

ONLINE APPENDIX

Are voters' views about proportional outcomes shaped by partisan preferences? A survey experiment in the context of a real election

Appendix A: The research design and the scenarios

The scenarios that a respondent gets depend on the party that the respondent prefers (the party to which she gives the highest rating) among the four main parties (Conservative, Liberal, NDP and Green). There are six possible scenarios for each group of party supporters, and all respondents get four randomly assigned scenarios. There are six scenarios because there are two treatments: the percentage of seats that the preferred party gets (plus, reference, minus) and whether the electoral outcome is proportional or disproportional.

We use the vote and seat share projected by CBC poll tracker as a reference point. This reference point was last updated on September 10, 2019 at 11:49AM. At the time the election was called, on September 11, 2019, this corresponded to the latest polls and projections. Figure A1 displays, for each party, all possible six scenarios. The electoral performance of the preferred party is highlighted in grey. The first three rows for each party are disproportional, followed by three rows for proportional outcomes. This gives a total of six rows (i.e., scenarios) for each preferred party. We have four preferred parties (Conservative, Liberal, NDP, and Green).

Figure A1. Parties and scenarios

Conservative supporters

		Conservative		Liberal		NDP		Green		Bloc		Others	
Disproportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
1	Plus	40	50	32	45	11	1	9	0	4	4	4	0
2	Reference	34	42	34	49	13	4	11	1	4	4	4	0
3	Minus	28	33	36	52	15	7	13	4	4	4	4	0
Proportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
4	Plus	40	42	32	34	11	11	9	9	4	4	4	0
5	Reference	34	36	34	36	13	13	11	11	4	4	4	0
6	Minus	28	30	36	38	15	15	13	13	4	4	4	0

Liberal supporters

		Conservative		Liberal		NDP		Green		Bloc		Others	
Disproportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
7	Plus	32	38	40	57	11	1	9	0	4	4	4	0
8	Reference	34	42	34	49	13	4	11	1	4	4	4	0
9	Minus	36	45	28	40	15	7	13	4	4	4	4	0
Proportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
10	Plus	32	34	40	42	11	11	9	9	4	4	4	0
11	Reference	34	36	34	36	13	13	11	11	4	4	4	0
12	Minus	36	38	28	30	15	15	13	13	4	4	4	0

NDP supporters

		Conservative		Liberal		NDP		Green		Bloc		Others	
Disproportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
13	Plus	32	38	32	45	19	13	9	0	4	4	4	0
14	Reference	34	42	34	49	13	4	11	1	4	4	4	0
15	Minus	36	44	36	51	7	0	13	1	4	4	4	0
Proportional		Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
16	Plus	32	34	32	34	19	19	9	9	4	4	4	0
17	Reference	34	36	34	36	13	13	11	11	4	4	4	0
18	Minus	36	38	36	38	7	7	13	13	4	4	4	0

Green supporters

	Conservative		Liberal		NDP		Green		Bloc		Others	
	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
Disproportional												
19 Plus	32	39	32	46	11	1	17	10	4	4	4	0
20 Reference	34	42	34	49	13	4	11	1	4	4	4	0
21 Minus	36	43	36	49	15	4	5	0	4	4	4	0
Proportional	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats	Votes	Seats
22 Plus	32	34	32	34	11	11	17	17	4	4	4	0
23 Reference	34	36	34	36	13	13	11	11	4	4	4	0
24 Minus	36	38	36	38	15	15	5	5	4	4	4	0

Here are the rules we applied for the assignment of vote and seat shares under each scenario.

Disproportional

Votes

Reference: The votes in the reference category correspond to the mean vote intentions for each party according to the CBC poll tracker at the time of the survey (beginning of the campaign).

Plus: The respondent's preferred party receives 6 percentage points more than in the reference category, and 2 points are subtracted from each of the remaining 3 parties. For example, the votes for the Conservative party in the reference category above (row 2) was 34% plus 6 points, that is, 40% (row 1). Each of the other 3 parties (Liberal, NDP and Green) gets 2 percentage points removed from their reference category. For example, the Liberal party had 34% (row 2), now they have 32% (row 1).

Minus: We subtracted 6 percentage points for the preferred party, and 2 points are added to each of the remaining 3 parties. For example, the Conservative party gets 6 fewer percentage points ($34-6=28\%$, see 2 and 3), and each of the 3 parties (Liberal, NDP and Green) receives 2 more percentage points. For example, the Liberal party goes from 34% to 36% (see rows 2 and 3).

Seats

Reference: The seats in the reference category correspond to the mean projected seat share for each party according to the CBC poll tracker at the time of the survey (beginning of the campaign).

Plus: The preferred party gets 9 percentage points more in seat share than in the reference category, and 3 points are subtracted from each of the remaining 3 parties. For example, seats for the Conservative party in the reference category are 42% plus 9 points, that is, 51%. It is actually 50%. This is explained below. Each of the other 3 parties (Liberal, NDP and GRN) gets 3 percentage points removed from their reference category. For example, the Liberal party had 49%, now they have 46%. It is actually 45%. This is explained below.

Minus: The preferred party gets 9 fewer percentage points than in the reference category, and 3 points are added to each of the remaining 3 parties. For example, the seats for the Conservative party in the reference category are 42% – 9 points, that is, 33%. Each of the other 3 parties (Liberal, NDP, and Green) gets 3 percentage points added to their reference category. For example, the Liberal party had 49%, now they have 52%.

Exceptions to the rules for Disproportional:

- Bloc Québécois always gets 4% in votes and seats and Other party always get 4% votes and 0 seats.

- In row 1, we cannot remove 3 points in seats from the Green party (we can only remove 1 point) so we are left with 102% seats. Therefore, we remove one point in seat from both the Conservative party and the Liberal party to reach 100% seats.
- In row 15, we cannot remove 9 points in seats from the NDP (we can only remove 4), so 2 points are added to both the Conservative party and Liberal party and seats for the Green party remain the same.
- In row 21, we cannot remove 9 points in seats from the Green party, so we remove only 1 point and flip a coin toss to decide whether the Liberal party or the Conservative party should gain this point. All the other parties receive the same seats as in the reference category.

Proportional

- The votes are the same as in FPTP.
- Bloc always gets 4% in votes and seats
- Other party always gets 4% votes and 0 seats
- The Conservative party and the Liberal party always get a bonus of two points in seats
- The NDP and the Green party always have the same percentage of votes and seats.

The following is an example of the survey question respondents saw:

We are going to show you four different scenarios.

In each scenario, there are 2 pieces of information about a possible outcome of the forthcoming federal election in October:

1. The percentage of **votes** that each party gets;
2. The percentage of **seats** in the House of Commons;

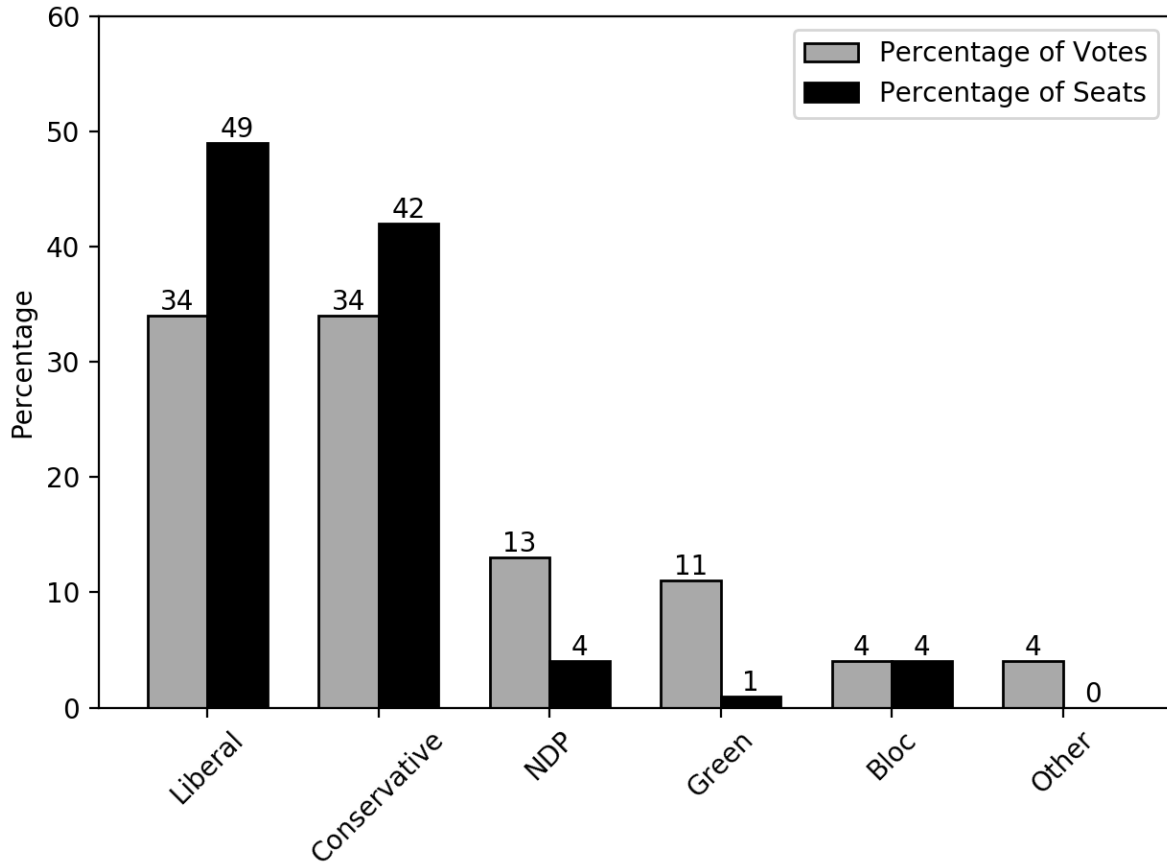
We would like to know how satisfied you would be with each possible outcome.

Let us start with the first possible outcome.

FIRST ELECTION OUTCOME

This graph indicates the percentage of votes and seats obtained by each party in the October 2019 election.

Votes and Seats



How satisfied would you personally be with such an outcome on a 0 to 10 scale, where 0 means NOT SATISFIED AT ALL and 10 means VERY SATISFIED?

0 1 2 3 4 5 6 7 8 9 10

Appendix B: Mean satisfaction by scenario for each supporter group

	Group/Scenario	Mean satisfaction
<u>Disproportional</u>	1.Conservative Plus	6.39
	2.Conservative Reference	2.93
	3.Conservative Minus	2.30
<u>Proportional</u>	4.Conservative Plus	6.83
	5.Conservative Reference	4.26
	6.Conservative Minus	3.05
<u>Disproportional</u>	7.Liberal Plus	6.89
	8.Liberal Reference	6.39
	9.Liberal Minus	3.47
<u>Proportional</u>	10.Liberal Plus	6.72
	11.Liberal Reference	4.72
	12.Liberal Minus	3.76
<u>Disproportional</u>	13.NDP Plus	4.09
	14.NDP Reference	3.71
	15.NDP Minus	3.59
<u>Proportional</u>	16.NDP Plus	4.54
	17.NDP Reference	4.35
	18.NDP Minus	3.94
<u>Disproportional</u>	19.Green Plus	3.98
	20.Green Reference	3.70
	21.Green Minus	3.68
<u>Proportional</u>	22.Green Plus	4.69
	23.Green Reference	4.41
	24.Green Minus	4.38

Appendix C: The impact of the scenarios, with a different operationalization of votes (OLS)

Satisfaction	(1)	(2)	(3)	(4)
Votes	1.212*** (0.041)	0.371*** (0.041)	0.425*** (0.050)	0.397*** (0.042)
Proportional	0.344*** (0.060)	0.607*** (0.059)	0.607*** (0.059)	0.331*** (0.092)
Conservative	-1.032*** (0.102)	-0.581*** (0.103)	-0.581*** (0.103)	-0.857*** (0.114)
NDP	-1.301*** (0.145)	0.043 (0.158)	0.044 (0.158)	-0.074 (0.183)
Green	-1.162*** (0.153)	0.151 (0.165)	0.153 (0.165)	-0.073 (0.196)
Plurality seats		2.646*** (0.104)	2.648*** (0.104)	2.563*** (0.105)
Proportional × Votes			-0.111 (0.059)	
Proportional × Conservative				0.521*** (0.128)
Proportional × NDP				0.146 (0.180)
Proportional × Green				0.368 (0.196)
Constant	5.152*** (0.074)	3.695*** (0.097)	3.695*** (0.097)	3.875*** (0.102)
R ²	0.139	0.199	0.200	0.201
N	11283	11283	11283	11283

Clustered standard errors by respondents in parentheses: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Appendix C is a replication of Table 2, but with a different measure of Votes. In Table 2, we use the percentage of the votes received by the preferred party in a given scenario (for instance 40% for the Conservatives in the first scenario). In Appendix C, Votes indicates whether the scenario corresponds to a plus (+1) or minus (-1) outcome, the reference scenario taking the value of 0.

Appendix D: OLS estimates of the impact of the scenarios: strong preferences

Satisfaction	(1)	(2)	(3)	(4)
Votes	0.278*** (0.011)	0.081*** (0.010)	0.088*** (0.011)	0.090*** (0.011)
Proportional	0.242** (0.086)	0.579*** (0.083)	0.928*** (0.261)	0.097 (0.139)
Conservative	-1.148*** (0.133)	-0.602*** (0.134)	-0.604*** (0.134)	-0.979*** (0.156)
NDP	4.367*** (0.327)	1.899*** (0.301)	1.911*** (0.300)	1.800*** (0.329)
Green	4.711*** (0.346)	1.809*** (0.308)	1.822*** (0.307)	1.474*** (0.343)
Plurality Seats		3.275*** (0.146)	3.259*** (0.146)	3.130*** (0.148)
Proportional × Votes			-0.013 (0.008)	
Proportional × Conservative				0.691*** (0.175)
Proportional × NDP				0.389 (0.292)
Proportional × Green				0.916** (0.324)
Constant	-4.445*** (0.376)	0.451 (0.331)	0.259 (0.346)	0.484 (0.334)
R ²	0.217	0.297	0.298	0.300
N	5544	5544	5544	5544

Clustered standard errors by respondents in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

OLS estimates of the impact of the scenarios: weak preferences

Satisfaction	(1)	(2)	(3)	(4)
Votes	0.132*** (0.008)	0.049*** (0.009)	0.046*** (0.010)	0.050*** (0.009)
Proportional	0.420*** (0.084)	0.595*** (0.083)	0.463* (0.211)	0.521*** (0.118)
Conservative	-0.752*** (0.153)	-0.447** (0.154)	-0.444** (0.154)	-0.628*** (0.169)
NDP	1.506*** (0.256)	0.684** (0.242)	0.675** (0.242)	0.730** (0.267)
Green	2.027*** (0.271)	1.020*** (0.257)	1.010*** (0.257)	1.042*** (0.274)
Plurality		1.787*** (0.137)	1.804*** (0.138)	1.766*** (0.139)
Proportional × Votes			0.006 (0.007)	
Proportional × Conservative				0.357 (0.190)
Proportional × NDP				-0.069 (0.229)
Proportional × Green				-0.013 (0.246)
Constant	0.822** (0.318)	2.639*** (0.302)	2.723*** (0.329)	2.648*** (0.300)
R ²	0.087	0.118	0.119	0.119
N	5646	5646	5646	5646

Clustered standard errors by respondents in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$