Proposal for an MMPP voting system by Gordon Nicholls, Kitchener, Ontario

1. The five principles

In the May, 2016 announcement, the Government proposed five principles to guide the parliamentary committee's study for a new voting system:

   1. Restore the **effectiveness and legitimacy** of the voting system by reducing distortions and strengthening the link between voter intention and the electoral result;

   2. Encourage greater **engagement -both in voting** and participation in the democratic process with a stress on fostering greater civility and collaboration;

   3. Support **accessibility and inclusiveness** for all eligible voters, including by avoiding undue complexity in the voting process;

   4. Safeguard the **integrity** of our voting system by ensuring reliable and verifiable results as well as preserving the secret ballot;

   5. Take into consideration the importance Canadians attach to **local representation and that their MP must have an understanding of conditions at the individual riding level.**

2. Introduction- 1867 versus 2015

As we begin the discussion of our voting system we should recall that the current FPTP system worked well when Canada had a two party system. Most voters supported the concept that any person who won more than 50% support did indeed represent the will of the majority. After WWI the number of active parties increased and currently there are four active national parties. The increase in the number of parties has produced what many Canadians consider an unfair result both in individual ridings and also for large geographic areas. For example in the 2015 election the following distortions occurred under the FPTP electoral system:

- 71 new MP's won their seat with less than 40% of the votes in their ridings
- 5 MP's won their seat with less than 29.2% of the votes in their riding!
- Although 47.9% of all the voters in the greater Toronto area voted for other parties this large number of citizens have no representation for their ideas in the new Commons because 100% of the 25 seats were won by members of the Liberal party.
- only 39.3% of the 338 seats in the Commons were won by members who earned more than 50% of the votes in their riding. This clearly shows that the original system from 1867 is not working for over 60% of the ridings
- In Ontario Conservatives won 35% of vote but only 27% of the seats; the NDP won 16.6% of the vote but only 6.6% of seats

These results suggest that Canada's current 'Representative democracy' is no longer truly representative and requires adaptation to deal with the distortions caused by the multi-party situation.

3. Proposal for a new voting system to be called Mixed Member Preferential-Proportional (MMPP)

The unfairness in the 2015 voting results described above is not unique to Canada and different solutions have been devised to make the voting system fairer.

Many countries have **preserved the traditional riding MP,** and thus addressed **Principle #5**, by preserving some Constituency ridings as well as introducing a component of proportional voting to allow for rebalancing of disproportionate results between percentage of seats won versus percentage of votes won. This Mixed Member Proportional (MMP) system combines FPTP(for 50% to 80% of seats) with Proportional voting for the remainder(ie 50% to 20%). Unfortunately, this MMP combination still allows for some MP's to win a seat with a percentage as low as 26%! Clearly the MMP system does **not address Principle # 1**.

To make a new voting system fairer than the MMP system and thus address **Principle #1,** but at the same time preserve the traditional riding MP, as required for Principle 5, a modification of the MMP to a Mixed Member Preferential-Proportional (MMPP) system is proposed. This system would **replace FPTP with a 2 choice Preferential voting system** but retain the Proportional component.

4. Impact of an MMPP system on the voter

To avoid complexity, see **Principle #3** , the new ballot for a MMPP system would only require a slight modification to the current Canadian elections ballot. The difference would be the addition of a second column for the voter to indicate their second choice. The ballot would look like the illustration shown:

North Hudson Riding Ballot 2019 -Place one X for 1st choice and one X for second choice

Candidate	Party	1st Choice	2nd Choice
Bull	NDP		
Dogmmar	Conservative		
Hill	Libertarian		
Noble	Green		
Pine	Liberal		
Zack	Independent		

The use of a two choice ballot makes this form of Preferential voting similar to the 'run off' system that is used in some countries for the top two candidates in the first round of voting. The decision for the second choice is very important for all voters in ridings where the substantial vote split in round one produced a winner with less than 50% support.

The request for a second choice would be the extra step required of the voter to guarantee that the winning MP would have earned at least 50% support in the final vote count for the riding.

5. Impact of the MMPP system on election night vote counting

This part of the electoral process would be more complicated than the traditional counting system and would require a computerized system for vote tabulation. To guarantee the integrity specified in **Principle 4** the algorithm for counting the votes would have to be tested by independent computer experts hired by each of the parties. In addition the voting machines must not transmit data via the internet. On election night other methods must be used to transfer the data to a central site for processing.

There would be two parts to the vote counting.

Part 1 would determine the winner of the local riding using Preferential vote counting as follows:
   1. All the first choice votes would be counted and the candidates would be listed in order of percentage votes won. If the first candidate has more than 50% then the winner is declared.
   2. If the first candidate has less than 50% then the second choice is counted for all voters who initially voted for any candidate in positions 3, 4 etc. These votes would be assigned to the candidates in the first two positions or would be disqualified if they were awarded to one of the candidates dropped from the list. The winner would then have more than 50% of final votes counted unless the final result produced an exact tie, which would be very unlikely.

Part 2 would be the Proportional component and this part would require reorganization of the riding structure in every province. The following changes would be necessary to implement a proportional component that would guarantee both **Principles # 1 & 2**.
   1.   If a 75:25 split is used, then the traditional ridings in every province would be enlarged by replacing every group of four ridings with three new ridings. The major advantage of a 75:25 split is that it only increases the size of the traditional riding by 33% as compared to a 66% increase for a 60:40 split . In a province like Nova Scotia which currently has 11 ridings the new organization would have 8 traditional ridings and 3 seats that would be won by Proportional vote counting. In a large province like Ontario which has 121 ridings, a new approach would be required that would subdivide the province into several regions, each region containing between 10 and 20 traditional ridings. Each of these regions would then have the 75:25 division applied. For example a 20 seat region would be reorganized to contain 15 new Constituency ridings and 5 seats that would be won using proportional voting.
   2.   After the winner in each traditional riding has been declared using Preferential voting the other candidates would be put on an interim Party Proportional list for their party in that province (or region). The party list would then be reorganized in order of percentage votes won by each candidate. To illustrate the process: suppose the hypothetical **Jubilee Party won 1** seat in **a** 15 riding Ontario region. Their initial Proportional List would contain 14 names listed in descending percentage order with vote counts of 31%, 30.2% etc. The final Jubilee Party Proportional List would then be created using only the top 3 names. A similar process would be followed for all parties.

   3.   To determine the winners of Commons seats using Proportional voting, the computer would now calculate the percentage of votes won by each party for the province (or region) and compare this percentage to the percentage of Riding seats won. In the example shown in section 2, the Jubilee Party 's one seat was 6.67% of the seats available. Suppose their vote count was at 12%. They would then be eligible to receive one of the 5 List seats. The Jubilee member to receive this seat would be the candidate who was at the top of the Jubilee Party List. A similar calculation would be done for all parties. This approach has the advantage of placing candidates on the Party List

who are know by the electors, have campaigned and won the largest percent of votes. It guarantees the List candidates are not selected by party headquarters and **further reinforces Principles 1, 4 and 5**.

6. Conclusion

One extra Principle that the MMPP proposal introduces is that it can be implemented inside of each province and does not require any adjustment to the current number of seats allocated to any province. This has the advantage of not changing any constitutional requirements.

The Liberal government has stated that the 'time has come to replace FPTP with a fairer and more inclusive voting system' and that Preferential voting is to be considered. The Green and NDP parties have stated that the only way to accomplish a fairer system is to introduce complete proportional voting. Unfortunately a complete proportional approach would mean that Principle 5 would be abandoned and Canadians would no longer have access to a local riding MP.

The MMPP system proposed in this essay addresses four of the five Principles set forth for the Parliamentary Committee. In the future Canadians will realize that the MMPP system will not only preserve the local riding structure but also returns us to the original democratic concept that a winner must obtain more than 50%. In addition the Proportional component will guarantee that voter intention will be better respected than under the FPTP system**.**

Greater civility and collaboration, as specified in Principle 2, will perhaps be displayed to the Canadian public when members of this Electoral Reform Committee demonstrate that they can collaborate to reach a compromise solution. If the final proposal from this committee is supported by members who represent more than 50% of those who voted in the 2015 election then this proposal will indeed represent the will of more than 50% of Canadians.

Since the MMPP system proposed has never been used before it is reasonable to ask: "What would the results be?" The Appendix that follows gives two possible outcomes. The results were produced by using different probability models to predict the second choice of voters. Since there are many variables in an election environment, these two examples can only be used as a guide to what to expect. The actual result could vary either up or down.

Although the MMPP system is not perfect, this proposal will encourage cooperation , require compromise from all parties in the Commons and it will accomplish most of the Principles set forth in the Commons motion to create your committee. Hopefully it will receive serious consideration.

Respectfully submitted by
Gordon Nicholls
Kitchener, Ontario

Appendix to the MMPP proposal -What sort of outcome would be expected?

Methodology

1. Probability models were used to determine the possible distribution of the second choice vote for ridings where the winner had less than 45% of the vote in the 2015 election.

 2. These numbers were then used to modify the FPTP outcome for the 2015 election using the 338 seats specified for this election.

3. It was then assumed that the 75:25 ratio would be used to reduce the constituency seats from 338 to 254 by combining four adjacent ridings into three ridings and that the support for each party would not change. Total seats for each province were reduced separately by multiplying the number of seats won in 2015 by 0.75.

4.The next step was to distribute the 84 List seats using Proportional voting to each province.

5. Since these calculations take a lot of time the smaller provinces were grouped together to create a Maritime Region of 32 seats, a Prairie Region of 62 seats and a Northern Region of 3 seats. The three largest provinces were treated separately for a total of six provincial regions. A separate calculation for the distribution of the Proportional seats was done for each of the regions .

6. To guarantee there would be no interference with the number of seats allocated to each province, it would be necessary to build a model that showed hypothetical results for all ten provinces. This would be the approach required if this system were to be implemented.

Table 1 shows what the outcome might have been if the 70% probability was applied to non Liberal voters on their second choice.

Table 1 - Comparison 2015 FPTP results to MMPP using 70% probability

Bloc Quebecois	BC	Prairies	Ont	Quebec	Maritimes	North	
FPTP seats 2015				10			10
% seats won 2015				12.8			2.9%
% vote won 2015				19.3			4.7
Preferential at 70% level				4			4
Share List seats				6			6
MMPP Total seats				10			10
% seats using MMPP				0.128			2.9%

Conservative Party	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	10	44	33	12	0	0	99
% seats won 2015	23.8	71	27.2	15.3	0	0	29.2%
% vote won 2015	30	48.4	35	16.7	18.2	17.4	31.9
Preferential at 70% level	2	31	21	4	0	0	58
Share List seats	7	0	15	5	4	1	32
MMPP Total seats	9	31	36	9	4	1	90
% seats using MMPP	21.4%	50.0%	29.7%	11.5%	12.5%	33.3%	26.6%

Green pArty	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	1	0	0	0	0	0	1
% seats won 2015	2.3	0	0	0	0	0	0.2%
% vote won 2015	8.2	3	2.9	2.3	3.8	2.4	3.4
Preferential at 60% level	1	0	0	0	0	0	1
Share List seats	1	2	3	1	1	0	8
MMPP Total seats	2	2	3	1	1	0	9
% seats using MMPP	4.7%	3.2%	2.4%	1.2%	3.1%	0.0%	2.6%

Liberal Party	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	17	12	80	40	32	3	184
% seats won 2015	40.4	19.4	66.1	51.2	100	100	54.4%
% vote won 2015	35.2	31	44.8	35.7	59.1	49.7	39.5
Preferential at 60% level	22	13	66	43	23	2	169
Share List seats	0	6	0	0	0	0	6
MMPP Total seats	22	19	66	43	23	2	175
% seats using MMPP	52.3%	30.6%	54.5%	55.1%	71.8%	66.6%	51.7%

NDP	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	14	6	8	16	0	0	44
% seats won 2015	33.3	9.7	6.6	20.5	0	0	13.0%
% vote won 2015	25.9	16.5	16.6	25.4	18.2	23.8	19.7
Preferential at 70% level	7	3	4	7	1	0	22
Sharef List seats	3	7	12	7	3	0	32
MMPP Total seats	10	10	16	14	4	0	54
% seats using MMPP	23.8%	16.1%	13.2%	17.9%	12.5%	0.0%	15.9%

Table 2 - Comparison 2015 FPTP results to MMPP using 60% probability

Bloc Quebecois	BC	Prairies	Ont	Quebec	Maritimes	North	
FPTP seats 2015				10			10
% seats won 2015				12.8			2.9%
% vote won 2015				19.3			4.7
Preferential at 60% level				5			5
Share list seats				6			6
MMPP Total seats				11			11
% seats using MMPP				0.141			3.2%

Conservative Party	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	10	44	33	12	0	0	99
% seats won 2015	23.8	71	27.2	15.3	0	0	29.2%
% vote won 2015	30	48.4	35	16.7	18.2	17.4	31.9
Preferential at 60% level	4	32	22	6	0	0	64
Share List seats	8	0	15	4	4	1	32
MMPP Total seats	12	32	37	10	4	1	96
% seats using MMPP	28.5%	51.6%	30.5%	12.8%	12.5%	33.3%	28.4%

Green pArty	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	1	0	0	0	0	0	1
% seats won 2015	2.3	0	0	0	0	0	0.2%
% vote won 2015	8.2	3	2.9	2.3	3.8	2.4	3.4
Preferential at 60% level	1	0	0	0	0	0	1
Share List seats	2	2	3	1	1	0	9
MMPP Total seats	3	2	3	1	1	0	10
% seats using MMPP	7.1%	3.2%	2.4%	1.2%	3.1%	0.0%	2.9%

Liberal Party	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	17	12	80	40	32	3	184
% seats won 2015	40.4	19.4	66.1	51.2	100	100	54.4%
% vote won 2015	35.2	31	44.8	35.7	59.1	49.7	39.5
Preferential at 60% level	20	12	63	39	23	2	159
Share List seats	0	7	0	0	0	0	7
MMPP Total seats	20	19	63	39	23	2	166
% seats using MMPP	47.6%	30.6%	52.0%	50.0%	71.8%	66.6%	49.1%

NDP	BC	Prairies	Ont	Quebec	Maritimes	North	Total
FPTP seats 2015	14	6	8	16	0	0	44
% seats won 2015	33.3	9.7	6.6	20.5	0	0	13.0%
% vote won 2015	25.9	16.5	16.6	25.4	18.2	23.8	19.7
Preferential at 60% level	8	3	5	8	1	0	25
Share List seats	1	6	12	7	3	0	29
MMPP Total seats	9	9	17	15	4	0	54
% seats using MMPP	21.4%	14.5%	14.0%	19.2%	12.5%	0.0%	15.9%