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HOW SHOULD I VOTE?

**A study of various aspects of voting systems used in
Parliamentary elections, particularly in Australia.**

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CONTENTS

| | | Page |
|-----|---|------|
| | CONTENTS | (ii) |
| | FOREWORD | (iv) |
| I | INTRODUCTION | 1 |
| II | JUSTIFICATION FOR THE AUSTRALIAN ELECTORAL SYSTEM, AND THE SIZE AND COMPOSITION OF THE HOUSES | 12 |
| | Paper 1 Stability and the Voting System in Australia | 15 |
| | Paper 2 On Even Numbers of Seats in Parliament | 22 |
| | Paper 3 Representation of Territories in Federal Parliament | 34 |
| III | FAIRNESS OF VOTING : SINGLE MEMBER CONSTITUENCIES | 47 |
| | Paper 4 Measures of Power in Australian Politics | 48 |
| | Paper 5 Swings and Gerrymanders | 63 |
| | Paper 6 Boundary Changes in South Australia | 77 |
| IV | THE AUSTRALIAN SENATE, AND THE SINGLE TRANSFERABLE VOTE (STV) | 106 |
| | Paper 7 Sampling Errors in the Electoral Process for the Australian Senate | 108 |
| | Paper 8 Electoral Distortion under STV Random Sampling Procedures: A Comment | 124 |
| | Paper 9 Aspects of the Voting System for the Senate | 126 |

| | | |
|-----|---|-----|
| V | STRATEGIC VOTING AND THE ALTERNATIVE VOTE | 132 |
| | Paper 10 The Determinants of Strategic Voting | 133 |
| VI | DECISIVENESS | 183 |
| | Paper 11 The Probability of Being Decisive | 185 |
| | Paper 12 The Probability of a Tied Vote for the U.S. Presidency: the Orthodox Formulation | 202 |
| | Paper 13 The Probability of a Tied Vote for the U.S. Presidency: a Reformulated Calculation | 215 |
| | Paper 14 Strange Bedfellows: A critical review of <i>Democracy and Decision - the pure theory of electoral preference</i> by G. Brennan and L. Lomasky | 230 |
| | Paper 15 A Further Experimental Study of Expressive Voting | 247 |
| VII | MULTIPLE - BORDA AND STV | 263 |
| | Paper 16 Simultaneous Election of Representatives | 264 |

FOREWORD

I became interested in practical aspects of electoral systems in the late 1960's, when confronted with a wide choice of candidates in the STV election of the ACT Advisory Council in about 1968. I remember trying hard to work out a voting strategy which would maximise the effectiveness of my vote. From this I became interested in the problem of finding the sampling error for elections to the Australian Senate, which I began in 1970, and worked on sporadically until 1972. For all practical purposes, I had solved the problem at this time, but I was not satisfied with either the theoretical framework or the extent of my assumptions. I left the problem and did not look at it again until 1977, when I developed the framework of the article which eventually appeared in 1980. The answers to the problem of the sampling error, which I obtained for that paper, differed by only one or two percent from those I had originally calculated in 1972.

By then I knew the voting system for the Australian Senate well enough to write a further paper exposing some of its shortcomings and suggesting improvements. I was also asked to act on a Committee of my University on electoral machinery. Out of this work arose a paper on the simultaneous election of representatives, primarily to show how the system for electing the University Council was likely to fail when most needed.

This research was, however, peripheral to my other work in economics. Together with a colleague, I received a large research grant to examine the diffusion of innovations in the wheat industry in South Australia, and I worked primarily in this area for several years. In 1983, however, I made a short submission to the Australian Parliament's Joint Parliamentary Committee on Electoral Reform, highlighting the existence of my two articles on the Senate.

It was not until John Taplin, organiser of Symposia on Electoral Reform at two successive ANZAAS Conferences in 1986 and 1987, contacted me early in 1986 that I again began to focus on further work. In 1986 came the Conference Paper comparing the electoral system of Australia with that of New Zealand and the UK on the one hand and proportional representation systems on the other. In 1987 I followed this with applied work on the game-theory concept of Power in politics for the ANZAAS Symposium that year. I tried to get this work published in *Political Geography*, and received my only outright rejection of any submissions I have made in this area.

By now my dabbling was somewhat more serious, although it has remained a secondary research interest of mine. The paper on Political Power turned out to be pivotal. Although it was a "fizzer" in itself, it inspired work on looking at the variability of the swing at a particular election. The introduction of a stochastic element in this area proved more fruitful. It has enabled a quantification of the variation in the number of seats gained by a party with a particular proportion of the overall vote. This has allowed an estimate of the probability of a tied Lower House, and more importantly, opened the way for an analysis of electoral bias, or more loosely, gerrymandering. More recently, it has provided a basis for work on decisiveness.

Having believed that I had hit on something important, I therefore decided to enrol in a Ph.D. program in this area. I enrolled in September 1992, after a long and for many months inconclusive debate with the University's administration about whether they would accept the kind of thesis I proposed, the possibility of early submission, and whether I had to pay fees.

In the first instance, then, this thesis has cobbled together bits and pieces of my "hobby" research. However, in the last two years, I have done much more. I had intended to make my work on electoral boundaries a central part of the thesis. I decided, after enrolling, that I could not do this. Gelman and King had independently used essentially the same method as mine, and their work had primacy by some months. They then extended their work in exactly the way I had thought I would extend my work in the area, to distinguish it from theirs! While I have included some of my work in this area, I have also concentrated on two other areas, which have enabled me to combine my work in Experimental Economics with my thesis. I have done two sets of experiments, one on the determinants of strategic voting, which breaks new ground in this area, and the other on instrumental and expressive voting. The second set of experiments is just one aspect of recent work I have done in the area of decisiveness, which my supervisor (Professor Jonathan Pincus) suggested I examine more closely. Rather reluctantly, I did so. The newer area has borne rather more fruit than I had imagined it would (though I will only grudgingly admit as much to my supervisor). One of these pieces of fruit is also one of the smallest contributions (in terms of size) to the thesis. In the whole area of Public Choice and electoral theory, the most important single notion is perhaps that of decisiveness. So it is important that the probability that a voter is decisive is calculated using a correct and appropriate method. For the last twenty or so years, it has not been: mistakes of the order of magnitude of 10^{100} , and more, have been made. Consequently, the importance of expressive voting has been overemphasised, and there has been a lack of correspondence between the theoretical probability of being decisive and observed behaviour on turnout. My revision of the calculation of the probability has crowded out a paper I have been intending to write, which would extend the notion of power and the probability of decisiveness to an index of voter inequality based on the Lorenz Curve and Gini coefficient.

It is usual to thank people who have helped and encouraged me in this work. The thesis being done the way it has been, I have a rather short list, as I have worked predominantly alone on it for most of the time.