

Strategic Voting under Ranked Choice Voting and Plurality: Empirics

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1 Introduction

This memo sets out, compares, and contrasts the main empirical results from our work so far. For a given distribution of voters with specific preferences over three parties, and a belief over the likely election outcome (centred on the ballot profile v_0), we evaluate the following for both RCV and plurality:

- what proportion of the voting population faces a positive incentive to vote strategically?
- (under RCV) how is this incentive further distributed between second-first and third-first ballots?
- how likely are voting paradoxes (no-show, monotonicity violation) to occur?
- if voters anticipate other voters' strategic behaviour, how do the incentives change? (which system is more vulnerable to coordination problems?)

Unfortunately, we do not know of a data source that captures both voters' relative preferences over parties as well as their vote choice under plurality **and** RCV (which, as the name suggests, requires a ranked choice over

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parties/candidates).¹ Instead, we draw on two complementary data sources: first, the CSES (*Comparative Study of Electoral Systems*), which contains 162 surveys in different countries (at different times). Here, we use respondents' like-dislike scores (thermometer) about parties to construct their v_{MN} utilities. For the purposes of further analysis, we then assume that voters believe that the expected election outcome is centred on the outcome that would occur if everyone else in that survey voted sincerely. Second, look at the 2015 state election in New South Wales (NSW), Australia, which used ranked-choice voting, with the possibility to truncate one's ballot. We use the Australian Election Study (specifically, only respondents from NSW) for to construct voters' utilities; and the actual distribution of ballots from the 2015 election to inform v_0 .

2 Data

2.1 Summary

- mention key differences between data sets

2.2 Descriptive Statistics

- include simplex plots of distribution of v_0 s
- summarise preference distribution

3 Frequency of Strategic Voting Incentives

What can we see here? The pattern is extremely similar across both cases. At very low levels of information, there are roughly similar proportions of RCV second and plurality second optimal votes (with plurality being slightly higher). There exists virtually no incentive to vote RCV third. This changes as information improves: the plurality incentive stagnates below 0.2 on average, whereas RCV second keeps rising. Crucially, at high levels of information, the incentive to vote RCV third also becomes very large. (how is this related to the theory?)

¹We do have utilities and the first *two* ballot ranks recorded in the AES, but the number of respondents who rank major parties as the top two is small; furthermore, respondents are bad at giving accurate responses for lower ranks.

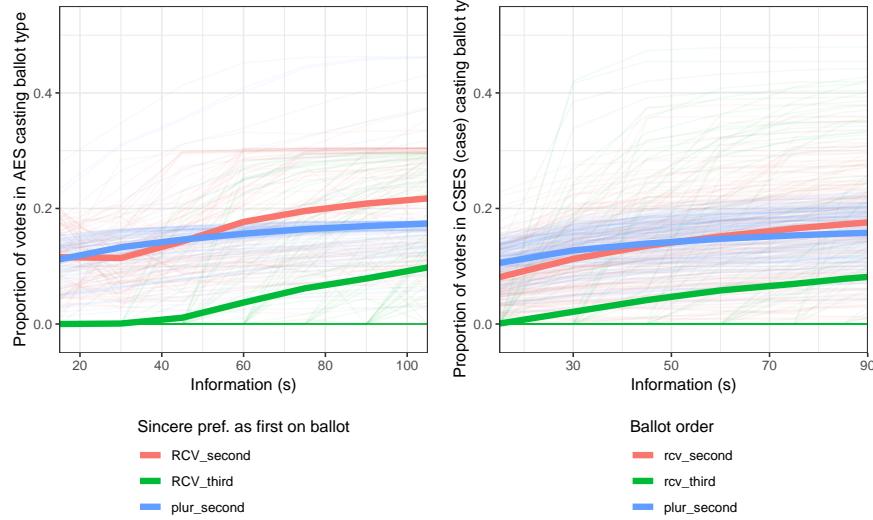


Figure 1: Proportion of voters with non-sincere optimal vote, by level of information. Left panel: NSW. Right panel: CSES

4 Direct Comparison of Frequency

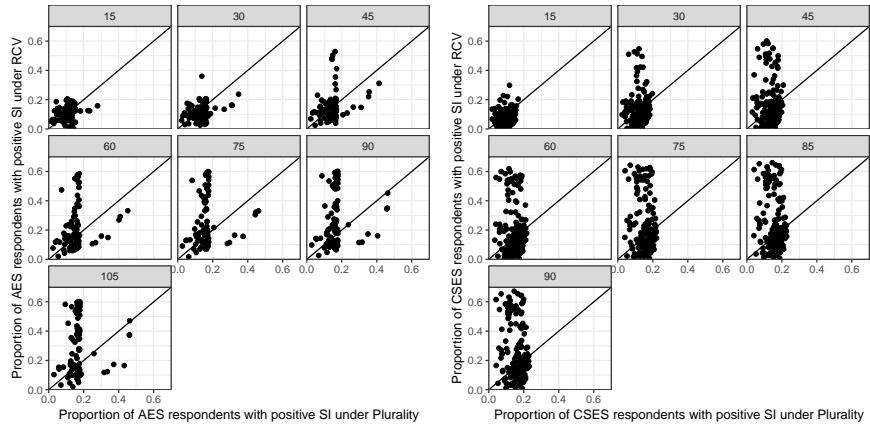


Figure 2: Proportion of voters with non-sincere optimal vote, by level of information. Left panel: NSW. Right panel: CSES

5 QQ-Plots

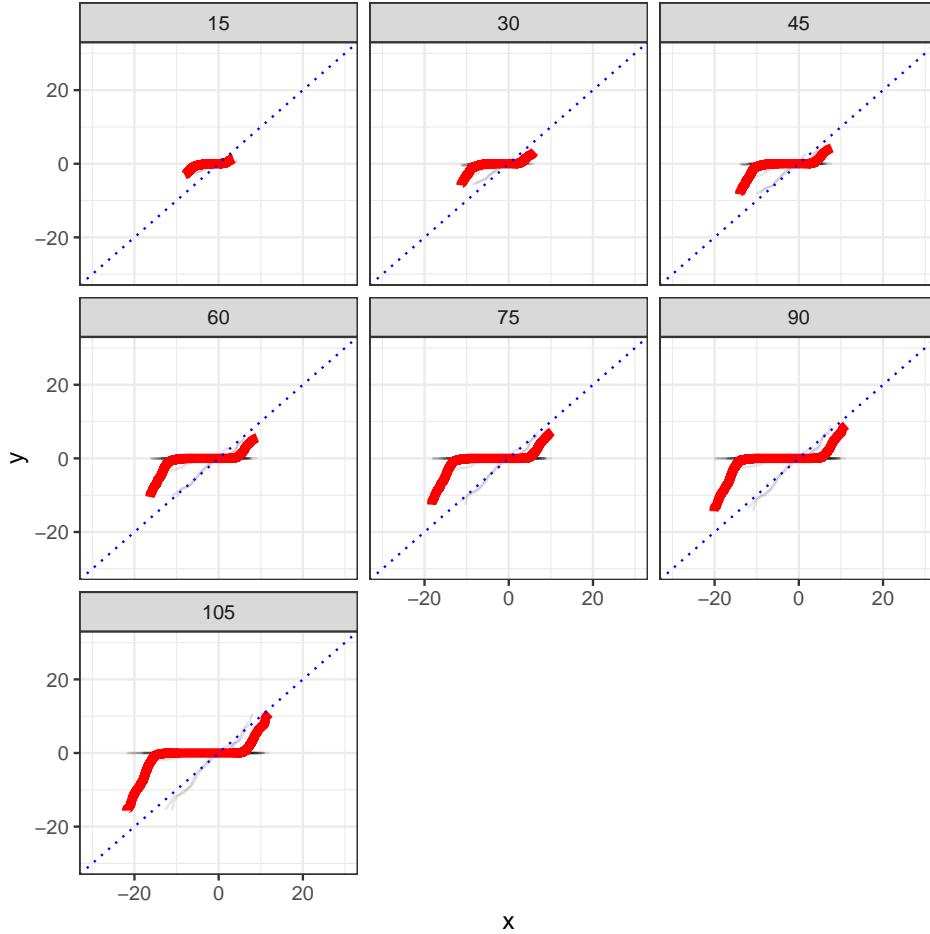


Figure 3: QQ-Plot of strategic incentives, τ , under Plurality (x) and RCV (y), across all NSW cases

What can we see from these qq-plots? Fundamentally, the distributions are such that there is a much higher proportion of the total population under RCV that experiences a negative τ , meaning they have no incentive to vote strategically. On the other side, there is a moderately higher proportion of voters under plurality that have positive strategic incentives, although this pattern reverses for extremely high values of τ .

We can also look at these figures and ask: what if strategic voting came

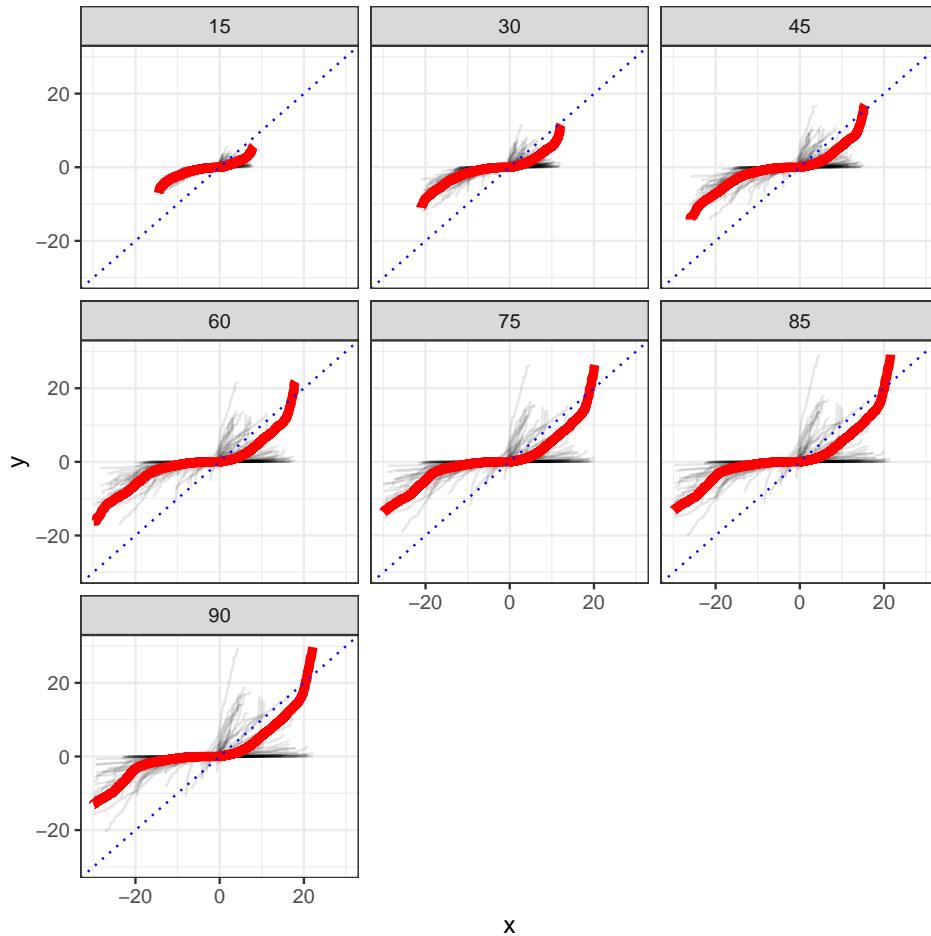


Figure 4: QQ-Plot of strategic incentives, τ , under Plurality (x) and RCV (y), across all CSES cases

with an additional cost? If this cost is constant, the new threshold for optimal strategic voting becomes $\tau^* \equiv \tau - c$. (Interpretation)

6 Incidence of Voting Paradoxes

7 Interdependence

8 Conclusion