

Cooperative Proportional: A new voting system for Canada

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November 2015

As Canada considers its options for electoral reform, I put forward a new voting system called Cooperative Proportional (CP).

The system is *cooperative* in two regards. First, instead of choosing a single candidate to run in a riding, a party chooses one **candidate** and one **co-candidate** who *cooperate* to win votes. Second, instead of electing a single MP to represent their riding, voters elect one **representative** and one **co-representative** who *cooperate* to serve the constituents. A riding's representative and co-representative may be from the same party or from different parties, or one or both could be independents. They should have equal standing in the House of Commons, and their riding-level decisions should be made by consensus. Although two MPs are elected in each riding, the ridings would double in size so that the total number of seats remains the same.

The system is also *proportional*. This is accomplished as follows. If a candidate/co-candidate team receives more votes than any other, the team **wins the riding** and the candidate is elected as the riding's representative. The co-candidate becomes a contender for the co-representative seat, and if he/she wins the team **sweeps the riding**. However, the candidates from the other teams are also contenders for the co-representative seat. The contender with the most votes is referred to as the **2nd-place finisher**. He/she has the first opportunity to be elected co-representative, but this is only possible if his/her party has enough **top-up seats**. The number of top-up seats given to a party is the number of additional seats it needs to reach its **allocation**: its share of House of Commons based on the popular vote. If a party has fewer top-up seats than 2nd-place finishers, the seats automatically go to those with the highest percentages of votes in their ridings. If a 2nd-place finisher is denied a top-up seat, the 3rd-place finisher becomes eligible, followed by the 4th, the 5th, etc., until all top-up seats are claimed.¹

CP has a number of advantages over the much discussed Mixed-Member Proportional (MMP)² and Single Transferable Vote (STV)³ systems:

¹ Similar ideas can be found in the voting system used by the German state of Baden-Württemberg, as well as Canadian electoral reform proposals by Éric Grenier (<http://www.threehundredeight.com/2015/05/a-proposal-for-electoral-reform.html>) and Canadians for Justice (<http://www.canadiansforjustice.org/electoralreform>). However, these systems seem to lack co-candidates and co-representatives, distinguishing features of this CP proposal.

² I assume Open-List MMP, where voters decide which of a party's candidates receive its top-up seats. According to Fair Vote Canada (<http://campaign2015.fairvote.ca/about/>), the "Open List" variant of MMP was recommended by the Law Commission of Canada.

³ I assume Multi-Winner STV, where the top several candidates in each district are elected. See Fair Vote Canada for criticism of Single-Winner STV, also referred to as Alternative Vote or Instant Runoff Voting (<http://campaign2015.fairvote.ca/about/>).

- CP is capable of achieving a higher degree of proportionality because it distributes top-up seats across the entire country. MMP and STV, by contrast, strive for proportionality within smaller regions. With smaller regions, fewer seats are used to approximate the popular vote, so the approximation is less reliable.
- CP provides regionally balanced representation with exactly two MPs per riding. Under MMP or STV, a disproportionately large number of elected MPs may hail from particular communities within each region.
- Whereas MMP and STV complicate the ballot with a multitude of candidates and/or the unfamiliar task of ranking them, CP keeps voting and vote-counting simple.

What would the ballot look like?

Under the Cooperative Proportional voting system, ballots remain almost the same as in the current system. The only difference is that instead of seeing a single candidate's name beside each circle, the voter sees both the candidate's and the co-candidate's names. By marking a single 'X' in a circle, one votes for both the candidate and his/her associated co-candidate.

Below is an example showing the information that would appear on a ballot under the CP system. The candidates' names are taken from the Canadian 2015 election. Because ridings would double in size under CP, I merge two of the 2015 ridings to form a new hypothetical riding called *South Surrey & Delta*. One individual from each party is arbitrarily chosen to be the candidate (the name in **BOLD**), and the other is listed as the co-candidate (the name in *ITALICS*). The 'X' indicates the voter is supporting Jeremy Leveque and Pixie Hobby from the NDP.

South Surrey & Delta Ballot

() Green: **COLERO, LARRY** & *DEVELLANO, ANTHONY EDWARD*
 (X) NDP: **LEVEQUE, JEREMY** & *HOBBY, PIXIE*
 () Liberal: **QUALTROUGH, CARLA** & *HIGGINBOTHAM, JUDY*
 () Conservative: **WATTS, DIANNE LYNN** & *FINDLAY, KERRY-LYNNE*

With CP, the task of marking the ballot would be nearly as easy as it is under the current First Past the Post system. By contrast, Open-List MMP complicates the ballot with an additional list of candidates for each party. Multi-Winner STV not only increases the number of candidates, but requires voters to distinguish between their 1st choice, 2nd choice, 3rd choice, etc. Some fraction of voters will get this wrong, either spoiling their ballots or voting against their intentions. Importantly, votes would be much easier to count with CP than with MMP or STV.

Who gets elected?

To understand how seats in the House of Commons would be filled, let's revisit our hypothetical riding of *South Surrey & Delta*. Suppose that each team of two (candidate and co-candidate) receives the number of votes shown below. To get these numbers, I added the 2015 election votes from the original two ridings.

South Surrey & Delta Votes

Liberal:	QUALTROUGH, C & HIGGINBOTHAM, J		50975 votes
Conservative:	WATTS, DL & FINDLAY, KL		43167 votes
NDP:	LEVEQUE, J & HOBBY, P		14201 votes
Green:	COLERO, L & DEVELLANO, AE		3702 votes

Total:			112045 votes

The first phase is easy. The Liberal team has won more votes than any of the opposing teams, so their candidate Carla Qualtrough is elected to serve as the riding's representative.

The second phase is a somewhat more complicated. One of the remaining candidates or co-candidates will be elected to serve as the riding's co-representative. To figure out who, the first step is to narrow the list of contenders by eliminating the co-candidates from the teams that did not win the riding. The only co-candidate who remains a contender is Judy Higginbotham, since her team won. One co-candidate from the winning team, plus three candidates from the losing teams, makes four contenders in total.

Most of the contenders keep all the votes their teams received. The exception is the co-candidate from the winning team, who only keeps the excess votes that were not needed to win the riding. In our example, the Conservative team finished second with 43167 votes. This means the Liberal team needed only 43168 votes to win: 1 vote more than the Conservatives. Since they received 50975 votes, Judy Higginbotham is awarded $50975 - 43168 = 7807$ votes in the procedure to determine the co-candidate. Below is the list of co-representative contenders along with the number of votes they are allowed to keep. We also see each contender's vote share, his/her percentage of the 112045 votes cast in the riding.

South Surrey & Delta Co-Representative Contenders

Conservative:	WATTS, DL		43167 votes	=>	38.5%
NDP:	LEVEQUE, J		14201 votes	=>	12.7%
Liberal:	HIGGINBOTHAM, J		7807 votes	=>	7.0%
Green:	COLERO, L		3702 votes	=>	3.3%

With a 38.5% vote share, Dianne Lynn Watts from the Conservative party leads the contenders by a large margin. Does she become elected as the riding's co-representative? She probably does, but there's a catch. The catch is that her party, the Conservatives, must have enough top-up seats based on their share of the nation-wide popular vote. Let's take a look at the popular vote based on the 2015 election.

Canada-Wide Popular Vote

Liberal:	39.5%	=>	133 seats owed		92 ridings won
Conservative:	31.9%	=>	108 seats owed		49 ridings won
NDP:	19.7%	=>	67 seats owed		22 ridings won
Bloc:	4.7%	=>	16 seats owed		5 ridings won
Green:	3.4%	=>	11 seats owed		1 ridings won

Total:	99.2%	=>	335 seats owed		169 ridings won

There are 338 seats in the House of Commons, and the Conservatives won 31.9% of the popular vote. Because CP is a proportional system, the Conservative party is owed 31.9% of 338 seats, or about 108 seats. Suppose the party places 1st in 49 ridings (about half as many as in the 2015 election, since the proposed system would cut the number of ridings in half). With 108 seats owed and 49 ridings won, the Conservatives would be awarded $108 - 49 = 59$ top-up seats. These 59 seats top the party up so that its overall seat count is proportional to the number of votes it receives across the country.

Now let's return to the riding of *South Surrey & Delta*. To be elected co-representative, Dianne Lynn Watts must be granted one of the Conservative party's 59 top-up seats. Suppose she is one of, for example, 74 Conservative candidates who sit in 2nd place in their respective ridings. In that case, the 59 top-up seats automatically go to the 2nd-place Conservative candidates with the highest percentages of their ridings' votes. My intuition is that 38.5% is a rather high vote share for a 2nd-place finisher, so I imagine Dianne Lynn Watts would be included in the top 59 and would therefore be elected co-representative. But if she ends up being one of the $74 - 59 = 15$ lowest 2nd-place Conservative candidates, the opportunity passes to the other contenders.

After all 2nd-place finishers across the country are either elected or fail to acquire a top-up seat, the 3rd-place finishers are considered. At this point Jeremy Leveque (12.7%) may be granted a top-up seat from the NDP and be elected. But if the NDP runs out of top-up seats as well, then Judy Higginbotham (7.0%) has a chance to join her Liberal teammate Carla Qualtrough who has already been elected by virtue of winning the riding. In order to win both the representative and co-representative seats in the same riding, a party will generally need to win the riding in a landslide. This is not the case for the Liberals in *South Surrey & Delta*, so perhaps the opportunity would pass to Larry Cohero (3.3%) from the Green party.

Because a fair number of Canadians vote for independents, the total number of top-up seats is likely to be fewer than the total number of ridings. Accordingly, there will be a few ridings where no contender acquires a top-up seat. In these ridings, the 2nd-place finishers become the co-representatives.

If the CP system is adopted, Canadians should understand that (a) the candidate who receives the most votes in any riding is elected, (b) the remaining contenders who finish closer to the top have better chances of being elected as the co-representative, and (c) co-representatives are determined in a way that respects the popular vote. While the above procedure for determining co-representatives can be

carried out easily by a computer, it does require some effort for people to understand. Hopefully CP will be regarded as less confusing than STV, which involves a more sophisticated algorithm. CP does entail a few more steps than one would like, but at least the task of voting remains simple. Its acceptance rests on whether Canadians value both proportionality and regional balance enough to tolerate a little computer processing after all votes have been cast and counted.

How do independents compete?

An independent candidate can run in any riding either with or without a co-candidate. If the independent wins the riding, he/she becomes the riding's representative, just like in the current system. If the independent places 2nd, he/she might still be elected as the co-representative. If a winning independent has a co-candidate, the co-candidate receives the excess votes and is eligible to become the co-representative.

Unlike a party-affiliated candidate, an independent may not acquire a top-up seat. The only way an independent becomes the co-representative is if he/she finishes in 2nd place and none of the other contenders acquires a top-up seat. Recall that if no top-up seats are granted in a riding, the 2nd-place finisher is elected.

In my opinion, Cooperative Proportional is more generous to independents than certain other proportional systems. In MMP, for example, an independent placing 2nd in a riding is eliminated, while his/her party-affiliated opponents who place 3rd or 4th may still be elected from a party list. In CP, by contrast, a 2nd-place independent is rewarded for taking votes away from the parties. His/her opponents end up with smaller shares of the local vote, and are therefore less likely to acquire top-up seats. Furthermore, a vote for any independent acts as a vote against the party system, decreasing every party's share of the popular vote and reducing the total number of top-up seats across the country. With fewer top-up seats, a greater number of ridings will simply elect their top two choices regardless of party affiliation.

Would there be a threshold?

It is common practice for countries with proportional representation to require parties to achieve a minimum share of the popular vote, say 5%. This type of nation-wide threshold makes no sense to me. It means that the Bloc, who achieved 4.7% of the popular vote in 2015, would receive zero seats. But had they won just a third of a percent more votes and made the 5% threshold, they would get 17 seats. Proportional representation means that a party receiving 5% should have only slightly more seats than a party with 4.7%. The ratio should not be 17-to-zero. I worry that a nation-wide threshold would give rise to a number of undesirable voting and campaign tactics. So let me propose an alternative.

Instead of a nation-wide threshold, I propose a 2% **buy-in**. By choosing to run candidates in a particular riding, a party agrees to have 2% of the votes cast in that riding deducted from its share of the popular vote. The deduction is applied regardless of the outcome of the vote count. If the party wins 50% of the votes in the riding, only 48% contributes to their share of the nation-wide popular vote. If they win 1%

of the votes in the riding, their popular vote share actually decreases as a result of contesting that riding and performing poorly.

Note that the example presented earlier did not include the 2% buy-in. The example indicated that with 3.4% of the popular vote, the Green party would win 11 seats. They might only win 5 seats with the 2% buy-in. But 5 seats is a better reflection of their support than the 1 seat they actually won under First Past the Post, and it is more fair than eliminating multiple Green candidates on account of a nation-wide threshold. The example also indicated that the Bloc would win 16 seats. With the 2% buy-in, they would actually keep most of these seats because the buy-in would only be applied in Quebec ridings where the Bloc fields their candidates. A buy-in of 2% should be high enough to discourage parties from running in ridings they are not serious about representing. For instance, the Bloc would probably not run outside of Quebec for fear of performing poorly and losing top-up seats. Yet 2% is low enough that the other major parties would happily run candidates in every riding.

Now, having argued against a nation-wide threshold, I must admit that a threshold imposed on individual candidates seems perfectly reasonable. To make the number easy to remember, I would put this threshold at 2% to match the buy-in. Any candidate or co-candidate who individually holds less than 2% of the votes in his/her riding is simply eliminated. If he/she would have been next in line for a top-up seat, the 2nd-place finisher is elected instead.

Are there any other details?

Two additional details come to mind.

Suppose that the percentage of ridings won by a party is double their share of the popular vote. This is extremely unlikely. But if it did happen, the party might end up with more seats than its allocation based on its proportion of the nation-wide votes. The party would then get zero top-up seats, but it would keep the extra seats won at the riding level. Under no circumstances would the total number of seats increase. Cooperative Proportional is based on the idea that every riding has two representatives, no more and no less. So if a party wins extra seats, the number of top-up seats awarded to other parties might have to be adjusted downwards. There are different ways this calculation could be done.

The other detail concerns resignations. If an MP resigns, and if that MP ran with a co-candidate who did not get elected, I imagine that the co-candidate would be offered the job. This seems democratic since the co-candidate's name had been on the ballot, and his/her team must have received considerable support in order to have at least one candidate elected. Of course, if there is no unelected co-candidate available, or if the co-candidate declines, then a by-election is needed as in the current system.

But does Canada really want a fully proportional system?

Some Canadians do want full proportionality, whereas others feel that large parties must be favoured in the interests of electing decisive governments. To some degree, the 2% buy-in helps large parties at the expense of small parties. I caution against significantly raising the buy-in or imposing a nation-wide

threshold. Nevertheless, there is a responsible way to introduce only a moderate degree of proportionality if so desired.

Recall that under Cooperative Proportional, 169 of 338 seats are still assigned in a First Past the Post manner. The remaining 169 seats are allocated in a compensatory manner by which the seats already won by a party are subtracted from its allocation when calculating its top-up seats. Instead, it is possible to dispense with the subtraction and strive for proportionality only within the second group of 169 seats. The result would be a 50-50 compromise between First Past the Post and proportional representation, though otherwise the system would work exactly as described above. While this Cooperative *Half*-Proportional system might displease Canadians on both sides of the electoral reform debate, it represents a step towards proportionality while maintaining a strong incentive for parties to win at the riding level.

Overall, how would this new system affect Canadian elections?

Under Cooperative Proportional, all votes would count and the outcome of elections would be fair. Votes for a heavily favoured candidate would help elect his/her co-candidate, allowing their party to sweep the riding. Votes for a 2nd-, 3rd-, or 4th-place team would help them acquire a top-up seat and establish a second voice in the riding. Votes for any party would increase their allocation and help them elect co-representatives. And votes for independents would reduce the total number of top-up seats and free co-representative positions for anyone to win. CP would be relatively easy to implement, would ensure that representation remains regionally balanced, and would achieve the desired degree of proportionality with greater reliability than either MMP or STV.