



Suggestion 5

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WA FEDERAL ELECTORAL 2020 REDISTRIBUTION

Brief Submission – Confronting the Territorial Dilemma

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In all territorially-based electoral systems, Redistribution Committees face a permanent dilemma – that is, how to fairly delimit a set of district/division boundaries designed to maximise the criteria of equal population [within reasonable constraints] and the representation of regional interests. This dilemma becomes especially acute in a State like Western Australia which has such an uneven population distribution. This particular situation means that the chosen redistribution outcome will only be one of an indeterminate number that satisfies ‘fairness’ and minimises any unintended partisan consequences. The Redistribution Commissioners should be legally-bound to be able to scientifically defend the final set of boundaries that they determine in order to meet these criteria.

One solution to begin to resolve this overall dilemma and requirement is to devise an appropriate set of mechanisms for evaluating the likely impact of alternative electoral distribution solutions [Rumley 1985 – see attachment]. The Federal Electoral Commission should be empowered to devise an appropriate evaluation scheme or schemes for all redistributions in all jurisdictions.

Reference

Rumley, D. [1985], ‘The evaluation of electoral redistributions: the case of Western Australia’, *Australian Geographical Studies*, Vol. 23 [1], pp. 105-114.

The evaluation of electoral redistributions: the case of Western Australia*

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Electoral boundaries may be delimited by electoral commissioners who are explicitly non-partisan but the consequences of their decisions are generally highly partisan. An evaluation of the State redistribution in Western Australia reveals that the Liberal Party was given a significant initial advantage for the 1983 State Election. Indicators used in the evaluation procedure include political party competition, shape, the integrity of political units, predictors of voting behaviour, as well as the re-aggregation of the 1983 election results by the pre-redistribution boundaries.

This article develops an evaluation procedure for state electoral redistributions in Western Australia. In particular, it is concerned with some of the political-geographic and socio-geographic implications of the state electoral redistribution for the Metropolitan electoral zone undertaken in 1982. Four specific sets of indicators are used in the evaluation – political party competition, shape, the integrity of political units, and predictors of voting behaviour. In addition, the results of the state election in 1983 are re-aggregated on the pre-redistribution boundaries.

The Western Australian Electoral Districts Act, 1947-1981

The Western Australian Electoral Act regulates participation in state elections but state electoral power is allocated territorially via the Electoral Districts Act (Rumley, 1980). For the purposes of periodic electoral redistributions, the State of Western Australia is divided into three electoral zones – the North-West-Murchison-Eyre zone, the Agricultural, Mining and Pastoral zone and the Metropolitan zone (Fig. 1). The boundaries of the three electoral zones are currently delimited directly by State Parliament. For the North-West-Murchison-

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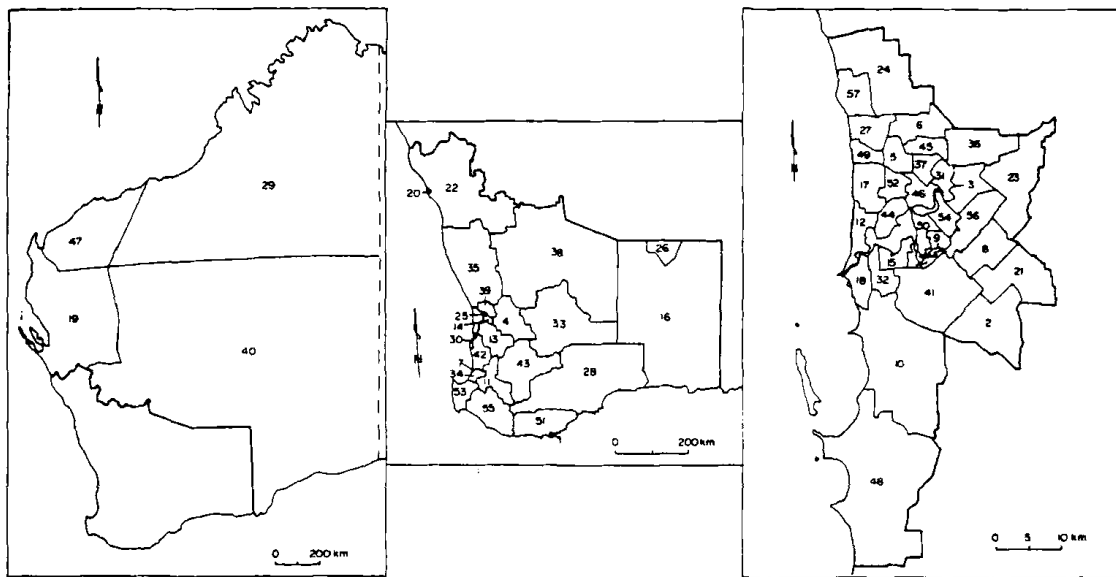


Fig. 1 The electoral zones of Western Australia 1982.

- a. North-West-Murchison-Eyre
 b. Agricultural, Mining and Pastoral
 c. Metropolitan

1. Albany, 2. Armadale, 3. Ascot, 4. Avon, 5. Balcatta, 6. Balga, 7. Bunbury, 8. Canning, 9. Clontarf, 10. Cockburn, 11. Collie, 12. Cottesloe, 13. Dale, 14. Darling Range, 15. East Melville, 16. Esperance-Dundas, 17. Floreat, 18. Fremantle, 19. Gascoyne, 20. Geraldton, 21. Gosnells, 22. Greenough, 23. Helena, 24. Joondalup, 25. Kalamunda, 26. Kalgoorlie, 27. Karrinyup, 28. Katanning-Roe, 29. Kimberley, 30. Mandurah, 31. Maylands, 32. Melville, 33. Merredin, 34. Mitchell, 35. Moore, 36. Morley-Swan, 37. Mount Lawley, 38. Mount Marshall, 39. Mundaring, 40. Murchison-Eyre, 41. Murdoch, 42. Murray-Wellington, 43. Narrogin, 44. Nedlands, 45. Nollamara, 46. Perth, 47. Pilbara, 48. Rockingham, 49. Scarborough, 50. South Perth, 51. Stirling, 52. Subiaco, 53. Vasse, 54. Victoria Park, 55. Warren, 56. Welshpool, 57. Whitford.

Eyre zone (Fig. 1a), the number of Lower House (Legislative Assembly) seats is fixed at four by the Act, and the boundaries of these seats—Gascoyne (9), Kimberley (29), Murchison-Eyre (40) and Pilbara (47)—are delimited directly by State Parliament. The boundaries of seats in the other two zones, however, are determined by three independent electoral commissioners—the Chief Justice, the Surveyor-General and the Chief Electoral Officer.

Prior to the 1976 redistribution, Section 5 of the Electoral Districts Act stated that every two Metropolitan electors would be counted as one elector, and each elector in the Agricultural, Mining and Pastoral zone would be counted as one elector. This two-to-one elector bias in favour of non-Metropolitan Western Australia was explicitly removed in 1975, but was replaced by a rule which necessitated that, for the 1976 redistribution, the Metropolitan zone would be allocated twenty-seven of the fifty-five seats in the Lower House. For the 1982 redistribution, the Metropolitan zone was to be allocated thirty of the fifty-seven seats in the Lower House, each having a 'statutory quota' (number of electors to be contained in a seat) of 16,224 with an allowable deviation of 10 per cent. The largest seat in the Metropolitan zone was Melville (32) with 17,117 electors. In the Agricultural, Mining and Pastoral zone, on the other hand,

the statutory quota was 8583 (allowable deviation of 15 per cent) and the smallest seat was Warren (55) with 7979 electors. However, the smallest number of electors in any State seat was Murchison-Eyre (40) in the North-West zone with 1932.

For the Upper House, the Legislative Council, Section 9 of the Act states that electoral provinces in the Metropolitan zone must contain four or five contiguous Assembly districts, and in the rural area provinces must contain two or three contiguous Assembly districts (Electoral Districts Act). As a result, at the Council level the value of one vote in the Agricultural, Mining and Pastoral zone is generally at least four times the value of one vote in the Metropolitan zone. For the 1982 redistribution, the smallest number of electors in any province (5694) was contained in Lower North (comprising Gascoyne plus Murchison-Eyre). On the other hand, the province of North-East Metropolitan (comprising Ascot, Helena, Maylands, Morley-Swan and Welshpool) contained 80,718 electors.

The interaction of this malapportionment with the geographical distribution of political party supporters has produced a consistent electoral bias in favour of the former Liberal-Country Party coalition, especially for the Legislative Council (Rumley, 1982a). The extent of the malapportionment and the resultant bias caused Brian Burke, the leader of the then Labor opposition, to mount a legal challenge in March 1982 in the State Full Court before three judges, one of whom was the Chief Justice. The Chief Justice, who is also the Chairman of the electoral commissioners, noted during the hearings that for some considerable time the average country vote in Western Australia has been worth something like twice the city vote (*The West Australian* 3 March 1982). On 7 April 1982 the three judges unanimously rejected the legal challenge to the Act.

An evaluation of the 1982 electoral redistribution

It has been pointed out that a territorially-based electoral system allows political parties in power the opportunity to manipulate electoral law in order to remain in power (Johnston, 1979). The extent to which the Western Australia State government is able to manipulate the Electoral Districts Act in order to remain in power is both indirect and direct. It is indirect in the sense that it has the authority to change the boundaries of each of the three electoral zones, and it is direct in the sense that it has the authority to change the boundaries of the four seats within the North-West-Murchison-Eyre zone. For the other two zones it is important to recognise that, although electoral boundaries may be delimited by electoral commissioners who are explicitly non-partisan, the consequences of their decisions are generally highly partisan (Rossiter and Johnston, 1981).

In order to identify and evaluate these effects it is essential to develop a set of evaluation procedures. These procedures are likely to vary according to the nature of the electoral system under consideration and according to the point of view or the aim of the evaluation. For example, a recent article presents a detailed framework for the identification and evaluation of racial gerrymandering which is applied to Congressional districts in Manhattan and Mississippi and to New Orleans City Council districts (O'Loughlin, 1982).

General changes

For the case of Western Australia, a former State Premier, Sir Charles Court, indicated that the basic objective of the 1982 electoral redistribution was to make sure that all electors were adequately represented (Western Australia, *Hansard*, 1981, 1353). For several peripheral Metropolitan electorates, the electoral populations were significantly above the allowable 10 per cent deviation from the 1976 statutory quota of 15,589 – for example, Canning, Cosnells,

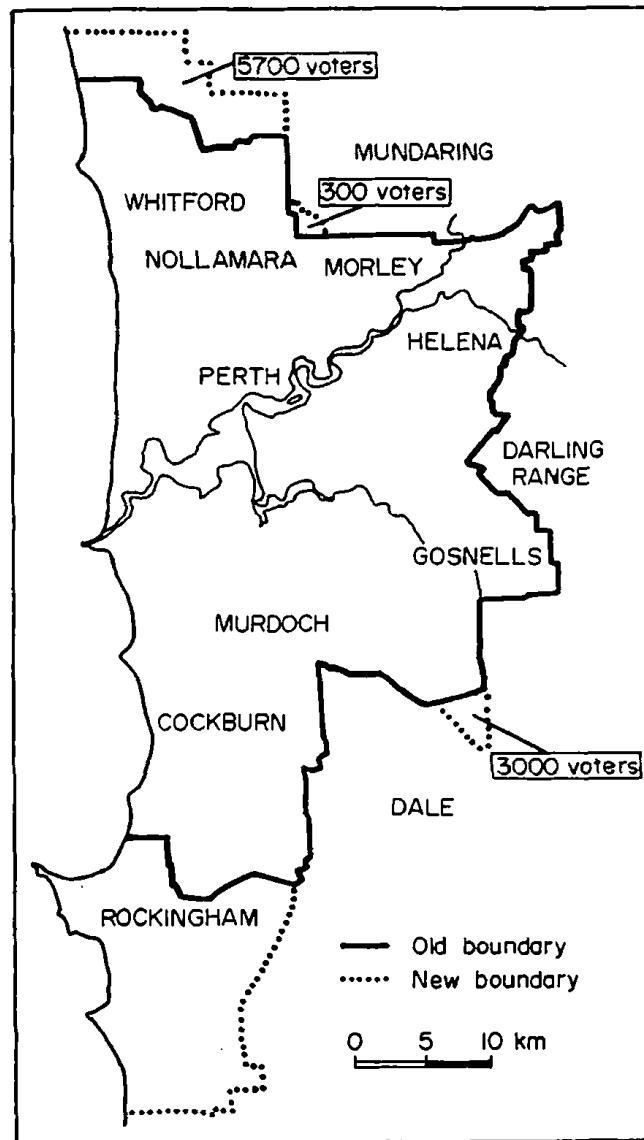


Fig. 2 Metropolitan zone boundary changes.

Murdoch and Whitford. Furthermore, some Metropolitan electorates were below quota, notably Nedlands, Perth and South Perth (Fig. 1). The growth of the Metropolitan population, especially at the periphery, contributed to a government decision to extend the boundary of the Metropolitan zone to include the non-Metropolitan electorate of Rockingham as well as other areas in the north and southeast (Fig. 2). It was also decided to increase the number of Metropolitan electorates by a further two, giving a total of thirty based on the statutory quota of 16,224. The addition of Rockingham in the Metropolitan zone meant that the number of electorates in the Agricultural, Mining and Pastoral zone was reduced to twenty-three based on the statutory quota of 8,583. As a result of these changes, the average number of electors

in each seat in the Metropolitan and Agricultural zones was reduced by about 6 per cent. The only significant change which occurred in the North-West-Murchison-Eyre zone was the government decision to alter the boundary between the electorates of Pilbara and Kimberley, thereby more than doubling the electoral population of the latter.

For the purposes of the present discussion, in order to evaluate some of the indirect results of State government electoral policy, consideration will only be given to some of the changes which have occurred within the Metropolitan zone. Four sets of evaluation indicators will be used – political party competition, shape, the integrity of political units and predictors of voting behaviour.

Population and party competition

The number of Metropolitan electorates increased from twenty-seven to thirty, but the Metropolitan zone gained five new seat names – Armadale, Balga, Helena, Joondalup and Nollamara (Fig. 1). The gain of three districts was realised by the addition of the former 'rural' district of Rockingham (making six additions) and by the loss of three seat names – Dianella, Mount Hawthorn and Swan – all of which were won by the Australian Labor Party with increased majorities in the 1980 State election. Of the twenty-four retained seat names, twelve were won by the Liberals and twelve were won by the Australian Labor Party in 1980. As was noted above, one of the bases for changing the Metropolitan electorates was the changing distribution of the electoral population. An analysis of enrolment change 1977-1980 for the twenty-four retained seat names shows a correlation of -0.91 with per cent electoral population change for the 1982 electoral boundaries. However, Section 7 of the Act states that one criterion which must be given 'due consideration' by the electoral commissioners in any redistribution is the 'existing boundaries of districts' (Electoral Districts Act). For the 1982 redistribution, however, only one Metropolitan electorate, Fremantle, retained its previous boundaries.

In order to test for any significant percentage change in the number of voters for the various political parties in the twenty-four retained districts, a simple index of party competition was computed for the results of the 1977 and 1980 State elections. The index was adapted from a study which used a similar approach to examine the extent of competition in British local government elections (Alt, 1971). In the present study, the index was derived by subtracting from fifty the difference between 50 per cent and the percentage Labor vote for all twenty-four seats. The results of this analysis are only indicative – that is, there was a slight tendency for the electoral population of highly competitive seats in 1980 to be reduced ($r = -0.34$). Second there was little association between competition change 1977-1980 and change in the electoral population ($r = 0.16$). However, in the case of the latter, the pattern of associations was found to vary according to which political party had won the seat in 1980; that is, although there was little association between competition change and change in electoral population for Australian Labor Party – held seats ($r = -0.19$), the association for Liberal-held seats was moderate ($r = -0.44$).

Evaluating shape

One of the ways of determining whether gerrymandering has occurred is through the inspection of the electoral map to discover if any seats possess convoluted shapes (Prescott, 1972, 77). It must be remembered, however, that shape analysis can only provide a first approximation in this regard, and cannot of itself be used as proof of an intended gerrymander. What can be said is that the assumption that non-compact seats and those with strange shapes constitute evidence of gerrymandering is probably accurate (O'Loughlin, 1982, 170). As has

been noted, for any given two-dimensional area, the most compact shape is a circle (Schwartzberg, 1966). It has therefore been argued that the circle is an ideal shape against which gerrymandering can be tested (Bunge, 1966). In a recent discussion of the literature, a shape index which divides the maximum diameter by the minimum diameter of a seat is found to be the simplest and most useful indicator. Further, it was argued that any seat with a ratio of more than two generally requires some justification (Morrill, 1981, 22).

Applying this shape index to the thirty seats in the Metropolitan zone revealed a mean value of 3.3 with seven electorates having a value of at least one standard deviation above the mean – Clontarf (9), Gosnells (21), Helena (23), Melville (32), South Perth (50), Subiaco (52) and Welshpool (56) (Fig. 1c). By far the most remarkable result of the shape analysis was the shape of the new electorate of Clontarf (Fig. 3). Can it be that the original gerrymander which was born in 1812 and which died in 1813 has been reborn in Western Australia, or is it simply a strange coincidence? (Taylor and Johnston, 1979, 373).

Integrity of political units

The Supreme Court of the United States has recognised the desirability of following the boundaries of local government areas, as well as the desirability of including them in their entirety where possible within electoral districts, both on the basis of voter identification and in terms of convenience. It is likely that elongated districts which cross many political lines will result in less effective representation because of the probable disunity of the component parts. In any event, a local government area which has an electoral population smaller than an electoral district and which is divided as a result of an electoral redistribution requires considerable justification (Morrill, 1981, 25).

In the Western Australian case, ideas of voter identification derived from the issue of the integrity of political units are closely related to another criterion to be given 'due consideration' by the electoral commissioners – 'community of interest' (Electoral Districts Act). Cottesloe (12) is the only Metropolitan electorate in which the integrity of small local government areas has been relatively closely respected. In the remaining twenty-nine electorates the correspondence between electorates and local government areas is minimal right down to the level of the ward. The new electorate of Helena (23), for example, incorporates parts of the Swan Shire and parts of wards in the Shire of Kalamunda. No complete local government area is used as a State electorate, and the boundary of the Metropolitan zone itself bisects a number of local government units. Indeed, there are three local government areas – Bassendean (7139), Kwinana (7223) and Subiaco (12,059) – which are divided by electoral boundaries and yet which possess an electoral population which is less than the lowest allowable statutory quota (14,602).

In particular need of justification are electoral units which display both a lack of consideration for the integrity of political units and which are also elongated. Three electorates are especially problematic in this regard – Clontarf (9), Helena (23) and Subiaco (52).

Predictors of voting behaviour

Shape analysis can be suggestive of a gerrymander but a simple analysis of the distribution of political party supporters can give some indication of its extent. 'Good' predictors can go one stage further to indicate with some precision the political implications of electoral redistributions. For Western Australia as a whole, a class approach has been found to be a necessary but not sufficient basis for the explanation of voting behaviour in State Elections (Rumley, 1982b). However, there appears to be considerable variation in the relevance of this approach by electoral zone (Johnston, Hay and Rumley, 1983).

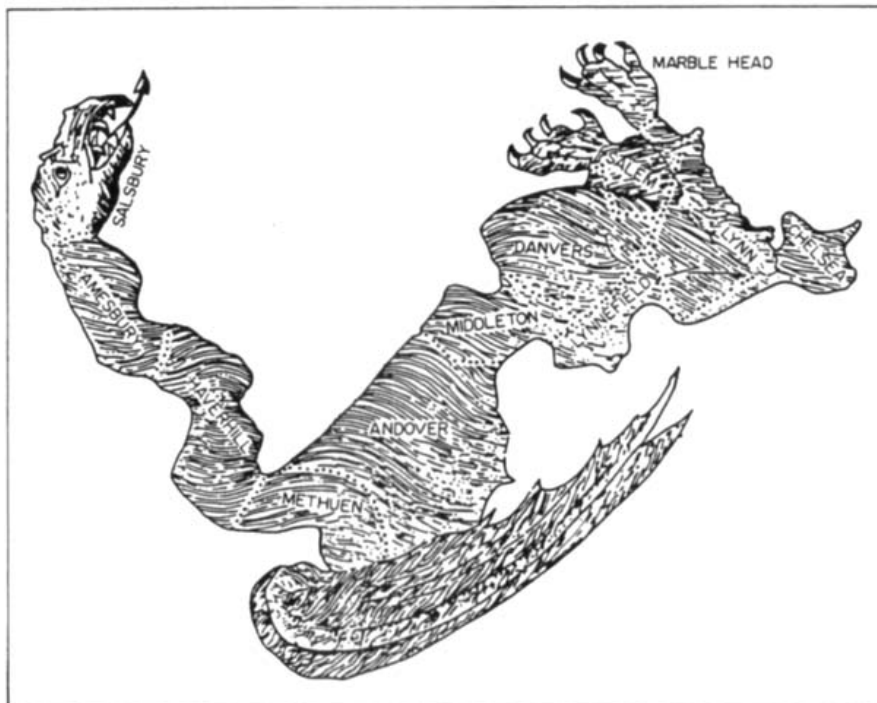
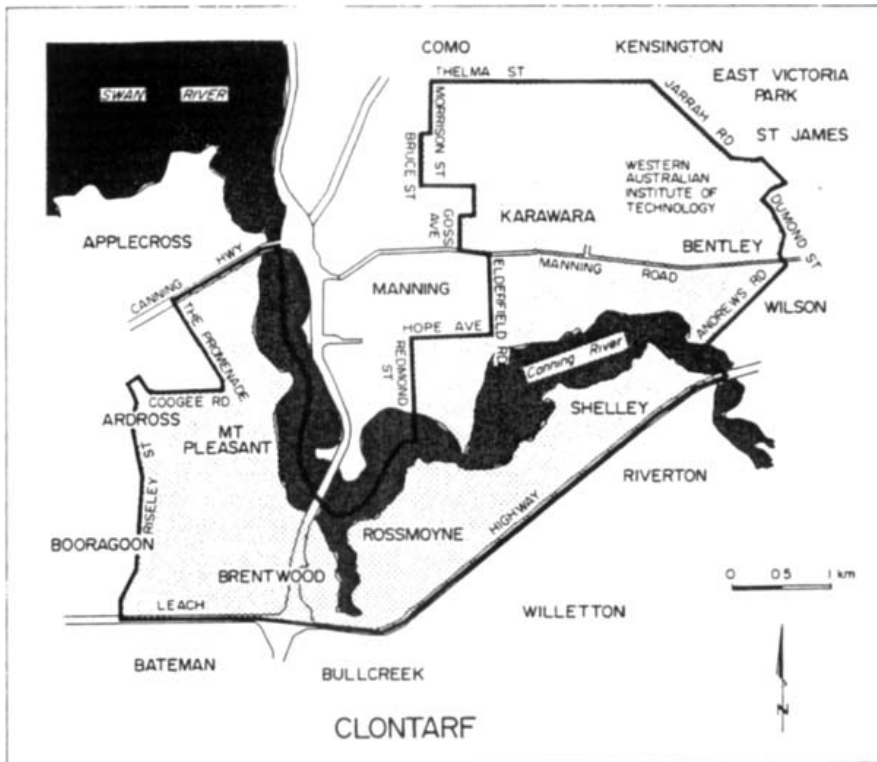


Fig. 3 The strange shape of the Clontarf electorate.

TABLE I
 VOTING PREDICTORS IN THE METROPOLITAN ZONE
 WESTERN AUSTRALIA, 1977 AND 1980

<i>Predictor</i>		<i>Predictor</i>	
X ₁	Tertiary qualifications	X ₅	White collar workers
X ₂	No formal qualifications	X ₆	Manufacturing occupations
X ₃	Annual income greater than \$15,000	X ₇	Catholics
X ₄	Professional occupations		

The variables used in the class analysis for the whole State were therefore subjected to an aggregate correlation analysis for the twenty-seven pre-redistribution electorates in the Metropolitan zone. Seven variables were found to be very significantly correlated with Australian Labor Party and Liberal vote for the 1977 and 1980 State Elections (Table I). Differing combinations of these variables were included in a number of stepwise regression analyses in order to derive a model or models with the highest predictive capability. The best solution produced three models – one for the Labor vote in 1977 (ALPVOT), one for the Labor vote in 1980 (ALP80) and one for the Liberal vote in 1977 (LIBVOT). The solution for the 1980 Liberal vote was excluded because it was the only model which did not predict the winning party both in the 1977 and 1980 elections. The form of the models is as follows:

(1) *ALPVOT*:

$$42.82 - 0.34X_1 + 0.83X_2 + 0.15X_3 - 0.65X_4 - 0.92X_5 - 0.37X_6.$$

$$(r^2 = 0.93)$$

(2) *ALP80*:

$$72.39 + 0.25E - 0.1X_1 + 0.74X_2 - 1.06X_4 - 1.12X_5 - 0.59X_6 - 0.24X_7.$$

$$(r^2 = 0.87)$$

(3) *LIBVOT*:

$$84.33 + 0.97X_1 - 1.1X_2 + 0.88X_5 + 0.25X_6.$$

$$(r^2 = 0.94)$$

The values for each of the variables used in the three predictive models were obtained from the 1981 census for each of the twenty-four retained seat names in the Metropolitan zone. In each case, the predicted Labor vote was calculated and averaged across the three models to produce a single predicted percentage for the purposes of the evaluation. Comparison with the Labor vote in the same twenty-four seats in the 1980 State Election revealed that the 1982 electoral redistribution had on average yielded a 5 per cent advantage to the Liberal Party. However, no significant correlation was found (0.15) between the predicted change in the Australian Labor Party vote and party competition change between 1977 and 1980.

The Western Australian State Election 1983

Despite the significant initial advantage accorded to the Liberal Party it was overwhelmingly defeated in the February 1983 State Election. Its percentage of the Assembly vote declined by 4.4 per cent to 39.4 per cent, and its proportion of seats declined by 12.2

per cent to twenty of the fifty-seven seats. The Labor Party, on the other hand, gained an additional 7.2 per cent of the Assembly vote and won nine extra seats to give it a total of thirty-two. However, the in-built malapportionment enshrined in the Electoral Districts Act resulted in another significant bias against Labor in the Legislative Council. The Upper House, therefore, continued to be controlled by non-Labor political parties as a consequence of the 1982 State Election. Parliamentary efforts to remedy this situation have since been frustrated by the Western Australian Legislative Council.

In order to determine the electoral impact of the new boundaries, all 1983 results by polling place were re-aggregated for the pre-1982 redistribution boundaries for the Metropolitan electoral zone. Clearly, such a procedure does not precisely measure the impact of the redistribution since it assumes that there was no demographic change within electoral districts. Such a procedure also assumes that the journey to vote is minimised and that this remained unaffected by the redistribution. Because of the difficulty in precise comparison of all districts due to partition, absorption, name-changing and the geographical extension of the Metropolitan zone, five of the districts were omitted from this part of the analysis – Armadale (2), Balga (6), Joondalup (24), Nollamara (45) and Rockingham (48). For the remaining twenty-five districts, the net effect of the 1982 redistribution was estimated by determining the difference in the 1983 results on both sets of boundaries.

The electoral effect measured by this method was to reduce the mean Labor vote by almost 1 per cent, and to increase the mean Liberal vote by slightly less. In particular, however, three electoral districts – Clontarf (9), Mount Lawley (37) and Murdoch (41) (all won by the Liberals in 1983) – would possibly have been lost on the old boundaries. Interestingly, the correlation between the predicted impact on the Labor vote based on the demographic models and the impact based on poll re-aggregation was high (0.73).

Conclusion

The purpose of this article has been to present an evaluation procedure for state electoral redistributions in Western Australia. The evaluation presented here has concerned itself primarily with some of the indirect effects of State government policy on electoral law for the Metropolitan zone. This has been done to emphasise the relevance of an issue which has been raised in other political contexts such as the United Kingdom – that is, although electoral boundaries may be delimited by electoral commissioners who are explicitly non-partisan, the consequences of their decisions are generally highly partisan (Rossiter and Johnston, 1981).

- There are at least four major lines of further research on this issue which need to be pursued:
1. A detailed analysis of the direct effects of the redistribution experienced in the North-West-Murchison-Eyre zone. In the State Parliament, former Liberal Member of the Legislative Council for North Province (comprising Pilbara and Kimberley) referred to the change in the Pilbara-Kimberley electoral boundary as 'approximately 70 per cent more of a gerrymander than any other carried out in the world' (Western Australia, *Hansard* 1981, 5499).
 2. The development and refinement of predictive models for the Agricultural zone in order to determine the political implications for the redistribution in that zone.
 3. The provision of a research basis for a legal definition of criteria which the electoral commissioners must take into account in their re-districting procedure, especially that of community of interest. Among other things, this requires considerably more research effort into the spatial structure of Metropolitan Perth in terms of, for example, perceived neighbourhoods and nodal regions.

4. Arising out of the above, the development of alternative re-districting procedures even within the constraints of the system of electoral zones. It must be recognised that the solution provided by the electoral commissioners, for example, is only one among a number of potential alternatives. The range of potential solutions needs to be carefully evaluated in order to determine a fair and just set of electoral boundaries.

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