National Uniformity, and State and Local Effects on Australian Voting: A Multilevel Approach

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The existence and extent of influences arising within spatial contexts is an important issue in the study of voting behaviour. This paper extends previous Australian research by using the relatively new technique of multilevel analysis to draw together individual survey data from the 1993 Australian Election Study and ecological census data to investigate the question. The results show that, once individual voter characteristics are taken into account, influences on first preference voting for the ALP at the 1993 election were quite uniform nationally, with relatively small spatial variations. Moreover, those spatial variations which were present were at the divisional, not the state, level and can be almost completely explained by a very small number of sociotropic factors, especially a local economic prosperity influence and the well-known rural–urban cleavage.

As far as influences on voting at the 1993 election at the level of individual voters are concerned, these multilevel analyses provide some new insights, as well as confirming some previous results

A major component of the debate about the determinants of voting behaviour has been whether the characteristics of individual electors provide by themselves an adequate explanation or whether relevant group characteristics are also important. This is a particular instance of what is more generally referred to as the micro–macro linkage, that is, the link between micro behaviour (individual voting, in this case) and the (macro) social contexts in which that behaviour occurs (Alexander *et al.* 1987, Huber 1991, Jones 1995). Because of the nature of the available data, many such group characteristics (such as family aspects or employment type) are generally operationalised as properties of the individual. However, at least partly because of data availability, those influences which arise within spatial contexts have often been examined, with particularly vigorous debate having taken place in Britain, especially with regard to regional differences (Pattie & Johnston 1995; Jones *et al.* 1992; McAllister & Studlar 1992; Johnston 1987; McAllister 1987a, b; Johnston & Pattie 1987; Kelley & McAllister 1985).

Although the extent of spatial variations in overall voting is easily established

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(by, for example, the simple examination of aggregate voting data: see table 2 in Bean & Butler (1991a) for some Australian data on interstate variations), what is of much more interest—and also more difficult—is to provide explanations for those variations which are observed. This involves two main questions: first, are any observed spatial variations the result of the various geographic areas containing differing concentrations of individuals with particular social characteristics, with these individual characteristics (such as income levels or employment status) actually being the important influences on voting, or are any such compositional differences insufficient to explain the spatial voting variations? Following on from this is the second question: if compositional difference is found to be an inadequate explanation then what other, contextual, influences might be at work?

Answering the second question is methodologically complicated by the fact that there are several geographic scales at which such contextual influences might operate simultaneously, ranging all the way from the very small scale of local neighbourhoods through to very large-scale regions (such as states). Although, as mentioned above, much of the British debate in the last decade has concentrated on quite large-scale regional differences, there is also a history of claims for the existence of much smaller-scale neighbourhood effects (for example, Butler & Stokes 1974; Miller 1977, 1978). In the United States similar claims have been made for the existence of small-scale contextual influences at the level of urban neighbourhoods and broader scale ones (for example, at the county level) (see Huckfeldt & Sprague 1987, MacKuen & Brown 1987, for example).

In the Australian context, however, there has been relatively little comparable analysis making use of individual survey data. Most debate here has concentrated (for easily understandable reasons, in view of the constant emphasis on Commonwealth–State relations within the Australian federal political system) on the question of whether or not there are differences between the States in terms of voting behaviour, and has mainly used aggregate voting statistics as the only source of evidence,[1] although Kemp's (1978) chapter on 'The Nationalization of Opinion and Influence' does extend the analysis down to the divisional level using variance components methods for the 1940–72 period and Leithner (1995) has a similar kind of analysis for the period from 1900 to 1990 which, among other things, concludes that voting by the Australian electorate has become more nationally homogeneous since Federation.

A major methodological difficulty with relying on aggregate voting statistics is that it is not possible to be sure of the extent to which spatial variations are the result of individual compositional differences. Two recent papers which do make use of individual survey data to address potential interstate differences are Bean & Butler (1991b) and Denemark & Sharman (1994). The former finds little evidence of consistent between-state voting differences when individual voter characteristics are taken into account; the latter is concerned with differences in political culture rather than voting behaviour, and finds some significant state differences at the 1993 election in voters' attitudes towards trust in government, but no difference in attitudes towards political efficacy and involvement.

On the other hand, if we broaden our consideration beyond that of interstate

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[1] There is a very large literature on this subject, sometimes conflated with the wider topic of 'uniform swing'. The paper by Bean & Butler (1991a) and the rejoinder by Sharman (1991) give a good summary of much of this debate.

differences, there is little doubt that at least one spatial aspect (namely, a rural–urban cleavage) does play a role in Australian voting behaviour. Institutionally, this is recognised by the continuing existence of the National Party, which is essentially a non-metropolitan party (and, indeed, was previously known successively as the Country Party and the National Country Party). Support for the party is generally seen as being both sectional (through the farming sector) and regional (in country towns). It does appear, however, that demographic changes are reducing the party's voting base (Duncan & Epps 1992; Woodward 1994).

On an even smaller geographical scale, there may be other kinds of contextual effects such as the neighbourhood effects mentioned previously. These could, of course, derive from several sources, but if we draw on the literature relating to urban residential differentiation the most probable causes to be considered would relate to socioeconomic, family and ethnic status (see Logan *et al.* 1975, ch. 4, for example). In fact, an analysis of Australian survey and census data from the early 1970s (Jones 1981) did conclude that the party preference of urban married males was influenced by the socioeconomic status of their neighbourhood, although it found that the size of the effect was rather small.

The existence of simultaneous effects at several spatial levels has in the past presented methodological difficulties (see Blalock 1984, for example) but with the relatively recently developed statistical technique of multilevel modelling (see Goldstein 1995; Hox & Kreft 1994, for example), it is now possible to give comprehensive analyses of situations where influences at such different spatial levels are postulated (for example, individual voters influenced by their personal characteristics, operating within local neighbourhoods with their own influences on voting, in turn operating within some other spatial context (such as states or economic regions) with its own influences).

The model makes this possible by explicitly incorporating all of the different levels within a single framework. Previously, the failure to take account of the tendency of similar individuals to cluster together had led to estimation problems (see Woodhouse 1993, p. 14; Skinner *et al.* 1989 give a much more thorough—and more technically demanding—discussion of the issue). Similarly, the statistical inefficiency which might result from the need to make multiple group comparisons is avoided; in the voting context, it thus avoids the potential unreliability of divisional-level estimates based on the typically small samples within each division (see Woodhouse 1993, pp. 13–14; Jones *et al.* 1992, p. 356).

A good explanation of the concepts and methods of multilevel modelling applied to voting research is contained in Jones *et al.* (1992). Since the technique allows the existence and extent of influences at all levels to be examined simultaneously, the effects of explanatory variables at the various levels can be investigated, as well as the extent of residual (unexplained) differences. In this way, the existence of particular postulated contextual effects can be tested. In the analysis of voting behaviour in Britain, use of this technique has been claimed to demonstrate the existence of both constituency-level and regional-level effects, in addition to individual voter level effects (Jones *et al.* 1992; Heath *et al.* 1994).

In this paper, I will apply multilevel modelling methods to recent Australian electoral data. My first aim is to investigate the extent of interstate and interdivision differences. This will provide evidence to assess the validity of the national uniformity argument, not just at the interstate level usually considered in previous research but also at the finer level of electoral divisions. The second aim is to use

Table 1. Data structure

Level	Number	Meaning
1	2230	Individual voters
2	146	House of Representatives divisions
3	6	States and Territories

Notes
1. The Australian Capital Territory (with only two divisions) is included with New South Wales and the Northern Territory (only a single division) is included with Queensland.
2. The election for the division of Dickson was not held on the same date as that for other divisions (because of the death of a candidate) and the division is consequently omitted from the analysis.

the multilevel methodology to try to explain any differences which are found, in terms of basic spatial cleavages such as the rural–urban one, and socioeconomic or other local contextual influences.

Data Sources and Methods

The data sources for the analyses are the 1993 Australian Election Study (AES) (Jones *et al.* 1993) and the 1991 Census. Three levels are used in the analysis: individual voters form level one, House of Representatives divisions form level two (these had a mean enrolment per division at the 1993 election of about 77,500 voters), and the States and Territories form level three, the highest level of spatial aggregation. Individual level data are drawn from the 1993 AES and divisional level data are taken from the 1991 Census (adjusted to the divisional boundaries in use at the 1993 election).

Only respondents who voted for either the Australian Labor Party (ALP) or for the Liberal-National coalition are included in the analysis[2] and the final data structure is as shown in Table 1. The dependent variable used is the log-odds of voting for the ALP as against voting for the coalition, i.e. logistic regression models are used. The individual-level explanatory variables used (see Table 2) cover a fairly standard range of influences (such as occupational class, religion, union membership, age, employment sector, income, sex). They include the main ones which have been previously found to be important in Australian studies and, as will become apparent later in the paper, are sufficiently extensive to leave little in the way of higher-level effects.

In terms of interpreting the results of the analyses, one of the most important aspects is the extent of spatial variation in voting which is not explained by the factors included in the models. In the models presented in this paper[3] these are

[2] About 93% of respondents voted for these two main party groupings. Extensions to more than two parties are not possible with the ML3E software used for the analyses (see Prosser *et al.* 1991), while at the same time considering the three levels of individual voters, divisions and states. The British analyses in Jones *et al.* (1992) are similarly restricted to Conservative and Labour voters.

[3] These are all random intercept models, that is, they allow for the possibility of the overall log-odds of voting ALP varying between divisions at any given level of a variable, but do not allow the slope of the relationship between the log-odds and the variable to vary between divisions: see Jones *et al.* (1992, pp. 347–55) for a fuller explanation. Various random slope models were also investigated, but none was found to be a significant improvement.

Table 2. Explanatory variables used

Level	Name	
1	UNEMP	Unemployed in the previous week
1	RETIRE	Retired
1	HOUSEK	Keeping house in the previous week
1	OCCOTH	Student or 'other' employment in previous week
1	INCOM1	Family income below $12,000
1	INCOM2	Family income $12,000-$25,000
1	INCOM4	Family income $40,000-$70,000
1	INCOM5	Family income over $70,000
1	UPPERC	Upper class (self-assessed)
1	MIDCL	Middle class (self-assessed)
1	NOCL	No class (self-assessed)
1	SELFEM	Self employed
1	GOVEM	Government employee
1	BIRTHYR	Year of birth
1	MALE	Male = 1; Female = 0
1	UKBORN	Born in UK or Ireland
1	OTHOSEAS	Born overseas (not UK or Ireland)
1	MANUAL	Manual occupation
1	FARMING	Farmer, farm manager or farm labourer
1	UNIONMEM	Trade union member
1	CATHOLIC	Roman Catholic
1	UNITING	Uniting/Methodist
1	OTHRELIG	Other religion
1	NORELIG	No religion
1	ATTEND1	Attends religious service at least monthly
1	ATTEND2	Attends religious service several times per year
1	ATTEND3	Attends religious service at least once a year
2	DIVUNEMP	Divisional unemployment rate (%) at 1991 Census
2	DIVAGRFF	Divisional % employed in Agriculture, Fishing, Forestry and Hunting at 1991 Census
2	DIVOSEAS	Divisional % born overseas at 1991 Census
2	DIVMOBIL	Divisional residential mobility rate (% resident in 1991 at different address from five years before)
2	DIV2PARS	Divisional % of families with two parents and offspring at 1991 Census
2	DIVSHSNG	Divisional % of households resident in state housing at 1991 Census
2	DIVMINE	Divisional % employed in mining at 1991 Census

Other than BIRTHYR, all level one variables are indicators (scored 1 if the respondent possesses the attribute, 0 if not). The base categories (all 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), Nonmanual (for occupational class), Anglican/Cof E (for religious denomination), Attends less than once a year or Never (for Religious attendance).

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 unexplained by the model, that is, the level two random component represents the unexplained variation between electoral divisions and the level three random

Table 3. Summary of null (constant only) two- and three-level models

	Model A estim.	Model B estim.	Model C estim.	Model D estim.
FIXED				
CONS	0.06	0.06	0.03	0.02
RANDOM				
Level 3				
CONS	—	—	0.03	0.03
			(0.03)	(0.03)
Level 2				
CONS	0.19	0.20	0.16	0.17
	(0.05)	(0.06)	(0.05)	(0.05)
Level 1				
CONS	1	0.95	1	0.95
	(0)	(0.03)	(0)	(0.03)
Deviance ($-2\log(1h)$):	3206.00	3203.41	3203.37	3200.79

Notes
Standard errors of random estimates are given in brackets.
Model A: two-level null model, assuming binomial level 1 variance.
Model B: two-level null model, unconstrained level 1 variance.
Model C: three-level null model, assuming binomial level 1 variance.
Model D: three-level null model, unconstrained level 1 variance.

component represents the unexplained interstate variation.[4] In order to put the size of these components into perspective, where possible I will make comparisons with comparable British results from Jones *et al.* (1992).

Analyses and Results

The first models estimated are the null (no explanatory variables) models. As well as being interesting in their own right by showing the extent of overall interstate and interdivisional differences, these also provide baselines for the assessment of more complex models. There are two main features of interest in the results (see Table 3). Firstly, the size of the level two random components shows not just that there are differences between divisions in the log-odds of voting ALP (this is hardly surprising because we already know that different divisions are more or less strongly ALP), but that the extent of this difference is relatively small. This is a reflection of the fact that there are very few ultra-safe seats in Australia, with around 60% of seats falling in the marginal and ultramarginal categories at each of the last five elections (see table 3 in Charnock 1994). The comparable between-constituency differences in Britain are much larger (for example, while the level two Australian random component in model A only equals 0.19, the equivalent model estimate in Britain was 0.88 (Jones *et al.* 1992, p. 361)). It should, however,

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[4] The statistical significance of random components can be assessed by using a likelihood ratio test based on the difference between the respective model deviances.

be noted that the extent of the Australian-British difference at this level is partially an artefact of the use of different sampling methods.[5]

Second, and very importantly, the three-level model results (models C and D) show that there is no significant state-level component remaining once the divisional-level effect is taken into account.[6] The implication of this finding is that any observed interstate differences in the log-odds of voting ALP at the 1993 election were actually ones which resulted from compositional differences at a smaller geographic scale. In other words, there was no separate state-level influence on voting at the 1993 election.

These two findings are in themselves important, but the analysis can be continued further, with the next main question to be answered being whether or not the observed divisional-level effect can be explained by differences in the individual-level characteristics of the voters in the various divisions. For example, different divisions will contain different socioeconomic mixes of individuals. In turn, these socioeconomic characteristics are related to voting behaviour. Are the differing compositions sufficient to explain the divisional-level effect? Table 4 shows the results of including individual-level factors as explanatory variables in the fixed part of the model, namely, occupational class, religious denomination and attendance, union membership, age, labour force status, family income, self-assessed class, sex, employer-type, country of birth.

Since the rule of thumb for assessing the significance of individual fixed part coefficients is whether the size of the corresponding Z value exceeds 2 (see Jones *et al.* 1992, p. 360, for example), this table shows that the effects of these individual-level explanatory variables are mainly what would have been expected from single-level analyses which have been carried out previously (see McAllister 1992, for example). Thus, the log-odds of voting ALP were higher for government-sector employees, males, the young, manual workers, the self-assessed working class, those with the lowest incomes, Roman Catholics, union members, and so on.

An interesting finding is that those who were retired from the labour force had increased log-odds of voting ALP. This could be interpreted as possibly being a reflection of the circumstances of the 1993 election, in which the opposition coalition parties promised to introduce a comprehensive and radical set of policies if elected, including a general Goods and Services Tax (GST) and changes to health insurance and social security arrangements. Since these policies were widely seen

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[5] Because of the cluster sampling design used in the British Election Study, observed differences between constituencies in the BES actually represent differences between polling districts. These are on a considerably smaller scale than the Australian electoral divisions and would include any neighbourhood effects (or any other effects arising from intracluster correlation) at the polling district scale. These would not be present in the sampling method used in the AES (systematic random sampling using uptodate address lists supplied by the Australian Electoral Commission). Consequently, the size of the Australian–British divisional-level difference may be somewhat overstated by these comparisons although, in any case, the analysis in Jones (1981) suggests that very small-scale socioeconomic neighbourhood influences on Australian party preference are quite small.

On another technical point, note that there is no strong evidence of extra-binomial variation at level one in the Australian analyses, whereas the British models typically demonstrated under-dispersion.

[6] Since the precision of estimation depends on the number of areal units at each level, it would ideally be desirable to have more than six level three units (that is, the states). However, the nature of the problem makes this unavoidable and the substantive importance of estimating the size of state-level effects makes it undesirable to omit this third level.

Table 4. Three-level model with individual-level explanatory variables: individuals in divisions in states

| | Model E | |
	Estim.	Z
FIXED		
Level 1		
CONS	− 0.40	—
UNEMP	0.43	1.83
RETIRE	0.61	3.51
HOUSEK	0.43	2.54
OCCOTH	0.04	0.22
INCOM1	0.31	2.00
INCOM2	− 0.06	− 0.45
INCOM4	− 0.04	− 0.28
INCOM5	− 0.54	− 2.83
UPPERC	− 1.15	− 2.52
MIDCL	− 0.61	− 5.54
NOCL	− 0.54	− 2.72
SELFEM	− 0.54	− 3.59
GOVEM	0.28	2.39
BIRTHYR	0.021	4.86
MALE	0.22	2.00
UKBORN	0.03	0.19
OTHOSEAS	0.28	1.74
MANUAL	0.38	3.25
FARMING	− 0.68	− 2.48
UNIONMEM	0.79	6.60
CATHOLIC	0.69	5.09
UNITING	− 0.40	− 2.57
OTHRELIG	0.07	0.44
NORELIG	0.53	3.56
ATTEND1	− 0.46	− 3.03
ATTEND2	− 0.40	− 2.79
ATTEND3	− 0.38	− 2.39
RANDOM		
Level 3		
CONS	0.02 (0.02)	
Level 2		
CONS	0.09 (0.04)	
Level 1		
CONS	0.97 (0.03)	
Deviance (-2log(lh)): 2734.95		

Note
Standard errors of random estimates are given in brackets.

as being detrimental to people on fixed incomes, the effect on those retired could be seen as a 'hip-pocket nerve' effect.

The result which is probably most surprising is that being personally unemployed was not found to be statistically significant in increasing a voter's log-odds of voting ALP. Since this may be related to the important question of whether economic factors influence voting behaviour through egocentric or sociotropic routes (see Gow 1990, for example), it is a question I will return to later on in the paper.

A further interesting feature is the way in which religiosity (as measured by attendance at religious services) is associated with decreased log-odds of voting for the ALP (and hence with increased log-odds of voting for the coalition), even when the attendance is rather infrequent (as little as 'at least once a year', as in variable ATTEND3). Taken together with the religious denomination effects apparent in Table 4, this seems to support Bean's (1995) contention that the importance of religion as a cleavage has become undeservedly downplayed in recent Australian electoral studies.

The size of the reduction in the model deviance (from 3200.79 in model D to 2734.95 in model E) indicates that the inclusion of this set of individual-level explanatory variables adds considerably to the goodness of fit of the model. Nevertheless, it is still the case that there is a significant divisional-level effect, that is, even when differences in the individual-level compositions of the divisions are taken into account, there are still differences at the divisional level, although the size of the corresponding component has been reduced from 0.17 to 0.09.[7]

Therefore, although we can conclude that the determinants of the voting behaviour of the Australian electorate were nationally relatively uniform, nevertheless there are still some (relatively small) divisional-level differences present and the next task is to attempt to see whether the contextual effects discussed earlier can account for these remaining differences. In order to do this I used 1991 Census information about characteristics of the divisions as divisional-level explanatory variables. Variables examined (see Table 2) related to the urban–rural cleavage (as reflected in the non-urban industry sectors of agriculture, fishing, forestry, hunting and mining) and to aspects of the socioeconomic, family and ethnic structure of the divisions (as the three main underlying influences on urban residential differentiation).

For example, if the sort of 'countrymindedness' (Aitkin 1988) said to be still at the heart of the success of the National Party is still present, then one would expect that voters in electoral divisions with higher proportions of their workforce engaged in the areas of agriculture, fishing, forestry and hunting would (even after controlling for individual-level characteristics) be less likely to vote for the ALP. This would be a clear contextual effect and readily related to our previous understanding of Australian electoral behaviour.

Similarly, it is known that at least some groups of migrants have different voting patterns from those born in Australia (for example, Jupp & Sawer 1994; McAllister & Makkai 1991). This might be a reflection of either (or both) of an individual level or of a group level effect. Since migrants form such a large part of the Australian population (for example, at the 1991 Census, some 23% of the population were overseas-born), their voting behaviour is a matter of some potential importance.

Of all the variables considered, the one which was found to be easily the most important was the divisional unemployment rate. This indicates that of the contextual effects which influence Australian voting behaviour, socioeconomic ones are

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[7] The comparable British analysis (Jones *et al.* 1992, p. 367) again shows a constituency-level component (0.23) which is considerably larger than the Australian divisional-level one (that is, even after individual-level explanatory variables are considered), and also a substantial regional component (0.35, compared to the very small Australian state-level one of only 0.02). Again, the size of these differences may be somewhat overstated because I have used a more extensive list of individual-level explanatory variables than Jones *et al.* (1992).

overall of most importance. Of the remaining divisional-level variables, only two more (DIVAGRFF and DIVOSEAS) were found to significantly improve the model,[8] and the final model (F) is shown in Table 5. Once these three divisional-level explanatory variables are added to the individual-level ones considered earlier (and comparison of the individual-level coefficients in models E and F shows that the effects of these are essentially unchanged by the inclusion of the divisional variables), what is now very clear is that there are no remaining significant effects at either the divisional- or the state-level (only 0.01 and 0.02, respectively).[9]

Discussion

The use of multilevel modelling, which allows for the simultaneous examination of several levels and for the incorporation of both individual- and divisional-level explanatory variables, has demonstrated that (at least at the 1993 election) divisional-level random effects are relatively small; nor is there anything here to suggest the presence of a significant state-level effect when the divisional effect is taken into account. To this extent it is reasonable to conclude that the determinants of Australian federal voting are nationally quite uniform.

A substantial proportion of those divisional-level effects which do exist is capable of being explained by differences in the individual-level characteristics of voters in the various divisions. For the most part, these individual voter characteristics are quite standard, previously recognised ones (occupational class, age, union membership, income and so on), although the facts that being personally unemployed was not found to be of significance but that being retired was important are of some note. Nevertheless, there are some divisional-level differences (albeit quite small) which remain even after these individual-level characteristics are taken into account. These, however, almost completely disappear when just three group-level influences are also taken into account as explanatory variables.

The most important of these identified group-level influences on voting behaviour relates to differences in the local levels of economic wellbeing, as reflected in unemployment rates. This is clearly a group-level influence since while the individual-level characteristic of being unemployed was not found to be significant, differences in unemployment rates were found to be significant at the divisional level. In view of the fact that it was the incumbent government, it is perhaps surprising that higher unemployment levels were associated with having increased log-odds of voting ALP.

It is possible that the explanation for this finding lies in the particular circumstances of the 1993 election. The policies of the Liberal-National coalition presented in the 'Fightback' package, especially the proposed GST, were widely portrayed as being regressive in their impact and as having particularly deleterious effects on recipients of social security benefits. Paradoxically, then, the ALP may

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[8] Stepwise backward variable elimination and forward variable selection procedures both produced the same final model. The reduction in the model deviance achieved by adding DIVUNEMP by itself to the model was 24.41, while the total deviance reduction by also adding DIVAGRFF and DIVOSEAS to the model as level two explanatory variables was a further 17.51.

[9] This conclusion is quite different to that drawn from the similar British multilevel analysis in which, even after including three constituency-level explanatory variables similar to the ones used here (as well as some individual-level variables), there still remained significant effects at both the constituency and the regional level (Jones *et al.* 1992).

Table 5. Three-level models with both indi-
vidual- and divisional-level explanatory vari-
ables: individuals in divisions in states

	Model F	
	Estim.	Z
FIXED		
Level 1		
CONS	− 0.48	−
UNEMP	0.44	1.84
RETIRE	0.62	3.55
HOUSEK	0.44	2.55
OCCOTH	0.09	0.46
INCOM1	0.31	1.95
INCOM2	− 0.07	− 0.48
INCOM4	0.01	0.06
INCOM5	− 0.48	− 2.42
UPPERC	− 1.09	− 2.31
MIDCL	− 0.58	− 5.23
NOCL	− 0.54	− 2.71
SELFEM	− 0.56	− 3.62
GOVEM	0.30	2.53
BIRTHYR	0.021	4.89
MALE	0.22	2.01
UKBORN	0.04	0.22
OTHOSEAS	0.27	1.63
MANUAL	0.37	3.08
FARMING	− 0.73	− 2.54
UNIONMEM	0.78	6.46
CATHOLIC	0.73	5.32
UNITING	− 0.39	− 2.43
OTHRELIG	0.11	0.73
NORELIG	0.57	3.56
ATTEND1	− 0.45	− 2.99
ATTEND2	− 0.40	− 2.74
ATTEND3	− 0.36	− 2.21
Level 2		
DIVUNEMP	0.102	5.47
DIVAGRFF	− 0.026	− 2.89
DIVOSEAS	− 0.015	− 2.15
RANDOM		
Level 3		
CONS	0.02 (0.02)	
Level 2		
CONS	0.01 (0.03)	
Level 1		
CONS	0.99 (0.03)	
Deviance (-2log(lh)):	2693.03	

Notes
Standard errors of random estimates are given
in brackets.
Model F: final model, incorporating all
significant level two variables.

have been the beneficiary of the poor employment situation (the unemployment rate was 11%, very high by Australian standards: higher, in fact, than at any other postwar election). However, the multilevel analysis presented here shows that it was apparently not an individual-level influence, but was a group-level effect. Whether or not this is a long-term advantage to the ALP can only be determined by similar analyses of other elections.

This finding also, I think, helps in our understanding of whether economic variables influence voting behaviour via egocentric or sociotropic routes, i.e. whether individuals focus on their personal economic situation or on broader economic influences (such as measures of the performance of the national economy). In the Australian context, there is research which suggests relatively weak relationships between aggregate national economic variables and voting levels for incumbent governments over the last 45 years (Mughan 1987; Jackman & Marks 1994; Charnock 1995; Jackman 1995). However, in debating this it has been argued (Gow & Turnour 1994) that the weakness might be at least partly because of the use of two-party preferred vote as the dependent variable. Moreover, from a previous analysis (based on survey data from the 1990 AES) the conclusion was drawn that '. . . a citizen's political response to economic conditions is mediated by judgments that are collectively oriented' (Gow 1990, p. 70). Consequently, it is necessary to reconcile these findings.

Part of the difficulty in this debate may be due to the appropriate 'collective' level actually being something smaller than the national economy (for example, it might operate at something closer to the state or divisional level), and as illustrated in Table 5 the multilevel approach allows for the influence of group-level economic effects at levels such as divisions to be investigated. The finding from model F appears (at least partly) to resolve the previously mentioned apparently contradictory findings: sociotropic effects are indeed important, but are operating at a subnational level.

Second, there is evidence to support the existence of an urban–rural cleavage; voters in divisions with higher proportions of their workforce in agriculture, forestry, fishing and hunting had reduced log-odds of voting ALP (even given differences in individual characteristics, including actually being engaged in the farming industry). Although the National Party is sometimes portrayed as the 'farmers' party', it is important to note that this 'countrymindedness' factor is in addition to an individual-level 'farming' effect. That is, the 'countrymindedness' is a genuine group-level effect, not just an effect which arises from differing individual-level compositions within divisions. However, it should be noted that the size of this 'countrymindedness' effect does appear to be smaller than might have been anticipated from the existence of the National (previously Country) Party. This may not augur well for the long-term support base of the Party.

Third, possibly surprisingly, voters in divisions with higher proportions born overseas actually had reduced log-odds of voting ALP. This is rather different than some conventional wisdom would have it, bearing in mind that it is an effect after taking the individual-level explanatory variables into account, including whether individuals themselves were born overseas. However, the significance of this variable was quite marginal and it would be unwise to draw firm conclusions without further investigation into whether the effect is replicated at other elections.

In conclusion, the use of this relatively new technique provides a powerful way of studying the influence of contextual effects on Australian voting behaviour. The

analyses presented here show, firstly, that individual voter characteristics are overall considerably more important than contextual effects and, secondly, that at the 1993 election not only were regional variations in first preference voting for the ALP relatively small, but that they apparently operated not at the state level but more at the divisional level. Individual-level compositional differences accounted for roughly half of those spatial variations which were present, and most of the remainder can be accounted for by a local sociotropic economic effect and the well-recognised rural–urban effect.

In the language of previous debates (couched in terms of national, state and local effects), at the 1993 election voting was quite nationalised, with no significant overall state-level effect. There was, however, a relatively small, more localised effect, almost all accounted for by a local economic effect and the urban–rural cleavage.

To what extent these conclusions are particular to the 1993 election must await comparable analyses of other elections. The most important of the contextual effects relates to economic prosperity. Given that state level differences were not significant, it would seem that if we are to search for regional variations of a higher order of aggregation than electoral divisions then it would be appropriate to look for ones which have an economic basis.

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