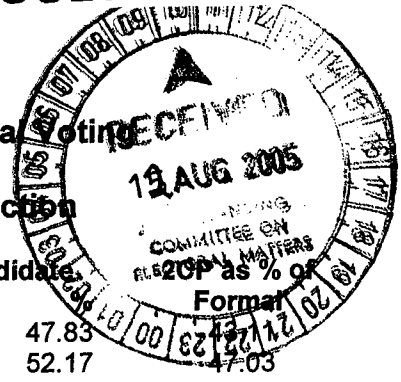


Joint Standing Committee on Electoral Matters	
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SUBMISSION. 188



Assessing the Impact of Optional Preferential Voting
Charters Towers – 2001 Queensland Election

Candidate	Party	Primary		Preferences		2-Candidate		Formal
		Votes	%	Votes	%	Votes	%	
Mitchell	NAT	5,984	34.58	1,476	39.41	7,460	47.83	47.03
Scott	ALP	7,575	43.78	563	15.03	8,138	52.17	52.17
Ree	ONP	3,745	21.64					
(exhausted)				1,706	45.55	1,706		9.86

In assessing the political impact of Optional Preferential Voting, the votes to be looked at are the 1,706 votes for Ree that did not express any further preference. If these electors had voted under a system of compulsory preferential voting, what assumptions can we make about how they would have directed preferences?

Assumptions about preferences	ALP %	NAT %
Scenario 1 Assume all preferences would have been for the Nationals. As a result, the National candidate would receive a further 1,706 votes. This is the worst case scenario for the Labor vote	47.03	52.97
Scenario 2 Assume the 1,706 votes would have split between Labor and National in the same proportion as those that did direct preferences. This would give Labor an additional 471 votes and the National Party an additional 1,235	49.75	50.25
Scenario 3 Assume preferences had split 50:50. Both Labor and National would receive an additional 853 votes. This is the preferences neutral option.	51.96	48.04
Scenario 4 Actual percentage achieved using Optional Preferential Voting	52.17	47.83
Scenario 5 The reverse of Scenario 2, where Labor receives 1,235 preferences and the National Party 471. This is an unlikely option but is used below to explain the political advantage in optional preferential voting.	54.17	45.83
Scenario 6 Assume all preferences would have been for the Labor Party. As a result, the Labor candidate would receive a further 1,706 votes after preferences This is the best case scenario for the Labor vote	56.89	43.11

Scenarios 1 and 6 are clearly unrealistic, but they set the upper and lower bounds for what could have been the results under full preferences. I would argue that Scenario 2 is the best estimate to use in assessing the political impact. In allocating the exhausted preferences between Labor and National, you have to accept some value between 0 and 100 as the percentage of preferences flowing to Labor. The option chosen by Scenario 2, to use the percentage of voters that did direct preferences, is at least available data. Any other assumption is based on data that does not exist.

There are two effects in operation that need to be separated in assessing political impact of optional preferential voting. The first is the exhaustion effect. Every exhausted vote puts the leading candidate closer to 50% at a faster rate than the second placed candidate. In the above example, the 9.86% of exhausted votes is effectively allocated to the Labor and National percentages as the percentages are re-weighted to 100%. In the above example, Labor effectively receives 5.14% of the exhausted vote total and the National Party 4.72%, which is in the same ratios as the 2CP's as a percentage of the formal vote. This re-weighting is a simple function of mathematics and in every case will assist the candidate that starts out with the highest vote.

The second effect is the missed preferences effect. In the Charters Towers example, Labor has been advantaged, and the National Party disadvantaged, because under Scenario 2, the majority of exhausted votes would have flowed to the Nationals.

If the preferences of the distributed votes had split 50:50, then the missed preferences effect would be zero. Even if all exhausted preferences had been distributed in the same ratio, it would have no impact on the result, as no matter how many preferences are distributed, a 50:50 split cannot change the order of the two leading candidates.

But note, a 50:50 split of preferences does not cancel the exhaustion effect. The leading candidate will still receive an advantage from exhausted votes, even with a 50:50 split.

In the above examples, the missed preferences effect equals the difference between Scenarios 2 and 3, the missed preferences measured against a 50:50 split. So here, the missed preference effect for Labor is $51.96 - 49.75 = +2.21$.

The exhaustion effect is the difference between Scenarios 3 and 4. So the exhaustion effect for Labor is $52.17 - 51.96 = +0.21$

It is important to note that the exhaustion effect will always be positive for the leading candidate, but the missed preference effect will be negative or positive depending on whether a party has missed out on preferences thanks to exhausted preferences, or seen their opponent disadvantaged by missing out on a flow of preferences.

Scenario 5 is the reverse of Scenario 2 and assumes Labor receives the majority of preferences. Under Scenario 5, this is $51.96 - 54.17 = -2.21$.

So Scenario 5 produces the reverse missing preference effect to Scenario 2, but the exhaustion effect does not change.

My overall measure of optional preferential voting advantage is:

$$\begin{aligned} \text{OPV Advantage} &= [\text{Exhaustion Effect}] + [\text{Missing Preferences effect}] \\ &= 0.21 + 2.21 \\ &= +2.42 \end{aligned}$$

If Scenario 5 had applied, then the advantage would have been $0.21 + (-2.21) = -2.00$ (i.e. a disadvantage)

Normally the OPV advantage would be calculated directly by subtracting the percentage calculated where the ratio of actual preferences is applied to the exhausted votes (Scenario 2) from the percentage calculated under optional preferential voting (Scenario 4).

However, as the above discussion explains, this advantage has two components, the exhaustion effect which is always positive for the leading candidate, and the missing preferences effect which can be either positive or negative.

W.A. Legislative Assembly Ticket Vote - 1988

Illustration 9.4 Ticket voting—Western Australian Legislative Assembly, 1986

NEW BALLOT PAPER USED FOR ASCOT ELECTION ON
19 MARCH, 1986

Western Australia Ballot Paper

Election of one member of the Legislative Assembly

Ascot

Vote only in one way

This way

↓

Fill in one square only.
Place the number 1
in one of these
squares to show
the voting ticket
you choose.

LIBERAL	<input type="checkbox"/>
INDEPENDENT	<input type="checkbox"/>
or	
INDEPENDENT	<input type="checkbox"/>
or	
AUSTRALIAN LABOR PARTY	<input type="checkbox"/>
or	

OR

↓

Fill in all squares.
Place the numbers
1 to 5 in the squares
to show the order of
your preference for
the candidates.

<input type="checkbox"/>	BLAXELL Peter Liberal
<input type="checkbox"/>	WARD Mike Independent
<input type="checkbox"/>	MSAMA Luke Independent
<input type="checkbox"/>	JACOBS Cedric Independent
<input type="checkbox"/>	RIPPER Eric Australian Labor Party

Election District	1st	Primary Votes			2-candidate Percent			% Preferences			OPV Effects			
		% 2nd	% Other %		1st	2nd	Exh	1st	2nd	Exh	Exhaust	Missing	Total	Predict
QLD Examples														
1995 Redcliffe	ALP	44.61 LIB	40.10	15.29	50.38	49.62	4.31	32.76	67.24	28.17	+0.02	+0.74	+0.76	49.62
1998 Barron River	ALP	35.16 LIB	29.88	34.96	50.63	49.37	9.39	41.90	58.10	26.86	+0.06	+0.76	+0.82	49.81
1998 Mansfield	ALP	40.86 LIB	38.95	20.19	50.17	49.83	4.41	44.98	55.02	21.86	+0.01	+0.22	+0.23	49.94
1998 Springwood	ALP	38.25 LIB	34.03	27.72	50.57	49.43	8.58	41.70	58.30	30.93	+0.05	+0.71	+0.76	49.81
1998 Tablelands	ONP	42.03 NAT	32.89	25.08	50.28	49.72	8.66	23.68	76.32	34.53	+0.02	+2.28	+2.30	47.97
2001 Burdekin	ALP	36.72 NAT	22.74	40.54	55.13	44.87	24.39	30.72	69.28	60.16	+1.25	+4.70	+5.95	49.17
2001 Charters Towers	ALP	43.78 NAT	34.58	21.64	52.17	47.83	9.86	27.61	72.39	45.55	+0.21	+2.21	+2.42	49.75
2001 Warrego	NAT	33.84 IND	26.09	40.07	50.30	49.70	20.68	31.24	68.76	51.60	+0.06	+3.88	+3.94	46.36

NSW Elections

1988 Camden	ALP	40.68 LIB	34.01	25.31	50.05	49.95	7.23	31.82	68.18	28.58	+0.00	+1.32	+1.32	48.74
1988 Charlestown	ALP	43.66 LIB	34.80	21.54	50.11	49.89	2.44	27.37	72.63	11.34	+0.00	+0.55	+0.56	49.55
1988 Keira	ALP	38.87 LIB	34.72	26.41	50.79	49.21	10.16	41.59	58.41	38.48	+0.08	+0.85	+0.93	49.85
1988 Maitland	ALP	40.51 LIB	31.70	27.79	50.76	49.24	6.72	32.44	67.56	24.19	+0.05	+1.18	+1.23	49.52
1988 Port Stephens	ALP	42.23 LIB	40.36	17.41	50.16	49.84	7.57	41.96	58.04	43.47	+0.01	+0.61	+0.62	49.54
1991 The Entrance	LIB	46.14 ALP	43.12	10.74	50.19	49.81	2.89	33.12	66.88	26.88	+0.01	+0.49	+0.49	49.70
1995 Murwillumbah	NAT	41.15 ALP	28.01	30.84	52.05	47.95	10.13	27.19	72.81	32.83	+0.21	+2.31	+2.52	49.54
1999 Albury	LIB	43.00 IND	34.85	22.15	50.98	49.02	7.72	28.02	71.98	34.87	+0.08	+1.70	+1.77	49.20
1999 Clarence	ALP	36.86 NAT	25.43	37.71	50.22	49.78	16.78	23.56	76.44	44.49	+0.04	+4.44	+4.47	45.74
2003 Gosford	LIB	46.25 ALP	43.14	10.61	50.33	49.67	5.68	24.64	75.36	53.53	+0.02	+1.44	+1.46	48.87
2003 Willoughby	LIB	36.27 IND	24.85	38.88	50.22	49.78	19.73	21.08	78.92	50.76	+0.04	+5.71	+5.75	44.47

1995 Queensland Counter Example

1995 Mulgrave	NAT	45.98 ALP	45.19	8.83	50.47	49.53	1.80	50.92	49.08	20.34	+0.01	-0.02	-0.01	50.48
1995 Mundingburra	ALP	43.82 LIB	44.40	11.78	50.04	49.96	3.30	53.93	46.07	28.04	+0.00	-0.13	-0.13	50.17

NSW Safe Seat Examples

2003 Marrickville	ALP	48.40 GRN	28.47	23.12	60.70	39.30	15.39	38.18	61.82	66.56	+1.65	+1.82	+3.46	57.23
2003 Liverpool	ALP	69.60 LIB	15.19	15.21	80.72	19.28	10.10	57.99	42.01	66.42	+3.10	-0.81	+2.30	78.42