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Supplementary Evidence to the Northern Ireland Assembly

From Professor Brendan O'Leary

In the joint submission made by Christopher McCrudden, John McGarry, Brendan O'Leary and Alex Schwartz we did not consider the formal possibility that the size of the Assembly might change. I have since run some simulations regarding the likely consequences of changing the number of MLAs returned per existing constituency (using the 2011 first preference voting patterns for these purposes). There may be some arithmetical errors in my simulations in particular constituencies because the analyses were performed quickly, but the general patterns suggested are likely robust. The analyses here supports the arguments that will be presented in my oral statement on behalf of our joint submission.

Brendan O'Leary

Simulating the Impact of Reducing the Number of MLAs Returned Per Constituency based on the 2011 Elections for the Northern Ireland Assembly.

Distribution of Seats in the Assembly

Suppose that the number of MLAs in the Assembly is reduced from the current number of 108 to 90, with five members elected in each constituency rather than the current six members (Scenario 1). If the electorate voted as it did in 2011 then following the method described below comparative party and designation losses would be as shown in Table 1.

Unionists		Nationalists		Others
DUP	-7	SF	-4	
UUP	-6	SDLP	-1	
TOTAL	-13	TOTAL	-5	

Table 1. Projected losses with existing constituencies returning 5 members
Source: Table 6 and the Appendix below provide specific constituency predictions

Under this first scenario there would be 38 nationalist MLAs out of a total of 90, i.e. **42.2%**, compared with their present share of 43 out of 108, i.e. **39.8%**. By contrast there would be 42 unionist MLAs if we count Mr McClarty as an independent Unionist, i.e. **46.7%**, compared with **50.9%** at present. The percentage share of others (Green and APNI) would rise to **11.1%** from **9.3%** at present, and their number of MLAs would stay the same.

Suppose instead that the number of MLAs is reduced from the current number of 108 to 72, with four members elected in each constituency rather than the current six members (Scenario 2). If the electorate voted as it did in 2011 then following the method described below party and designation losses would be as shown in Table 2.

Unionists		Nationalists		Others	
DUP	-12	SF	-11	APNI	-3
UUP	-5	SDLP	-3	Green	-1
Ind Unionist	-1				
TOTAL:	-18	TOTAL:	-14	TOTAL:	-4

Table 2. Projected losses with existing constituencies returning 4 members
Source: Table 6 and the Appendix below provide specific constituency predictions

Under this second scenario there would be 31 nationalist MLAs out of a total of 72, i.e. **43.1%**, compared with their present share of 43 out of 108, i.e. **39.8%**. By contrast there would be 37 unionist MLAs, i.e. **51.4%**, compared with **50.9%** at present. The percentage share of others (Green and APNI) would fall to **6.9%** from **9.3%** at present, and the other MLAs would consist entirely of APNI members.

Consequences for Executive Formation

Scenario 1.
If the Northern Ireland Assembly were reduced in size by 18 MLAs and the electorate otherwise voted as they did in 2011 (according to the projected losses in Table 1) then the d'Hondt allocation process for the executive would run as shown in Table 3.

divisors	DUP		UUP		APNI		SDLP		SF	
	S	M	S	M	S	M	S	M	S	M
1	31.0	**1**	10.0	**7**	8.0	**8**	13.0	**4**	25.0	**2**
2	15.5	**3**	5.0		4.0		6.5		12.5	**5**
3	10.3	**6**	3.3		2.7				8.3	**9**
4	7.8	**10**								
5	6.2									

Table 3. Running d'Hondt with an Assembly reduced to 90 MLAs
S= Seats. Numbers in bold under M are Ministries won by each party and their order of "pick."

In this first scenario with a 10 member executive there would be 4 DUP, 1 UUP, 3 SF, 1 SDLP and 1 APNI Ministers, and a balance of 5 unionists, 4 nationalists and 1 other. With a six member executive there would be 3 DUP, 2 SF and 1 SDLP Ministers, i.e. 3 unionists and 3 nationalists and no others.

Running this scenario under Sainte-Lagüe (using odd number divisors of 1, 3, 5 etc) with a 10 member executive there would be 4 DUP, 1 UUP, 3 SF, 1 SDLP, and 1 APNI ministers, and a balance of 5 unionists, 4 nationalists and 1 other; whereas under Sainte-Lagüe with a 6 member executive there would be 3 DUP, 2 Sinn Fein and 1 SDLP Ministers, a balance of 3 unionists and 3 nationalists and no others. Sainte-Lagüe combined with a smaller executive would enhance nationalists' prospects of having parity of representation with unionists. The ambition to have a smaller executive is simply inconsistent with the desire to improve the prospect of representation of others in the executive since not even the Sainte-Lagüe rule can help them.

Scenario 2.

If the Northern Ireland Assembly were reduced in size by 36 MLAs and the electorate otherwise voted as they did in 2011 (according to the projected losses in Table 2) then the d'Hondt allocation process for the executive would run as set out in Table 4 below. With a 10 member executive there would be 4 DUP, 1 UUP, 3 SF, and 2 SDLP Ministers, and a balance of 5 unionists, and 5 nationalists, and no others; and with a six member executive there would be 2 DUP, 1 UUP, 2 SF and 1 SDLP Ministers, i.e. 3 unionists and 3 nationalists and no others.

divisors	DUP		UUP		APNI		SDLP		SF	
	S	M	S	M	S	M	S	M	S	M
1	26	**1**	11	**5**	5		11	**4***	18	**2**
2	13	**3**	5.5		2.5		5.5	**10**	9	**6**
3	8.7	**7**	3.7		1.7		3.7		6	**9**
4	6.5	**8**							4.3	
5	5.2								3.6	
6	4.3									
7	3.7									

Table 4. **Running d'Hondt with an Assembly reduced to 72 MLAs**
S= Seats. Numbers in bold under M are Ministries won by each party and their order of "pick."

Running this scenario under Sainte-Lague (using odd number divisors of 1, 3, 5 etc) with a 10 member executive there would be 3 DUP, 2 UUP, 2 SF, 2 SDLP, and 1 APNI ministers, i.e. a balance of 5 unionists, 4 nationalists and 1 other; whereas under Sainte-Lague with a 6 member executive there would be 2 DUP, 2 Sinn Fein, 1 SDLP and 1 UUP Ministers, a balance of 3 unionists and 3 nationalists and no others. Once again, we can see that Sainte-Lague combined with a smaller executive would enhance nationalists' prospects of having parity of representation with unionists, and that the ambition to have a smaller executive is simply inconsistent with the desire to improve the prospect of representation of others in the executive.

Reasonable conclusions from the two scenarios

1. Regarding distribution by designation, the first scenario results in the proportion of nationalist MLAs increasing, and the proportion of unionist MLAs decreasing. Others would increase, very slightly, but not in their number. The second scenario results in the proportion of both nationalist and unionist MLAs increasing. The proportion of others would decrease.

2. Any significant reduction in the size of the Assembly (e.g. by 36 members) would enhance the likelihood that APNI would not win a place in the executive, whether the executive is large (10) or small (6).

3. A smaller executive (of six) makes parity in the number of unionist and nationalist ministers far more likely, and would almost certainly remove others from representation in the executive.

4. The use of Sainte-Lagüe can only marginally enhance the likelihood that others would get a higher pick among executive portfolios, and would not significantly compensate them for loss of seats in a much reduced Assembly. The use of Sainte-Lagüe at present would seem likely to enhance the prospects of the nationalist compared with the unionist bloc.

Method Used to Make These Simple Simulations

Exact simulations of the impact of changes in "district magnitude" under STV can not be executed without complete knowledge of each voter's full array of preferences expressed in the ballot papers cast in each constituency in Northern Ireland in 2011, and detailed knowledge of movements in the electoral register and changes in every constituency's demographics. A comprehensive simulation would also allow party strategies to change following changes in district magnitude, e.g. parties would be more likely to run fewer candidates as the number of candidates to be elected falls.

Fortunately, however, there is a simple way of approximating the highly likely consequences of changes in district magnitude, which does not involve making guesses about the number of candidates who will run, or the intricate details of the transfer of ballot papers. The method is to extrapolate from the 2011 elections by calculating the approximate number of Droop quotas that would be won by each party if there were six, five or four candidates to be elected, and then using the size of these quotas to predict outcomes. The reason this works so well is that the best simple predictor of the number of seats a party will win in a multi-member constituency is the number of Droop quotas ($1/(n+1)+1$) it has at the first stage of the count (where n is the number of people to be elected in the constituency). The Droop quota can be treated as $1/n+1$ for approximation. The number of quotas a party has is calculated by taking its first preference vote share expressed as a percentage and then dividing it by its Droop quota (here expressed to one decimal place).

Table 5 below provides a worked example from East Antrim, based on the 2011 first preference vote totals by party. The Droop quotas have been calculated for three outcomes (6, 5 or 4 candidates being elected). The numbers inside square brackets predict the number of seats each party would win under each scenario assuming voters vote the same way as in 2011. In 2011 with a six member constituency the quota was $1/7 = 14.3\%$ when rounded to one decimal place; it would be 16.7% for a five member constituency, and 20% for a four member constituency. The operative assumption made in the calculations here is that a party with more than half a quota may win a seat, providing its quota total is the largest remainder in the count, having already allocated a seat to each party that has won a whole quota. Another background assumption is that voters follow party allegiance in their preference rankings (a reasonable assumption in Northern Ireland).

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	8.2	4.6	15.5	2.3	16.9	46.2	6.4
6 member district (quotas)	0.6 [1]	0.3	1.1 [1]	0.2	1.2 [1]	3.2 [3]	0.4
5 member district (quotas)	0.5	0.3	0.9 [1]	0.1	1.0 [1]	2.8 [3]	0.4
4 member district (quotas)	0.4	0.2	0.8 [1]	0.1	0.8 [1]	2.3 [2]	0.3

Table 5. East Antrim Simulations by Quota strength.
Numbers inside square brackets predict number of seats each party is expected to win.

As Table 5 shows this method would have correctly predicted in 2011 that the DUP would win 3 seats in East Antrim (with 3.2 quotas); the UUP 1 seat (with 1.2 quotas); the APNI 1 seat with 1.1 quotas, and SF 1 seat with .6 of a quota. On these assumptions the method predicts that in this constituency SF would lose a seat if the constituency was reduced to returning five MLAs, and that if it became a four seat constituency then both SF and the DUP would lose a seat compared with the status quo. Readers will also note that when six members are being returned all unionist designated parties (the UUP, DUP and Other Unionists) have 4.8 quotas [which would predict that they would return 4 members, correctly]; when five members are being returned they would have 4.2 quotas [which would predict that they would return 4]; and when four members are being returned they would have 3.4 quotas [which would predict they would return 3]. So this method is useful both for predicting party outcomes and outcomes by designation.

What we have done in the Appendix that follows is to repeat the same exercise for the 17 other constituencies. The Appendix shows that only in one constituency did the method employed here retrodict manifestly the wrong outcome for any seat allocation in 2011: it

suggests that the DUP would have won 2 seats and the SDLP 1 seat in South Belfast, when the result was the opposite. In Upper Bann the method would have retrodicted SF winning two seats not one, but that can be discounted as SF significanttly mismanaged its vote across its candidates. Getting one result manifestly wrong (and one understandably wrong) across two parties among 108 seat allocations shows that the method produces a very impressive approximation of real-world allocation. All are aware that the transfer pattern in South Belfast in 2011 was unusual.

Table 6. Summary of projected seat losses by party by constituency with existing constituencies now returning 5 MLAs (scenario 1).

The comparison is with 2011 outcomes.
Source of calculation: See Appendix.

Party	SF	SDLP	APNI	Others	UUP	DUP	Other Unionists
East Antrim	-1						
North Antrim					-1	-1	
South Antrim						-1	
North Belfast						-1	
East Belfast					-1		
South Belfast							
West Belfast	-1						
East L'derry						-1	
Foyle		-1					
West Tyrone		-1					
Fermanagh & West Tyrone	-1	+1				-1	
Mid Ulster					-1		
Newry & Armagh	-1						
South Down					-1		
Upper Bann					-1		
Lagan Valley						-1	
Strangford					-1		
North Down						-1	
TOTAL	-4	-1			-6	-7	

Summary: Projected Losses: SF 4, SDLP 1   Nationalists 5
Projected Losses: DUP 7, UUP 6   Unionists 13

Table 7. Summary of projected seat losses by party by constituency with existing constituencies now returning 4 MLAs (scenario 2)

The comparison is with 2011 outcomes

	SF	SDLP	APNI	Others	UUP	DUP	Other Unionists
East Antrim	-1					-1	
North Antrim					-1	-1	
South Antrim			-1			-1	
North Belfast	1					-1	
East Belfast			-1			-1	
South Belfast	-1	-1					
West Belfast	-2						
East L'derry						-1	-1 [UUP]
Foyle	-1	-1					
West Tyrone	-1	-1					
Mid Ulster	-1				-1		
F'agh & S. Tyrone	-1					-1	
Newry & Armagh	-1					-1	
South Down	-1				-1		
Upper Bann					-1	-1	
Lagan Valley			-1			-1	
Strangford					-1	-1	
North Down				-1		-1	
TOTAL	-11	-3	-3	-1	-5	-12	-11

Summary. Projected Losses SF 11, SDLP 3 Nationalists 14
APNI 3, Green 1, Others 4
UUP 5, DUP 12, Other Unionist 1 Unionists 18

Appendix 1. Constituency Details

Simulation details using all constituencies with Six, Five or Four Members returned extrapolating from the 2011 elections and calculating Droop quotas

EAST ANTRIM (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	8.2	4.6	15.5	2.3	16.9	46.2	6.4
6 member district (quotas)	0.6 [1]	0.3	1.1 [1]	0.2	1.2 [1]	3.2 [3]	0.4
5 member district (quotas)	0.5	0.3	0.9 [1]	0.1	1.0 [1]	2.8 [3]	0.4
4 member district (quotas)	0.4	0.2	0.8 [1]	0.1	0.8 [1]	2.3 [2]	0.3

NORTH ANTRIM (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	15.3	9.1	4.6	-	11.7	47.6	11.7
6 member district (quotas)	1.1 [1]	0.6	0.3		.8 [1]	3.3 [3]	.8 [1]
5 member district (quotas)	0.9 [1]	0.5	0.3		0.7	2.9 [3]	0.7 [1]*
4 member district (quotas)	0.8 [1]	0.5	0.2		0.6	2.4 [2]	0.6 * [1]

* Allocated in a tie-breaker with the UUP; the TUV had a higher first preference vote total in this constituency

SOUTH ANTRIM (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	14.5	10.6	14.2	-	17.8	38.3	4.7
6 member district (quotas)	1.0 [1]	0.7	1.0 [1]	-	1.2 [1]	2.7* [3]	0.3
5 member district (quotas)	0.9 [1]	0.6	0.9 [1]	-	1.1 [1]	2.3 [2]	0.3

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
4 member district (quotas)	0.7** [1]	0.5	0.7	-	0.9 [1]	1.9 [2]	0.2

* Last seat allocated to the DUP in a tie-breaker with the SDLP because the DUP first preference vote divided by three in this constituency was higher than the SFLP's first preference vote share for its single candidate
* Allocated to SF because it had a higher 1st preference vote total than APNI

NORTH BELFAST (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	31.9	14.0	6.3	4.5	8.2	37.1	-
6 member district (quotas)	2.2 [2]	1.0 [1]	0.4	0.3	0.6	2.6 [3]	
5 member district (quotas)	1.9 [2]	0.8 [1]	0.4	0.3	0.5	2.2 [2]	-
4 member district (quotas)	1.6 [1]	0.7 [1]	0.3	0.2	0.4	1.9 [2]	

EAST BELFAST (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	3.2	0.8	26.3	2.7	9.7	44.0	13.1
6 member district (quotas)	0.2	0.1	1.8 [2]	0.2	0.7 [1]	3.1 [3]	0.9*
5 member district (quotas)	0.2	0.0	1.6 [2]	0.2	0.6	2.6 [3]**	0.8
4 member district (quotas)	0.2	0.0	1.3 [1]	0.1	0.5 [1]	2.2 [2]	

* The method did not fail to predict on this occasion because the "Other Unionists" category conflates the PUP and the TUV, which had different policy platforms, and both of which were behind the UUP in first preference vote totals. ** Unless local circumstances change the method would predict the UUP would lose to the DUP for the last available unionist seat.

SOUTH BELFAST (method does not retrodict perfectly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	12.5	23.9	19.8	5.2	13.6	24.3	0.7
6 member district (quotas) *	0.9 [1]	1.7 [1]	1.4 [1]	0.4	1.0 [1]	1.7 [2]	0
5 member district (quotas)	0.8 [1]	1.4 [1]	1.2 [1]	0.3	0.8 [1]	1.5 [1]	0
4 member district (quotas)	0.6	1.3 [1]	1.0 [1]	0.3	0.7 [1]	1.2 [1]	0

* The method anticipating 2 DUP rather than 2 SDLP seats: in this case the SDLP's Conal McDevitt benefitted from a highly unusual pattern of transfers.

WEST BELFAST (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	70.8	13.5	0.5	7.6	1.7	6.1	-
6 member district (quotas)	5.0 [5]	0.9 [1]	0.0	0.5	0.1	0.4	-
5 member district (quotas)	4.2 [4]	0.8 [1]	0.0	0.4	0.1	0.4	-
4 member district (quotas)	3.5 [3]	0.7 [1]	0.0	0.4	0.1	0.3	-

EAST LONDONDERRY (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	21.1	14.9	5.5	-	8.4	36.9	13.1
6 member district (quotas)	1.5 [1]	1.0 [1]	0.4		0.6	2.6 [3]	0.9* [1]
5 member district (quotas)	1.3 [1]	0.9 [1]	0.3		0.4	2.2 [2]	.5* [1]
4 member district (quotas)	1.1 [1]	0.7 [1]	0.3		0.4	1.8 [2]	0.4

* Former UUP MLA David McClarty was elected as an independent. His first preference vote total has been used to calculate what would happen if five or four members were returned. There is clearly a whole UUP

quota in the constituency for five members (and close to one for four) if the UUP persuades Mr McClarty to rejoin it.

FOYLE (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	34.0	35.3	0.9	11.5	-	18.4	-
6 member district (quotas)	2.4 [2]	2.5 [3]	0.1	0.8*		1.3 [1]	
5 member district (quotas)	2.0 [2]	2.1 [2]	-	.5**		1.1 [1]	
4 member district (quotas)	1.7*** [1]	1.8 [2]	-	0.4	-	0.9 [1]	

* Highest among the others was Mr. Eamon McCann with just over half a quota, so method would have been right. The SDLP candidate won its third seat through DUP transfers. ** McCann's quota is calculated. *** The method predicts SF would lose a seat if 4 members were returned, but in fact they would likely retain a 2nd member at the expense of the DUP on McCann's transfers.

WEST TYRONE (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	50.1	8.5	2.2	5.7	10.4	23.1	-
6 member district (quotas)	3.5 [3]	0.6 [1]	0.2	0.4	0.7 [1]	1.6 [1]	-
5 member district (quotas)	3 [3]	0.5	0.1	0.3	0.6 [1]	1.4 [1]	
4 member district (quotas)	2.5* [2]	0.4	0.1	0.3	0.5 [1]	1.2 [1]	

* In a four member contest if SF was to attract any SDLP transfers it would win three of the seats, but the method predicts just two for nationalists in this constituency when just four are returned.

MID ULSTER (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	49.2	14.7	0.9	3.4	10.3	16.7	4.9
6 member district (quotas)	3.4 [3]	1.0 [1]	0.1	0.2	0.7 [1]	1.2 [1]	0.3
5 member district (quotas)	3.0 [3]	0.9 [1]	0.1	0.2	0.6	1.0 [1]	0.3

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
4 member district (quotas)	2.5 [2]	0.7 [1]	0	0.1	0.5	0.8 [1]	0.2

FERMANAGH & SOUTH TYRONE (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	40.3	9.6	1.8	2.1	19.3	24.4	2.1
6 member district (quotas)	2.8 [3]	0.7	0.1	0.1	1.3 [1]	1.7 [2]	0.1
5 member district (quotas)*	2.4 [2]	0.6 [1]	0.1	0.1	1.2 [1]	1.5 [1]	
4 member district (quotas)	2.0 [2]	0.5	0.1	0.1	1.0 [1]	1.2 [1]	

* With five members being returned the final seat would likely be determined by transfers, with the DUP and SDLP fighting for the last seat. The method predicts the SDLP would win the last seat.

NEWRY & ARMAGH (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	40.8	23.5	1.6	0.2	18.7	13.1	2.0
6 member district (quotas)	2.9 [3]	1.6 [1]	0.1	0	1.3 [1]	0.9 [1]	0.1
5 member district (quotas)	2.4 [2]	1.4 [1[	0.1	0	1.1 [1]	0.8 [1]	0.1
4 member district (quotas)	2.0 [2]	1.2 [1]	0.1	0	0.9 [1]	0.7	

SOUTH DOWN (method retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	30.9	35.8	2.1	2.7	10.6	12.5	5.6
6 member district (quotas)	2.2 [2]	2.5 [2]	0.1	0.2	0.7 [1]	0.9 [1]	

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
5 member district (quotas)	1.9 [2]	2.1 [2]	0.1	0.1	0.6	0.8 [1]	
4 member district (quotas)	1.5 [1]	1.8 [2]	0.1	0.1	0.5	0.6 [1]	

UPPER BANN (method almost retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	27.2	11.4	6.5	-	24.6	27.1	3.0
6 member district (quotas)	1.9 [1]*	0.8 [1]	0.5	-	1.7 [2]	1.9 [2]	0.2
5 member district (quotas)	1.6 [1]	0.7 [1]	0.4	-	1.5 [1]	1.6 [2]	0.2
4 member district (quotas)	1.4 [1]	0.6 [1]	0.3	-	1.2 [1]	1.4 [1]	0.2

* In 2011 there was vote mismanagement by SF, when its two candidates's total of first preferences was very close to two quotas, but they lost out to the SDLP.

LAGAN VALLEY (method almost retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	3.4	6.1	12.4	1.7	20.4	53.1	2.9
6 member district (quotas)	0.2	0.4	0.9 [1]	0.1	1.4 [1]	3.7 [4]	0.2
5 member district (quotas)	0.2	0.4	0.7 [1]	0.1	1.2 [1]	3.2 [3]	0.2
4 member district (quotas)	0.2	0.3	0.6	0.1	1 [1]	2.7 [3]	0.1

STRANGFORD (method almost retrodicts correctly for 2011)

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
% 1st pref vote in 2011	3.0	8.5	14.4	-	20.4	48.9	4.8

	SF	SDLP	APNI	Others	UUP	DUP	Oth U
6 member district (quotas)	0.2	0.6	1.0 [1]	-	1.4 [2]	3.4 [3]	0.3
5 member district (quotas)	0.2	0.5	0.9 [1]	-	1.2 [1]	2.9 [3]	0.3
4 member district (quotas)	0.2	0.4	0.7 [1]	-	1.0 [1]	2.4 [2]	0.2

NORTH DOWN (method almost retrodicts correctly for 2011)

	SF	SDLP	APNI	Green*	UUP	DUP	Oth U
% 1st pref vote in 2011	1.0	2.7	18.6	7.9	10.4	44.2	4.8
6 member district (quotas)	0.1	0.2	1.3 [1]	0.6 [1]	0.7 [1]	3.1 [3]	0.3
5 member district (quotas)	0.1	0.2	1.1 [1]	0.5 [1]	0.6 [1]	2.6 [2]	0.3
4 member district (quotas)	-	0.1	0.9 [1]	0.4	0.5 [1]	2.2 [2]	0.2

* I have excluded the rest of the Others to show the winning Green candidiate