



A discussion paper on Robson rotation in Tasmania

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EXECUTIVE SUMMARY

This paper considers the need to enhance Robson rotation for Tasmanian elections by further reducing the advantage that can be gained from the position of candidate names on a ballot paper.

Robson rotation is used in Tasmanian House of Assembly, Legislative Council and local government elections, and Legislative Assembly elections in the Australian Capital Territory (ACT).

The key points of the paper are:

- Some voters number ballot papers straight down a column apparently without consideration of their preference for each candidate. However, they may have chosen the column (party) that they prefer. This form of marking the ballot paper is referred to as 'linear voting' in this paper. Some voters start marking the ballot paper at their preferred candidate and continue marking down the paper before returning to the top to continue numbering in a circular fashion. This form of marking the ballot paper is referred to as 'circular voting' in this paper.
- Robson rotation reduces the impact of linear voting by creating a number of versions of the ballot paper, each with a different order of candidate names. Currently, the number of versions is equal to the number of candidates in the column - with each candidate name appearing at the top on one version.
- Some commentators correctly claim that one candidate can still unfairly receive more linear votes than another following the exclusion of a candidate. These additional votes can be enough to elect that candidate over another in that column. The allocation of these additional votes is determined by the 'luck of the draw' as to:
 - who has the higher position on the ballot paper where the excluded candidate's name is shown at the top, and
 - which of the two competing candidates is above the other on more versions of the ballot paper (e.g. three rather than two versions where there are five candidates).
- Linear voting was found to be higher in the ACT. To address this in the ACT, Robson rotation has been extended to 60 rotations for divisions electing 5 members and to 420 rotations for divisions electing 7 members.
- While the ACT extension reduces the remaining effect of linear voting, it does not remove it fully. The system in the ACT also restricts the number of candidates in a column to 5 or 7. If a party wishes to nominate more candidates they must be split over 2 or more columns.
- An analysis of House of Assembly ballot papers from the 2006 elections shows the frequency of linear voting is much lower than that recorded in the ACT. The analysis also shows a level of "circular voting" which may counteract the effect of linear voting.
- An analysis of Legislative Council and local government ballot papers shows very low levels of linear voting on single column ballot papers. This suggests that there is less need to extend Robson rotation for single column ballot papers.
- This paper discusses 4 options from no change to the full number of possible permutations.

ROBSON ROTATION

What is Robson rotation?

The Hon. Neil Robson MHA developed and promoted a process for rotating the order of candidate names on ballot papers for Tasmanian parliamentary elections. The Tasmanian Electoral Act was amended in 1979 to require multiple versions of the ballot paper so that each candidate name appeared an equal number of times at the top, the bottom and in other 'favoured positions' on the ballot paper. This new process became known as 'Robson rotation'.

By rotating the order of candidate names, ballot papers showing preferences marked sequentially down a column (linear votes) are shared equally by all candidates rather than only favouring the top candidate listed on the single version ballot paper.

Under Robson rotation, the number of versions is equal to the number of candidates in the column. Robson rotation for 5 candidates is shown below:

1st rotation (drawn by lot)	5th rotation	2nd rotation	4th rotation	3rd rotation
Candidate A	Candidate B	Candidate C	Candidate D	Candidate E
Candidate B	Candidate D	Candidate A	Candidate E	Candidate C
Candidate C	Candidate A	Candidate E	Candidate B	Candidate D
Candidate D	Candidate E	Candidate B	Candidate C	Candidate A
Candidate E	Candidate C	Candidate D	Candidate A	Candidate B

Ballot papers are printed and collated so that consecutive ballot papers do not show candidate names in the same order.

Elections that use Robson rotation

Robson rotation is used for Tasmanian House of Assembly, Legislative Council and local government elections and ACT Legislative Assembly elections.

Legislative Council and local government election ballot papers list all candidates in one column. The number of candidates at Legislative Council elections since 1991 has varied from 2 to 11. More than 20 candidates have stood in some local government elections.

House of Assembly and ACT Legislative Assembly election ballot papers include a separate column for each party or group of candidates. Each column has its own set of rotations – a three-candidate column will have three rotations and a four-candidate column will have four rotations.

Where columns on the House of Assembly ballot paper contain different numbers of candidates, it is necessary to print enough ballot papers versions for a fair distribution within each column. For example, 12 versions are required for a ballot paper containing three and four candidate columns.

REMAINING EFFECT OF LINEAR VOTING UNDER ROBSON ROTATION

Robson rotation considerably reduces the advantage a candidate gains from being listed in favoured positions on a ballot paper. However, a small effect of linear voting still occurs under Robson rotation.

The remaining effect of linear voting was clearly described in the 1998 ACT elections review (ACT Electoral Commission 1999:3), which found that:

...while Robson rotation did share the linear vote evenly between candidates within the party column when first preferences were counted, it did not effectively share the linear vote equally between candidates whenever a candidate was excluded during the scrutiny and later preferences were counted.

For example, when Candidate B is excluded, all linear votes are distributed to Candidate D as shown below.

5 th rotation	
1	Candidate B
2	Candidate D
3	Candidate A
4	Candidate E
5	Candidate C

In this case, Candidate D has an advantage over the other candidates because, he or she will receive all linear votes from two of the five rotations. That is the rotation with D on top as well as the rotation with B on top.

THE ACT SYSTEM

Review of 1998 ACT election

The ACT Electoral Commission's review of the 1998 election found that from a 5% sample of the 1998 election ballot papers:

- 22.6% of votes were linear votes.
- Linear votes expressed as a proportion of total first preference votes received by each candidate were generally higher for lesser-known major party candidates who received relatively fewer votes compared to better-known candidates in the same party.

The ACT Electoral Commission concluded that the high levels of linear voting assisted the election of two members at the 1998 ACT elections (ACT Electoral Commission 1999).

Increased number of rotations in the ACT

To address this issue, the ACT increased the number of rotations to 60 for 5 candidate columns and 420 for 7 candidate columns.

This means that, for example, Candidate B is in the top position for 12 rotations, as shown below (see Schedule 2 of the ACT *Electoral Act 1992* for further details).

B	B	B	B	B	B	B	B	B	B	B	B
A	A	A	C	C	C	D	D	D	E	E	E
E	D	C	D	E	A	C	A	E	A	C	D
D	C	E	E	A	D	A	E	C	C	D	A
C	E	D	A	D	E	E	C	A	D	A	C

The ACT system for 5 candidate columns also caters for columns containing two, three or four candidates by simply using the same table but disregarding the candidates letters not required. However, the ACT does not cater for columns containing more than five candidates.

The ACT system for 7 candidate columns similarly caters for 7 or less candidates.

Columns split where more than 5 or 7 candidates

To cater for cases where the number of candidates in a column exceeds the number to be elected, the ACT *Electoral (Entrenched Provisions) Amendment Bill 2001* amended the legislation to require that in this situation—

- candidate names are printed in 2 or more adjacent columns of equal length; and
- the names printed in each column are determined by lot.

This requirement would have significant implications for Tasmanian elections. These implications are discussed later in the paper.

Not all permutations included in the ACT

All permutations of the order of candidate names would be required for linear votes to be shared equally amongst the remaining candidates. The full numbers of permutations would be as follows:

5-candidate column	120 rotations
6-candidate column	720 rotations
7-candidate column	5,040 rotations
8-candidate column	40,320 rotations

For practical reasons the ACT developed a reduced set of 60 rotations for five-candidate columns and 420 rotations for seven-candidate columns. While not removing the effect of linear voting entirely, both sets of rotations equally share the linear vote down to the third preference on the ballot paper. Assuming an equal share of linear votes to each candidate, the reduced number of ACT rotations is designed so that the advantage of linear voting is shared equally across the candidates in the column throughout the scrutiny.

This would work well for Legislative Council elections where only one person is to be elected from a single column and assuming an equal share of linear votes. However, for House of Assembly elections, where candidates are elected progressively through the count not all ballot papers continue in the count and therefore rotations will not be equally represented at any particular exclusion.

Spreading party candidates across two or more columns

Listing party candidates across two or more columns would have a significant impact in that:

- The party name would have a greater visual impact on the ballot paper if spread across 2 columns.
- It could cause voter confusion and may increase informal voting if voters only mark preferences in one of the columns.
- It is likely that candidates listed in the first column would be favoured over those in the second.
- Candidates would likely benefit from being in the same column as a high profile candidate.
- It would introduce a new 'luck of the draw' element.

For the above reasons, it is considered unlikely that parties or groups would nominate more than 5 (or 7) candidates as currently happens in Tasmania. This would limit the freedom of parties or groups to decide the best number of candidates to nominate.

LINEAR VOTING AT TASMANIAN ELECTIONS

Discussion about the distinction between single and multiple column ballot papers is necessary before considering the impact of linear voting at Tasmanian elections.

Single and multi-column ballot papers

It is important to make a clear distinction between a *party* linear vote (which occurs on a multi-column ballot paper) and a *full* linear vote (which occurs on a single column ballot paper). In short:

- A *party* linear vote is where the voter sequentially numbers all candidates within one party/group column on a multi-column ballot paper. It could be argued that *party* linear votes occur when the intention of the voter is to cast a vote for the party rather than any specific party candidate.
- A *full* linear (or 'donkey') vote is where the voter sequentially numbers all candidates down and or across the ballot paper. It could be argued that *full* linear votes occur when the intention of the voter is for no specific party or individual.

The important point here is that a party linear vote indicates some choice by the voter, where the full linear vote does not.

House of Assembly elections

A survey was conducted on division of Bass and Denison ballot papers from the 2006 House of Assembly elections. Only the three parliamentary parties – the Australian Labor Party, the Liberal Party and the Tasmanian Greens – nominated more than three candidates. Hence, the survey only examined ballot papers received as a first preference by candidates grouped under these parties. Across the three parties:

- 8.3% of the ballot papers were party linear votes (compared with 22.6% in the ACT in 1998) and the number of party linear votes in reverse order was insignificant;
- 5.2% of the ballot papers had the first preference for a name not in the top position, with preferences in a continuous sequence around the rest of the column (circular votes);
- More than three quarters of voters (76.8%) are giving preferences to all candidates of a single party before giving a preference to any other candidate on the ballot paper; and
- 43.3% of formal voters chose to provide the minimal number of 5 preferences, while 45.2% marked a preference for every candidate. The remaining 11.5% voted for an in-between number of candidates.
- Stronger candidates received up to three times as many linear votes as candidates receiving less votes. This extra number of linear votes implies that some voters have a deliberate preference for only one candidate within the party. This is effectively circular voting where the candidate is listed at the top of the column,

The existence of circular votes and the issue raised in the last dot point, counter the assumption that all party linear voting is random and can therefore be equally shared between candidates by Robson rotation. Furthermore, circular votes may partly counteract the effect of party linear voting within a scrutiny.

Legislative Council elections

Ballot papers from the 2007 Legislative Council election in the division of Pembroke were examined. Six candidates had nominated for the election and were listed in a single column. The survey of all formal ballot papers found:

- 1.1% of the ballot papers were full linear votes.
- 0.8% of the ballot papers were full linear votes going in the reverse direction (bottom to top).
- 1.7% of the ballot papers were full circular votes.
- 21.6% ballot papers showed only the minimum three preferences and 76.8% of ballot papers showed a preference for each candidate. Only 1.6% voted for an in-between number of candidates.
- 18.6% of the ballot papers contained partial linear voting. That is, voters casting their first few preferences with apparent care, and then filling in the remaining boxes in a straight sequence up or down the ballot paper.

This shows that linear and circular voting at this Legislative Council election were very low. Consistent with the House of Assembly survey, stronger candidates received over twice as many linear votes as the candidate with the least number of first preferences.

Local government elections

Ballot papers from the 2002 Latrobe and Meander Valley Council elections were examined. The survey of all formal ballot papers found:

- 1.4% of the ballot papers were full linear votes.
- 0.4% of the ballot papers were full linear votes going in the reverse direction (bottom to top).
- 2.4% of the ballot papers were full circular votes.
- 27.5% of the ballot papers showed only the minimum five preferences and 66.4% of ballot papers showed a preference for all 14 candidates. Only 6.1% voted for an in-between number of candidates.
- 27.9% of the ballot papers contained partial linear voting. That is, voters casting their first few preferences with apparent care, and then filling in the remaining boxes in a straight sequence up or down the ballot paper.

In summary linear voting at local government elections did not appear to be a large problem.

Overall effect on single column ballot papers

The very low linear voting figures from the Legislative Council and local government surveys suggests that linear voting is not an issue for single column ballot papers. It could be argued that there is little justification for extending Robson rotation for either Legislative Council or local government elections.

OPTIONS FOR ROBSON ROTATION IN TASMANIA

The following four options are put forward for discussion.

Option 1 – The ACT system

The review into the 2001 ACT Legislative Assembly election noted that (ACT Electoral Commission 2002:15):

“...The introduction of the increased numbers of Robson rotation versions was intended to share the linear vote more equally between all candidates at each stage of the count. In particular, the intention was that, in situations where the last 2 candidates left standing in a party column were vying for one seat, the linear vote would be shared as close as possible equally between the 2 candidates.”

The ACT system does share the linear vote more evenly than the original Robson rotation, but not to the full extent of all permutations of the order of candidate names.

The practicality of this option is reduced by the limitation placed on the number of candidates in a column. If a party or group nominates more candidates than the number to be elected, then the names are split between 2 or more columns. Both the Liberal and Labor parties in Tasmania have nominated 6 candidates in 5 member divisions and, previously, 8 candidates in 7 member divisions.

The ACT system could not be used for all Legislative Council elections as more than seven candidates have stood in 6 of the 52 elections since 1991 and candidate numbers cannot be restricted. Similarly the ACT system would not be suitable for local government elections, where most councillor elections have more than seven candidates. However, as discussed earlier, it could be argued that Robson rotation need only be extended for the House of Assembly.

Option 2 – The full extension of Robson rotation

All permutations of the order of candidate names are required to enable the full effect of linear votes to be shared equally. While producing all permutations is manageable for five or six candidate columns, the greater the number of rotations the bigger the impact the following issues have on an election:

- Producing thousands of rotations for each division would increase the likelihood of error in the production of the ballot papers.
- A greater period of time would be required to produce and check all rotations before issuing ballot papers for pre-poll or postal voting.
- Ballot papers are printed so that the order of candidate names on one ballot paper is different to the next ballot paper. The higher the number of rotations, the more complex the order of printing of ballot paper versions.
- The order of ballot papers would have to be very carefully designed to ensure that each subset of ballot papers (e.g. a bundle of 100) contained an even cross section of the order of names. Otherwise there could be a bias between parcels of ballot papers issued at a polling place and even between polling places.

Option 3 – Double the number of current rotations

There are a number of ways linear voting impacts an election result. Perhaps the most common case and the one that draws the greatest attention is where two candidates from within the one party are contesting for the last seat to be won by that party. As noted by the review into the 2001 ACT Legislative Assembly election (ACT Electoral Commission 2002:15):

In these cases, particularly where the difference in the vote totals between the last 2 candidates is small, the distribution of the linear vote can determine which of the last 2 candidates wins the seat.

Doubling the number of rotations – by adding another set of rotations with the order of names under the top position reversed (as shown below) – would share the linear vote between these two candidates during the distribution of preferences.

1st rotation	1st reversed	5th rotation	5th reversed	2nd rotation	2nd reversed	4th rotation	4th reversed	3rd rotation	3rd reversed
A	A	B	B	C	C	D	D	E	E
B	E	D	C	A	D	E	A	C	B
C	D	A	E	E	B	B	C	D	A
D	C	E	A	B	E	C	B	A	D
E	B	C	D	D	A	A	E	B	C

Under this option, regardless of which two candidates are still in the count, the remaining effect of linear votes will be at least halved and in some cases fully negated. Similar to the ACT system, the distribution of linear votes will not always be equal as some ballot papers remain with elected candidates. However, the highest number of linear votes one candidate can receive under this option is half that possible under the current system.

This option would not equally share the linear votes between three party candidates who were evenly contesting for the final seat, as was the case at the 1998 Molonglo election in the ACT where only 110 votes separated the last three Australian Labor Party candidates. However, it would still share the linear vote between two of the three candidates rather than all linear votes going to just one candidate.

The main advantage of this option is that doubling the number of current rotations will at least halve the remaining advantage. Therefore this is a practical option for House of Assembly elections and could be extended to other elections were the need demonstrated.

Option 4 – Maintain the current system

Robson rotation already significantly reduces the unfair advantage a candidate receives by being in a favoured position on a fixed ballot paper, like those used in most other Australian parliamentary elections.

The analysis of Tasmanian Legislative Council and local government ballot papers has shown that the effect of linear voting (around 1%) is largely outweighed by reverse linear voting and the possible effects of circular voting. Therefore there appears to be little advantage in changing the current form of Robson rotation for these elections.

At House of Assembly elections, the frequency of party linear voting (around 8%) is less than half that recorded at ACT elections. Furthermore the identification of circular voting patterns suggests that there are other patterns of voting that may reduce the impact of linear voting.

Therefore it could be argued that while there are some gains to be made in increasing the number of rotations, the need is less than that in the ACT and these gains would need to be weighed against the difficulties in implementing the other options.

REFERENCES

ACT Electoral Commission 1999, *The 1998 ACT Legislative Assembly Election — Review Of The Electoral Act 1992* http://www.elections.act.gov.au/pdfs/election_98/98electionreview.pdf

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