

Submission to The Special Parliamentary Committee on Electoral Reform

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Summary

I write as a new Canadian. I urge you to enact some reform to some form of Proportional Representation (PR). Which exact PR system you choose, matters much less than getting good reform done at all. Give wait to Fair Vote Canada's excellent analysis. Adopt ranked-choice ballot structure with whatever PR system you adopt.

Any reform must have legitimacy for Canadians to accept it. A referendum is one possible source of legitimacy, but not the only one. This committee and this Parliament have a mandate to enact electoral reform. But only multi-party approvals of reform will command the legitimacy of this mandate. Requiring a review of the reformed electoral system, after two election cycles, will increase the confidence that mistakes will be fixed, thus increasing legitimacy.

I also write as a software engineer of long experience. That experience, and the wisdom of the software security field, says that to have online voting is to give up the secret ballot. Anyone who claims to offer a secret ballot through online voting is making an extraordinary claim, and you should demand extraordinary evidence. Online voting may be useful at the margin, to improve accessibility. You should regard online ballots as being as non-secret as faxed ballots.

Improving access and participating in elections is a noble goal. You have other tools to achieve this beyond just online voting. A PR system which shows that votes now matter more than they did under First Past the Post (FPTP) will help greatly. So will moving election day to a weekend or holiday. So will advanced voting periods.

Supporting PR

I am a newly-minted Canadian citizen, as of January 2016. I know the frustration and distortion of the FPTP electoral system from my home country. When I vote in my first Canadian parliamentary election, I really, really hope it will not be with this same archaic FPTP system. Please, please, please enact some reform in time for the next national elections.

I urge you to enact some form of Proportional Representation (PR). Make it remove the incentives for strategic voting, because the need for strategic voting is the acid that eats away at confidence that a vote makes a difference.

I will not burden you with the details of what kind of PR I prefer. You have many briefs on this subject. It is more important to get to some form of PR, than to get to my preferred form. I support the options and reasoning in the Fair Vote Canada brief, so please re-read that one.

There is value in having a ranked-choice ballot structure be part of whatever reform you enact. This does not prejudice the choice between, say, Single Transferable Vote or Mixed-Member Proportional or

Alternative Voting, because those are matters of how the ranked-choice ballots are counted. However, letting voters rank their choices is tangible evidence of reform for voters, and provides a platform on which future Parliaments and electoral officers can build better and better electoral systems. Let us make the leap from single-choice to ranked-choice ballots with this reform.

Legitimacy

In order for electoral reform to stick, it must be seen as legitimate. Where will you find the legitimacy for your reform?

Some say that there must be a referendum. The silent message is that only a referendum can confer legitimacy. The right referendum question and campaign *can* deliver legitimacy, but it's not the only way. And, it is so easy for opponents of change to word the question and fight the campaign in a way to block change, and worse yet, to block change without conferring legitimacy on that block.

In 2015, the Liberal, NDP, and Green parties campaigned clearly on the premise of electoral reform, and won a large majority of the seats. This gives this parliament a mandate to enact reform. However, the Liberal party took a false majority in Parliament from the FPTP system's distortions. Thus, this parliament must approve electoral reform by a *multi-party* majority. The ERRE committee must recommend reform by a multi-party majority, or better yet a committee-wide consensus.

It's hard to make such a change, in one election cycle, and get every detail right. One tool you have for improving legitimacy is to build in review and correction. Enact reform, but require that, after running for two election cycles, it be reviewed and improved. There should be an option of returning to the 2015 FPTP system, if the reform is failing. I don't expect reform to fail, but the review reduces an objection to reform.

Online voting or secret ballot, choose one

The committee has a mandate to consider online voting. As a trained experienced software engineer, I want to urge caution and realistic expectations for what technology can deliver to online voting.

I have been a working software engineer for over 30 years. I developed products and managed engineers for major software maker Adobe Systems for 16 years. I have followed the experts in systems security, voting machine verification, and privacy for decades. I evaluate online voting from this perspective.

As far as I know, there is no practical technology solution for delivering a secret ballot via online voting. If you have someone claiming they can achieve a secret ballot through online voting, they are making an extraordinary claim. Demand extraordinary proof.

True, I can deposit a cheque to my bank using my smartphone, and I'm pretty sure the spy monitoring my ISP can't find out the amount of the deposit. But that is not an analogy with a secret ballot. My bank knows exactly who I am, what cheque I deposit, and the amount. The transaction is not secret to my bank.

In contrast, when I mark a paper ballot and put it in a box, the diligent Elections Canada has no practical way of knowing at the end of the day which ballot was mine. My ballot is secret, *even to the people running the system and counting the votes.*

By contrast, with online voting, the people who develop the online software, or operate it, have the technical ability to eavesdrop on exactly what vote I individually cast. Any vendor you talk to will swear

up and down they they *don't* eavesdrop. But before you believe that they cannot, and all attackers cannot, demand extraordinary evidence.

Treat any online voting system the way you would treat a faxed-in ballot. Assume that the ballot is not secret to anyone in the room when the ballot is filled out: a demanding family member can peek at every ballot cast on-line from that home. Assume that someone en route can see the ballot as it goes past. With a fax, it might be someone at the telephone office. With online voting, it might be a vendor technician.

Thus I recommend that you allow online voting only at the margins, to get participation from a small segment of the electorate who otherwise won't have access to voting. But if the portion of votes cast online gets large enough to turn an election, you have to assume the integrity of that election is suspect.

In any online voting system, or electronic voting machine for that matter, you should not accept any system with secret source code and refusal of audits. It's a well-known principle of software security that anyone can make a system that they cannot break themselves; you need audits by outsiders and experts to have confidence that the system will resist skilled attackers. Ideally, an online voting system will have open source code, open to audit by all. The security will come from good but open design, along with carefully-generated cryptographic keys as the only secrets. Vendors like to hide their code as trade secrets, but this is "security by obscurity", and is a proven weak point in secure systems.

In a related matter, any electronic voting machine used in a Canadian election should have a voter-verified paper trail, and systemic audits of the paper trail to validate the electronic counts. The electoral security community in the United States have a strong set of best practices, gained from fifteen years of painful experience with lesser voting machines in the US since 2000.

Improving accessibility and participation

The committee has a goal of improving accessibility to elections, and the participation rate, especially by underserved populations. This is a wonderful goal. Online voting is sometimes held out as a panacea for participation. Having poured cold water on online voting, let me suggest other ways to achieve this goal.

A big obstacle to participation is the sense that votes don't matter, which is related directly to the illegitimacy of the FPTP electoral system, with its false majorities, safe districts, and requirement for strategic voting. I believe that if you move to a proportional voting system, which lets people express their preference directly with their vote, you will greatly reduce this sense that votes don't matter.

Voting should happen on days that don't compete with the normal work day. Elections should be on weekends, or Canada should declare a voting holiday. And, while there's a great civic unity that comes from everyone voting on the same day, I believe that allowing a few weeks of advanced voting would ease the impossible scheduling conflict that any one day places in front of some segment of the voters. Allow voting on several days in advance of the main election day.

Recommendations

- Adopt a Proportional Representation (PR) system. The choice of PR system is less important than moving forward from our archaic, unfair current FPTP system.
- Give weight to Fair Vote Canada's well-considered advice on PR options.

- Let us make the leap from single-choice to ranked-choice ballots with this reform.
- Adopt a PR system which removes the practical requirement for strategic voting.
- Establish legitimacy for the reform you enact.
- A referendum is not the only path to legitimacy, and not even the best path.
- This Parliament and this committee have a mandate for reform, based on platforms of the Liberal, NDP, and Green parties in the October 2015 campaign. A multi-party vote for reform is required to draw legitimacy for reform from that mandate.
- Require a review of the electoral reform after two election cycles. This improves legitimacy by giving confidence that there is a built-in path to recover from mistakes.
- To have online voting is to give up the secret ballot. Anyone who claims to offer a secret ballot through online voting is making an extraordinary claim, and you should demand extraordinary evidence.
- Treat online voting as a minor way to improve accessibility at the margin. Regard online ballots as being as non-secret as faxed ballots.
- Improving access and participating through enacting a PR system, which makes votes matter more.
- Moving election day to a weekend or holiday, to reduce the conflict between voting and the work day.
- Enact advanced voting periods, to reduce the inevitable conflict between any single election day and the variety of conflicting obligations for some voters.