUNEMP) and the rural–urban cleavage (as indicated by DIVAGRFF) seem to provide contextual influences on voting.[7]

These analyses indicate some changes between 1993 and 1996 in the spatial variations, with the most notable difference being the relative inability of the individual-level variables to explain the divisional-level variations in voting. As already noted, this may be a reflection of the nature of the 1993 election campaign. A more detailed examination of the 1996 data should offer more insights, and it is to that I now turn.

More Detailed Analysis, Including Discussion of Ethnic Contextual Influences

One significant aspect of the 1996 election was the victory of Pauline Hanson in the division of Oxley in Queensland (previously a very safe ALP seat), after she had lost her Liberal party endorsement following some comments on racial issues. More generally, a significant debate about ethnic composition and immigration has been generated, and it therefore seems particularly worthwhile to examine related explanatory variables. At the 1993 election, I had found (Charnock 1996) that living in electoral divisions with higher proportions of people born overseas was associated with a reduced chance of voting for the ALP. This had already appeared to provide some evidence for the existence of an anti-migrant contextual influence on voting, although DIVOSEAS is a fairly undifferentiated measure of ethnicity.

Consequently, to provide more detail for the 1996 election, I expanded the analysis in two ways: first, by using several different related divisional-level variables (not just DIVOSEAS) and, second, by using a more detailed version of the individual-level variable referring to country of birth. Since it is also possible that some of the divisional-level rural–urban effect indicated by the significance of DIVAGRFF was a consequence of not including an individual-level indicator for place of residence, I also added size of place indicators to the analysis.[8]

Table 7 shows a full list of the extra variables used. The additional divisional-level variables attempt to reflect a variety of things related to ethnic composition which might provide contextual influences on voting, including the broad measure DIVOSEAS, a measure reflecting direct lack of fluency in English (DIVNOENG), and a number of ones attempting to reflect ethnicity (DIVSEASA, DIVATSI and, more indirectly, DIVNESB).

The results from Model G in Table 8 show the impact of adding the extra individual-level variables, without including any divisional-level variables.

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[6] Although the magnitude of its coefficient is not statistically significant, DIVOSEAS is included to enable direct comparisons with 1993.

[7] Since the divisional-level explanatory variables are based on data from the 1991 Census, it may be that they do not accurately reflect the divisional-level variations as they were at the time of the 1996 election. On the surface, DIVAGRFF is probably the one that is likely to be the most stable, which might explain why the effect of DIVUNEMP is noticeably smaller than at the 1993 election.

[8] This was possible because the 1996 Australian Election Study included a question about size of place of residence, whereas the 1993 AES did not.

Table 7. Extra variables investigated

Individual level

EUROPNAM	Born in Europe or North America
OTHOSEA2	Overseas-born (not UK, Ireland, Europe or North America)
RURAL	Resident in a rural area or a village[a]
CNTRYSML	Resident in a small country town (under 10,000 people)[a]
CNTRYLRG	Resident in a large country town (over 10,000 people)[a]
TOWNLRG	Resident in a large town (over 25,000 people)[a]

Divisional level

DIVSEASA	Divisional % born in Southeast Asia, 1991 Census
DIVNESB	Divisional % born in non-English-speaking countries, 1991 Census
DIVNOENG	Divisional % not fluent in English, 1991 Census
DIVATSI	Divisional % identified as Aborigines and Torres Strait Islanders, 1991 Census

Notes
EUROPNAM and OTHOSEA2 together replace OTHOSEAS, used in earlier analyses.
[a] The base category for these four size of place indicators is Resident in a major city (over 100,000 people).

Comparison with Model E in Table 5 shows a change in model deviance of 27.7, so the combination of the expanded birthplace variable and the size of place indicators is a worthwhile addition to the model. Of the two, however, the expanded birthplace variable is the more useful, with only one (RURAL) of the individual size of place indicators being statistically significant (for a one-tailed 5% significance test). There are no major changes to the sizes of other coefficients that result from the addition of these extra variables, and no change to the estimated state-level and divisional-level random effects.

Individual-Level Influences

What does this model indicate about the influence of these individual-level social-structural variables on voting at the 1996 election, and what can we learn from the models about estimated differences from 1993?

1. Males were more likely than females to vote for the ALP, with the size of the effect being about the same at the two elections.
2. Union members were more likely than non-members to vote for the ALP, with the size of the effect also being about the same at the two elections.
3. Being self-employed again reduced the log-odds of voting for the ALP; however, the estimated size of this effect was somewhat larger in 1996 than in 1993. On the other hand, although the effect of being in government employment was in the same direction as in 1993 (raising the log-odds of voting ALP) it was not statistically significant in 1996.
4. In terms of labour-force status, keeping house was again associated with higher log-odds of voting ALP, with the size of the effect being about the same at the two elections. However, although the direction of the effect of being retired was the same as in 1993 (raising the log-odds of voting ALP), its size was much smaller than in 1993 (and is not statistically significant). Furthermore, probably the most notable of all the differences between 1993 and 1996 lies in the effect of being personally unemployed. In 1996 this had the effect of reducing the log-odds of voting ALP, whereas in 1993 the effect was in the opposite direction.

Table 8. Three-level model with expanded individual-level explanatory variables

	Model G	
	Estim.	Z
FIXED		
Level 1		
CONS	− 1.14	—
UNEMP	− 0.66	− 1.97
RETIRE	0.31	1.44
HOUSEK	0.43	2.18
OCCOTH	− 0.50	− 2.20
INCOM1	0.66	3.20
INCOM2	0.20	1.09
INCOM4	0.24	1.42
INCOM5	0.11	0.52
UPPERC	− 1.38	− 2.06
MIDCL	− 0.38	− 2.91
NOCL	− 0.31	− 1.33
SELFEM	− 0.83	− 4.80
GOVEM	0.18	1.18
BIRTHYR	0.010	2.30
MALE	0.27	2.08
UKBORN	0.13	0.62
EUROPNAM	0.00	0.01
OTHOSEA2	0.98	3.84
MANUAL	0.29	1.94
FARMING	− 0.07	− 0.18
UNIONMEM	0.76	5.75
CATHOLIC	0.54	3.36
UNITING	− 0.09	− 0.40
OTHRELIG	0.40	2.12
NORELIG	0.63	3.37
ATTEND1	− 0.62	− 3.73
ATTEND2	− 0.18	− 0.95
ATTEND3	− 0.11	− 0.56
RURAL	− 0.37	− 1.76
CNTRYSML	− 0.23	− 1.18
CNTRYLRG	0.01	0.06
TOWNLRG	0.13	0.79
RANDOM		
Level 3		
CONS	0.03 (0.03)	
Level 2		
CONS	0.12 (0.12)	
Level 1		
CONS	0.95 (0.96)	
Deviance (− 2 log (lh)):	1772.5	

Note
Corresponding random estimates for model E are given in brackets.

5. The changes between 1993 and 1996 in these last two effects (of being retired and unemployed) seem in keeping with the suggestion made in Charnock (1996) that in 1993 they were strongly influenced by the perceived deleterious impact of the policies in the 'Fightback' package (including the GST) on people on fixed incomes.
6. The age effect was in the same direction (younger voters having increased log-odds of voting ALP), but was smaller in 1996 than 1993.
7. Frequency of religious attendance has a negative association with the log-odds of voting ALP (as was also the case in 1993), although ATTEND2 and ATTEND3 are not separately statistically significant (which they were in 1993).
8. Catholics and those stating they had no religion had increased log-odds of voting ALP (as in 1993). In the context of changing religious denominational compositions, it is interesting to note that the NORELIG estimate is higher than the CATHOLIC one.
9. All the self-identified social class indicators had effects in the same direction as in 1993 (all having reduced log-odds of voting ALP compared with those identifying themselves as working class), but the effects for MIDCL and NOCL were smaller than in 1993, with that for NOCL not being statistically significant.
10. Perhaps related to item 9, although the directions of the occupational class effects were the same as in 1993, the FARMING effect in particular was notably smaller.
11. While the country of birth indicators show effects in the same direction as 1993 (the overseas-born overall being more likely than the Australian-born to vote ALP), the more detailed version used in Table 8 serves to demonstrate that the largest effect (in fact, the only one which is statistically significant) is among those not born in the UK, Ireland, Europe or North America.
12. Although the direction of the effect for the lowest income group is as expected (increasing the log-odds of voting ALP), none of the remaining income groups show a statistically significant effect. This is perhaps a little surprising, but even a simple bivariate cross-tabulation shows rather small (and not statistically significant) differences between the voting patterns of the various income groups at this election.

Several of these effects have a bearing on the question of the nature and strength of the relationship between class and voting in Australia, something I explore in much more detail elsewhere (Charnock 1997).

Contextual Influences

What is found when the divisional-level explanatory variables in Tables 3 and 7 are added to the model? As in the earlier analyses (cf. Table 6), both DIVAGRFF and DIVUNEMP were found to be significant. In addition to these two variables, I investigated ethnicity and migrant influences in some detail using DIVOSEAS and the extra variables in Table 7. Of these, the only one which was found to be significant was DIVSEASA (the percentage of the divisional population born in Southeast Asia). The final model estimates, for the model including all individual-level and significant divisional-level variables, are shown as Model H in Table 9. Changes in the individual-level coefficients due to adding the divisional-level

variables to the model are quite small, and my earlier comments about the effects of the social-structural variables on voting for the ALP at the 1996 election still apply.

What extra conclusions can we draw from the divisional-level variables? I first need to reiterate the fact that these measures are based on the 1991 Census and any conclusions about the 1996 election based on them must therefore be regarded as somewhat tentative. Bearing this caveat in mind, the evidence that was found at the 1993 election for contextual effects associated with the local economy (through the unemployment rate) and with 'country-mindedness' (reflected in DIVAGRFF) is confirmed at the 1996 election, the former increasing the chance of voting ALP and the latter decreasing it. An additional degree of confidence that these are genuine contextual effects, ones with a stable existence in recent (and also probably much earlier) Australian federal voting behaviour, is provided by noting that they are still found to be significant even though there are two major changes in the individual-level analyses, viz. extra variables relating to place of residence are included and, second, that there is a significant change between the elections in the direction of the effect of the individual-level indicator of unemployment.

The respective model deviances can be thought of as measures of the 'badness of fit' of the models to the data (McCullagh & Nelder 1989, pp. 33–6), and so the larger the change in deviance when extra variables are included, the more useful they are. In this case, the total deviance reduction resulting from adding the individual-level variables was 350.1 (comparing models D and G), while the extra reduction from also adding the three divisional-level variables was 22.1 (comparing Models G and H). Consequently, judging by this measure, the overall impact of the divisional-level variables does not appear to be large when the individual-level variables are taken into account (cf. Jones 1981).

In relation to ethnic context, that it is of social importance is hardly a new finding. However, it has been more common in the area of Australian voting to find it discussed in terms of providing an advantage to the ALP (cf. Jupp & Sawer 1994), although the findings in Charnock (1996) did suggest the possible existence of an anti-migrant contextual effect on voting. Of course, this also would involve a perceived lack of bipartisanship in the area, something that obviously has potentially divisive consequences.

At the 1996 election, the more detailed analyses presented here indicate the existence of a specifically anti-Asian contextual influence on voting, inasmuch as living in electorates with higher proportions of people born in Southeast Asia was associated with reduced log-odds of voting for the ALP. In pragmatic terms this would seem to present something of a dilemma for the ALP, because the individual-level OTHOSEA2 effect actually works in the opposite direction, strongly favouring the ALP, i.e. those born overseas, but not in the UK, Ireland, Europe or North America, had much increased chances of voting for the ALP. In fact, 55% of AES respondents in that category gave their first preference in the House of Representatives to the ALP, compared to only 35% of respondents born elsewhere (including Australia).

In the 1993 election multilevel analyses, the addition of the relatively small number of divisional-level explanatory variables to the individual-level variables had the effect of almost completely removing spatial variations at the divisonal level (there was already very little state-level variation). At the 1996 election, this is not true to the same extent, with slightly more variation being left unexplained.

Table 9. Final three-level model with both individual-level and divisional-level explanatory variables

	Model H	
	Estim.	Z
FIXED		
Level 1		
CONS	− 1.21	—
UNEMP	− 0.63	− 1.88
RETIRE	0.29	1.35
HOUSEK	0.42	2.08
OCCOTH	− 0.51	− 2.23
INCOM1	0.64	3.07
INCOM2	0.18	1.00
INCOM4	0.22	1.28
INCOM5	0.13	0.59
UPPERC	− 1.31	− 1.97
MIDCL	− 0.36	− 2.68
NOCL	− 0.27	− 1.14
SELFEM	− 0.84	− 4.84
GOVEM	0.17	1.17
BIRTHYR	0.010	2.28
MALE	0.38	2.15
UKBORN	0.13	0.63
EUROPNAM	− 0.04	− 0.14
OTHOSEA2	0.96	3.70
MANUAL	0.29	1.92
FARMING	0.02	0.04
UNIONMEM	0.77	5.75
CATHOLIC	0.52	3.22
UNITING	− 0.13	− 0.60
OTHRELIG	0.38	2.00
NORELIG	0.61	3.26
ATTEND1	− 0.54	− 3.24
ATTEND2	− 0.13	− 0.69
ATTEND3	− 0.06	− 0.29
RURAL	− 0.28	− 1.25
CNTRYSML	− 0.07	− 0.33
CNTRYLRG	0.11	0.44
TOWNLRG	0.12	0.68
Level 2		
DIVUNEMP	0.063	3.00
DIVAGRFF	− 0.037	− 3.09
DIVSEASA	− 0.070	− 2.28
RANDOM		
Level 3		
CONS	0.03	
Level 2		
CONS	0.05	
Level 1		
CONS	0.96	
Deviance (− 2log(lh)):	1750.4	

This may be a result of the already-noted need to use somewhat out-of-date divisional-level data, i.e. it is possible that unemployment rates etc. actually do explain as much of the divisional-level variations as in 1993 but that our measures of these explanatory variables are inaccurate and hence dilute the apparent effect. Alternatively, we may need to look for other influences at the local level.

Conclusions

Several of the main findings about influences on voting for the ALP at the 1993 election obtained using multilevel analyses were also true at the 1996 election. Among these, one of the most important is the finding that the overall extent of spatial variations was roughly the same (and relatively small by comparison with Britain), and mostly attributable to the divisional level—rather than the state level. A difference between the elections is that only a small amount of the divisional-level effect was due to variations in their sociodemographic compositions in 1996, whereas about half could be so explained in 1993. The implication of this is that local influences were rather more important in 1996.

Introduction of the individual-level variables shows a number of differences from 1993. In almost all cases, the difference is in the estimated strength of the effects, though not all are statistically significant. However, the influence of being person-ally unemployed actually changed direction, from favouring the ALP in 1993 to the opposite in 1996. As with a number of the changes in the strength of effects, this could be a consequence of the unusual nature of the 1993 election campaign, with its emphasis on the 'Fightback' package and the GST. The nature of the 1993 campaign probably also helps to explain why, as noted above, local influences on voting were more important in 1996 than in 1993.

Among the individual-level variables which increased the log-odds of voting ALP at least as strongly in 1996 as in 1993 were union membership, being male, keeping house, having no religion, and being overseas-born (but outside the UK and Ireland), with more detailed analysis showing that the latter effect was even stronger when applied somewhat more precisely to being overseas-born (but outside the UK, Ireland, Europe and North America). On the other hand, a number of variables had smaller estimated effects than in 1993, notably including age, being in government employment and some of those measuring occupational and self-identified class. On balance, from these comparisons it would not seem reasonable to conclude (as some have done) that the base of the ALP's vote has been severely undermined, although the smaller class-related effects are certainly of note (also see Charnock 1997).

As far as contextual influences are concerned, despite limitations due to having to use 1991 Census data at the divisional level, the incorporation of three divisional-level explanatory variables had the effect, as in 1993, of reducing the divisional-level variations by a reasonable amount. However, unlike in 1993, some such variations remain unexplained. One possible explanation for this is the inadequacy of the Census data; whether this is so will only be able to be answered when the 1996 Census data are released. Overall, though, the additional contribu-tion of the contextual variables to the explanatory power of the model is by no means large when the individual-level variables are included.

The general nature of the three apparent contextual influences is the same as in 1993, one referring to local economic influences, one to the rural–urban cleavage

and one to ethnicity. The last of these seems to indicate the existence of a specifically anti-Asian effect on voting, which operates in the opposite direction to the individual-level effect of ethnicity, thus creating something of a dilemma for the ALP in particular.

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