CITY OF VANCOUVER

REPORT

Report Date: December 15, 2020
Contact: Rosemary Hagiwara
Contact No.: 604.873.7177
RTS No.: 13363
VanRIMS No.: 08-2000-20
Meeting Date: January 19, 2021
Submit comments to Council

TO: Vancouver City Council

FROM: Acting City Clerk

SUBJECT: Report Back on the Random Order Ballot Model Used in the 2018 Vancouver Election

RECOMMENDATION

A. THAT Council direct staff to continue with the random order ballot model that was approved by Council and implemented for the 2018 general municipal election in the 2022 general municipal election;

FURTHER THAT Council direct staff to include the addition of numbers in front of candidate names on the ballot in the 2022 general municipal election.

B. THAT Council direct staff to implement Recommendation A in any by-elections prior to the 2022 general municipal election.

C. THAT the City of Vancouver request that the Province amend the *Vancouver Charter* to extend the candidate nomination period and move it to earlier in the election year (87 days);

FURTHER THAT Council submit to the next Lower Mainland Local Government Association (LMLGA) and subsequent Union of British Columbia Municipalities (UBCM) conventions a resolution for consideration that requests an extension of the candidate nomination period.

D. THAT the City of Vancouver request that the Province amend the *Vancouver Charter* to require a minimum of 75 qualified nominators for Councillor candidates and 100 qualified nominators for Mayoral candidates.

REPORT SUMMARY

Council directed staff to report back regarding the impacts of using a random order ballot following the 2018 municipal election, so Council could consider what to do for future Vancouver elections. The report was to include input from Advisory Committees.

COUNCIL AUTHORITY/PREVIOUS DECISIONS

At the Regular Council meeting on April 17, 2018, Council directed staff to provide recommendations to allow the names of candidates to be listed in random order on the ballot for the 2018 Vancouver general municipal election.

At the Standing Committee of Council on City Finance and Services meeting on June 6, 2018, staff proposed a by-law amendment and identified costs associated with implementing a random order ballot. Council approved amendments to the Election By-Law that required the order of candidate names on the ballot to be determined by lot, in accordance with section 79 of the *Vancouver Charter*.

At the Standing Committee on Policy and Strategic Priorities on May 15, 2019, staff reported back to Council with a review of the 2018 Vancouver municipal election, which included an evaluation of the random order ballot experience from the perspective of voters and non-voters. Staff based the report on a post-election survey that was undertaken by a third party survey company.

At the Standing Committee of Council on City Finance and Services on July 24, 2019, Council directed staff to report back to Council with Advisory Committee feedback and recommendations related to whether to return to an alphabetically ordered ballot for the next Vancouver municipal election, or retain a random order ballot.

CITY MANAGER'S/GENERAL MANAGER'S COMMENTS

The Acting City Manager recommends approval of the foregoing.

REPORT

Background/Context

The City of Vancouver has primarily used an alphabetical ballot in its elections (candidate names are listed in alphabetical order on the ballot by candidate last name). A random order ballot (candidate names are drawn, and based on the order they are drawn, they are placed on the ballot in that order) was used both in the 1993 Vancouver election and, most recently, in the 2018 election as directed by Council. After the 1993 election, Council decided at the time, based on feedback received from the public and recommendations from staff, to revert to an alphabetical model for the 1996 election because of the confusion the random order ballot caused for voters.

Due to concerns regarding a possible ballot order effect (that candidate placement on the ballot impacts the number of votes received because those on the top of the ballot receive more votes

than those on the bottom of the ballot), Council directed staff to implement a random order ballot for the 2018 election as provided for under section 79 of the *Vancouver Charter.*

At the Standing Committee of Council on City Finance and Services on July 24, 2019, Council directed staff to engage specific advisory committees for their feedback on the use of an alphabetical versus random order ballot. Staff was to consider the benefits and drawbacks of strategies such as numbering candidates on a randomized ballot, or having multiple randomized versions of ballots, versus just one random version.

Strategic Analysis

As part of Council's direction from the Standing Committee of Council on City Finance and Services on July 24, 2019, staff engaged with specific advisory committees for their feedback on the use of an alphabetical versus random ballot. The findings from this discussion and workshop are included in Appendix A.

Staff also determined it was important to evaluate the scope and level of impact that ballot order effect has on voters' decision-making in Vancouver. This would better inform Council on the impacts of ballot order models. Staff hired two Simon Fraser University researchers; Eline de Rooij, Associate Professor, Political Science, and Political Science Masters student, Cory Henderson, to conduct research into the impacts of ballot order effect in Vancouver elections. This included a literature review of past research in this area, as well as analysis of City of Vancouver election data to determine the extent of ballot order effect on Vancouver's elections. A summary of their findings is in Appendix B and their full report is in Appendix C.

As a result of the research findings, staff recommends:

1. **Continuing with the random ballot and add numbers in front of candidate names on the ballot for the 2022 municipal election**

Staff recommend that Council continue with the random order ballot model in 2022, but add numbers on the ballot in front of candidate names to provide a 'system' or 'pattern' to the ballot that will help voters find candidates on the ballot. This would also assist candidates in their campaign by providing voters with a simple number to look for on the ballot.

Not many jurisdictions use this type of ballot, but it is currently used in the City of Chicago and Lyons Township, Cook County (suburb of Chicago). The numbering system on their ballot is a remnant of an older punch card model of their ballot, where only numbers were listed on the ballot. In discussions with election administrators from Cook County and the City of Chicago, there have been anecdotal benefits identified for voters in making it easier to find candidates on the ballot. However, there has not been much research on the topic.

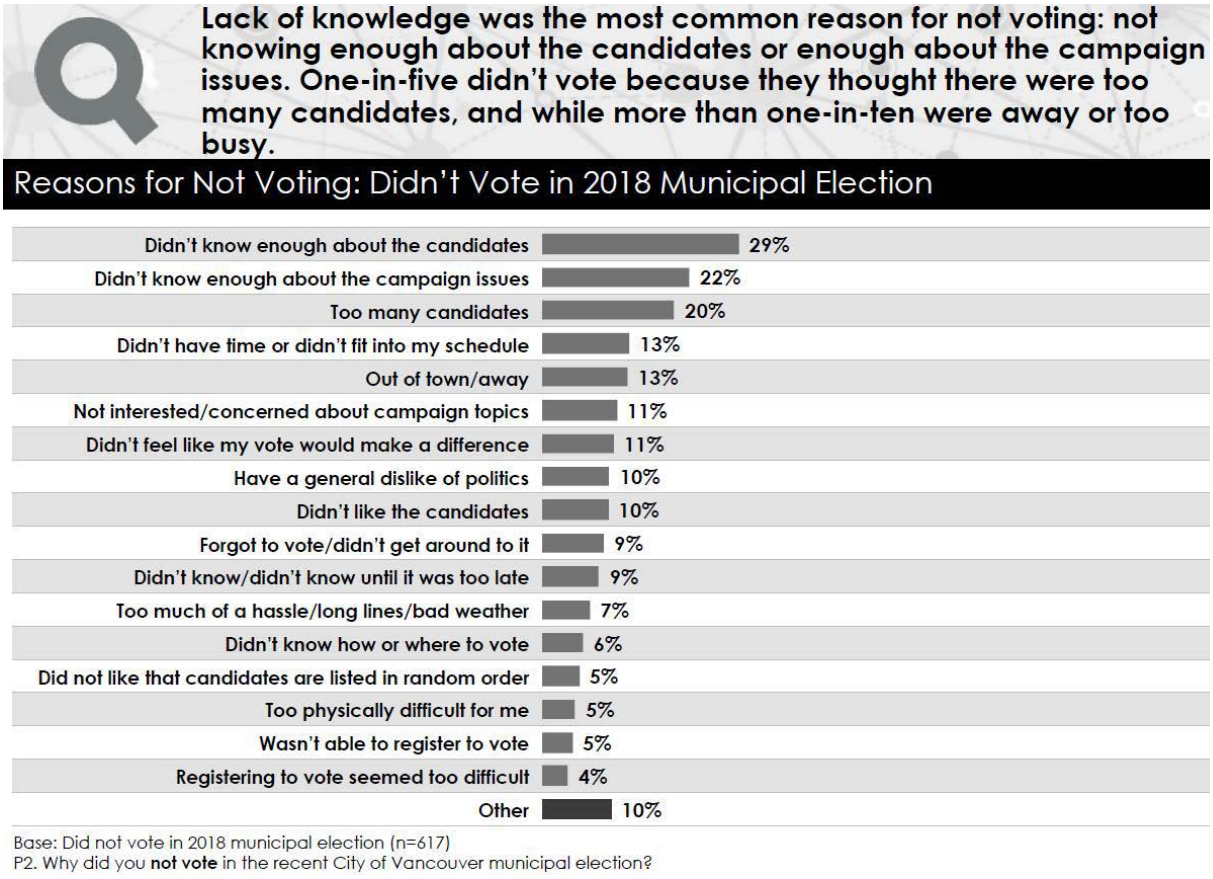
2. **Requesting to the Province that the candidate nomination period be extended and moved to earlier in the election year**

Staff recommend that Council request that the Province amend the *Vancouver Charter* to extend the candidate nomination period and move it to earlier in the election year (87 days). One of the largest barriers to voting identified by post-election survey respondents in Appendix B of the 2018 Municipal Election Review Report (see Figure 1 below) and by advisory committee workshop participants, is not knowing enough about the candidates and

their platforms (this also impacts the ballot order effect). Staff recommend a timeline similar to the City of Toronto where the candidate nomination period runs from May 1 until the end of July of the election year (closing 87 days prior to general election day). Currently, the candidate nomination period in Vancouver closes 36 days prior to general election day or 26 days prior to the first advance voting day, and does not provide voters with adequate time to learn about candidates.

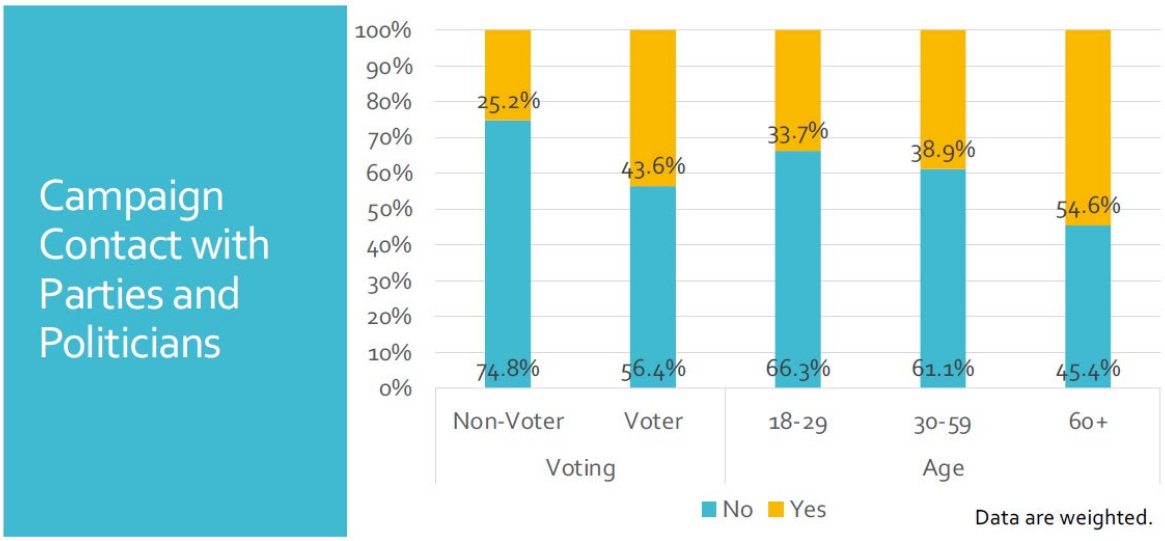
There are tangible benefits to voters having more time to educate themselves about candidates, and for candidates to connect with voters on their policies and platforms. In the 2019 Canadian Election Survey[1] conducted by the Consortium on Electoral Democracy on the 2019 federal election, it was found that eligible voters who had been contacted by a party or politician were more likely to vote than those who had not (see Figure 2).

Figure 1 - Reasons for not voting in the 2018 Vancouver municipal election



[1] More information can be found here: http://www.ces-eec.ca/

Figure 2 - Contact with Parties or Politicians



Extending the time for voters to research and learn about the candidates, while also providing more time for candidates to educate voters about their platform, would likely help reduce this barrier to voting.

Staff will also be taking new actions aimed at reducing systemic barriers through civic engagement and outreach, to increase voter turnout and candidate diversity. These actions will be included as part of the "Your City Hall" (YCH) initiative, led by the City Clerk's Office.

Your City Hall will take a systems change and equity-focused approach to increasing civic literacy, deepening local democratic engagement, and reducing barriers to participation in civic life within and beyond City Hall. YCH actions include:

1. Embarking on a listen and learn campaign to understand and respond to gaps in knowledge about how local government works, how to get involved, and how to make change happen;
2. Building a toolbox of resources to fill gaps in information and clarify pathways to civic participation, and
3. Convening partners and amplifying actions among interested individuals and groups.

3. **Increasing minimum candidate nominator requirements for Councillor and Mayoral candidates**

Staff recommend that Council request that the Province amend the Vancouver Charter to require a minimum of 75 qualified nominators for Councillor candidates and 100 qualified nominators for Mayoral candidates, to reflect the responsibilities of elected offices. Currently, candidates are only required to obtain 25 nominators in accordance with the Election By-law enacted pursuant to the *Vancouver Charter*. Section 43 of the *Vancouver Charter* requires a minimum of just two nominators, but allows Council, by by-law, to increase the number of nominators to 25. Council has enacted such a by-law.

The number of candidates on the ballot was identified as an issue for respondents in the post-election survey and by advisory committee workshop participants. The sheer number of candidates created a challenge for voters to learn about each individual candidate and their platform and to navigate the long ballot at the time of voting. In 2018, the City of Vancouver had almost twice the number of candidates (158) as Surrey, the next largest municipality in BC (83 candidates). The City's ballot tabulator vendor also identified Vancouver's ballot as the longest ballot that had been prepared in Canada.

Examples of nominator requirements from other jurisdictions are included below. It is important to note that, unlike Vancouver, these municipalities operate within a ward system. Jurisdictions that operate within a ward system, and not an at-large system, typically have fewer candidates on their ballots as voters elect only one representative for their area for each ballot race.

Municipality	# of Nominators Needed for School Board	# of Nominators Needed for Park Board	# of Nominators Needed for Councillor	# of Nominators Needed for Mayor	Electoral System
Vancouver	**25**	**25**	**25**	**25**	At-Large
Toronto	**25**	**N/A**	**25**	**25**	Ward
Montreal	**10**	**N/A**	**25**	**200**	Ward
Calgary	**100**	**N/A**	**100**	**100**	Ward
Winnipeg	**25**	**N/A**	**25**	**250**	Ward
Regina	**10**	**N/A**	**25**	**25**	Ward
Halifax	**5**	**N/A**	**5**	**5**	Ward
San Francisco	**20**	**N/A**	**20**	**20**	Ward
San Diego	**N/A**	**N/A**	**100**	**200**	Ward
Portland	**N/A**	**N/A**	**100**	**100**	Ward

	School Board	Park Board	Councillor	Mayor
Mean	**27.5**	**25**	**45**	**95**
Median	**22.5**	**25**	**25**	**62.5**
Mode	**25**	**25**	**25**	**25**

Based on the preliminary analysis of taking the average across the municipalities listed above and factoring in Vancouver's at-large system, the City of Vancouver could increase the minimum nominator requirements to 75 for Councillor candidates and 100 for Mayoral candidates. The minimum number of qualified nominators for Park Board and School Board candidates would remain the same at 25 nominators.

Increasing the minimum number of nominators could not only help reduce voter fatigue but also better reflect the responsibilities and competencies required for those in elected office.

Implications/Related Issues/Risks

Financial

There are no financial implications.

Legal

The *Vancouver Charter* authorizes either an alphabetical order or a random order ballot. The Province is responsible for any amendments to the Vancouver Charter respecting nomination periods and required nominators.

CONCLUSION

At the Standing Committee of Council on City Finance and Services on July 24, 2019, staff were directed to report back to Council with Committee feedback and recommendations related to whether or not to return to an alphabetically ordered ballot for the next Vancouver municipal election or to retain a random form ballot.

The recommendations provided in this report will help address voter fatigue, provide more time for awareness and knowledge of candidates, and make it easier for individuals who rely on pattern recognition or those with language barriers.

* * * * *

DISCUSSIONS AND WORKSHOP WITH ADVISORY COMMITTEE MEMBERS

Staff invited members from the following Advisory Committees to attend a workshop on February 3, 2020, to provide feedback on the use of an alphabetical versus a random order ballot:

- Children, Youth and Families Advisory Committee
- 2SLGBTQ+ Advisory Committee
- Persons with Disabilities Advisory Committee
- Racial and Ethno-Cultural Equity Advisory Committee
- Seniors' Advisory Committee
- Urban Indigenous Peoples' Advisory Committee
- Women's Advisory Committee

Members from the following Advisory Committees attended the workshop: Racial and Ethno-Cultural Equity Advisory Committee, Persons with Disabilities Advisory Committee, and Seniors' Advisory Committee.

In addition, feedback was received from one member of the Urban Indigenous Peoples' Advisory Committee at a meeting on January 30, 2020.

As part of the workshop and discussion, advisory committee members were asked to identify the benefits and drawbacks of the random order ballot model used in Vancouver. A summary of discussion feedback is found below:

PERCEIVED BENEFITS

Fairness

- Random order ballots are more fair for candidates but more confusing for voters
- Random order ballot is not "truly fair" but more fair than alphabetical

PERCEIVED DRAWBACKS

Accessibility

- Accessibility concerns include language barriers, difficulty with English characters
- Individuals with vision difficulty may find random order ballots confusing
- Individuals with developmental disabilities may find random order ballots confusing
- Individuals with vision impairment who make use of audio electronic voting machines may not know when a list of candidates ends resulting in confusion or fatigue
- Improvements could be made to ballot design to improve accessibility (e.g. using colours)
- Consistency of ballot design across elections is important

Importance of patterns / pattern recognition

- People who rely on pattern recognition (e.g. alphabet) to understand the ballot and voting process may find random order ballots confusing

- A number of suggestions were made to re-introduce patterns or symbols (e.g. adding numbers, sorting candidates by alphabet in a random draw, etc.)
- Numbering candidates may be easier for individuals with language barriers.
- Numbers may be easier to recognize and more universal, however, perceived bias may occur if numbering begins with 1 (perception may be that 1 means 'best')
- Consider randomizing numbering system to reduce perceptions of numbering priority

In addition to feedback directly related to the random order ballot, related comments and feedback include the following:

Length of ballot

In the 2018 election, there were 158 candidates on the ballot across four races, and three capital plan borrowing questions. On this topic, comments from participants included:

- There are too many candidates on the ballot
- Voters may not finish the ballot because it is too long and they become frustrated
- Voters may not vote for the full number of allowable candidates (e.g. 10 candidates for Council) because they lose track of candidate names or become fatigued or make voting errors)
- Individuals struggling with concentration may lose track of placement

Suggestions noted in the discussion included increasing candidate nomination requirements, increasing the required number of nominators and/or increasing the deposit amount.

Systemic barriers, such as lack of knowledge about candidates, and lower participation of Indigenous, Black and People/Person(s) of Color (IBPOC) voters in voting:

- Considering the systemic and structural barriers to participation in political and civic life facing IBPOC residents, there were concerns whether the type of ballot is really the issue when it comes to voter confusion and lack of voter participation
- When discussion is focused on the type of ballot alone, other important issues may not be addressed including the length of the ballot, and low knowledge and awareness of candidates
- Suggestions were made to: put more effort and resources towards engagement and outreach efforts supporting IBPOC voters and encouraging first time IBPOC candidates to run for political office; consider raising the threshold of requirements for potential candidates so the length of the ballot is potentially reduced; and during the run up to an election, publicize candidate meetings more widely and hold candidate meetings by topical issue

Other concerns, additional suggestions or ideas

- There is a need to find a balance between fairness (for candidates) and equity (for voters)
- Consider maintaining an alphabetized ballot but randomizing names beginning with the same letter (e.g. all names beginning with letter "A" are grouped together but randomized)
- Placement bias on the ballot is an issue (candidates placed top on the ballot versus the bottom of the ballot)

- Consider changing candidate positions on the ballot for each election to create more fairness across elections
- Participants discussed the effectiveness of categorizing candidates by party affiliation, but were concerned that the clustering would be unfair for independent candidates

Comments and suggestions on increasing future voter participation

- To reduce the length of the ballot, consider raising eligibility requirements
- This may reduce "candidate mischief" (filling out the nomination package but not participating in the candidacy process)
- Include skill testing questions as part of candidate requirements
- Concern that frequent ballot change may discourage voter participation
- New processes can create confusion
- Focus on increasing knowledge on how to vote
- Keep it simple and clear
- More variables need to be considered
- Voting is an emotional process
- There is a need to provide more education to encourage voter participation, and improve accessibility
- Offer more engagement opportunities
- Start the educational process early

Summary

- When asked whether workshop members would prefer a random order ballot model or alphabetical model, responses were mixed and there was no clear consensus on using either model given that there are benefits and drawbacks to each model.

- Recommendations from attendees included focusing on improving the ballot design, increasing patterns on the ballot, reducing the length of the ballot, and reducing systemic barriers through engagement and outreach to increase voter turnout and candidate diversity.

Staff compiled and summarized feedback. On February 10th, a summary was sent to the Advisory Committees members who attended the meeting so they could verify their contributions.

ONLINE SURVEY

To supplement data gathered using other methods, staff administered an online survey. The English version of the survey instrument is found at this link: https://survey.vancouver.ca/s3/Random-Order-Ballot-Survey.

The survey was distributed via the City of Vancouver's Social Policy & Projects Community Service Grants email list. The list comprises over 100 organizations that receive City of Vancouver grants. The list represents a cross-section of demographic groups and issue areas. The invitation to participate in the survey was sent to staff at each organization, asking staff to circulate the survey link to people who access their respective services and programs.

A paper copy of the survey was attached to the email invitation for those organizations whose clients preferred this method to the online version. The survey (in English) was open from January 21 to March 12, 2020.

As of March 12, 2020, the total number of complete survey responses received was 135 (128 complete responses and seven partial responses).

The survey was initially not translated into languages other than English. Based on the demographic profile of responses received it is clear that this decision impacted the racial and ethno-cultural diversity of respondents.

In response to this gap, the survey was translated into four languages in March 2020: Punjabi, Tagalog, Simplified Chinese and Traditional Chinese. However, before the translated surveys could be distributed, the pandemic resulted a delay in administering the survey.

In September 2020, the translated surveys were distributed via the Vancouver Immigration Partnership Members' List and Punjabi Market Collective. The survey remained open for responses from September 3 to 28, 2020, resulting in an additional 25 responses (23 complete and two partial responses), with two additional responses received after September 28, 2020.

In order to reduce the number of City of Vancouver surveys and engagement requests taking place in September 2020, the survey was not promoted via social media feeds or other mechanisms. This decision likely impacted the overall response rate.

The total number of responses is 162 (153 complete and nine partial).The summary of quantitative survey findings is found below for both periods that the survey was open (January/February and September).

The survey was also distributed to Advisory Committee members to share with their fellow members who were unable to attend the workshop.

Methodological limitations

Due to the low survey response rate, findings cannot be considered statistically significant, nor are responses geographically or demographically representative. For this reason, the survey findings should be considered a partial snapshot that can be used to complement other research methods, but should not be weighted equally with other findings. It is also important to note that the pandemic resulted in methodological challenges in promoting and implementing the survey.

Survey responses

- Of the 159 responses to the question: "What impact do you think listing candidates in random order has on the fairness of voting?"
    - 45.9% indicate that the random order ballot increases fairness. 40.3% indicate that the random order ballot does not change fairness, and 13.8% indicate the random order ballot decreases fairness.

- Of the 158 responses to the question: "Whether you voted or not in the 2018 municipal election, what is your preference for the way candidates are listed on the ballot in the future?"

    - 42.4% indicate a preference for alphabetical by last name, 37.3% indicate preference for random order, 15.2% indicate no preference, and 3.8% indicate "other," and 1.3% indicate "don't know."

- Of the 156 responses to the question: "If you voted in the City of Vancouver's 2018 municipal election, how would you rate the clarity of the random order ballot?"

    - 33.3% indicate "very clear," 19.2% indicate "somewhat clear," 24.4% indicate "not clear but not confusing," 19.2% indicate "somewhat confusing," and 3.8% indicate "very confusing."

Summary

- Almost half of survey respondents (45.9%) indicate that the random order ballot model increases perceptions of fairness.

- At the same time, 42.4% indicate a preference for an alphabetical ballot, with 37.3% indicating a preference for the random order ballot.

- In rating the clarity of the random order ballot, responses are mixed. The top three responses range from "very clear" (33.3%), to "not clear but not confusing" (24.4%), to "somewhat confusing" (19.2%).

- The responses provided to the first open-ended question may reveal a clearer preference for the alphabetical model. Specifically, key themes that emerged from the open-ended questions include: (1) random order ballot causing confusion, (2) random order ballot being time consuming, and (3) questions raised around the perceived fairness of the random order ballot. Together, these responses may indicate a stronger preference for an alphabetical model.

Demographic profile of respondents:

- The survey sample is **not an accurate representation of Vancouver's population** demographically or geographically.

- **Geographic distribution:** The northeast quadrant and southeast quadrant of Vancouver are the most highly represented in the survey respondents (28.3% and 25.8% respectively). One possible explanation may be due to the fact that the survey was distributed via organizations that receive City of Vancouver Community Service Grants (many of which are located in these two quadrants of the city).

- **Age:** The distribution of respondents among all age cohorts is relatively even, ranging from 11.3% for 65-73 year olds to 19.5% for 35-44 years olds). The exception is 18-24 year olds who are significantly underrepresented (1.9% of respondents).

- **Ethno-Cultural identity:** Of the total respondents who answered this question, white (European decent) respondents represented the most (55.3%), with the next most frequently represented group being Chinese (17.0%).

- **Language most often spoken at home:** 71.3% of respondents identified English as the most spoken language at home. The next most frequently represented language indicated is “other” (15.0%). “Other” is described as a combination of English plus another language indicating a more diverse set of responses than the English response rate may imply.

- **Persons with disabilities:** 86.6% of respondents indicate they do not identify as a person with a disability, while just over 13.4% indicate they do identify as a person with a disability.

ACADEMIC RESEARCH AND DATA ANALYSIS

Most of the research into the impacts of ballot order effect has been focused on American elections, with very limited Canadian research in this area. As a result, staff contracted Eline de Rooij, Associate Professor, Political Science, and Political Science masters student, Cory Henderson, from Simon Fraser University to conduct research into the impacts of ballot order effect in Vancouver elections, which included a literature review of past research and data analysis using past City of Vancouver election data to determine whether ballot order effect impacts vote distribution on the ballot, and if so, to what extent. Their full report, including findings, can be found in Appendix C. This research was conducted over the period of November 2019 to June 2020.

There were numerous findings from the report, which are summarized by the authors in Section 5 Overview of Findings and Recommendations in Appendix C, and are discussed below.

In terms of ballot order effect, it was found that:

- When reviewing the literature, the vast majority of published academic studies show that **the order in which candidates' names appear on the ballot impacts their vote shares**.
    - The authors noted, however, that care should be taken when using insights from studies conducted in one particular context to motivate changes to election laws in a very different context.

- When City of Vancouver ballot results from 1988 to 2018 were analyzed, it was found **that candidates lower on ballots for city council, park and school board elections receive, on average, a statistically significantly lower share of the votes than those ranked higher on the ballot**
    - The authors did not find such evidence for candidates in mayoral elections

- **This impact of candidates' position on the ballot exists net of other factors that impact candidates' vote share** such as candidates' gender, ethnic/racial background, whether they are incumbents and their party affiliation (if any), as well as, factors related to the election (such as the number of candidates running)

When it comes to understanding **how strong the impacts of ballot order effect are** on the distribution of votes, the following factors were determined to have an effect:

- **When a lack of sufficient information about candidates and/or when voters do not have a strong preference for one candidate over another, factors such as the order in which candidate names appear on a ballot can impact the voters decision-making process**
    - Specifically, factors such as: the number of candidates on a ballot, the number and position of races on a ballot, whether candidates are affiliated with political parties and whether they are incumbents, the electoral system, the nature of the election (competitive or not, the type of office), and differences among voters in their levels of interest, information and cognitive skills, all impact the strength of the ballot order effect (see Table 3.B in Appendix C)

- Based on past Vancouver election results data, it was found that **the impact of the ballot order is largest in Park Board elections, followed by School Board elections and then city Council elections**

- The average difference in elections between 1988 and 2018 between the vote share of the losing candidate with the most votes and the winning candidate with the fewest votes suggest that **ballot rank can potentially change election outcomes**

- The average difference in elections between 1988 and 2018 between the vote share of the losing candidate with the most votes and the winning candidate with the fewest votes suggest that **ballot rank can potentially change election outcomes**

When reviewing why ballot order effect may exist in Vancouver elections, the following variables were identified as likely having an impact:

- In the context of the Vancouver elections, the authors expect that the **relatively large number of candidates on the ballot, the municipal nature of the election** (as opposed to provincial or federal)**, the at-large electoral system** (versus a ward-system) **all strengthen the ballot order effect, while the prominent role of political parties should reduce the ballot order effect** (see Table 3.C in Appendix C)

Summary

From the research, it is evident that ballot order effect plays a role in the distribution of votes on Vancouver's ballot, although this impact is more distinct in some ballot races (Park Board and School Board) compared to others (Councillor; no ballot order effect was identified in the Mayor race). In terms of fairness for candidates, the random order ballot model could, therefore, be deemed fairer than the alphabetical model as they ensure the potential ballot order effect is distributed to randomly selected candidates – not those whose last names begin with a letter earlier in the alphabet.

In terms of increasing fairness for candidates, the City of Vancouver does not currently have the option, under the *Vancouver Charter*, to implement several ballot styles with candidates listed in different order on the ballots. Given the existing short period of time between the close of the candidate nomination period and Election Day, and the requirements that must be completed in such a short period of time, such as the design and printing of the ballots, and logistics and accuracy testing with ballot tabulators, it would be administratively challenging for staff to implement multiple ballots without additional changes to the candidate nomination period timeline as prescribed in the *Vancouver Charter*.

Having different ballots with a different list of candidates order on each ballot may also cause additional confusion and challenges for voters given the current length of the City's ballot and is, therefore, not recommended even though it may be considered more fair for candidates.

6/11/2020

Election Ballot Order Effects in Vancouver Municipal Elections

A report prepared for the City of Vancouver

Eline de Rooij &
Corinne Henderson

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1 Background

This report was written for the City Clerk's Office of the City of Vancouver, following a change in 2018 in the way in which candidates' names are ordered on the ballot for the City's municipal election. Prior to 2018, the City's municipal election ballots were ordered alphabetically using the candidates' last names, with the exception of the 1993 election. In 2018 (and in 1993), the order of candidates' names on the City of Vancouver's ballots was determined by a random draw. This change in *ballot order model* – the procedure for determining the order of candidate names on the ballot – was motivated by a desire "to negate the perception of an unfair advantage that may result from the current alphabetical ballot order"[1].

After the 2018 election, the City conducted a post-election survey to assess voters' and non-voters' opinions on the randomized ballot. The results were presented to City Council in May 2019 as part of the 2018 Municipal Election Review.[2] Subsequently, in July 2019, Vancouver City Council approved a motion instructing staff, among other things, to provide "feedback and recommendations related to whether or not to return to an alphabetically ordered ballot for the next Vancouver municipal election or retain a random form ballot, including possible recommendations for by-law enactment per the provisions of Section 79 of the *Vancouver Charter*."[3] This report was elicited by Vancouver City staff in response.

Central in this report is the concept of a *ballot order effect*, commonly understood as the impact of a candidate's position on the ballot (that is, whether the candidate is listed in first place, second place, third place, and so on) on the share of the vote(s) the candidate receives.

[1] City of Vancouver, "Randomized Ballot Name Order – Proposed Amendments to the Election By-law No. 9070," Report from the Chief Election Officer to Standing Committee on City Finance and Services, April 26, 2018, https://council.vancouver.ca/20180606/documents/cfsc4.pdf, 2.
[2] City of Vancouver, "2018 Municipal Election Review," Report from Chief Election Officer to Standing Committee on Policy and Strategic Priorities, March 26, 2019, https://council.vancouver.ca/20190515/documents/pspc3.pdf.
[3] City of Vancouver, "Report to Council. Standing Committee of Council on City Finance and Services," Meeting Minutes of Regular Meeting of the Standing Committee of Council on City Finance and Services, July 24, 2019. https://council.vancouver.ca/20190724/documents/cfsc20190724min.pdf, 6.

Specifically, the **directives** for this report, and the corresponding sections of the report in which they are addressed, are to:

1.	**Identify and summarize the types of ballot order models that are being used by election authorities** a. Discuss the advantages and disadvantages of the different ballot order models b. Provide examples of a few jurisdictions that use these varying models	**Section 2**
2.	**Provide a review of the academic research on ballot order effects** a. Identify factors that amplify or reduce ballot order effects b. Discuss to what extent these factors are likely to play a role in Vancouver's municipal election	**Section 3**
3.	**Analyze past Vancouver municipal election data to assess whether candidates' position on the ballot has impacted their likelihood of receiving votes, while accounting for other factors that may impact voters' decision** a. Assess whether a potential ballot order effect was reduced by using a randomized rather than an alphabetical ballot	**Section 4**
4.	**Summarize the literature review and the ballot order effect findings for Vancouver** a. Recommend alternative options to improve fairness on the ballot other than random order ballots, if there are any	**Section 5**

While the focus in this report is on the order of candidate names on a ballot, it is important to bear in mind that ballot order is only one among many potential factors that can influence candidates' vote share. For example, incumbency, political experience, campaign spending, endorsements, party affiliation, proposed policies, sociodemographic characteristics such as education, occupation, place of residence, age, gender, and ethnic and/or racial background, and personality traits are some of the other characteristics of candidates that have been shown to impact candidates' chances of being elected.[4]

Vancouver municipal elections use an at-large electoral system in which Vancouver is treated as one electoral district. For each race, voters can cast votes for as many candidates as there are positions (seats): one vote for the position of mayor, ten votes for the ten positions of city councillor, nine votes for the nine positions on the school board and seven votes for the seven positions on the park board. Voters can only give one vote per candidate.

[4] Rosie Campbell and Philip Cowley, "What voters want: Reactions to candidate characteristics in a survey experiment," *Political Studies* 62, no. 4 (2013): 745-65; John D. Griffin, "When and Why Minority Legislators Matter," *Annual Review of Political Science* 17 (2014): 327-36; Timothy B. Krebs, "The Determinants of Candidates' Vote Share and the Advantages of Incumbency in City Council Elections," *American Journal of Political Science* 42, no. 3 (1998): 921-35; Marsha Matson and Terri Susan Fine, "Gender, Ethnicity, and Ballot Information: Ballot Cues in Low-Information Elections," *State Politics and Policy Quarterly* 6, no. 1 (2006): 49-72; Jason Roy and Christopher Alcantara, "The candidate effect: Does the local candidate matter?" *Journal of Elections, Public Opinion & Parties* 25, no. 2 (2015): 195-214.

2 Overview of Existing Ballot Order Models

In this section we:

1. **Identify and summarize the types of ballot order models that are being used by election authorities**
   a. Discuss the advantages and disadvantages of the different ballot order models (summarized in Table 2.A)
   b. Provide examples of jurisdictions in Canada that use these varying models (summarized in Figure 2.A and Figure 2.B)

A ballot order model is the procedure for determining the order in which candidate names appear on a ballot. In this section we discuss seven different types of ballot order models and their advantages and disadvantages: alphabetical, randomized, rotated, randomized and rotated, alphabet lottery and rotation, according to party affiliation, and based on incumbency. We provide examples of the jurisdictions in which they are used, focusing on Canada. We also briefly discuss Saskatchewan as a special case. The first four ballot order models are the most common in Canada and so we summarize their advantages and disadvantages in Table 2.A. Figure 2.A and Figure 2.B at the end of this section summarize the ballot order models used in municipal/local and provincial/territorial elections in each of the Canadian provinces and territories.

Very little information is available on why jurisdictions opted for one model over another. In a few cases, the choice of a jurisdiction for moving from one model to another is documented in publicly available reports to the mayor and council or in legal documents. We report a number of such cases.

2.1 Alphabetical order

In Canada, the most common order used to list candidate names on a ballot is in alphabetical order using candidates' last names. If two candidates have the same surname, then the two candidates are usually ordered in alphabetical order according to their first name.

The alphabetical order model is a very straightforward model to use for election officials because there is only one version of the ballot. This means that in comparison to some of the other ballot order models, ordering the candidate names on the ballot is easy, as is administering the ballot to voters and tallying the resulting votes after the election. As a consequence, this model is likely the cheapest to implement. Alphabetical ordering is also transparent, "with transparency being simply achieved through publication by the electoral administration of the list of accepted candidates, parties, or groups in the required alphabetical order".[5] It is also an easy ballot for voters because they can easily identify who they would like to vote for, assuming they know the candidate's surname. The major disadvantage of this model is that *if* voters are more likely to vote for candidates listed first, then it is

[5] ACE Project, "Voting Operations - Determination of Order on Ballots," ACE Electoral Knowledge Network, n.d., http://aceproject.org/main/english/po/pof06.htm.

unfair to give that advantage to a candidate because of the first letter of their last name. This unfair advantage might be even greater for candidates with surnames indicating a non-Western heritage, which may be more likely to start with a letter lower down in the alphabet. In addition, ballots using alphabetical ordering "may be susceptible to manipulation, through name-based choice of candidates or taking alphabetical considerations into account when naming parties or groups. Safeguards are required both internally within the election processes of nomination and party registration and, perhaps, externally in relation to persons changing their names".[6] That is, candidates could choose to change their surnames to ensure a higher position on the ballot, or parties could favour candidates with surnames starting with initials earlier in the alphabet.

Most Canadian provinces and territories have adopted the alphabetical order model for their municipal and/or local elections and for their provincial or territorial elections (see Figure 2.A and Figure 2.B). In British Columbia, the Township of Langley adopted this model, repealing the previous model – by lot – explained below. The most negative feedback election officials received on the ballot by lot was that it was difficult for voters to find their preferred candidate on the ballot, increasing voting time.[7] Alphabetical order would make it easier and faster for voters to find their preferred candidate.[8] For larger municipalities, the number of candidates running in municipal elections is likely higher than for smaller municipalities. This makes ordering the candidates by lot more challenging for voters.

2.2 Randomized order/by lot

On ballots using a randomized order (also called by lot), the order of candidates' names is determined by drawing the names at random. The order in which the names are drawn determines the order for all ballots. This type of ballot order is fairer to candidates as their position on the ballot is not determined by their last name. It does not, however, exclude the possibility that candidates randomly selected to a higher position on the ballot still receive a greater share of the votes. As we will discuss in the academic literature review (Section 3), there are reasons to believe though that this ballot order effect might be smaller than the ballot effect of alphabetical ordering. As is the case with the alphabetical ordered ballot, there is only one version of the ballot. Because there is only one version of the ballot, the advantage of the randomized ballot is that it is nearly as easy and cheap to implement as alphabetical ordering. A potential cost arises from ensuring that the procedure for the random draw is transparent and fair to candidates, parties and voters. At minimum, the Ace Project[9] recommends requirements stipulating that the:

[6] idem
[7] Township of Langley, Corporate Administration Division, "2014 General Local Government Election," Report to Mayor and Council, Report 14-64, File 4200-01, May 26, 2014, https://tol.ca.legistar.com/LegislationDetail.aspx?ID=368&GUID=12BD940C-50B9-4083-8C07-A369D048967D&Options=ID%7cText%7cAttachments%7cOther%7c&Search=alphabetical, 3.
[8] idem, 2.
[9] The ACE Electoral Knowledge Network is the world's largest online community and repository of electoral knowledge. It provides extensive information and advice on all aspects of the electoral process. For more information, see: https://aceproject.org/.

- "draw to be made by persons, preferably electoral administration staff, independent of any political participants in the election;
- equipment used to be available for public inspection prior to and after the draw and constantly visible during the draw;
- equipment used to be of a durable nature (e.g., paper candidate name slips are not advisable; equal size and weight balls or tiles should be used);
- formal recording of draw results to be witnessed by candidate or party representatives present;
- additional integrity measures should be considered, such as a double randomisation process (a draw for each party or candidate's number and a second draw of these numbers for ballot position for each party or candidate)."

The major disadvantage of the randomized ballot is that it may be harder for voters to find the candidate they would like to vote for on the ballot, taking up valuable time. This is less of a problem if there are only a few candidates listed on the ballot. This drawback might also be ameliorated by assigning candidates a number indicating their order on the ballot, allowing candidates to campaign using that number (e.g., "Vote for number 4 on your ballot!").[10]

There are a few provinces that have adopted the randomized ballot model for municipal and/or local elections (see Figure 2.B). In British Columbia and the Northwest Territories, local governments have the option to adopt this model. In Manitoba, local governments can choose between random lot or rotated ballots (explained hereafter). In Saskatchewan, the default model is alphabetical, but a local government can adopt one of three other models: random lot (if there are more than 5 candidates), rotated order, and random lot and rotated order. In Yukon, random lot is the default for municipal or local elections and the only model available for territorial elections.

In order for local governments in BC to adopt a randomized ballot, they must first adopt a bylaw to allow this. Then the chief election officer will nominate a person to draw pieces of paper with candidates' names on them from a container. The order in which the names are drawn determines the order in which the names are listed on the ballot. See Section 79 of the *Vancouver Charter* for the details of the random ballot procedures.[11]

In 1993, the City of Vancouver adopted the randomized ballot for the general local election in that year.[12] In 1996, a report from the City Clerk to City Council recommended reverting to the pre-1993 alphabetical model, citing the difficulties voters faced when trying to find the candidate they wished to vote for on the randomized ballot.[13] Since then, the order of names on Vancouver municipal elections

[10] It might be though, that providing candidates with a number unfairly advantages those with low numbers over and above their position on the ballot. That is, campaigning as "number 2" might attract more voters than campaigning as "number 13", all else equal. We do not know of any academic research that has examined this idea.
[11] Queen's Printer for British Columbia, *Vancouver Charter*, *Statutes of British Columbia* 1953, c. 55, s. 79, http://www.bclaws.ca/civix/document/id/complete/statreg/vanch_00.
[12] City of Vancouver, "Amendment to Election Procedures By-Law," Report to Vancouver City Council, July 9, 1996, https://council.vancouver.ca/previous_years/960723/a21.htm.
[13] idem

has been alphabetical until the City of Vancouver adopted the randomized ballot model for the 2018 election.[14] Other municipalities that have adopted this model tend to be smaller communities, such as Dawson Creek, Fort St. John, Merritt, Salmo, Squamish, Summerland, and White Rock.[15]

The procedures for random lot for local government elections in Manitoba are similar to those of BC. However, in Manitoba there is no provision for folding the pieces of paper or for *who* is allowed to draw the pieces of paper from the container. Similarly, the Northwest Territories' legislation on local and municipal elections does not explain the procedures for randomizing the ballot. Instead, it only says that local governments can authorize adopting a randomized ballot.[16]

According to the Saskatchewan *Local Government Election Act*[17], local governments in Saskatchewan can adopt the randomized ballot model if the returning officer – the person responsible for how the election is run – believes that there will be five or more candidates running in the municipal election. If they adopt this model, local governments must choose to randomize the order of candidate names using one of two methods. The first method is by hand: uniform pieces of paper with candidates' names are drawn from a container, determining the order of names on a ballot. The second method is to randomize the order using a computer.

In Yukon, ballots for territorial elections are determined by lot.[18] The drawing of names takes place at the end of the nomination period. The Yukon *Elections Act*[19] does not specify the procedures. In municipal elections, the returning officer also determines the order of names on the ballot by lot on nomination day.[20]

2.3 Rotated order

According to the rotated order model, the order of names is rotated across a smaller jurisdiction or as many times as there are candidates. The first version of the ballot is alphabetically ordered, the second version rotates the previously first-listed candidate to the last position on the ballot, and so on until all

[14] City of Vancouver, Bylaw No. 12145, *A By-law to amend Election By-law No. 9070 regarding the order of names on the ballot* (June 19, 2018).
[15] See City of Dawson Creek, Bylaw No. 3993, *General Local Election Bylaw* (July 14, 2008); City of Fort St. John, Bylaw No. 2413, *Election and Assent Voting Bylaw* (March 26, 2018); City of Merritt, Bylaw No. 2237, *City of Merritt Election Procedure Bylaw* (June 26, 2018); Corporation of the Village of Salmo, Bylaw No. 697, *Election and Assent Voting Bylaw* (June 28, 2018); City of White Rock, "Name Order for 2018 Ballot," *City of White Rock,* 2018, https://www.whiterockcity.ca/DocumentCenter/View/2302/2018-09-18-DRAW-COMPLETED-MAYOR-COUNCIL-SCHOOL-TRUSTEE; Corporation of the District of Summerland, Bylaw No. 2018-017, *Election and Assent Voting Bylaw* (June 11, 2018); District of Squamish, Bylaw No. 2420, *District of Squamish Election and Assent Voting Bylaw* (November 21, 2017).
[16] Queen's Printer for Saskatchewan, *Local Government Election Act, Statutes of Saskatchewan* 2015, c.L-30.11, https://publications.saskatchewan.ca/#/products/73891.
[17] idem
[18] Queen's Printer for Yukon, *Elections Act, Revised Statutes of Yukon* 2002, c.63, http://www.gov.yk.ca/legislation/acts/elections_c.pdf.
[19] idem
[20] Queen's Printer for Yukon, *Municipal Act, Revised Statutes of Yukon* 2002, c.154, http://www.gov.yk.ca/legislation/acts/municipal.pdf.

candidates have been listed once at the top. In Canada, this model is available only for municipal or local elections in a few provinces or territories: Alberta, Manitoba, Saskatchewan and Yukon.

The major advantage of this model is that it clearly distributes any potential ballot order effect equitably across all candidates. There are some disadvantages of this model, for election officials and voters. It may be challenging and expensive to print different versions of a ballot, and to administer the different versions of the ballot to voters and to count the resulting votes. It may be difficult for voters to find the candidate they want if the ballot is long. As well, unlike with a randomized order, candidates cannot campaign by telling voters which number to vote for, because that number will differ depending on the version of the ballot. As the Ace Project concludes:[21]

> "Using rotating ballot positions negates any positioning advantage, and its implementation would depend on whether the measured impact on election equity outweighs administrative disadvantages. For inexperienced voters it may be confusing. For administration of voting operations it makes ballot counts more complex and has significant cost disadvantages in ballot materials printing and collation, ballot systems design, and, to some extent, voter education and election staffing. Appropriate transparency mechanisms are also more difficult and costly to implement; verifiable processes to ensure that equal numbers of each rotation's ballot papers, or machine or computer-generated ballot forms are available in each voting station must be maintained and available for public inspection."

In Alberta, the default model is alphabetical order, but local governments can adopt the rotated order model for municipal elections.[22] In Manitoba, local governments can choose between randomized order and rotated order.[23] In both these provinces, if local governments adopt the rotated order model, then the first version of the ballot is alphabetical, but this order is rotated until there are as many versions of a ballot as there are candidates. This means that for each candidate, there is a ballot where they are in first position, second position, and so on. The ballots are then distributed such that no two consecutive voters receive the same version of the ballot.

For municipal or local elections in Saskatchewan, local governments can adopt a model other than the default alphabetical model. Local governments can choose randomized order (if more than 5 candidates), rotated order, or randomized and rotated order.[24] For the rotated order model, the procedures are the same as those in Alberta and Manitoba. In Yukon, the default is randomized order, but local governments can adopt the rotated order model.[25] The Yukon legislation is not very specific

[21] ACE Project, "Voting Operations - Determination of Order on Ballots," http://aceproject.org/main/english/po/pof06.htm.
[22] Queen's Printer for Alberta, *Local Authorities Election Act, Revised Statutes of Alberta* 2018, c.L-21, http://www.qp.alberta.ca/1266.cfm?page=L21.cfm&leg_type=Acts&isbncln=9780779814350&display=html.
[23] Queen's Printer for Manitoba, *The Municipal Councils and School Boards Elections Act, Continuing Consolidation of the Statutes of Manitoba* 2005, c.M257, https://web2.gov.mb.ca/laws/statutes/ccsm/_pdf.php?cap=m257.
[24] Queen's Printer for Saskatchewan, *Local Government Election Act, Statutes of Saskatchewan* 2015, c.L-30.11, https://publications.saskatchewan.ca/#/products/73891.
[25] Queen's Printer for Yukon, *Municipal Act*, *Revised Statutes of Yukon* 2002, c.154, http://www.gov.yk.ca/legislation/acts/municipal.pdf.

about the rotation procedure, only stating that local governments can decide to rotate the order of names so that each candidate has an equal chance at each ballot position.

2.4 Randomized order/by lot and rotated order

This model combines the previous two models. The order of candidates for the first version of the ballot is determined by drawing their names at random. This order is then rotated across a smaller jurisdiction or for as many times as there are candidates, creating different versions of the ballot.

The advantage of equitably distributing any ballot order effect is even stronger for this model because the order of candidate names in relation to each other is randomized. For example, with the previous model, Bryant is always below Alberts, except for the version where Bryant is listed first. As for the disadvantages, as a combination of the randomized ballot and the rotated order ballot, the randomized and rotated order ballot combines the potential disadvantages discussed previously that associated with each model.

The only Canadian jurisdiction that provides for this model is Saskatchewan, and only for municipal or local elections. Local governments can adopt a by-law to implement this model.

2.5 Alphabet lottery and rotation (California)

This is a ballot order model specific to California. It is similar to the randomized and rotated ballot order model except that candidate names are not drawn at random – the letters of the alphabet are. The order in which the letters are drawn determines how candidate names are listed on the first version of the ballot. The ballot order is then rotated across 80 smaller jurisdictions called Assembly Districts. Each Assembly District gets a different version of the ballot. This model was adopted in California following *Gould v. Grubb*.[26] The court found that placing incumbents first on the ballot "violates the equal protection clause of both our state and federal Constitutions".[27] The court also found an alphabetical order model to be unconstitutional; however, the court left the decision of a new ballot order procedure to the legislators.

[26] *Gould v. Grubb*, 14 Cal. 3d 661, (Supreme Court of California July 7, 1975), https://law.justia.com/cases/california/supreme-court/3d/14/661.html.
[27] idem, para. 7.

Table 2.A. Summary table of advantages and disadvantages of four ballot order models

	Fairness to candidates	Transparency of ordering procedure	Ease and cost of implementation	Voter experience	Jurisdiction
Alphabetical	- Potentially unfair advantage to candidates with a last name initial early in the alphabet - Susceptible to manipulation (candidates changing their name; parties choosing candidates based on names)	- Transparent	- Easy and relatively cheap to implement, administer and to count the resulting votes (one version of the ballot)	- Easy for voters to find candidates on the ballot if they know their preferred candidates' names	- B.C. municipalities (by default), e.g., Kelowna, Victoria, Vancouver (except 1993 and 2018) - Alberta (by default but can adopt others) - Saskatchewan municipalities (by default but can adopt others)
Randomized	- No unfair advantage based on candidates' names, but potentially still an unfair advantage to candidates based on randomly determined ballot position	- Careful attention must be paid to ensure that the procedure for the random draw is transparent to candidates, parties and voters	- Relatively easy and cheap to implement, administer and to count the resulting votes (one version of the ballot) - Potentially some costs involved with ensuring a transparent random draw	- More difficult for voters to find their preferred candidates on the ballot compared to alphabetical ordering (especially when many candidates are listed) - It can be made easier by assigning candidates a number indicating their order on the ballot	- B.C. municipalities (after adopting bylaw), e.g., White Rock, Vancouver (in 1993 and 2018) - Manitoba municipalities (after adopting bylaw)
Rotated	- Distributes any potential ballot order effect equitably across all candidates	- Transparency is ensured by rotation based on initial alphabetical ordering - A potential issue arises in ensuring equal numbers of each ballot version are available at polling stations	- Expensive to print different versions of a ballot - More difficult than alphabetical and random ballots to administer and to count the resulting votes because of the multiple versions of the ballot	- More difficult for voters to find their preferred candidates on the ballot compared to alphabetical ordering (especially when many candidates are listed); however, ballot is still mostly alphabetical so likely easier than random ordering (especially random ordering without numbering) - Candidates cannot campaign by telling voters which number to vote for, because that number will differ depending on the version of the ballot	- Alberta municipalities (after adopting bylaw) - Manitoba municipalities (after adopting bylaw)
Randomized and rotated	- No unfair advantage based on candidates' names - Distributes any potential ballot order effect equitably across all candidates	- Careful attention must be paid to ensure that the procedure for the random draw is transparent - A potential issue arises in ensuring equal numbers of each ballot version are available at polling stations	- Expensive to print different versions of a ballot - More difficult than alphabetical and random ballots to administer and to count the resulting votes because of the multiple versions of the ballot	- More difficult for voters to find their preferred candidates on the ballot compared to alphabetical ordering (especially when many candidates are listed) - Candidates cannot campaign by telling voters which number to vote for, because that number will differ depending on the version of the ballot	- California - Saskatchewan municipalities (after adopting bylaw)

Source: http://aceproject.org/main/english/po/pof06.htm

2.6 Order according to party affiliation

According to this model, candidate names are ordered according to their party affiliation. In New Brunswick provincial elections, candidates affiliated to "recognized parties"[28] are listed first, and independent candidates are listed in alphabetical order after. The first candidate is the candidate affiliated with "the recognized party that was the governing party immediately before the commencement of the election period".[29] The second is the candidate affiliated with the opposition party. In third position and later, candidate names are listed in alphabetical order *according to the name of the party*. After all candidates of recognized parties are listed, the independent candidates are listed in alphabetical order according to their last name.

This type of ballot is likely easy to navigate for voters, because they are likely to know the party for which they wish to vote. From the perspective of election officials, who do not have to print multiple versions of a ballot, it is likely an easy ballot to implement, to administer to voters and to tally the resulting votes after the election. This type of ordering is also very transparent as the rules for determining the order are clearly stipulated. A severe drawback of this model is its potential to unfairly advantage candidates of certain parties over others, in addition to advantaging (independent) candidates based on the initial of their surname.

2.7 Order based on incumbency

This ballot order model lists the incumbent candidate(s) first. There are no examples of this model in Canada. In California, the court's decision in *Gould v. Grubb* was that this model is unconstitutional on the basis that if ballot order effects exist, then incumbents would enjoy an advantage and nonincumbent candidates would not. As well, there are other ways to identify an incumbent candidate on a ballot if jurisdictions decide to include this information.

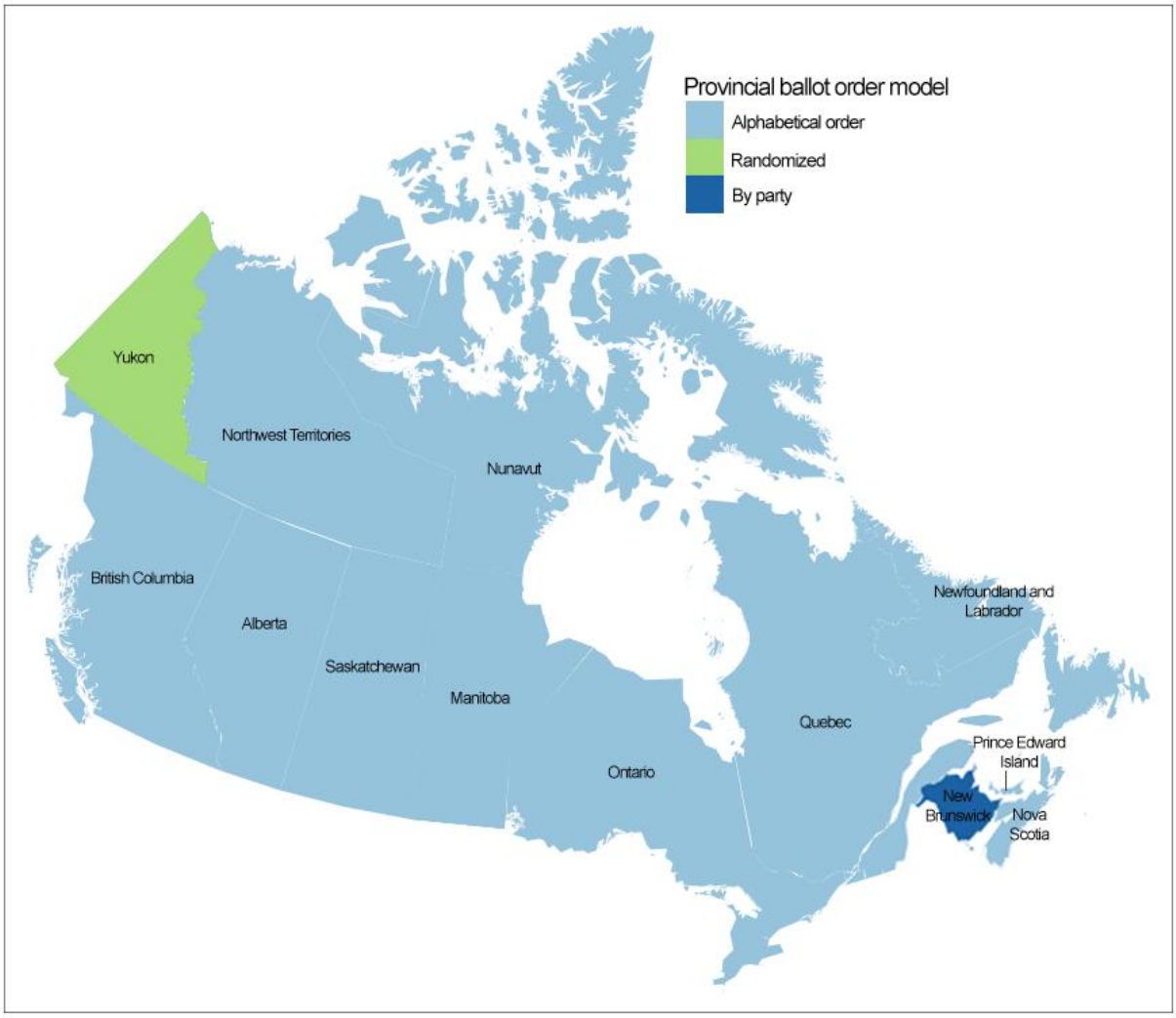
2.8 Saskatchewan as a special case

We conclude this section with a brief discussion of Saskatchewan, which is somewhat of a special case in Canada as its provincial legislation governing municipal or local elections provides the most flexibility to municipalities in choosing their preferred ballot order model. In 1999, the government proposed changes to Saskatchewan's *Local Government Election Act*. A Member of the Legislative Assembly asked the Minister of Municipal Government why the proposed changes included changing the rules for the order of names on the ballot. The Minister replied, "it's more than mythology that the first name on the ballot in alphabetical order has some kind of a perceptual advantage. And municipalities have actually been asking for this change".[30] The reasons for these various models seem to be that the governing party wished to guard against ballot order effects and wished to enable municipalities to choose their

[28] Queen's Printer for New Brunswick*, Elections Act, Revised Statutes of New Brunswick* 1973, c.E-3*,* http://laws.gnb.ca/en/showfulldoc/cs/E-3/#anchorga:s_63, s.63.
[29] Idem
[30] Saskatchewan, Legislative Assembly of Saskatchewan, Committee of the Whole, *Hansard*, 4th sess., 23rd Legislature, April 19, 1999, 635.

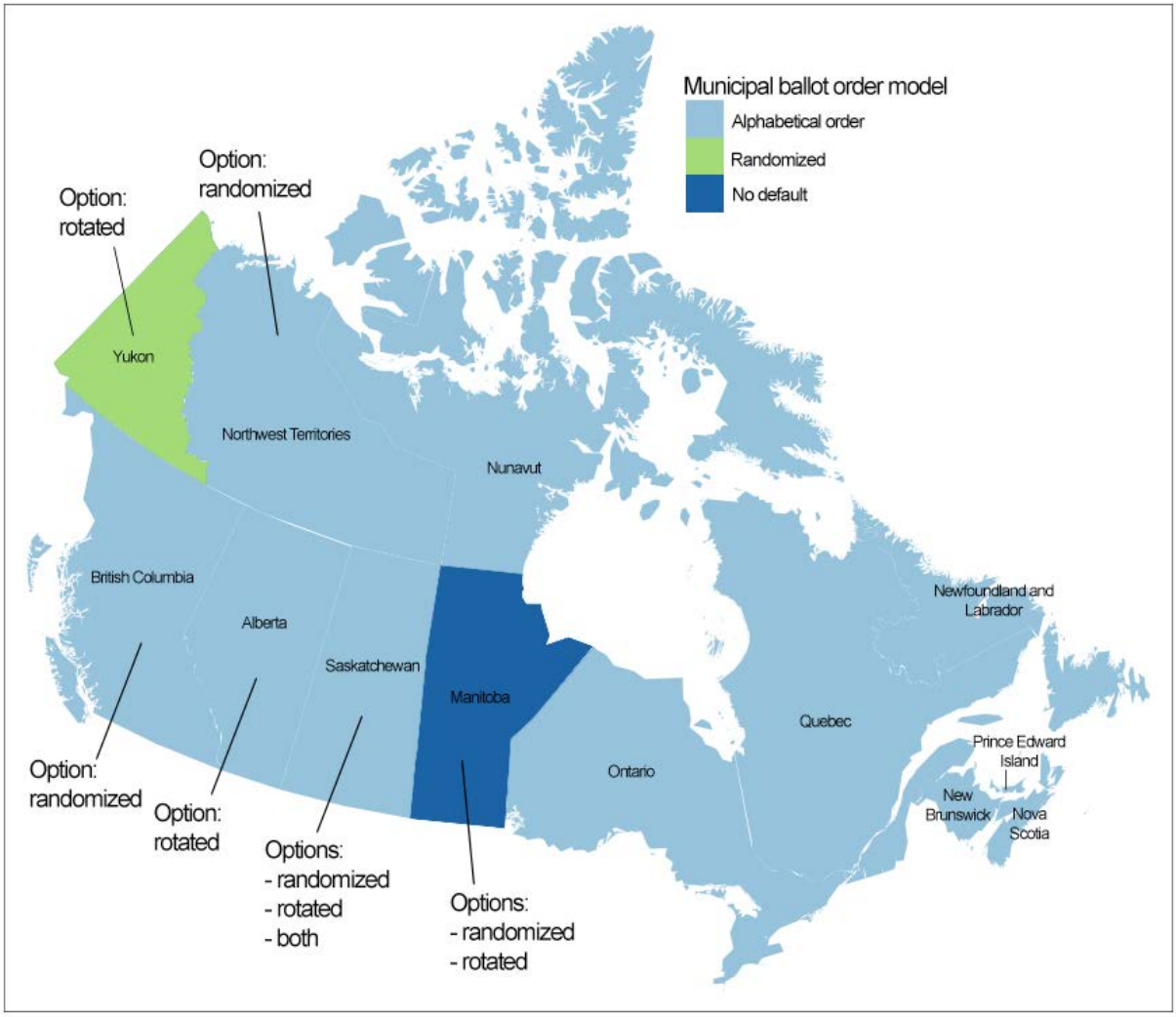
own model among a set of four: alphabetical order, randomized order, rotated order, or randomized and rotated order.

Figure 2.A. Map of provincial/territorial ballot order models



Note: In Nova Scotia, if there are only two candidates running in an electoral district, they can agree to list the names other than alphabetically.

Figure 2.B. Map of municipal ballot order models by province/territory



Note: Colours represent the default ballot order model available to municipal or local governments. Labels show the other options available to municipal or local governments in the province or territory.

2.9 Key findings Section 2

- **There are at least seven different types of ballot order models; that is, procedures for determining the order in which candidate names appear on a ballot**
- **The most common ballot order model in Canada is alphabetical order**
    - Other models used in provincial elections are randomized order (by lot) in Yukon and by party affiliation in New Brunswick (see Figure 2.A)
    - Other models that are provided for under some provincial/territorial legislation for municipal or local elections are randomized order (by lot), rotated order, and randomized and rotated order (see Figure 2.B)
- **In choosing which model to use, there are trade-offs in terms of their fairness to candidates, the potential transparency of the procedure by which the order is determined, their ease and cost of implementation, and the likely experience of voters (see Table 2.A)**

3 Overview of the Academic Literature on Ballot Order Effects

In this section, we:

2. Provide a review of the academic research on ballot order effects
   a. Identify factors that amplify or reduce ballot order effects
   b. Discuss to what extent these factors are likely to play a role in Vancouver's municipal election

The vast majority of academic studies shows that the order in which candidates' names appear on the ballot impacts their vote shares – and that certain factors can amplify or reduce this impact. Only a handful of published studies[31] find no effect of candidate name order.[32] The majority of studies that find ballot order effects examine and find evidence of a *primacy effect*, with candidates who are listed first on the ballot enjoying an advantage over candidates listed later.[33] Some studies have also examined the

[31] R. Michael Alvarez, Betsy Sinclair, and Richard L. Hasen, "How Much is Enough? The 'Ballot Order Effect' and the Use of Social Science Research in Election Law Disputes," *Election Law Journal* 5, no. 1 (2006): 40-56; Marsha Matson and Terri Susan Fine, "Gender, Ethnicity, and Ballot Information: Ballot Cues in Low-Information Elections," *State Politics and Policy Quarterly* 6, no. 1 (2006): 49-72.

[32] It is important to acknowledge the potential existence of *publication bias*, which implies that studies that do no find evidence of ballot order effects might be far less likely to be published than studies that do.

[33] David Brockington, "A Low Information Theory of Ballot Position Effect," *Political Behavior* 25, no. 1 (2003): 1-27; Eric Chen, Gábor Simonovits, Jon A. Krosnick, and Josh Pasek, "The Impact of Candidate Name Order on Election Outcomes in North Dakota." *Electoral Studies* 35 (2014): 115-22; Barry C. Edwards, "Alphabetically Ordered Ballots and the Composition of American Legislatures," *State Politics and Policy Quarterly* 15, no. 2 (2015): 171-91; Darren Grant,"The Ballot Order Effect is Huge: Evidence from Texas," *Public Choice* 172 (2017): 421-42; Daniel E. Ho and Kosuke Imai, "Randomization Inference with Natural Experiments," *Journal of the American Statistical Association* 101, no. 475 (2006): 888-900; Daniel E. Ho and Kosuke Imai, "Estimating Causal Effects of Ballot Order from a Randomized Natural Experiment: the California Alphabet Lottery, 1978-2002," *Public Opinion Quarterly* 72, no. 2 (2008): 216-40; Leon J. Kamin, "Ethnic and Party Affiliation of Candidates as Determinants of Voting." *Canadian Journal of Psychology* 12, no. 4 (1958): 205-12; Nuri Kim, Jon Krosnick, and Daniel Casasanto, "Moderators of Candidate Name-Order Effects in Elections: An Experiment," *Political Psychology* 36, no. 5 (2015): 525-42; Jonathan GS. Koppell and Jennifer A. Steen, "The Effects of Ballot Position on Election Outcomes." *The Journal of Politics* 66, no. 1 (2004): 267-81; Jon A. Krosnick, Joanne M. Miller, and Michael P. Tichy, "An Unrecgonized Need for Ballot Reform: The Effects of Candidate Name Order on Election Outcomes," in *Rethinking the Vote: The Politics and Prospects of American Election Reform*, eds. Ann N. Crigler, Marion R. Just, and Edward J. McCaffery (Oxford: Oxford University Press), 51-74; Marc Meredith and Yuval Salant, "On the Causes and Consequences of Ballot Order Effects," *Political Behavior* 35 (2013): 175-97; Joanne M. Miller and Jon A. Krosnick, "The Impact of Candidate Name Order on Election Outcomes," *Public Opinion Quarterly* 62 (1998): 291-330; Carmen Ortega Villodres, "Gender and Party Duopoly in a Small State: Ballot Position Effects under the Single Transferable Vote in Malta, 1947-2008," *South European Society and Politics* 13, no. 4 (2008): 435-56; Josh Pasek, Daniel Schneider, Jon A. Krosnick, Alexander Tahk, Eyal Ophir, and Claire Milligan, "Prevalence and Moderators of the Candidate Name-Order Effect: Evidence from Statewide General Elections in California," *Public Opinion Quarterly* 78, no. 2 (2014): 416-39; Charles Tessier and Alexandre Blanchet, "Ballot Order in Cueless Elections: A Comparison of Municipal and Provincial Elections in Québec," *Canadian Journal of Political Science / Revue Canadienne de science politique* 51, no. 1 (2018) : 83-102; Jo Wood, Donia Badawood, Jason Dykes, and Aidan Slingsby, "BallotMaps: Detecting Name Bias in Alphabetically Ordered Ballot Papers," *IEEE Transactions on Visualization and Computer Graphics* 17, no. 12 (2011): 2384-91.

existence of a *recency* or *latency effect*[34] – the advantage of being listed last on the ballot – but only Miller and Krosnick (1998) find that a candidate's vote share increases by an average of 1.45 percentage-points when listed last. Miller and Krosnick only find evidence of a recency effect in two out of the 57 races they include in their study that show ballot order effects. Primacy and latency effects are not necessarily incompatible, as scholars such as Meredith and Salant (2013) find that it is the middle ballot position that is the least advantageous.

Table 3.A presents an overview of studies on ballot order effects, in alphabetical order. We focus on studies published in the last 20 years, after Miller and Krosnick's 1998 study, which remains much quoted in the literature and which was the start of a new wave of more methodologically sound research. Miller and Krosnick reviewed prior research on ballot order effects, noting that many previous studies did not adequately report the results of their studies.

The table shows that studies on ballot order effects have included a wide range of years, going as far back as 1947.[35] Of all the studies referenced in the table, Meredith and Salant (2013) examined the greatest number of electoral races (7,846 races), followed by Tessier and Blanchet (2018) (7,187 races). Most studies have been conducted in the United States, examining various levels of government. Only two of the studies find no evidence of ballot order effects: Alvarez, Sinclair, and Hasen (2006) and Matson and Fine (2006). Ho and Imai (2006) examine the effect of a candidate being listed on the first page of a multi-page ballot – making this study slightly different from the others. They find that only minor candidates enjoy a first-page advantage. In 2008, the same authors studied ballot order effects specifically, finding evidence for ballot order effects only for minor candidates and in primary elections.[36]

While most scholars agree that some type of ballot order effect exists, there are many different explanations for its existence, and many different estimations of how strong the effect is. The effect strength is difficult to compare across studies, given the different types of elections being examined and the different methodological choices made by the scholars. This is why Alvarez, Sinclair, and Hasen argue in their article that

> "courts should be cautious before using generalized social science findings to decide election law cases. Although there seems little question that a ballot order effect exists in some circumstances, there has been little solid social science analysis of the direction and strength of the effect in different electoral contexts" (2006, 41).

That is, care should be taken when using insights from studies conducted in one particular context to motivate changes to election laws in a very different context. Nonetheless, our confidence in the results of each of the studies should increase as scholars have examined a greater number of races across a

[34] Alvarez, Sinclair, and Hasen, "How Much is Enough?"; Miller and Krosnick, "The Impact of Candidate Name Order".
[35] Edwards, "Alphabetically Ordered Ballots and the Composition of American Legislatures".
[36] In the US, primary elections are elections to select a party's candidate prior to a general election. General elections are elections for a particular office, in which multiple parties run. See Ho and Imai, "Estimating Causal Effects of Ballot Order".

longer period of time and greater number of locations, have selected races with randomized ballots, and have applied appropriate statistical models (see for a discussion, Section 3.4).

3.1 Canadian studies

In Table 3.A, we also included all three Canadian studies that we are aware of, regardless of their publication year, namely Kamin (1958), Antweiler (2014), and Tessier and Blanchet (2018). Antweiler's 2014 study was published on his online blog, and not in a peer-reviewed academic journal; however, as it is the only study that pertains directly to Vancouver, we nonetheless include a discussion of the findings. Antweiler finds evidence that alphabetical ranking increases the vote share of high-ranked candidates compared to low-ranked *within the same party* in Vancouver's 2014 School Board elections: "The second candidate will tend to receive about 10% fewer votes than the first candidate on the party list, everything else equal, and the fifth candidate on the party list will receive about 22% fewer votes than the first-ranked candidate." He finds a similar, albeit smaller, effect for City Council elections. For the Park Board elections (and to some extent also the City Council elections), he finds an effect of being listed at the top of the ballot: "The top 7 names on the list that were affiliated with political parties gained an extra 20%. The toplisting effect may also have boosted the fortune of candidates for city council. […] [The] specification points to an 11% benefit for the ten candidates whose name came first and who were affiliated with one of the political groups in Vancouver."

Although Kamin (1958) set out to study how the "ethnicity" (English or French) and party affiliations of candidates on an artificial ballot would impact which voters (English or French) would vote for which candidate, his results showed evidence of a ballot order effect. He found that the vote share of the first (37.0%) and second (40.9%) listed candidates was much higher than that of the third (22.2%) listed candidate, even though the order of names was randomized for each ballot.

In a recent study, Tessier and Blanchet (2018) focus on both municipal and provincial elections in Québec. Most municipalities tend to have a weak "party system"[37]: often, candidates will not be affiliated with a party, or parties that do exist in municipalities are not connected to a federal or provincial party. Exceptions in Québec are Québec City and Montréal, which have a stronger party system than other, smaller municipalities. Provincial elections also have strong party systems, because candidates are very often affiliated with a party. Tessier and Blanchet find evidence of ballot order effects in municipal elections, but not in provincial elections. In municipal elections outside Montréal and Québec City, the vote share of candidates with no party affiliation increases by 3.5 percentage-points when listed in first place, compared to being listed fourth place or lower. They conclude that strong party systems give cues to voters, which eliminates any potential ballot order effect.

[37] Tessier and Blanchet, "Ballot Order in Cueless Elections," 87.

Table 3.A. Twenty-one studies of ballot order effects

Study	Location	Election Type	Year(s)	No. of races	Type of effects observed? †
Antweiler (2014) ††	Vancouver, BC	Municipal	2014	3	Primacy (Council and Park Board)
Alvarez, Sinclair, and Hasen (2006)	California	All statewide (random ballot)	1998	8	None
Brockington (2003)	Peoria, IL	City council	1983-1999	8	Primacy
Chen et al. (2014)	North Dakota	All statewide (random ballot)	2000-2006	31	Primacy
Edwards (2015)	USA	Congressional and state legislature	1949-2012	Unclear	Primacy
Grant (2017)	Texas	All statewide (random ballot)	2014	24	Primacy
Ho and Imai (2006)	California	Gubernatorial recall election (random ballot)	2003	1	Primacy (minor candidates)
Ho and Imai (2008)	California	All statewide (random ballot)	1978-2002	80	Primacy (minor candidates and primaries)
Kamin (1958)	Kingston and Cornwall, ON	Artificial election (random ballot)	1957	1	Primacy
Kim, Krosnick, and Casasanto (2015)	USA	Artificial election (random ballot)	2009	1	Primacy
Koppell and Steen (2004)	New York City	All statewide Democratic Primaries (random ballot)	1998	79	Primacy
Krosnick, Miller, and Tichy (2004)	Ohio	President and Senate (random ballot)	2000	192	Primacy
Krosnick, Miller, and Tichy (2004)	North Dakota	President (random ballot)	2000	14	Primacy
Krosnick, Miller, and Tichy (2004)	California	President and Senate (random ballot)	2000	2	Primacy (President and Senate) and recency (Senate)
Matson and Fine (2006)	Miami-Dade County, FL	Community Council	1996	Unclear	None
Meredith and Salant (2013)	California	Local (random ballot)	1995-2008	7,846	Primacy
Miller and Krosnick (1998)	Ohio	All statewide and countywide (random ballot)	1992	118	Primacy and recency
Ortega Villodres (2008)	Malta	Parliamentary	1947-2008	16	Primacy
Pasek et al. (2014)	California	All statewide (random ballot)	1976-2006	76	Primacy
Tessier and Blanchet (2018)	Québec	Provincial and municipal	2008-2014	7,187	Primacy (municipal elections) and recency (outside Montréal without party affiliation)
Wood et al. (2011)	Greater London, UK	Local	2010	1	Primacy (within party)

† Where applicable, the specific type of race or candidate where effects were observed is provided in parentheses. †† Not a peer-reviewed study.

3.2 Why do ballot order effects exist?

It can be difficult for voters to decide which candidate to vote for in an election. Voters might lack sufficient information about candidates or might struggle to distinguish candidates' platforms. When voters do not have a strong preference for one candidate over another, factors such as the order in which candidate names appear on a ballot might enter the decision-making process.[38] Scholars have suggested several different ways in which the order of candidates' names on a ballot factor into the decision-making of voters. We can broadly distinguish two types of explanations.

3.2.1 Informative ballot ordering

First, the order in which names appear on a ballot might be informative.[39] For instance, in some jurisdictions the incumbent candidate is listed first by default, and/or candidates who are associated with major political parties are listed at the top. Voters tend to prefer incumbents and candidates associated with major parties, which would explain why primacy effects are observed in elections with such ballots; however, the majority of the most recent studies on ballot order effects were conducted in American states, like California or North Dakota, where the order of candidates' names is randomized and, in some cases, subsequently rotated across districts. For this reason, it is unlikely that the primacy effects found in most of the literature are due to incumbents or major party candidates' top-ranking ballot position.

3.2.2 The cognitive cost of voter decision-making

A second group of explanations for ballot order effects are about how voters use information presented to them in an ordered format in choosing their preferred candidate(s). These explanations rely on the psychology of decision-making and focus on how the cognitive costs associated with decision-making, and the efforts to reduce these costs, impact voting decisions.

According to these explanations, voters try to pick a candidate they believe is the best by considering each candidate on the ballot, starting from the top and moving down. As choosing a candidate is a cognitively challenging task, earlier-listed candidates have an advantage over others as voters become tired. This leads to the primacy effect (candidates benefitting from a top position on the ballot).

If voters have *some* information about candidates, their decision-making might be subject to "confirmatory bias":[40] when voters consider each candidate on the list in order, they attempt to find reasons to vote in favour of each and they will "think less and less about each subsequent alternative, because they become increasingly fatigued and short-term memory becomes increasingly clogged with thoughts".[41] This implies that voters might "generate more supportive thoughts"[42] about candidates listed higher up on the ballot and will be more likely to vote for them. It might of course be the case that

[38] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect," 418.
[39] Ho and Imai, "Estimating Causal Effects of Ballot Order," 219.
[40] Miller and Krosnick, "The Impact of Candidate Name Order," 293.
[41] idem, 294; see also Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[42] idem

in thinking about the candidates, voters can only think of reasons *not* to vote for them. Again because of cognitive fatigue and short-term memory congestion, this might mean that voters may come up with more reasons *not* to vote for the earlier than for the later candidates and will be therefore *less* likely to vote for those higher on the list.[43] This would explain the existence of latency effects – the electoral advantage enjoyed by candidates who are listed last on the ballot.

If voters have *little to no* information about candidates and the cost of making the wrong decision are seen as small, they may "settle for the first acceptable solution to a problem they confront"[44], where the "problem" is deciding who to vote for. This suggests that voters will go down the list of candidates until they find the first candidate that is not unacceptable[45], explaining the existence of primacy effects. Voters might also rely on cognitive short-cuts to reduce the cognitive costs of deciding which candidate(s) to vote for. For example, the use of a simple decision-rule that suggests that "up is good" or "first is best"[46] in deciding to support earlier-listed candidates over those listed further down on the ballot.[47]

3.3 Conditions under which ballot order effects are most likely

The biases and strategies that play a role in the decision-making of voters are particularly apparent when voters have little to no information about the candidates[48] (such as party affiliation, a well-recognized name or policy platforms[49]) or when the stakes in the election are (perceived to be) low, for example, when the race is not competitive or if the visibility of the electoral office is low.[50] In Table 3.B we summarize the factors identified in the literature that can amplify or reduce ballot order effects and categorize them by whether they are characteristics of the ballot and/or candidates on the ballot, the election and the electoral context, or the voters. We will briefly discuss each in turn.

[43] idem
[44] idem
[45] idem, 295
[46] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect," 418.
[47] In addition, alphabetically determined ballot orders might also lead to a primacy effect because according to Miller and Krosnick (1998) in the US most people have last names with initials from the first half of the alphabet. They argue that it is likely that as a result, voters are more exposed to these names and might have developed a liking for them. They further argue that voters' own names are also more likely to have initials early in the alphabet and as people tend to prefer their own initials, this would also explain why voters vote for candidates listed higher on a ballot because of their last name. As such, it is important to distinguish the effects of name order on ballots from alphabetical ordering on ballots. Miller and Krosnick, "The Impact of Candidate Name Order," 296, footnote 2.
[48] Grant, "The Ballot Order Effect is Huge"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects"; Miller and Krosnick, "The Impact of Candidate Name Order".
[49] Ho and Imai, "Estimating Causal Effects of Ballot Order"; Kamin, "Ethnic and Party Affiliation of Candidates"; Miller and Krosnick, "The Impact of Candidate Name Order"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[50] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".

3.3.1 Ballot and candidate characteristics

Number of candidates on the ballot

When the ballot is longer, containing a larger number of candidates, the effect of name order is stronger.[51] Other studies do not directly test whether the length of the ballot impacts ballot order effects, but do include it as an explanatory variable in the statistical models arguing that it relates to both the outcome of interest (vote shares) and to ballot position (1, 2, 3, etc.) and so that it is important to take into account when estimating ballot order effects.[52]

Multi-race ballots

There is conflicting evidence on whether ballot order effects increase or decrease when a race[53] is listed lower on a multi-race ballot (a ballot that includes, for instance, candidates running for mayor, city council and the school board). Miller and Krosnick (1998) argue that on a multi-race ballot, the ballot order effect decreases when the race is listed lower.[54] This is potentially due to the fact that more informed and engaged voters may be more willing to vote for all of the races on a ballot and are less susceptible to ballot order effects.[55] Augenblick and Nicholson (2016) find that when a particular race is moved down one position on the ballot, the vote share of the first-listed candidate increases by 0.065 percentage-points. They argue that as voters must make more decisions (for each race on a ballot), they experience "choice fatigue"[56] which can affect their decision-making. One of the effects of choice fatigue, Augenblick and Nicholson write, is the tendency to choose the first-listed candidate over others.

Party affiliation

The presence of party labels on the ballot can reduce the ballot order effect.[57] Party labels on a ballot "convey information to uninformed voters"[58], and more information means a smaller ballot order effect. For example, Kamin (1958) finds that "in the absence of a party label, a clear order of preference exists among the names".[59]

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[51] Ho and Imai, "Estimating Causal Effects of Ballot Order".
[52] Matson and Fine, "Ballot Cues in Low-Information Elections"; Tessier and Blanchet, "Ballot Order in Cueless Elections".
[53] A race is the contest for one particular office in a given election year. During a municipal election, the contest for mayor is one race, the contest for city councillor is another race, and so on.
[54] Miller and Krosnick, "The Impact of Candidate Name Order".
[55] Miller and Krosnick, "The Impact of Candidate Name Order".
[56] Ned Augenblick and Scott Nicholson, "Ballot Position, Choice Fatigue, and Voter Behaviour," *Review of Economic Studies* 83 (2016): 460.
[57] Ho and Imai, "Estimating Causal Effects of Ballot Order"; Kamin, "Ethnic and Party Affiliation of Candidates"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[58] Ho and Imai, "Estimating Causal Effects of Ballot Order," 219.
[59] Kamin, "Ethnic and Party Affiliation of Candidates," 209. This study has several weaknesses, but it was the first Canadian study to examine ballot order effects, and its main findings have been confirmed in more recent studies, like Ho and Imai, "Estimating Causal Effects of Ballot Order" and Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".

Incumbency

When incumbent candidates are listed first, the ballot order effect is stronger compared to ballots where non-incumbents are listed first[60]; that is, incumbent candidates benefit more from being at the top of the ballot than non-incumbent candidates. The same applies to candidates who are affiliated with major parties.[61] Interestingly, some scholars have found that the presence of an incumbent candidate on a ballot can actually reduce the overall ballot order effect[62]; however, the impact is relatively small, compared to, for instance, a ballot including partisan affiliations of candidates.[63] Other scholars have studied the impact of the reverse (in the US context), that is, of ballots for races in which no incumbents are running (for open seats) and find that ballot order effects may be stronger for such ballots, but only in primary elections.[64] The impact of the presence of an incumbent candidate is related to name recognition of the candidate. Miller and Krosnick note that "greater familiarity with candidates, even if only in the form of name recognition, discourages order-based voting"[65], and it is likely that voters recognize incumbents' names.[66]

Other candidate characteristics

As mentioned in Section 1, there are many potential factors related to candidates that can influence their vote share. Besides incumbency and party affiliation, we mentioned, political experience, campaign spending, endorsements, proposed policies, sociodemographic characteristics such as education, occupation, place of residence, age, gender, and ethnic and/or racial background, and personality traits.[67] We do not know of any research, however, that has looked at whether these factors amplify or reduce ballot order effects. In general, we would expect though that ballot order effects will be particularly apparent when voters have little to no information about the candidates.

3.3.2 Election and electoral context characteristics

Electoral system

The voting system itself impacts the strength of a ballot order effect. More complex electoral systems like preferential voting, in which voters rank candidates, are said to be more susceptible to ballot order

[60] Meredith and Salant, "Causes and Consequences of Ballot Order Effects".
[61] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[62] Miller and Krosnick, "The Impact of Candidate Name Order".
[63] idem
[64] Ho and Imai, "Estimating Causal Effects of Ballot Order".
[65] Miller and Krosnick, "The Impact of Candidate Name Order," 316.
[66] Werner Antweiler, "Alphabetical Ballot Order in Vancouver Politics," Werner's Blog – Opinion, Analysis, Commentary, December 17, 2014, https://wernerantweiler.ca/blog.php?item=2014-12-19; Matson and Fine, "Ballot Cues in Low-Information Elections"; Ortega Villodres, "Ballot Position Effects under the Single Transferable Vote in Malta".
[67] Campbell and Cowley, "Reactions to candidate characteristics in a survey experiment"; Krebs, "The Determinants of Candidates' Vote Share and the Advantages of Incumbency in City Council Elections"; Griffin, "When and Why Minority Legislators Matter"; Matson and Fine, "Ballot Cues in Low-Information Elections"; Roy and Alcantara, "Does the local candidate matter?".

effects, particularly the Single Transferable Vote system.[68] Likewise, Brockington shows how ballot order effects are stronger in cumulative voting systems, where voters distribute a number of votes (equal to the number of positions) among candidates in whatever way they choose, compared to plurality at-large systems, where voters are also allowed to select multiple candidates, but can only give one vote per candidate.[69]

Nature of the contest

As well, the ballot order effect is not very strong in close contests[70] – where the margin of victory is very small – and/or in high-profile contests.[71] If the office is *not* well known or visible, such as "insurance commissioner or secretary of state"[72] in California, ballot order effects are stronger.[73] Interestingly though, in the US, general elections may experience stronger ballot order effects than do primaries[74], although other studies have found ballot order effects to occur *only* in primary elections.[75] Ballot order effects are also stronger during a presidential election year.[76] The somewhat contradictory findings with regards to the type of election (presidential, primary, municipal and so forth) are likely the result of the fact that on the one hand, those elections that attract greater numbers of voters tend to be elections in which more information is available to voters about the candidates, aiding in voters' decision-making; one the other hand, when turnout rates increase, relatively more voters turn out who have "limited cognitive resources"[77] and are more likely to rely on cues like ballot position in making their vote decision.

Partisan contests

We already noted that party labels on a ballot decrease ballot order effects. A separate factor impacting ballot order effects is the partisanship of the contest as a whole[78]; however, there does not seem to be a consistent definition of "non-partisan contests". Pasek et al. (2014), for example, define such contests as those in which candidates' party affiliations were not listed on the ballot, but a non-partisan contest might also mean an election in which party affiliations are not permitted. Regardless, several studies have found that more partisan information (whether as a label on the ballot and/or as the election being partisan in nature) provides voters with information about who their preferred candidate might be, thus reducing ballot order effects. Non-partisan contests generally have stronger ballot order effects.[79] Miller

[68] Ortega Villodres, "Ballot Position Effects under the Single Transferable Vote in Malta".
[69] Brockington, "A Low Information Theory of Ballot Position Effect".
[70] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[71] Koppell and Steen, "Effects of Ballot Position".
[72] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect," 419.
[73] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[74] Brockington, "A Low Information Theory of Ballot Position Effect".
[75] Ho and Imai, "Estimating Causal Effects of Ballot Order".
[76] Chen et al., "The Impact of Candidate Name Order on Election Outcomes in North Dakota"; Ho and Imai, "Estimating Causal Effects of Ballot Order".
[77] Brockington, "A Low Information Theory of Ballot Position Effect," 9.
[78] Chen et al., "The Impact of Candidate Name Order on Election Outcomes in North Dakota"; Miller and Krosnick, "The Impact of Candidate Name Order"; Tessier and Blanchet, "Ballot Order in Cueless Elections".
[79] Chen et al., "The Impact of Candidate Name Order on Election Outcomes in North Dakota"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".

and Krosnick (1998) similarly study the impact of partisan contest and find that partisan contests see weaker ballot order effects. This information effect is not unique to partisan information, as other studies have found that low information environments in general can amplify ballot order effects, and increased media coverage can reduce these effects.[80]

3.3.3 Voter characteristics

Voters who are highly ambivalent about the election and the candidates are more likely to use the position of candidates on the ballot in their decision-making.[81] Pasek and colleagues (2014) find that, only for low-visibility offices, a high voter turnout and a low absentee voting rate are associated with stronger ballot order effects. Further, voters with low cognitive skills who exert low cognitive effort amplify the ballot order effect.[82] When voters have little information, the ballot order effect is also stronger.[83] Interestingly, home ownership, as a percentage of the voting area, has been associated with a reduced ballot order effect because "homeowners have a greater financial stake in the quality of governance and are more likely to vote".[84]

Table 3.B. Factors that amplify or reduce ballot order effects

	Amplify ballot order effect	Reduce ballot order effect
Ballot and candidate characteristics	- Lower position of race on ballot† - Large number of candidates - Open seat (no incumbents) †† - Incumbent or major-party candidate listed first	- Lower position of race on ballot† - Candidates with party affiliation - Presence of incumbent candidate††† - (Other candidate characteristics)
Election and electoral context characteristics	- Complex electoral system - Cumulative electoral system - Low-visibility office - General election versus primary election†††† - Presidential election year - Non-partisan contest	- Close contest - High-profile contest - Partisan contest - Strong party system
Voter characteristics	- High ambivalence - High turnout††††† - Low absentee voting rate††††† - Low cognitive skills/effort - Low information	- Home ownership

† There is conflicting evidence on the effect of the lower position of the race on ballot. †† For primaries only. ††† Marginal significance (not strictly statistically significant). †††† There is conflicting evidence on whether ballot order effects are greater in general or in primary elections in the US. ††††† For low-visibility offices only.

[80] Grant, "The Ballot Order Effect is Huge"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects"; Miller and Krosnick, "The Impact of Candidate Name Order".
[81] Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects".
[82] idem
[83] Grant, "The Ballot Order Effect is Huge"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects".
[84] Darren Grant, "Seaching for the Downsian voter with a simple structural model," *Economics and Politics* 10, no. 2 (1998):107-26, cited in Grant, "The Ballot Order Effect is Huge", 437.

3.4 Methodological challenges

Broadly speaking there are two types of methodological challenges in the literature on ballot order effects. The first concerns the most appropriate research design and data to study such effects and the second concerns the most appropriate statistical model to use to estimate the magnitude of the effect and to test whether it is statistically significantly different from zero. The fact that in estimating ballot order effects, scholars rely on data from different elections and use different statistical models with varying measures of ballot order and a changing set of control variables, makes comparisons of results across studies somewhat challenging. This in part might explain some of the contradictory results reported in Table 3.B.

3.4.1 Research design and data

The gold standard in assessing the impact of a cause such as ballot order on an outcome such as vote share is the experimental design. An ideal study would randomly assign groups of voters to ballots with a different ordering of candidate names to assess the impact of the ordering on votes.[85] Randomization ensures that, in expectation, there are no differences between the groups of voters before being assigned to receive a particular ballot and allows for valid inferences of the causal effect.

Many, especially earlier, studies, but also a recent Canadian study by Tessier and Blanchet (2018), do not use an experimental design, but instead rely on assessing the impacts of candidates' order of placement on a ballot on their vote share using data from a great number of elections. Although often unavoidable, the problem with this design is that it conflates other factors, which might also impact vote share, with ballot order. Simply put, if not determined randomly, then whatever means was used to determine the order of candidates on the ballot – be it alphabetic ordering of last names, incumbency status or party affiliation – might be impacting vote shares rather than the order of the names on the ballot.

More recent studies in the US have employed a "natural experimental" design, in order to benefit from the strengths of randomization.[86] Generally, these natural experiments focus on jurisdictions – usually American states – where the order of candidate names on a ballot is somehow randomized. For example, several studies have used election data from California, which uses a version of the randomization-rotation method.[87] These natural experiments benefit from the strengths of experiments in general: they are very good at producing valid results. The main weakness of these studies is that their methods are not transferable to other electoral contexts. There are many electoral jurisdictions – countries, states, provinces, counties, municipalities, etc. that do not randomize the order of candidate names on the ballot. Even if they *do*, they may not rotate the order of those names across some smaller jurisdiction – for example, California's 80 Assembly Districts. In sum, there are specific conditions under which natural experiments can produce valid and reliable results, and these conditions are far from being universally

[85] Miller and Krosnick, "The Impact of Candidate Name Order," 295.
[86] For instance: Grant, "The Ballot Order Effect is Huge"; Ho and Imai, "Randomization Inference with Natural Experiments"; Ho and Imai, "Estimating Causal Effects of Ballot Order"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects"; Matson and Fine, "Ballot Cues in Low-Information Elections"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[87] Alvarez, Sinclair, and Hasen, "How Much is Enough?"; Ho and Imai, "Randomization Inference with Natural Experiments"; Ho and Imai, "Estimating Causal Effects of Ballot Order"; Kim, Krosnick, and Casasanto, "Moderators of Candidate Name-Order Effects".

present, which means that we cannot determine to what extent the results found in California translate to very different electoral settings.

In sum, the key challenges in terms of research design and data are that: 1) many ballots are not randomized, making is impossible to disentangle the impact of ballot ordering on vote shares from other factors such as alphabetic ordering; 2) the number of elections that do use random ballots is small, leading to imprecise estimates of the effect; and 3) these elections tend to be concentrated in specific regions, making it difficult to generalize conclusions to other settings.

3.4.2 Statistical models

One issue in choosing the appropriate statistical model to estimate ballot order effects is that the outcome (the dependent variable) of interest is often the share (expressed as either a proportion or percentage) a candidate receives of the total number of votes cast in a particular race. This outcome necessarily ranges between 0 and 1 (or 0 and 100 if a percentage). Also, the vote shares of candidates in the same race are not independent: if the vote share of one candidate increases, then the vote share of another candidate necessarily decreases. The latter violates an important assumption of a common statistical estimation model used to estimate ballot order effects, Ordinary Least Squares (OLS) regression.[88] OLS models also predict outcomes that are continuous and not bounded by 0 and 1. Yet, many studies on ballot order effects use OLS regression, even if they tend to be somewhat older.[89] More recent studies employ more sophisticated statistical models such as beta regression[90], multilevel models[91], or seemingly unrelated regressions[92] to deal with the fact that candidate vote shares are not independent and/or are bounded by 0 and 1.

Another issue in specifying the correct statistical model is how to measure ballot order. The choice of how to measure ballot order depends in part on how many candidates are running. For instance, Tessier and Blanchet (2018) measure ballot order in municipal elections in the form of a four-category variable: first rank, second rank, third rank, and fourth or higher rank.[93] Others, like Alvarez and colleagues (2006) and Pasek and colleagues (2014) use a two-category variable simply indicating whether a candidate was listed first on the ballot or not (or last on the ballot or not).[94] When faced with longer ballots, scholars often opt to include ballot rank simply as a continuous variable ranging from 1,2,3, etc. to the total number of candidates on the ballot.[95]

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[88] idem
[89] For instance: Brockington, "A Low Information Theory of Ballot Position Effect"; Krosnick, Miller, and Tichy, "Unrecognized Need for Ballot Reform"; Matson and Fine, "Ballot Cues in Low-Information Elections"; Miller and Krosnick, "The Impact of Candidate Name Order".
[90] Tessier and Blanchet, "Ballot Order in Cueless Elections".
[91] Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[92] Alvarez, Sinclair, and Hasen, "How Much is Enough?"; Grant, "The Ballot Order Effect is Huge"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[93] Tessier and Blanchet, "Ballot Order in Cueless Elections".
[94] Alvarez, Sinclair, and Hasen, "How Much is Enough?"; Grant, "The Ballot Order Effect is Huge"; Pasek et al., "Prevalence and Moderators of the Candidate Name-Order Effect".
[95] For instance, Brockington, "A Low Information Theory of Ballot Position Effect".

A final issue is which "control" variables to include in a statistical model. Absent proper randomization, scholars commonly include variables in their statistical models that they expect are related to their outcome of interest and potentially also to candidates' ballot position. Most studies include control variables for candidate characteristics like incumbency and party affiliation, and for characteristics of races such as the type of election, the election year, and/or the number of candidates running. Still, the control variables included in the statistical models often differ between studies. For instance, Ortega Villodres's (2008) study is one of the few to include candidates' gender.[96]

3.5 The Vancouver municipal election context

On June 19, 2018, Vancouver City Council adopted a by-law for randomizing the list of names on the ballot in the upcoming municipal election.[97] Previously, ballots listed the names of candidates alphabetically, except for the 1993 election, where the name order was also randomized. After the 2018 municipal election, the City conducted a post-election survey to assess voters' and non-voters' opinions on the randomized ballot. The results were presented to City Council in May 2019 as part of the 2018 Municipal Election Review. This report noted that many voters were confused about the random order of the ballots and found it difficult to find their preferred candidate(s).[98]

In this section we discuss the relevance of the factors shown in Table 3.B for the Vancouver municipal election context. We do not discuss voter characteristics as it is difficult to say anything general about Vancouver voters. An overview of the factors specifically relevant to the Vancouver municipal elections is given in Table 3.C.

3.5.1 Ballot and candidate characteristics in Vancouver

Of the factors that amplify or reduce ballot order effects discussed so far, one that is very relevant to the Vancouver municipal context is the large number of candidates on the ballot: 158 candidates in 2018, with three capital plan questions on the back of the ballot. Although this was an exceptionally large number, the average number of candidates on ballots between 1988 and 2018 for elections for mayor was 17, for city council 39, for park board 27 and for school board 23 (see Table 4.A and Table 4.B). We would expect that the large number of candidates makes it more difficult for voters to decide between candidates, increasing ballot order effects.

Vancouver municipal elections also tend to be multi-race elections, combining races for mayor, city council, park board and school board on one ballot. Although, as discussed, it is unclear whether ballot order effects in races at the bottom of the ballot are greater or smaller than ballot order effects in races higher up on the ballot. If the number of voters who vote in races at the bottom of the ballot is substantially smaller than the number of voters who vote in races higher up on the ballot, this might

[96] Ortega Villodres, "Ballot Position Effects under the Single Transferable Vote in Malta".
[97] City of Vancouver, Bylaw No. 12145, *A By-law to amend Election By-law No. 9070 regarding the order of names on the ballot* (June 19, 2018).
[98] City of Vancouver, "2018 Municipal Election Review," Report from Chief Election Officer to Standing Committee on Policy and Strategic Priorities, March 26, 2019, https://council.vancouver.ca/20190515/documents/pspc3.pdf.

result in a smaller ballot effect as it suggests that only the most engaged voters are voting in those races.

The relatively prominent role of political parties in Vancouver municipal elections means that voters can rely on the information provided by party labels, which likely reduces ballot order effects. Like for any election, we would also expect that in Vancouver races in which incumbents are running, ballot order effects will be reduced.

3.5.2 Vancouver elections and electoral context characteristics

Vancouver municipal elections use an at-large electoral system in which Vancouver is treated as one electoral district and voters are allowed to cast as many votes as there are seats (for instance, ten seats for City Council), but can only give one vote per candidate. This system can be considered as more complex for voters than the commonly used ward-system in which a municipality is divided into several electoral districts (wards) – usually represented by one seat each – and voters cast one vote to elect one out of a small number of candidates to represent their ward. Because of its greater complexity for voters (the decision who to vote for is more difficult), we would expect greater ballot order effects in Vancouver compared to municipalities that use a ward-system.

Races will differ according to whether they are anticipated to be close and/or whether they receive a lot of media attention, and this will likely impact the size of ballot order effects across election years. More generally though, ballot order effects are likely greater in municipal elections like the Vancouver municipal election, than in provincial or federal elections. We would also expect that elections for lower-visibility offices such as park commissioner and school trustee show greater ballot order effects than higher-visibility elections for city councillor and especially those for mayor.

Table 3.C. Vancouver-specific factors that potentially impact ballot order effects

Potentially amplify ballot order effect	Potentially reduce ballot order effect
- Large number of candidates on the ballot	- Party labels / partisan context
- Lower position of race on ballot (if similar turnout across races)	- Lower position of race on ballot (if substantially lower turnout for lower-positioned races)
- At-large electoral system (versus ward-system)	
- Municipal election (versus provincial or federal)	
- Lower visibility office: park commissioner, school trustee	- Higher visibility office: mayor, city councillor

3.6 Key findings Section 3

- **The vast majority of published academic studies shows that the order in which candidates' names appear on the ballot impacts their vote shares. Only a handful of published studies find no effect of candidate name order (see Table 3.A)**
    - The fact that in estimating ballot order effects, scholars rely on data from different elections and use different statistical models with varying measures of ballot order and a changing set of control variables, makes comparisons of results across studies challenging
    - Therefore, care should be taken when using insights from studies conducted in one particular context to motivate changes to election laws in a very different context
- **When voters lack sufficient information about candidates and/or they do not have a strong preference for one candidate over another, factors such as the order in which candidate names appear on a ballot might enter the decision-making process**
    - Specifically, factors such as the number of candidates on a ballot, the number and position of races on a ballot, whether candidates are affiliated with political parties and whether they are incumbents, the electoral system, the nature of the election (competitive or not, the type of office), and differences among voters in their levels of interest, information and cognitive skills, all impact the strength of the ballot order effect (see Table 3.B)
- **In the context of the Vancouver City elections, we would expect that the relatively large number of candidates on the ballot, the municipal nature of the election (as opposed to provincial or federal), the at-large electoral system (versus a ward-system) all strengthen the ballot order effect, while the prominent role of political parties should reduce the ballot order effect (see Table 3.C)**
    - We also expect the ballot order effect to be greater in park and school board elections than in city council and especially mayoral elections
    - It is difficult to say how the position of a particular race on a ballot (for instance, school board elections at the bottom of the ballot) impacts the ballot order effect; this likely depends on whether turnout is similar for all races on the ballot or not

4 Measuring Ballot Order Effects in Vancouver

In this section, we:

3. Analyze past Vancouver municipal election data to assess whether candidates' position on the ballot has impacted their likelihood of receiving votes, while accounting for other factors that may impact voters' decision
   a. Assess whether a potential ballot order effect was reduced by using a randomized rather than an alphabetical ballot

We start by reviewing the data and methodology in Section 4.1. We then determine in Section 4.2 whether there is a statistically significant ballot order effect in Vancouver elections and, in Section 4.3, how large this effect is. In Section 4.4 we assess whether a potential ballot order effect was reduced by using a randomized rather than an alphabetical ballot. We then summarize our findings in Section 4.5.

4.1 Data and methodology

4.1.1 Description of the data

We examine data on the outcome of elections from thirteen Vancouver City municipal elections, including two by-elections, between 1988 and 2018. In 1988, 1990, 1993, 1996, 1999, 2002, 2005, 2008, 2011, 2014 and 2018 there were races for one position as mayor, ten positions on city council[99], seven positions on the park board, and nine positions on the school board. In the 1992 by-election, 15 candidates ran for one position on city council, and in the 2017 by-election, nine candidates ran for one position on city council and 19 candidates ran for all nine school board positions. For each race, voters can cast votes for as many candidates as there are positions, for example, one vote for the position of mayor and seven votes for the positions on the park board. Voters can give no more than one vote per candidate.

The dataset includes the election year, the type of election (for mayor, councillor, park commissioner and school trustee), the names of all candidates, their position (rank/order) on the ballot, which starts at one and counts up to the total number of candidates in a particular race (for example, 23 candidates were on the ballot for the election for school board in 2002), the number of votes they received, the total number of votes cast in their race, whether candidates were elected, their party affiliation (if

[99] Before 1993 city councilors were called aldermen.

any)[100], their perceived gender[101], their predicted ethnic/racial background[102], and whether they ran as an incumbent, measured as whether they held any elected municipal office in the previous election period.

The outcome in our analyses (the so-called dependent variable) is candidates' share of all the votes cast in a particular race – that is, the election for a particular office in a given election year, such as the city council election in 2014 or the park board election in 2011. In our statistical models, this variable is the proportion of votes a candidate receives out of all the votes cast. In this first section though, we convert the proportions to percentages by multiplying by 100, so that the numbers are easier to interpret. It is important to note that in the city council, park board and school board elections voters can, but do not have to, cast multiple votes. In these elections it is extremely unlikely that candidates will obtain vote percentages in the double digits. For example, in council elections voters cast up to ten votes (except in by-elections, when they normally cast one vote). If all voters were to cast their ten votes, the maximum percentage of votes a candidate could receive is 10%. But since not all voters cast all their votes, the

[100] We code candidates as being affiliated with one of the following nine major parties: COPE, the Green Party, IDEA, NDP, NPA, OneCity, VANCOUVER 1st, Vision Vancouver, or the Work Less Party; or as affiliated with another (small) party; or as running as an independent candidate. Parties were considered to be major parties when they fielded candidates in more than two election years, or when they fielded at least ten candidates across two consecutive election years (NDP and VANCOUVER 1st).

[101] Gender was assigned by Vancouver City employees based on candidates' names and/or knowledge about candidates. If not known, then candidates were labelled "unknown" on gender. While gender is commonly understood as a self-identification and/or a public expression that can differ from the sex assigned at birth (male or female) ("Gender of person," Statistics Canada, last modified April 16, 2019, https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&Id=410445) voters likely ascribe candidates' gender based on first names, media or public appearances. Research has suggested that (perceived) gender might influence voters' decision whom to vote for. Some research has suggested that women have a higher chance of being elected in municipal elections. See: Krebs, "The Determinants of Candidates' Vote Share and the Advantages of Incumbency in City Council Elections"; Matson and Fine, "Ballot Cues in Low-Information Elections".

[102] Like the gender measure, this variable is *not* a measure of a candidate's self-identification. We used the "wru" package for R (Khanna and Imai 2019) to match candidates' surnames to the US Census Bureau's Surname List. This matching returned five probabilities: probability of being white, Black, "Hispanic", Asian or Pacific Islander, or other, respectively, given the person's surname (Imai and Khanna 2016). While this is a cost-effective and relatively accurate way of estimating the probability of a person's race (Imai and Khanna 2016), there are two important caveats. First, the probabilities are based on the national US context, for which the demographics differ from Vancouver's. Second, the US Census questions on race are imperfect, because they do not necessarily account for how people self-identify nor how they are perceived (Prewitt 2013). In our analysis, this variable reflects what heuristics *may be* cued when a voter reads the candidate's name on the ballot. We converted the probabilities into a variable that indicated the most likely ethnic/racial background for each candidate (White, Asian, Hispanic or Black). If there was more than one most likely ethnic/racial category, we coded the candidate as "no prediction on ethnic/racial background". We include this five-category variable to see if it impacts candidates' vote share. See: Kosuke Imai and Kabir Khanna, "Improving Ecological Inference by Predicting Individual Ethnicity from Voter Registration Records," *Political Analysis* 24 (2016): 263-72; Kabir Khanna and Kosuke Imai, wru: Who are You? Bayesian Prediction of Racial Category Using Surname and Geolocation, R package version 0.1-9 (2019), https://CRAN.R-project.org/package=wru; Kenneth Prewitt, *What Is Your Race? The Census and Our Flawed Efforts to Classify Americans* (Princeton: Princeton University Press, 2013). Research shows that candidates with non-Latino last names receive more votes than others (Matson and Fine, "Ballot Cues in Low-Information Elections"). As well, some studies have found that white voters in the US do not consistently discriminate against black candidates in terms of vote choice; but white voters may consider candidates of colour to be less competent than their white counterparts (Griffin, "When and Why Minority Legislators Matter").

percentage can plausibly exceed 10%. For instance, at the extreme, if all voters decided to use only one of their ten votes and all voted for the same candidate, this candidate would receive 100% of all the votes cast.

Table 4.A and Table 4.B provide an overview of the variables in the dataset. Overall, men were more likely to run than women. 68% of mayoral candidates, 62% of council and park commissioner candidates and 51% of school trustee candidates were (likely) men. Between 80-92% of candidates, depending on the type of election, was (likely) white. The percentage of incumbents is the highest in school board elections (29%) and the lowest in mayoral elections (7%), whereas the percentage of independent candidates is the highest I mayoral elections (79%) and the lowest in school board elections (17%).

Table 4.A. Summary statistics for races and candidates in elections for mayor and councillor (1988 to 2018)

	Obser-vations†	Mean	Standard deviation††	Minimum	Maximum
Mayor					
Number of candidates running in race	11	17	15	2	58
Total votes in race	11	165,450	125,987	92,326	534,969
Votes received by candidate	192	7,370	18,701	10	83,529
% votes received by candidate	192	5.33	13.90	0.01	62.58
Man	192	0.68	0.47	0	1
Woman	192	0.17	0.37	0	1
Gender unknown	192	0.16	0.36	0	1
White	192	0.92	0.28	0	1
Asian	192	0.06	0.24	0	1
Hispanic	192	0.01	0.10	0	1
Black	192	0.00	0.00	0	1
No prediction ethnic/racial background	192	0.01	0.10	0	1
Incumbent candidate	192	0.07	0.26	0	1
Independent candidate	192	0.79	0.41	0	1
Councillor					
Number of candidates running in race	13	39	16	9	71
Total votes in race	13	927,915	443,362	27,222	1,452,811
Votes received by candidate	513	23,514	20,519	85	74,077
% votes received by candidate	513	2.53	3.42	0.09	42.51
% votes received by candidate, without 1992 and 2017 by-elections	489	2.25	1.85	0.09	6.37
Man	513	0.62	0.49	0	1
Woman	513	0.33	0.47	0	1
Gender unknown	513	0.05	0.23	0	1
White	513	0.81	0.39	0	1
Asian	513	0.13	0.34	0	1
Hispanic	513	0.01	0.12	0	1
Black	513	0.01	0.12	0	1
No prediction ethnic/racial background	513	0.03	0.17	0	1
Incumbent candidate	513	0.19	0.39	0	1
Independent candidate	513	0.34	0.47	0	1

† Observations indicate the number of races per election type (e.g., the data include 11 mayoral races) or the number of candidates running in the same election type across all years (e.g., the data include 192 mayoral candidates).
†† A Standard deviation is a measure of the spread of values. The smaller the standard deviation, the more concentrated the values are around the mean.

Table 4.B. Summary statistics for races and candidates in elections for park commissioner and school trustee (1988 to 2018)

	Obser-vations†	Mean	Standard deviation††	Minimum	Maximum
Park commissioner					
Number of candidates running in race	11	27	7	19	41
Total votes in race	11	729,378	146,357	539,114	991,653
Votes received by candidate	293	27,383	18,927	1,054	73,549
% votes received by candidate	293	3.75	2.50	0.18	9.08
Man	293	0.62	0.49	0	1
Woman	293	0.31	0.46	0	1
Gender unknown	293	0.07	0.26	0	1
White	293	0.85	0.36	0	1
Asian	293	0.11	0.32	0	1
Hispanic	293	0.01	0.08	0	1
Black	293	0.01	0.10	0	1
No prediction ethnic/racial background	293	0.02	0.15	0	1
Incumbent candidate	293	0.16	0.36	0	1
Independent candidate	293	0.30	0.46	0	1
School trustee					
Number of candidates running in race	12	23	5	19	33
Total votes in race	12	849,742	225,394	327,586	1,169,336
Votes received by candidate	281	36,288	18,171	926	75,100
% votes received by candidate	281	4.27	1.91	0.14	8.35
Man	281	0.51	0.50	0	1
Woman	281	0.41	0.49	0	1
Gender unknown	281	0.07	0.26	0	1
White	281	0.80	0.40	0	1
Asian	281	0.16	0.36	0	1
Hispanic	281	0.02	0.13	0	1
Black	281	0.00	0.00	0	1
No prediction ethnic/racial background	281	0.03	0.17	0	1
Incumbent candidate	281	0.29	0.45	0	1
Independent candidate	281	0.17	0.37	0	1

† Observations indicate the number of races per election type (e.g., the data include 11 park board races) or the number of candidates running in the same election type across all years (e.g., the data include 293 park board candidates).
†† A Standard deviation is a measure of the spread of values. The smaller the standard deviation, the more concentrated the values are around the mean.

4.1.2 The relationship between candidates' ballot rank and vote share – a first look

In Figure 4.A to D we show the percentage of all votes a candidate received by that candidate's placement on the ballot for each type of election (those for mayor, councillor, park commissioner and school trustee) in each election year. Each separate plot includes a fitted line – a smooth curve through the data points in the plot that best captures the relationship between the percentage of votes and candidates' ballot rank.[103] A downward sloping line indicates that candidates get a lower percentage of all votes as they are lower ranked on the ballot. An upward sloping line indicates that candidates get a higher percentage of all votes as they are lower ranked on the ballot. A flat, horizontal, line suggests that the percentage of votes candidates receive does not change depending on their placement on the ballot. Each figure also includes a plot with the total, showing the percentage of all votes a candidate received by that candidate's placement on the ballot for each type of election across *all* election years. It is important to keep in mind when looking at the plots including all election years that races differ in the number of candidates running and that a greater number of candidates running tends to result in a lower average vote share. This might drive some of the downward slopes in these plots.

Figure 4.A shows that across all mayoral elections there is a slight downward slope in the relationship between the percentage of votes and ballot placement. Thus, the lower ranked on the ballot, the smaller the share of votes. There is some substantial variation across election years though, which can mostly be explained by the fact that in most election years two candidates associated with major parties dominated the election, regardless of their placement on the ballot. Between 1990 and 2002, the candidates affiliated with COPE and the NPA obtained the largest share of the vote, while between 2008 and 2014 the candidates associated with the NPA and Vision Vancouver did so. The fact that during this time Gregor Robertson was the candidate for Vision, and that he was placed relatively low on the alphabetically ordered ballots due to his last name, likely explains the upward slope in the fitted lines for the 2008, 2011 and 2014 elections. In assessing the impact of ballot order on vote share it will therefore be important to take candidates' party affiliation into account and to assess the impact of ballot order independent of that of candidates' party affiliation.

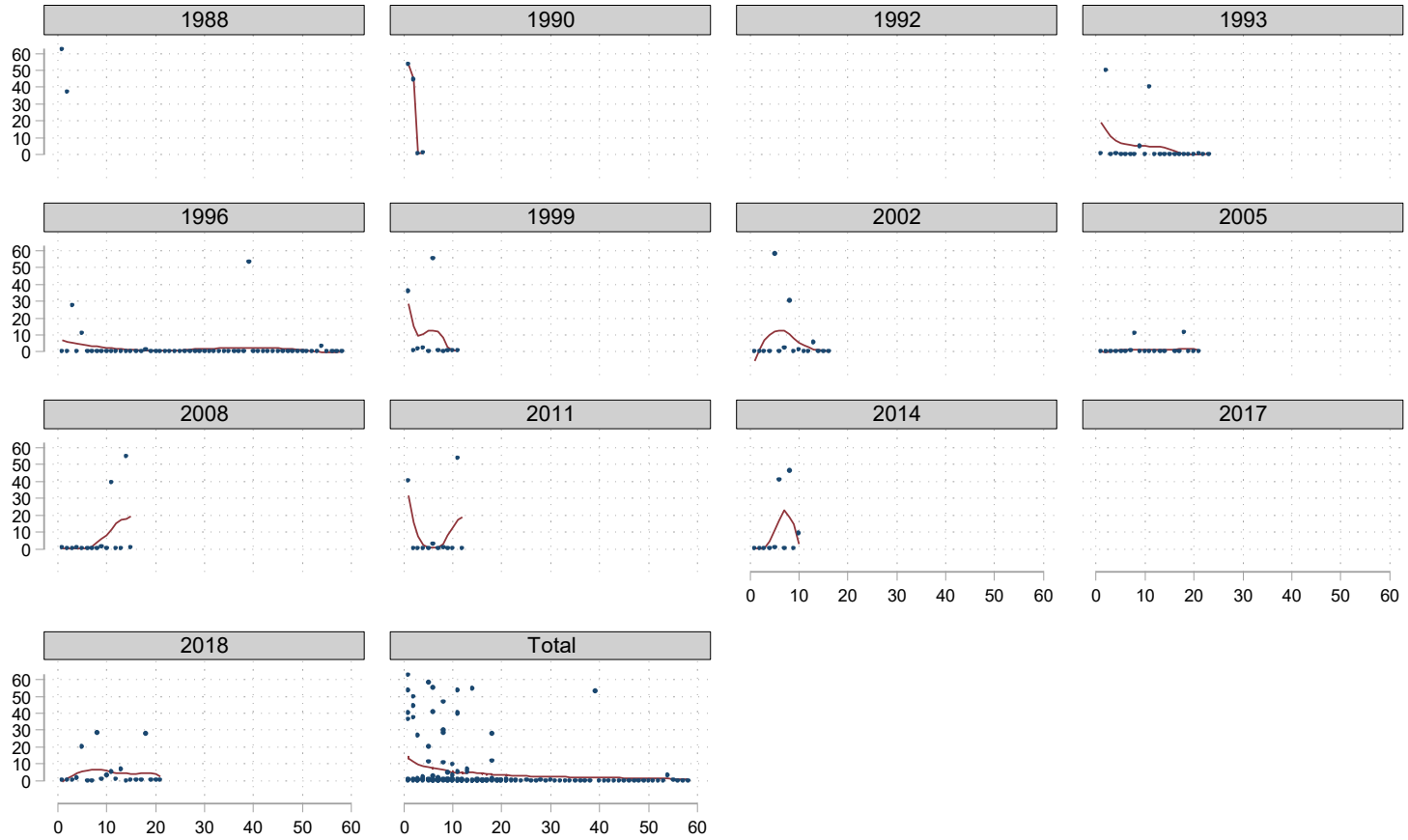
Figure 4.B, Figure 4.C and Figure 4.D show that, similar as for mayoral elections, for city council, park board and school board elections across all years there is a slight downward slope in the relationship between the percentage of votes and ballot placement. The overall percentages of votes candidates receive in these elections is much smaller though than in the mayoral races, as voters have multiple votes to cast rather than just one. Looking at each election year separately, the fitted lines for council elections tend to be flatter, indicating a weaker relationship between ballot placement and vote share, compared to the fitted lines for park and school board elections, which tend to slope more downward and suggesting that ballot placement might matter more in park and school board elections. The figures for the 1992 and 2017 by-elections for city council are shown in the Appendix Figure 0.A), as these elections are somewhat more similar to those for mayor in the sense that voters only cast one vote

[103] This line is created using locally weighted scatterplot smoothing (LOWESS), which fits simple regression models to localized subsets of the data.

instead of ten (and therefore the average vote percentage per candidate is higher) and the top candidates tend to be those with major party affiliations.

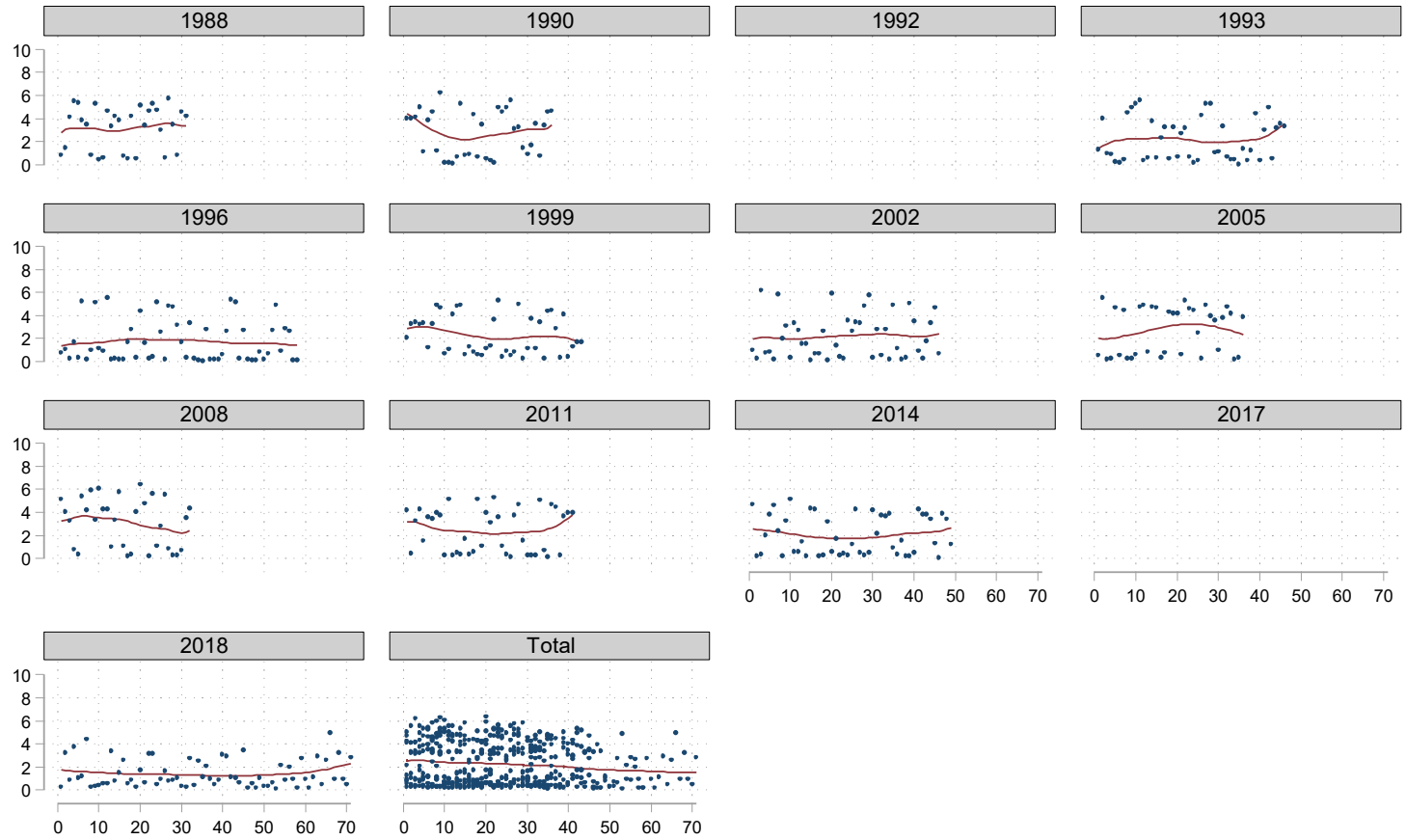
These figures do not take into account that candidates can differ on characteristics other than their ranking on the ballot that likely determine their share of the vote. We already mentioned their political party affiliation as one such characteristic. Other important characteristics that likely influence voters' decision for one candidate over another and therefore determine vote share, are whether candidates are incumbents and socio-demographic characteristics such as candidates' gender and ethnic/racial background. We now turn to our analyses, which take into account these characteristics.

Figure 4.A. Percentage of votes received by candidates' ballot rank in elections for mayor



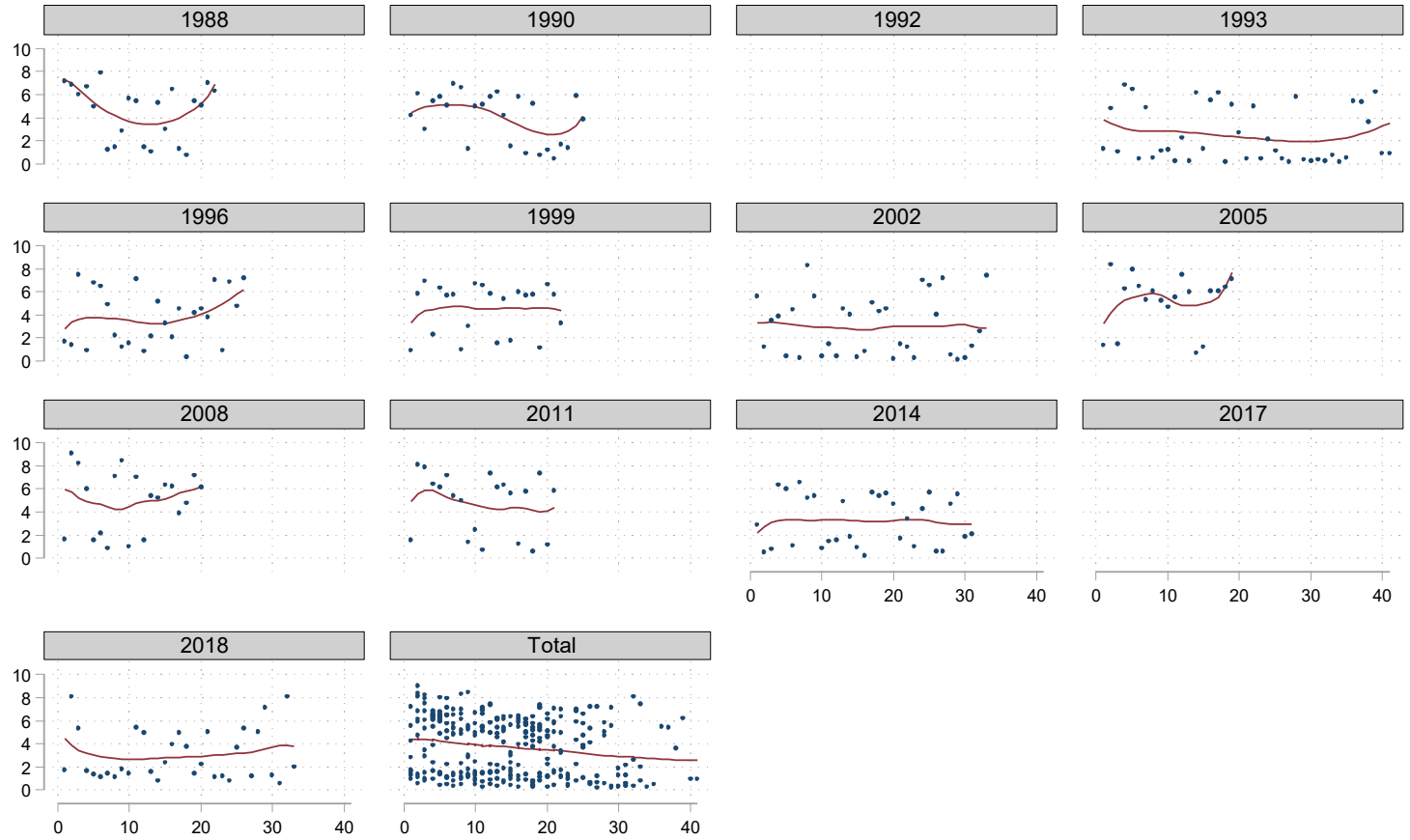
Note: The "Total" plot includes all 192 candidates running for mayor between 1988 and 2018 and their vote shares. A greater number of candidates running in a race tends to result in a lower average vote share. This might partly explain the downward slope in the "Total" plot.

Figure 4.B. Percentage of votes received by candidates' ballot rank in elections for councillor, excluding by-elections



Note: The "Total" plot includes all 481 candidates running for councillor between 1988 and 2018 (excluding 1992 and 2017 by-elections) and their vote shares. A greater number of candidates running in a race tends to result in a lower average vote share. This might partly explain the downward slope in the "Total" plot.

Figure 4.C. Percentage of votes received by candidates' ballot rank in elections for park commissioner



Note: The "Total" plot includes all 293 candidates running for park commissioner between 1988 and 2018 and their vote shares. A greater number of candidates running in a race tends to result in a lower average vote share. This might partly explain the downward slope in the "Total" plot.

Figure 4.D. Percentage of votes received by candidates' ballot rank in elections for school trustee

Note: The "Total" plot includes all 281 candidates running for mayor between 1988 and 2018 and their vote shares. A greater number of candidates running in a race tends to result in a lower average vote share. This might partly explain the downward slope in the "Total" plot.

4.1.3 Statistical model

A *ballot order effect* is commonly understood as the impact of a candidate's position on the ballot on the share of the vote(s) the candidate receives. Our outcome of interest (the dependent variable), then, is candidates' proportion of votes with values between 0 and 1. Therefore, and following Tessier and Blanchet, we use a beta regression (see Cribari-Neto and Zeileis 2010; Ferrari and Cribari-Neto 2004)[104] to model candidates' proportion of the total votes cast as a function of a set of predictor variables.[105] Our main predictor variable of interest is candidates' ballot rank. It is likely that the effect of ballot order diminishes for lower ranking candidates. That is, it likely matters more whether a candidate is placed fourth rather than third, than whether a candidate is placed twenty-fourth rather than twenty-third. To better capture this, we transform the values of ballot rank for the analysis by using a mathematical function, namely the natural logarithm. In addition to the natural logarithm of ballot rank, we include as predictors candidates' (perceived) gender, their predicted ethnic/racial background, whether they were an incumbent and the political party they were affiliated with, if any. These are included to allow us to estimate the impact of ballot rank independent of the impact of these factors, as they might explain substantial variation in candidates' electoral success.

We estimate this model for each race (a type of election in a given election year) separately. In addition, we also estimate models for each type of election combining all election years. In these latter models, we add predictor variables for the election years. Including these controls for election year enables us to estimate the effect of ballot order net of any election-specific characteristics. For instance, in some election years many more candidates ran than in others, and in these election years candidates are likely to have on average lower vote shares than in election years with fewer candidates.

The coefficient estimates obtained from beta regressions are not easily interpretable, as they indicate the estimated effect of a one-unit change in the predictor variable on the log odds of the outcome (proportion of the votes). After presenting and discussing these coefficient estimates, we will therefore present a more straightforward interpretation of the results from our analyses, namely in terms of estimated vote proportions in Section 4.3.

[104] Silvia Ferrari and Francisco Cribari-Neto, "Beta Regression for Modelling Rates and Proportions," *Journal of Applied Statistics* 31, no. 7 (2004), 799-815; Francisco Cribari-Neto and Achim Zeileis, "Beta Regression in R," *Journal of Statistical Software* 34 (2010): 1-24.

[105] Commonly, Ordinary Least Squares (OLS) regression is used when a dependent variable is continuous; however, a ratio variable like a proportion can only take on values ranging from 0 to 1. An OLS model could result in estimated values for candidates' proportion of votes received that are below 0 or above 1. Ratio variables also tend to have an asymmetric distribution, which might pose a problem for classic hypothesis tests when dealing with small samples, and OLS regression models using such variables tend to show a non-constant variance of the residuals (heteroscedasticity), which violates an important assumption of OLS models. Beta regression was developed specifically for dependent variables such as proportions that vary between 0 and 1. In a beta regression the dependent variable is assumed to be beta rather than normally distributed. We opt for a logit link-function in our beta regression models.

4.2 Results: Is there a ballot order effect in Vancouver municipal elections?

Figure 4.E shows the coefficient estimates and their 95%-confidence intervals for the effect of the predictor variables on candidates' proportion of the votes from the models for each type of election (for mayor, councillor, park commissioner and school trustee), combining all election years. The confidence intervals indicate the bounds around each estimate; the intervals will include the true value of the coefficient estimate 95 times out of 100. If the confidence interval excludes 0, we can be confident that the true value is different from 0 and the coefficient estimate is said to be statistically significantly different from 0. Figure 4.F shows exactly the same coefficient estimates but excludes those from the models for mayoral elections. This allows for more of a close-up view (note the horizontal scale covers a narrower range of values: -3.5 to 0.5 instead of -5.5 to 1.5).

The coefficient estimates that are obtained from beta regressions are not easily interpretable, as the coefficients are expressed in terms of log odds. Caution is also needed when comparing the size of the coefficient estimates for the different predictor variables, as the estimates reflect the effect of a one-unit change in the predictor variable on the outcome and not all predictor variables are measured on the same scale. That is, we can expect that the effect of a one-unit change in candidates' logged ballot rank is much smaller than a candidate being an incumbent as opposed to not being an incumbent. In discussing these figures, we therefore focus on statistical significance and the direction of the effect. In Section 4.3 we will discuss the effects in terms of their size – their substantive impact. Coefficient estimates greater than zero suggest that a predictor variable increases candidates' vote share, while coefficient estimates smaller than zero suggest that a predictor variable decreases candidates' vote share.

4.2.1 The ballot order effect

The coefficient estimates for ballot rank are all negative, indicating that as candidates are ranked lower on the ballot their share of the votes decreases, and all coefficient estimates except the one for mayoral elections are statistically significant. To have a closer look at the estimates for ballot rank, we turn to Figure 4.G; however, before doing so we first discuss the impact of the other candidate characteristics on vote share.

4.2.2 Other candidate characteristics that impact vote share

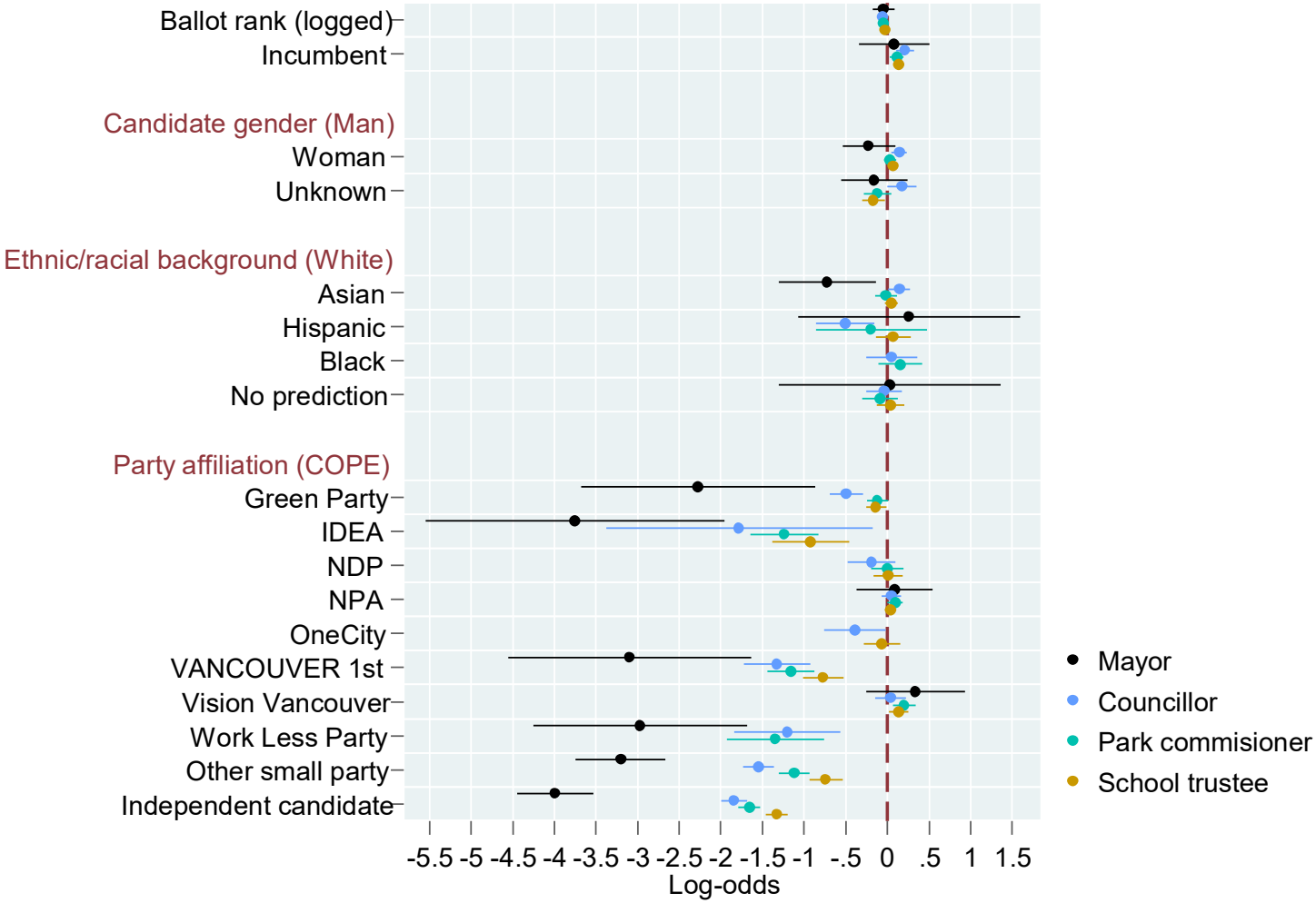
It is clear from the figure that incumbency and party affiliation, and in some elections candidates' gender and ethnic/racial background, are important factors to take into account when assessing the importance of ballot order, as they statistically significantly affect the proportion of votes candidates receive within a given election. Holding all other factors (candidates' ballot rank, gender, ethnic/racial background and party affiliation and the election year) in the model constant, incumbency statistically significantly increases the proportion of votes candidates receive (except in mayoral elections). Similarly, all else equal, being a woman compared to a man increases the proportion of votes for candidates in city council and school board elections, and having a surname that suggests an Asian background instead of a white background decreases the proportion of votes for candidates in mayoral elections but increases the proportion of the votes in council elections, whereas a Hispanic-sounding surname

decreases the proportion of votes in council elections. Being affiliated with the Green Party, IDEA, VANCOUVER 1st, the Work Less Party, one of the smaller parties, or running as an independent candidate has tended to result in a smaller proportion of votes for candidates compared to if the candidate is affiliated with COPE, whereas candidates affiliated with the NPA and Vision Vancouver have statistically significantly outperformed COPE candidates in park board elections and (Vision Vancouver candidates only) in school board elections.[106, 107]

[106] Being affiliated with OneCity has also tended to result in a statistically significantly smaller proportion of votes for candidates in city council elections compared to if candidates are affiliated with COPE; however, when by-elections are excluded this estimate is no longer statistically significant.

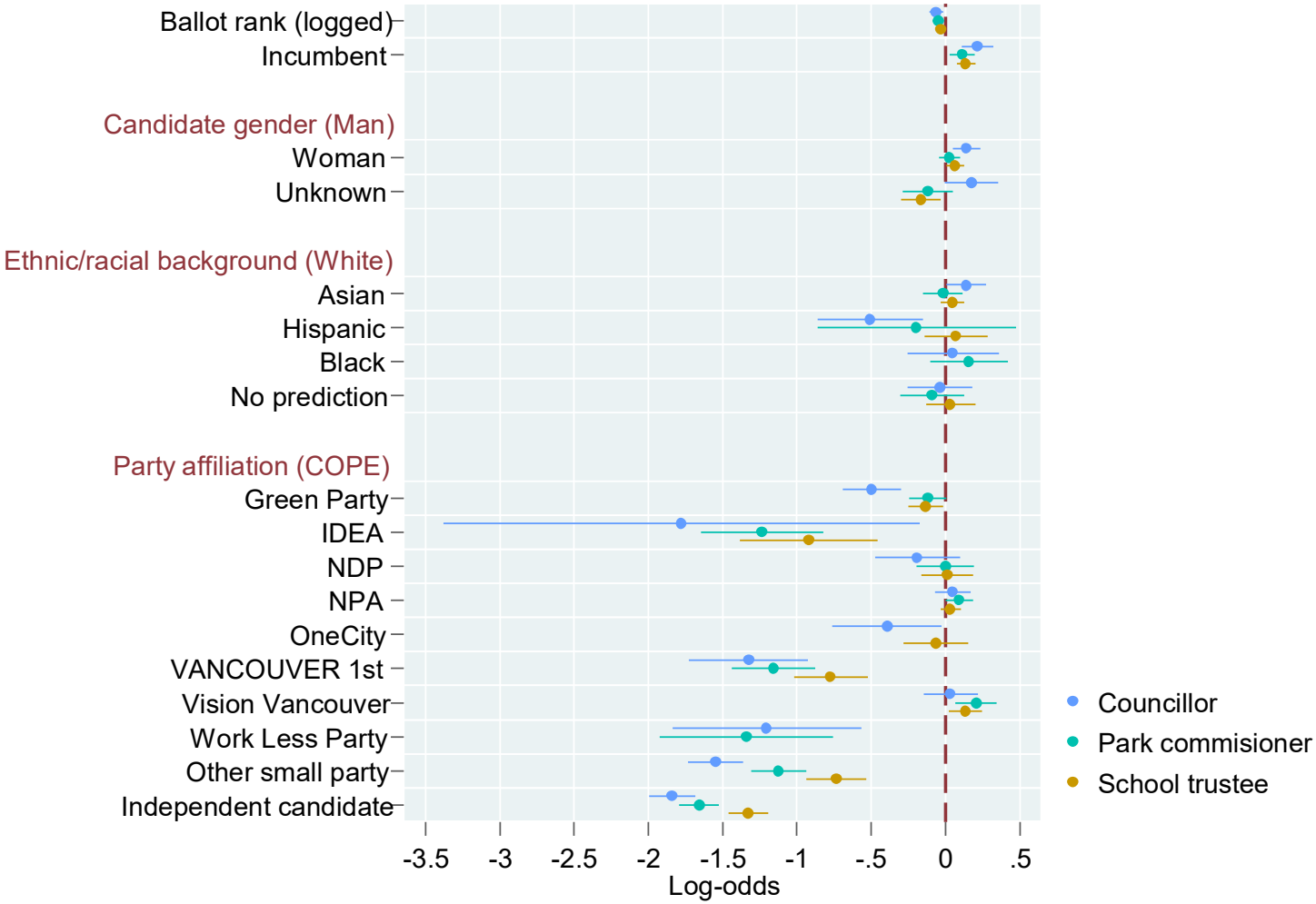
[107] Converting the coefficient estimates to odds by exponentiating the coefficients somewhat increases their interpretability. For instance, looking at the results for council elections (in blue), the model suggests that the ratio of the proportion of votes won to the proportion of votes not won, is exp(0.14)=1.15 times higher for women who run for city council than for men, holding candidates' gender, ethnic/racial background, incumbency status, party affiliation and the election year equal. Similarly, that same ratio is about exp(0.22)=1.25 times higher for incumbents compared to those who did not hold political office in the previous election cycle, exp(0.14)=1.15 times higher for candidates with surnames suggesting an Asian background compared to those with surnames suggesting a white background, and exp(-1.84)=0.16 times smaller (84% smaller) for independents compared to candidates running for COPE, all else equal.

Figure 4.E. The effect of candidates' ballot order (logged) and other characteristics on the proportion of votes received in four types of elections. Coefficient estimates obtained from beta regressions



Note: Controls for elections years included, but not shown.

Figure 4.F. The effect of candidates' ballot order (logged) and other characteristics on the proportion of votes received in three types of elections (excluding mayoral elections). Coefficient estimates obtained from beta regressions



Note: Controls for elections years included, but not shown.

The first panel of Figure 4.G shows for all election years, except for 2008, negative coefficient estimates for the impact of ballot order on mayoral candidates' vote share, indicating that candidates lower on the ballot tend to have lower vote shares. However, only for the 1996 and 2002 elections is this estimate statistically significantly different from 0.[108] This lack of statistical significance can be attributed to the very wide confidence intervals, which are likely a result of the relatively small number of candidates running in each election year.[109] But even when all years are combined, there is no evidence supporting the existence of a ballot order effect, once candidates' gender, ethnic/racial background, incumbency status and party affiliation are taken into account.

The second, third and fourth panels of Figure 4.G show negative ballot order effects for all council, park commissioner and school trustee elections, except for the 1988 council election and the 2005, 2008 and 2011 school trustee elections. For council elections[110], the negative effect is statistically significant in two of the election years: 1990 and 1996; for park board elections the effect is statistically significant in three election years: 2002, 2011 and 2014; and for school board elections the effect is statistically significant only for the 1996 election. When all election years are combined, the impact of ballot order on the proportion of votes received is negative and statistically significant for council, park board and school board elections.

In sum, when we combine all election years, we find evidence of ballot order effects in all but mayoral elections, with candidates placed towards the bottom of the ballot receiving statistically significantly fewer votes than candidates placed at the top of the ballot. Yet, it remains difficult to say whether ballot order matters in every election as we only find evidence of an impact of ballot order in nine out of forty-seven races: two mayoral, three council (including the 2017 by-election), three park and one school board elections. For other races we lack conclusive evidence. But statistical significance – how confident we are that a ballot order effect exists – is different from whether ballot order substantially impacts candidates' chance of being elected. What can we say about the *size* of the ballot order effect?

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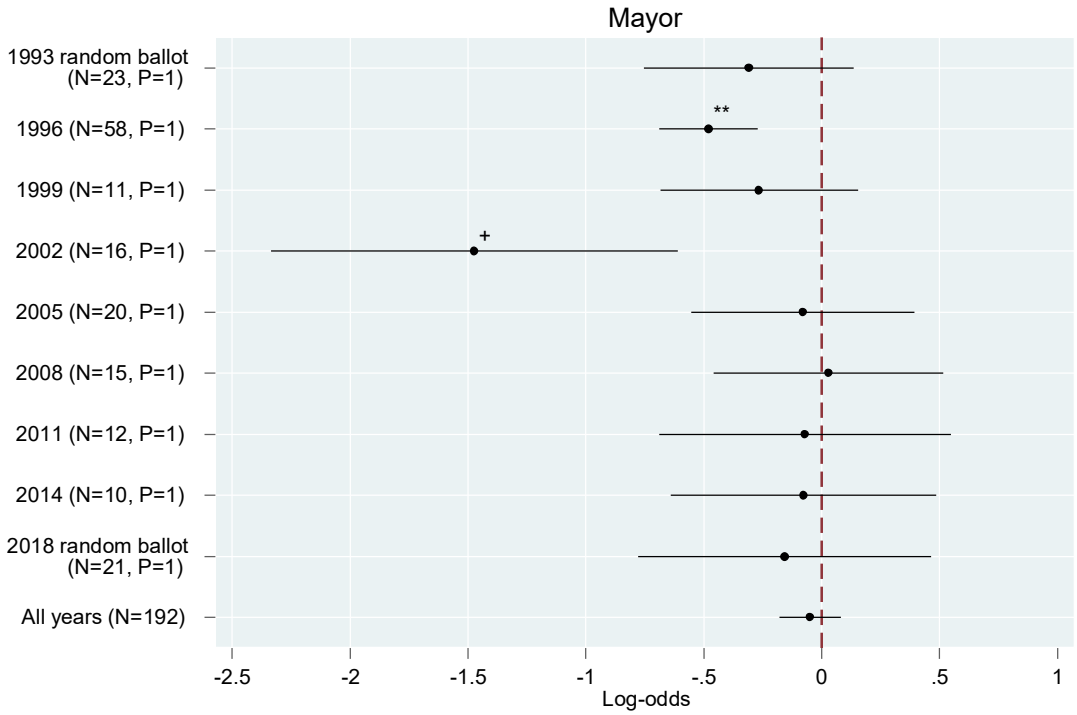
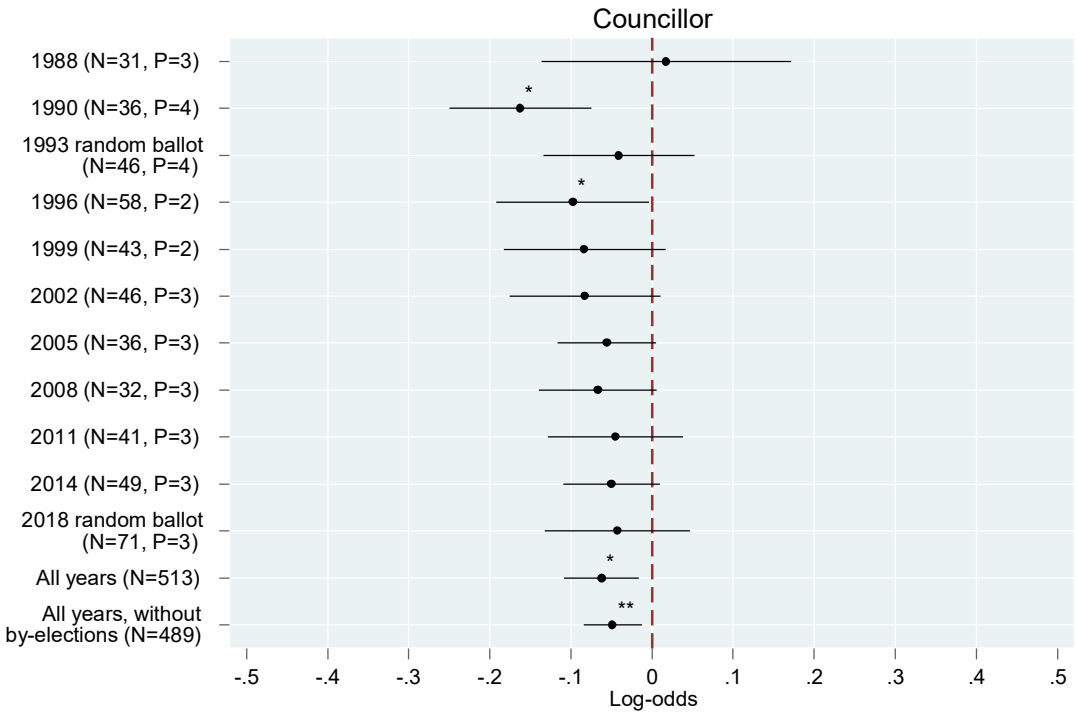
[108] The 1988 and 1990 mayoral elections are excluded from the figure as the number of candidates running in each was very small (2 and 4), resulting in either an un-estimable or extremely large estimate (see Appendix Figure 0.B).

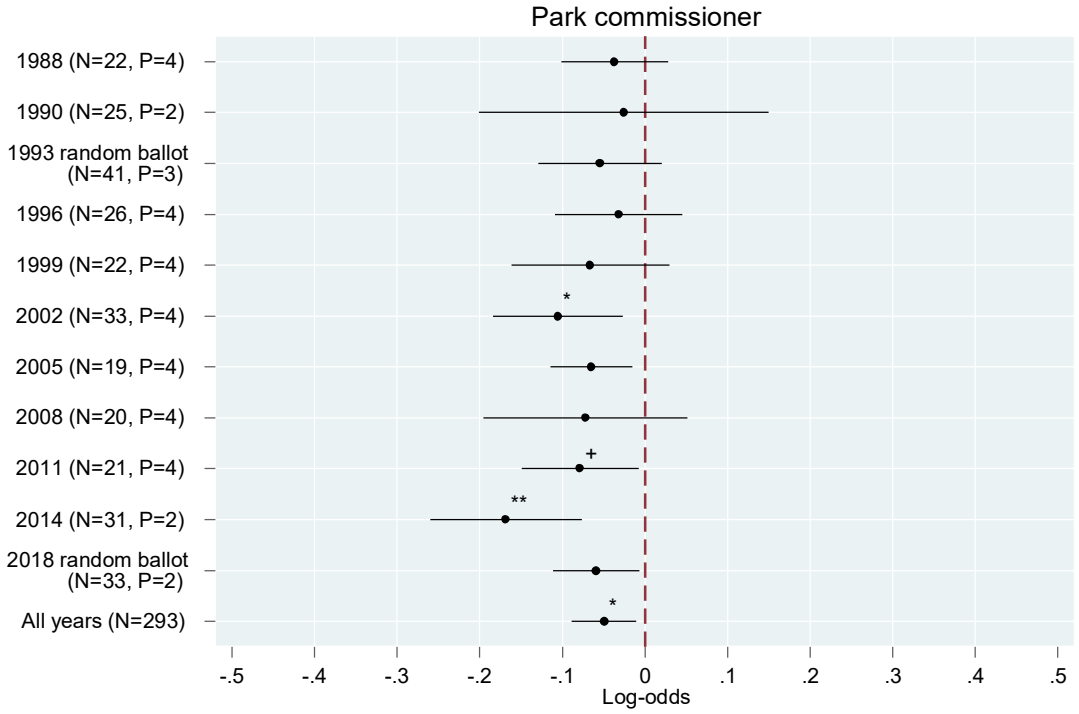
[109] In addition to the confidence intervals, we also provide p-values in Figure 4.G. These are estimated based on 5000 random permutations per race. These p-values indicate the probability of finding a coefficient estimate of the size observed or larger. With a small number of observations, significance tests that rely on permutation are recommended, as their validity does not rely on sample size (Simon Heß, "Randomization inference with Stata: A guide and software," *The Stata Journal* 17, no. 3 (2017): 630-651). In each permutation, candidates in a particular race are randomly allocated to a ballot position and then the coefficient estimate for the effect of ballot order on vote proportion is re-estimated. The p-value indicates the proportion of these simulated coefficient estimates that fall above (the absolute value of) our observed estimate. We use the usual cut-offs for p-values of .001, .01, .05 and .10 to indicate levels of statistical significance in the figures. In the first panel of Figure 4.G, only the coefficient estimate for the 1996 mayoral election has a p-value that indicates statistical significance, as less than .1% of all 5000 simulated coefficients exceeds the observed coefficient.

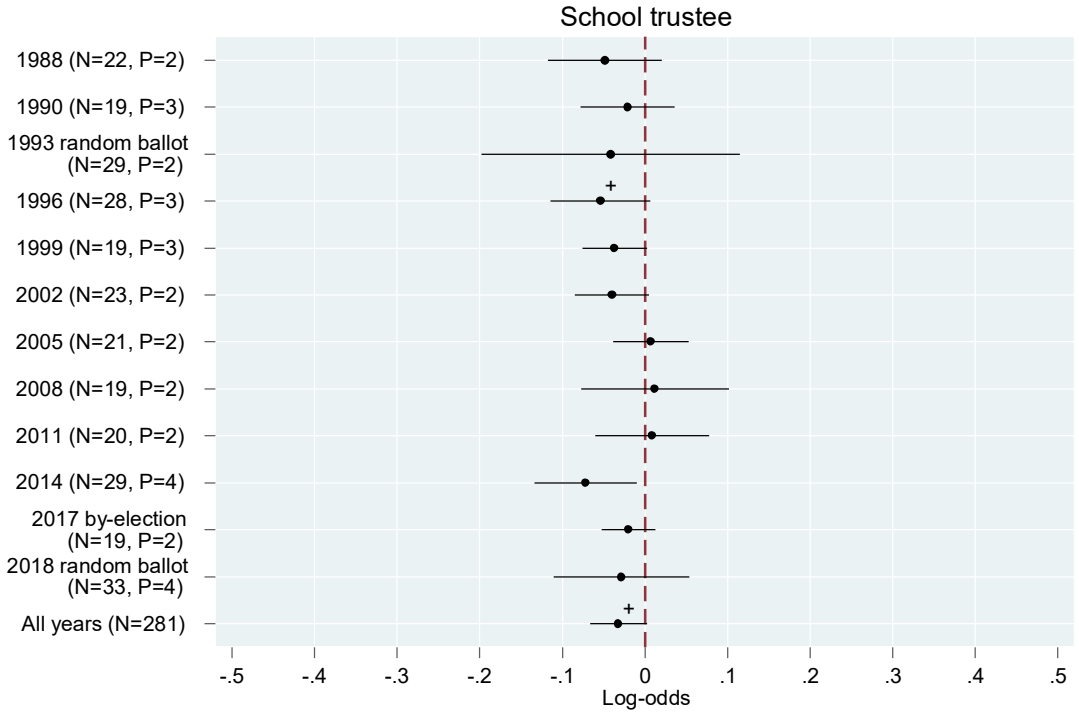
[110] For city council elections, the figure does not display the coefficient estimates for the 1992 and 2017 by-election as the estimates are much larger in size and noisier (larger confidence intervals) than the estimates for the other election years. This because far fewer candidates ran in the by-elections and a maximum of only one vote was cast per voter rather than a maximum of ten votes, resulting in larger vote shares per candidate. The results are shown in the Appendix Figure 0.B. In the second panel of Figure 4.G the coefficient estimate for all election years combined is shown both with and without the by-elections. Only the latter estimate is statistically significant.

Figure 4.G. The effect of candidates' ballot order (logged) on the proportion of votes received in four types of elections. For each election year separately and all years combined. Coefficient estimates obtained from beta regressions









Note: N: number of candidates running. 1988 and 1990 mayoral races, and 1992 and 2017 by-election council races not shown. P: position of race on the ballot. Controls for candidates' gender, ethnic/racial background, incumbency and political party affiliation and elections years included, but not shown.
*+ p < .10, * p < .05, ** p < .01, *** p < .001.*

4.3 How large is the ballot order effect in Vancouver municipal elections?

Our models for each of the different types of election provide us with estimates of candidates' proportion of the votes. These estimates can be considered our "best guess" given information on our predictor variables (candidates' gender, ethnic/racial background, incumbency and political party affiliation and year of the election) and a set of assumptions about, for instance, how to best characterize the relationship between these predictor variables and vote share. We use these estimates (rather than the actual vote shares) to make general statements about ballot order effects in Vancouver municipal elections.

Figure 4.H shows a plot for each type of election with the estimated proportion of votes received by candidates' placement on the ballot together with the 95%-confidence intervals. These estimations are based on the models presented in Figure 4.E that combine all election years. Some key ballot positions together with their estimated percentages of votes (the proportion of votes multiplied by 100) are also shown in Table 4.C.

Candidates placed first on the ballot in mayoral elections are estimated to receive 6.00% of the vote, whereas candidates placed 10th are estimated to receive 5.60% – a difference of 0.40 percentage-points. Similarly, the difference between a first-ranked candidate for city council and a candidate ranked 10th is estimated to be 0.26 percentage-points (2.57% versus 2.31%). For candidates for park board the same difference is estimated to be 0.43 percentage-points (4.19% versus 3.76%) and for candidates for school board 0.31 percentage-points (4.57% versus 4.26%). In terms of percentage-points these differences are small, but then again, so are the overall percentage of votes won by candidates, particularly in the city council, park and school board elections. So, does it matter for candidates' chances of winning where they are placed on the ballot? We can look at the real share of the votes candidates received and their ballot positions to very tentatively answer this question. We focus on the types of elections for which we are confident that a ballot order effect exists; that is, for which we found a statistically significant ballot order effect: city council, park and school board elections.

In the 2018 municipal elections, ballot order does not seem to have determined the chance of winning when we compare the winning candidate who received the least votes of all winning candidates to the losing candidate who received the most votes. For all races, the actual difference between the vote share of the winning candidate who received the least votes and the losing candidate with the most votes was larger than the estimated difference in vote share based on these candidates' ballot rank.

For instance, in the 2018 council race, the smallest vote share that a winning candidate received was 3.12%. This candidate was listed in 40th place on the ballot. The largest vote share that a losing candidate received was 3.0% – 0.12 percentage-points lower. This candidate happened to be listed in listed in 41st place on the ballot. Our estimates in Table 4.C indicate a difference in expected vote shares between candidates ranked in 40th versus 50th place on the ballot of only 0.02 percentage-points, which is much less than the actual margin of victory of 0.12 percentage-points. So, for these two candidates, this suggests that ballot order was not decisive in determining who won.

In the 2018 race for the park board, the winning candidate who received the smallest vote share was listed 28th and received 5.10% of the votes. The losing candidate with the largest vote share received 5.07% and was listed 21st on the ballot. In this case, a candidate listed lower on the ballot received a higher vote share, so for these two candidates too, ballot order clearly did not determine who won.

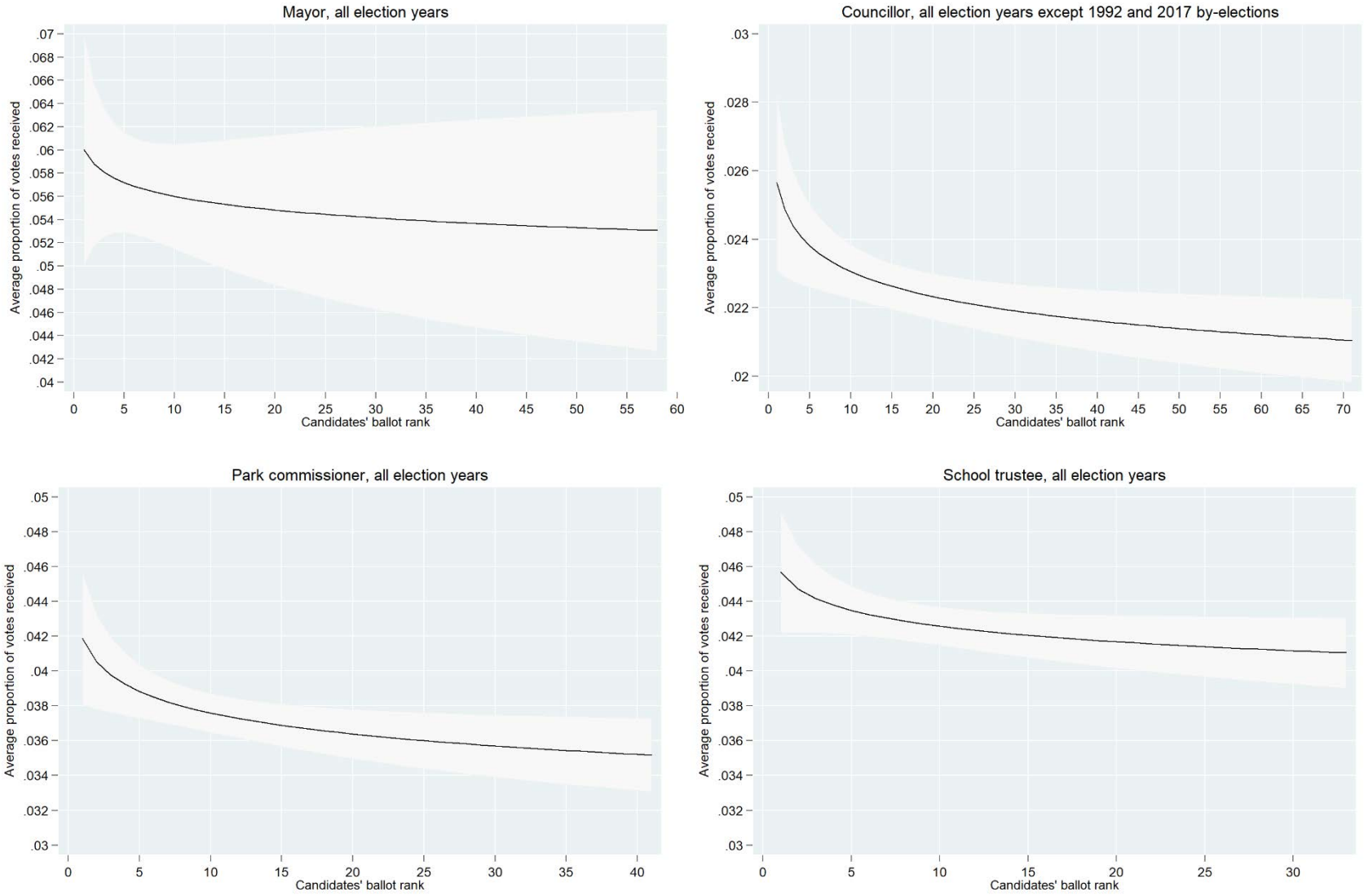
For the 2018 school board race, the vote share of the winning candidate who received the smallest share of the votes was 4.34% and this person was listed 26th on the ballot. The losing candidates with the most votes received 4.28% of all votes and was placed 30th on the ballot. The difference between these vote shares is 0.06 percentage-points. The estimated difference in vote share between a candidate in 20th and 30th position, according to Table 4.C, is 0.05 percentage-points – smaller than the actual difference, leading us to conclude that for these two candidates too, their respective ballot order was not decisive in determining who won.

The conclusion does not differ when we look at the 2014 municipal election. If we compare the vote share and ballot rank of the winning candidate who received the least votes to the losing candidate who received the most votes in each race, we find that ballot order was not decisive in determining who won. In every race except the race for city council, the winning candidate was listed *lower* on the ballot than the losing candidate. For the city council election, the actual difference in vote share between the two candidates was larger than the difference in their estimated vote share based on their ballot position.

This does not mean that ballot rank does *not* matter. It is important to bear in mind that these are just some examples. Whether ballot order affects the election outcome in practice will depend on where exactly particular candidates rank. For instance, for city council elections between 1988 and 2018 (excluding by-elections) the average vote share margin by which a winning candidate who received the least votes won over a losing candidate who received the most votes was 0.23 percentage-points. Looking at Table 4.C this is similar to the difference between being ranked 1st as a candidate versus being ranked 7th in city council elections. This means that presumably, a candidate would much rather be ranked 1st on a ballot than 7th. For park board elections the average winning margin is 0.24 percentage-points and for school board elections the winning margin is 0.11 percentage-points. These differences are near equivalent to being ranked 1st instead of being ranked 3rd in park board elections and being ranked 1st versus being ranked 2nd in school board elections, both elections in which ballot order matters even more.

We can also get a sense of how much a candidate's placement on the ballot matters by contrasting it with the impact of other candidate characteristics on vote share. For instance, the estimated percentage of the votes for council candidates affiliated with Vision Vancouver is 0.10 percentage-points greater than for council candidates affiliated with the NPA (3.93% versus 3.83%). This is the same difference as being 3rd rather than 7th on the ballot. Likewise, the estimated percentage of the votes for incumbent park board candidates is 0.41 percentage-points greater than for non-incumbent park board candidates (4.07% versus 3.66%). This is approximately the same difference as being 4th rather than 40th on the ballot. Finally, the estimated percentage of the votes for school board candidates who are perceived to be women is 0.27 percentage-points greater than for school board candidates who are perceived to be men (4.46% versus 4.19%). This is the same difference as being 1st rather than 7th on the ballot.

Figure 4.H. Estimated proportion of votes received by candidates' ballot rank with 95%-confidence bands



Note: Estimates are based on the models presented in Figure 4.E. For council elections including by-elections, see Appendix Figure 0.C.

Table 4.C. Estimated percentage of votes received by candidates' ballot rank and other characteristics

	Mayor	Councillor	Park commissioner	School trustee
Ballot rank				
1st	6.00	2.57	4.19	4.57
2nd	5.88	2.48	4.05	4.47
3rd	5.81	2.44	3.98	4.42
4th	5.76	2.41	3.92	4.38
5th	5.72	2.38	3.88	4.35
6th	5.69	2.36	3.85	4.32
7th	5.66	2.34	3.82	4.30
8th	5.64	2.33	3.80	4.29
9th	5.62	2.32	3.78	4.27
10th	5.60	2.31	3.76	4.26
11th	5.58	2.30	3.74	4.25
..	..	..	..	..
20th	5.48	2.23	3.64	4.17
30th	5.42	2.19	3.57	4.12
40th	5.37	2.16	3.52	..
50th	5.33	2.14	..	..
Other candidate characteristics				
Man	5.89	2.21	3.74	4.19
Woman	5.14	2.35	3.85	4.46
White	5.88	2.21	3.76	4.23
Asian	3.69	2.53	3.70	4.42
Not an incumbent	5.56	2.05	3.66	4.07
Incumbent	5.85	2.68	4.07	4.64
COPE	34.70	3.71	5.24	4.92
Green Party	5.94	2.57	4.68	4.33
NPA	36.64	3.83	5.72	5.09
Vision Vancouver	42.37	3.93	6.37	5.59
Independent candidate	1.30	0.67	1.04	1.35

Note: Estimates are based on the models presented in Figure 4.E. The estimated percentages for councillor are based on the model excluding the 1993 and 2017 by-elections.

4.4 Do the 1993 and 2018 random ballots reduce the ballot order effect?

In this last section, we turn to answering the question whether the use of a random ballot reduces the ballot order effect. In 1993 and 2018 the position of candidates was randomly rather than alphabetically listed on the ballot. The motivation for the change in 2018 was a desire "to negate the perception of an unfair advantage that may result from the current alphabetical ballot order"[111]. It is indeed arguably fairer to determine through random draw rather than alphabetically who receives an advantage from being placed at the top of the ballot. But, might is also be the case that a candidate's placement on a random ballot matters less in determining their vote share than a candidate's placement on an alphabetical ballot? Random ballots were only used in two elections, which means we have little data to work with. Figure 4.G showed no statistically significant ballot order effects in 1993 or 2018 for the elections for mayor, councillor, park commissioner and school trustee; however, as we have seen, many of the other election years, in which alphabetical ballots were used, also showed no statistically significant ballot order effect.

To compare the two types of ballots more directly, we re-estimate the models for city council, park board and school board elections (in which we found statistically significant ballot order effects) separately for years in which an alphabetical ballot was used and for years in which a random ballot was used. The top two panels of Figure 4.I show the coefficient estimates and their 95%-confidence intervals from these models. The left-hand panel only includes elections years in which an alphabetically ordered ballot was used (excluding the 1993 and 2017 by-elections for council) and the right-hand panel only includes 1993 and 2018 – the years in which random ballots were used.

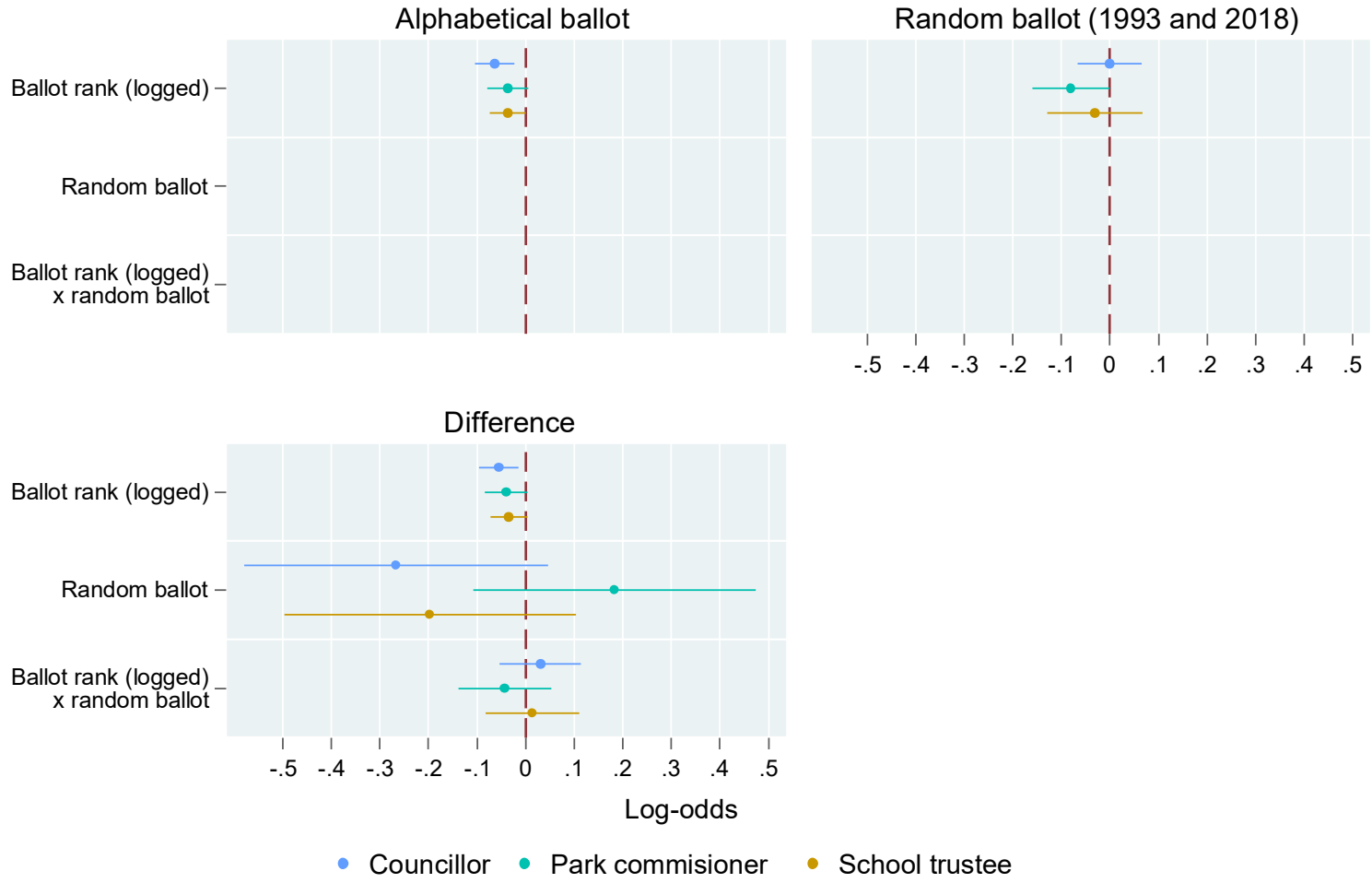
The bottom panel of the figure shows a model that combines election years with alphabetical and random ballots, but in which the type of ballot is included as a predictor variable and is interacted with ballot rank. A statistically significant coefficient estimate greater than zero for the interaction between the type of ballot and ballot rank (labelled "ballot rank (logged) x random ballot" in the figure) would indicate that candidates placed at the bottom of a random ballot are *less* disadvantaged compared to candidates placed at the bottom of an alphabetical ballot, relative to top-placed candidates. Only the coefficient estimates for the interaction for city council and school board elections are greater than zero; however, none of the coefficient estimates are statistically significantly different from zero.[112] This means, that based on the available evidence, we *cannot* conclude that a random ballot decreases (or increases) the effect of ballot order on vote share compared to an alphabetical ballot.[113]

[111] City of Vancouver, "Randomized Ballot Name Order – Proposed Amendments to the Election By-law No. 9070," 2.

[112] We also calculated p-values for the interaction effects using 5000 random permutations. These also confirm that the effects are not statistically significant.

[113] We also conducted an analysis in which we interacted whether candidates were affiliated with a political party or were independents with ballot rank. The results are shown in the Appendix, Figure 0.D, and suggest that in park board elections only, the ballot order effect for candidates is stronger (more negative) for independent candidates than for candidates affiliated with a political party; that is, independent candidates are more relatively disadvantaged by a low placement on the ballot compared to candidates affiliated with a party.

Figure 4.I. The effect of candidates' ballot order (logged) on the proportion of votes received in three types of elections. For alphabetical and random ballots separately. Coefficient estimates obtained from beta regressions



Note: 1992 and 2017 by-election council races not included. Controls for candidates' gender, ethnic/racial background, incumbency and political party affiliation and elections years included, but not shown.

4.5 Key findings Section 4

Based on our analysis of Vancouver City municipal election data covering the period from 1988 to 2018, we conclude that:

- **Candidates lower on ballots for city council, park and school board elections receive, on average, a statistically significantly lower share of the votes than those ranked higher on the ballot**
  - This impact of candidates' position on the ballot exists net of other factors that impact candidates' vote share such as candidates' gender, ethnic/racial background, whether they are incumbents and their party affiliation (if any), as well as factors related to the election (such as the number of candidates running)
  - We find no such evidence for candidates in mayoral elections
- **The impact of the ballot order is largest in park board elections, followed by school board elections and then city council elections**
  - The difference between being placed 1st versus 10th in park board elections is estimated to be 0.43 percentage-points. This is similar to the difference between running as an incumbent versus not running as an incumbent (0.41 percentage-points), but much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (5.33 percentage-points)
  - The difference between being placed 1st versus 10th in school board elections is estimated to be 0.31 percentage-points. This is similar to the difference between a candidate being a woman versus being a man (0.27 percentage-points), but smaller than the difference between running as an incumbent versus not running as an incumbent (0.57 percentage-points), and much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (4.24 percentage-points)
  - The difference between being placed 1st versus 10th in city council elections is estimated to be 0.26 percentage-points. This is larger than the difference between a candidate being a woman versus being a man (0.14 percentage-points), but somewhat smaller than the difference between a candidate with a name suggesting an Asian ethnic/racial background versus one with a name suggesting a White ethnic/racial background (0.32 percentage-points). It is even smaller than the difference between running as an incumbent versus not running as an incumbent (0.63 percentage-points), and much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (3.26 percentage-points)
  - The average difference in elections between 1988 and 2018 between the vote share of the losing candidate with the most votes and the winning candidate with the fewest votes suggest that ballot rank can potentially change election outcomes
- **There is no evidence suggesting that the random ballots used in the 1993 and 2018 elections statistically significantly reduced the impact of candidates' placement on the ballot**

5 Overview of Findings and Recommendations

In this final section, we provide an overview of the findings and briefly provide some recommendations for consideration. The **directives** for this report, and the corresponding sections of the report in which they are addressed, were to:

1.	**Identify and summarize the types of ballot order models that are being used by election authorities** a. Discuss the advantages and disadvantages of the different ballot order models b. Provide examples of a few jurisdictions that use these varying models	**Section 2**
2.	**Provide a review of the academic research on ballot order effects** a. Identify factors that amplify or reduce ballot order effects b. Discuss to what extent these factors are likely to play a role in Vancouver's municipal election	**Section 3**
3.	**Analyze past Vancouver municipal election data to assess whether candidates' position on the ballot has impacted their likelihood of receiving votes, while accounting for other factors that may impact voters' decision** a. Assess whether a potential ballot order effect was reduced by using a randomized rather than an alphabetical ballot	**Section 4**
4.	**Summarize the literature review and the ballot order effect findings for Vancouver** a. Recommend alternative options to improve fairness on the ballot other than random order ballots, if there are any	**Section 5**

5.1 Overview of key findings

5.1.1 Key findings Section 2

A *ballot order model* is the procedure for determining the order in which candidate names appear on a ballot. We reviewed the academic and non-academic literature on ballot order models and surveyed documentation from various provinces and municipalities in Canada. We conclude that:

- **There are at least seven different types of ballot order models; that is, procedures for determining the order in which candidate names appear on a ballot**
- **The most common ballot order model in Canada is alphabetical order**
    - Other models used in provincial elections are randomized order (by lot) in Yukon and by party affiliation in New Brunswick (see Figure 2.A)

- Other models that are provided for under some provincial/territorial legislation for municipal or local elections are randomized order (by lot), rotated order, and randomized and rotated order (see Figure 2.B)

- **In choosing which model to use, there are trade-offs in terms of their fairness to candidates, the potential transparency of the procedure by which the order is determined, their ease and cost of implementation, and the likely experience of voters (see Table 2.A)**

5.1.2 Key findings Section 3

A *ballot order effect* is commonly understood as the impact of candidates' position on the ballot (that is, whether a candidate is listed in first, second or third place, and so on) on the share of the vote(s) candidates receive. We reviewed the academic literature on ballot order effects and discussed the extent to which we might expect a ballot order effect in Vancouver municipal races. We conclude that:

- **The vast majority of published academic studies shows that the order in which candidates' names appear on the ballot impacts their vote shares. Only a handful of published studies find no effect of candidate name order (see Table 3.A)**
  - The fact that in estimating ballot order effects, scholars rely on data from different elections and use different statistical models with varying measures of ballot order and a changing set of control variables, makes comparisons of results across studies challenging
  - Therefore, care should be taken when using insights from studies conducted in one particular context to motivate changes to election laws in a very different context
- **When voters lack sufficient information about candidates and/or they do not have a strong preference for one candidate over another, factors such as the order in which candidate names appear on a ballot might enter the decision-making process**
  - Specifically, factors such as the number of candidates on a ballot, the number and position of races on a ballot, whether candidates are affiliated with political parties and whether they are incumbents, the electoral system, the nature of the election (competitive or not, the type of office), and differences among voters in their levels of interest, information and cognitive skills, all impact the strength of the ballot order effect (see Table 3.B)
- **In the context of the Vancouver City elections, we would expect that the relatively large number of candidates on the ballot, the municipal nature of the election (as opposed to provincial or federal), the at-large electoral system (versus a ward-system) all strengthen the ballot order effect, while the prominent role of political parties should reduce the ballot order effect (see Table 3.C)**
  - We also expect the ballot order effect to be greater in park and school board elections than in city council and especially mayoral elections
  - It is difficult to say how the position of a particular race on a ballot (for instance, school board elections at the bottom of the ballot) impacts the ballot order effect; this likely depends on whether turnout is similar for all races on the ballot or not

5.1.3 Key findings Section 4

We examined the election outcomes of Vancouver municipal elections between 1988 and 2018 (thirteen elections, including two by-elections), estimating how much candidates' vote share changes depending on their position on the ballot. We found that:

- **Candidates lower on ballots for city council, park and school board elections receive, on average, a statistically significantly lower share of the votes than those ranked higher on the ballot**
  - This impact of candidates' position on the ballot exists net of other factors that impact candidates' vote share such as candidates' gender, ethnic/racial background, whether they are incumbents and their party affiliation (if any), as well as factors related to the election (such as the number of candidates running)
  - We find no such evidence for candidates in mayoral elections
- **The impact of the ballot order is largest in park board elections, followed by school board elections and then city council elections**
  - The difference between being placed 1st versus 10th in park board elections is estimated to be 0.43 percentage-points. This is similar to the difference between running as an incumbent versus not running as an incumbent (0.41 percentage-points), but much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (5.33 percentage-points)
  - The difference between being placed 1st versus 10th in school board elections is estimated to be 0.31 percentage-points. This is similar to the difference between a candidate being a woman versus being a man (0.27 percentage-points), but smaller than the difference between running as an incumbent versus not running as an incumbent (0.57 percentage-points), and much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (4.24 percentage-points)
  - The difference between being placed 1st versus 10th in city council elections is estimated to be 0.26 percentage-points. This is larger than the difference between a candidate being a woman versus being a man (0.14 percentage-points), but somewhat smaller than the difference between a candidate with a name suggesting an Asian ethnic/racial background versus one with a name suggesting a White ethnic/racial background (0.32 percentage-points). It is even smaller than the difference between running as an incumbent versus not running as an incumbent (0.63 percentage-points), and much smaller than the difference between a candidate affiliated with a major party like Vision Vancouver versus an independent candidate (3.26 percentage-points)
  - The average difference in elections between 1988 and 2018 between the vote share of the losing candidate with the most votes and the winning candidate with the fewest votes suggest that ballot rank can potentially change election outcomes
- **There is no evidence suggesting that the random ballots used in the 1993 and 2018 elections statistically significantly reduced the impact of candidates' placement on the ballot**

5.2 Recommendations

The option that reduces ballot order effects the most would be to randomize and rotate the ballots – having as many versions of ballots as there are names. That way, each candidate has a chance of being listed in each ballot position. However, it is costly to print many versions of a single ballot and to ensure they are distributed equally to different polling stations, and voters will likely find it very difficult to locate their preferred candidate on the ballot among the many listed. Further, as of now, the BC government provides only two options for municipal ballot order models: alphabetical order or random (and not rotated) order.[114] Vancouver's municipal elections since 1988 contain examples of both of these ballot order models.

Although we did not find any significant difference in ballot order effect between alphabetical and random ballots in Vancouver municipal elections, randomly ordered ballots can be considered fairer in the sense that they ensure the potential ballot order effect is distributed to randomly selected candidates – not those whose last names begin with a letter earlier in the alphabet. And although we did not examine the likelihood of belonging to a particular ethnic and/or racial group and having a last name beginning with a letter lower down in the alphabet, it is plausible that alphabetical ordering is particularly disadvantageous to candidates with surnames indicating a non-Western heritage.

Vancouverites agree that a random ballot is fairer and have expressed a preference for a randomly ordered ballot over an alphabetically ordered one, even though it complicated the voting process:[115]

> "Seven-in-ten (71%) voters agree that listing candidates on the ballot in random order (instead of alphabetically) increased fairness for people running in the election. However, many voters also found that the random ballots came with difficulties:
>
> - Two-thirds (67%) agreed that the random order made it take longer to find who to vote for; and
> - Just under two-in-five (37%) found the random order ballots confusing.
>
> When asked directly which method they prefer for future elections, half of voters (49%) pick random order ballots, compared to 37% who prefer alphabetical order by last name."

Thus, **we recommend maintaining the random ballot for future municipal elections, but to explore possible changes to the ballot design that make it easier for voters to select their preferred candidates.** One such change might be to sequentially number candidates on the ballot, and to make these numbers available to candidates and voters before the election so that candidates can campaign using their number (e.g., "Vote for number 4 on your ballot"). We expect that this would make it much easier for voters to find their preferred candidates on the ballot. A potential disadvantage of using numbers indicating candidates' position might be that campaigning with a low number (e.g., 1, 2, 3)

[114] Queen's Printer for British Columbia, *Vancouver Charter*, *Statutes of British Columbia* 1953, c. 55, s. 79, http://www.bclaws.ca/civix/document/id/complete/statreg/vanch_00.
[115] City of Vancouver, "2018 Municipal Election Review," 33.

might attract more voters than campaigning with a high number (e.g., 16, 17, 18), all else equal. However, as we are not aware of any academic research that evaluates the advantages and disadvantages of a numbered list of candidates, we suggest gaining advice from practitioners and experts in ballot design (for instance through the ACE Project: http://aceproject.org/electoral-advice/ask/default).

Another way to make it easier for voters to decide which candidates to vote for, is to **provide plenty of information about the election process and about candidates and their platforms, as ballot order effects are less strong when voters feel they have a stake in the election, are interested in the election and are informed about candidates**. This is particularly important for low voting communities and demographics, as discussed in the 2018 Municipal Election Review.[116] As part of this, the sample ballot could be made widely available before the election (e.g., through the VanConnect app, voters' guide, website, etc.) so that voters are able to familiarize themselves with the ballot and the placement of candidates on the ballot before going to vote. Furthermore, given the preferences of many Vancouverites for a random ballot, we advise to clearly communicate the rationale for the chosen ballot order in the next municipal election, so that voters can appreciate the trade-off between fairness to candidates and their own voting experience.

There is conflicting academic evidence on whether ballot order effects increase or decrease when a race is listed lower on a multi-race ballot. On the one hand, ballot order effects might be smaller for races at the bottom of the ballot if only the more informed and engaged voters are voting in these lower-placed races.[117] On the other hand, as voters are required to make more decisions (for each race on a ballot), they might get tired and start to rely on short-cuts such as choosing first-listed candidates over others. We would suggest **listing races with the largest ballot order effects, that is for the lower-visibility offices of park commissioner and school trustee, first on the ballot**. We cannot say for sure whether this will reduce the ballot order effect in these races; however, even if it does not, it might increase turnout for these races, which should still be considered a positive. We expect that the ballot order effect in races for the higher-visibility offices of city council, and especially mayor, are less likely to be impacted by the placement of the race on the ballot. We also suggest **to keep ensuring that all races are on the same side of the ballot, whenever possible**. Currently, the list of names of all the candidates for the same race must be on only one side of the ballot, but multiple races or questions may be listed on the same ballot if there is space and both sides of the ballot may be used.[118] Since 1990 it has been commonplace, though, to list all races on the same side of the ballot. (In 1988 the list of Park Commissioner candidates was on the second side of the ballot). We recognize that there might be practical considerations when listing lower-visibility races first on the ballot, as the ability to list all races on one page and in a particular order depends in part on what fits on the ballot.

While the focus in this report is the effect of a candidate's placement on the ballot on their share of the votes, we included other potentially relevant factors such as party affiliation, incumbency, gender, and ethnic/racial background that also impact vote share. For gender and ethnic/racial background we lacked accurate information. Instead, gender was assigned using names and photos (where available) by

[116] idem, 25-32.
[117] Miller and Krosnick, "The Impact of Candidate Name Order".
[118] City of Vancouver, Bylaw No. 9070, *Election By-law* (May 15, 2018), s. 6.13-6.15.

Vancouver City employees, and we estimated the probability of belonging to a particular ethnic and/or racial group using an automated method based on US Census data. Both methods have their flaws and do not capture candidates' self-identification. Having accurate data on the sociodemographic diversity of candidates is not only important for analyses of election data such as those reported here, but is crucial to reporting and addressing issues of equity, diversity, and inclusion. Therefore, we propose **considering the systematic collection of information on all candidates' gender and ethnic/racial background.**

Finally, we suggest **a number of potential changes to the voting process that would likely decrease ballot order effects**. These changes are substantial, and although they would likely be beneficial in reducing ballot order effects, they might not be desirable or even feasible for a variety of reasons. For instance, some would require amendments to electoral laws. They would therefore require careful consideration of the advantages and disadvantages and of their feasibility, which is beyond the scope of this report.

For instance, allowing for municipalities in BC to opt not only for an alphabetical or random ballot model, but also for a rotated, or randomized and rotated model. In particular the last ballot order model is considered the fairest to candidates. However, because it is expensive and difficult to implement and can be challenging for voters, especially when ballots are long, we would also recommend investigating voting equipment options that can (securely) simplify the use of these types of ballots.

Second, we suggest exploring the option to expand the use of voting by mail. This will ensure voters receive mail-in ballots early, allowing them to familiarize themselves with the ballot and the placement of candidates on the ballot, and should therefore decrease ballot order effects. We would also expect it to increase turnout.

Third, to facilitate voter information and engagement efforts, we recommend considering a longer candidate nomination period and longer time frame between the close of the nomination period and Election Day. Currently, the nomination period lasts for 10 days, starting on the 46th day and ending on the 36th day before Election Day.[119] In comparison, the nomination period for the City of Toronto's most recent municipal election was from May 1 to July 27, 2018, and Election Day was not until October 22, 2018.[120] Extending these periods will likely provide more opportunities for voters to become engaged and to learn about candidates and issues, which is especially challenging in elections with many candidates.[121]

Fourth, in an at-large system like Vancouver's, it is difficult to have many different versions of the same ballot, and even the randomized ballot is challenging to voters given its length. A ward system could help distribute any ballot order effect more equitably, as it would make different ballots for different candidates in each ward more feasible, or, at minimum result in shorter randomized ballots.

[119] Queen's Printer for British Columbia, *Vancouver Charter*, *Statutes of British Columbia* 1953, c. 55, s. 41, http://www.bclaws.ca/civix/document/id/complete/statreg/vanch_00.
[120] City of Vancouver, "2018 Municipal Election Review," 35.
[121] idem

In sum, we make the following recommendations:

A. Maintain the random ballot for future municipal elections, but explore possible changes to the ballot design that make it easier for voters to select their preferred candidates
1. One such change might be to sequentially number candidates on the ballot, and to make these numbers available to candidates and voters before the election. This would likely make it easier for voters to find their preferred candidates on the ballot, but could conceivably somewhat advantage candidates with lower numbers (e.g., 1, 2, 3)
B. Continue efforts to increase voter engagement and access to information about the election process and about candidates and their platforms, as ballot order effects are less strong when voters feel they have a stake in the election, are interested in the election and are informed about candidates
1. These efforts are particularly important for low voting communities and demographics
2. Provide ample opportunities for voters to view the sample ballot before the election so that voters can familiarize themselves with the ballot and the placement of candidates on the ballot
3. Clearly communicate the rationale for the chosen ballot order in the next municipal election, so voters can appreciate the trade-off between fairness to candidates and their own voting experience
C. Keep ensuring that all races are printed on the same side of the ballot (as has been done since 1990) and consider changing the order of races on the ballot by listing those for the lower-visibility offices of park commissioner and school trustee first
D. Consider the systematic collection of information on all candidates' gender and ethnic/racial background. This is not only important for analyses of election data such as those reported here, but is crucial to reporting and addressing issues of equity, diversity, and inclusion
E. Explore the feasibility and desirability of changes to the voting process that would likely decrease ballot order effects, such as:
1. Allowing for ballots for municipal elections to be rotated, or randomized and rotated
2. Expanding the use of voting by mail, where voters receive mail-in ballots early, allowing them to familiarize themselves with the ballot and the placement of candidates on the ballot
3. Lengthening the candidate nomination period and the time frame between the close of the nomination period and Election Day to further facilitate voter information and engagement efforts
4. Changing the Vancouver electoral system from an at-large system to a ward-system

About the authors

Eline A. de Rooij, Ph.D.

Dr. de Rooij is an Associate Professor in Political Science at Simon Fraser University. She holds an M.A. from the University of Nijmegen (the Netherlands) and a Ph.D. from the University of Oxford (Nuffield College).

Central to most of Dr. de Rooij's work is how we can encourage people who don't typically vote or participate in politics to do so, in order to increase their voice in politics. She studies how individuals become politically interested, knowledgeable and informed, and how political actors can mobilize individuals to be politically active. In her research, she also pays particular attention to the role of group identities and interactions with others in fostering political engagement.

Much of Dr. de Rooij's work relies on the use of advanced statistical analyses of survey and experimental data. In addition to her teaching at SFU, she has served as an instructor for the Inter-university Consortium for Political and Social Research (ICPSR) Summer Program in Quantitative Methods of Social Research.

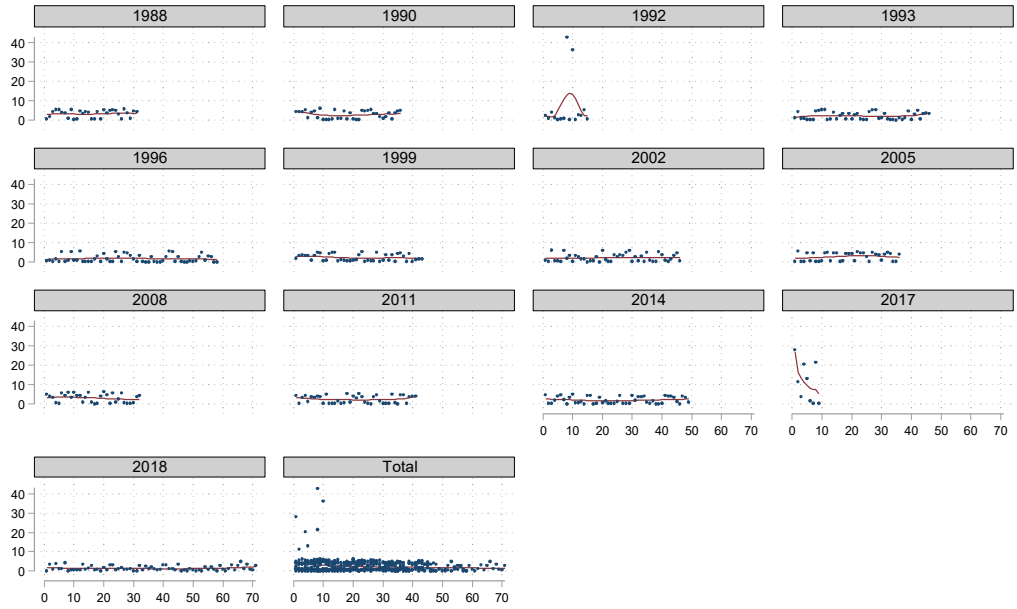
Her works has been published in leading journals in political science and sociology, such as the *American Journal of Political Science*, *The Journal of Politics*, *Political Behavior, Electoral Studies*, the *European Sociological Review* and *Social Science Research*.

Corinne Henderson, B.A. (Hons.)

Corinne Henderson is a Master's student in Political Science at Simon Fraser University. She is an alumna of the SFU French Cohort Program in Public and International Affairs, obtaining her Bachelor of Arts in Political Science (Honours) in 2019. Corinne's research focuses on the media coverage of women, particularly women of colour, in Canadian politics.

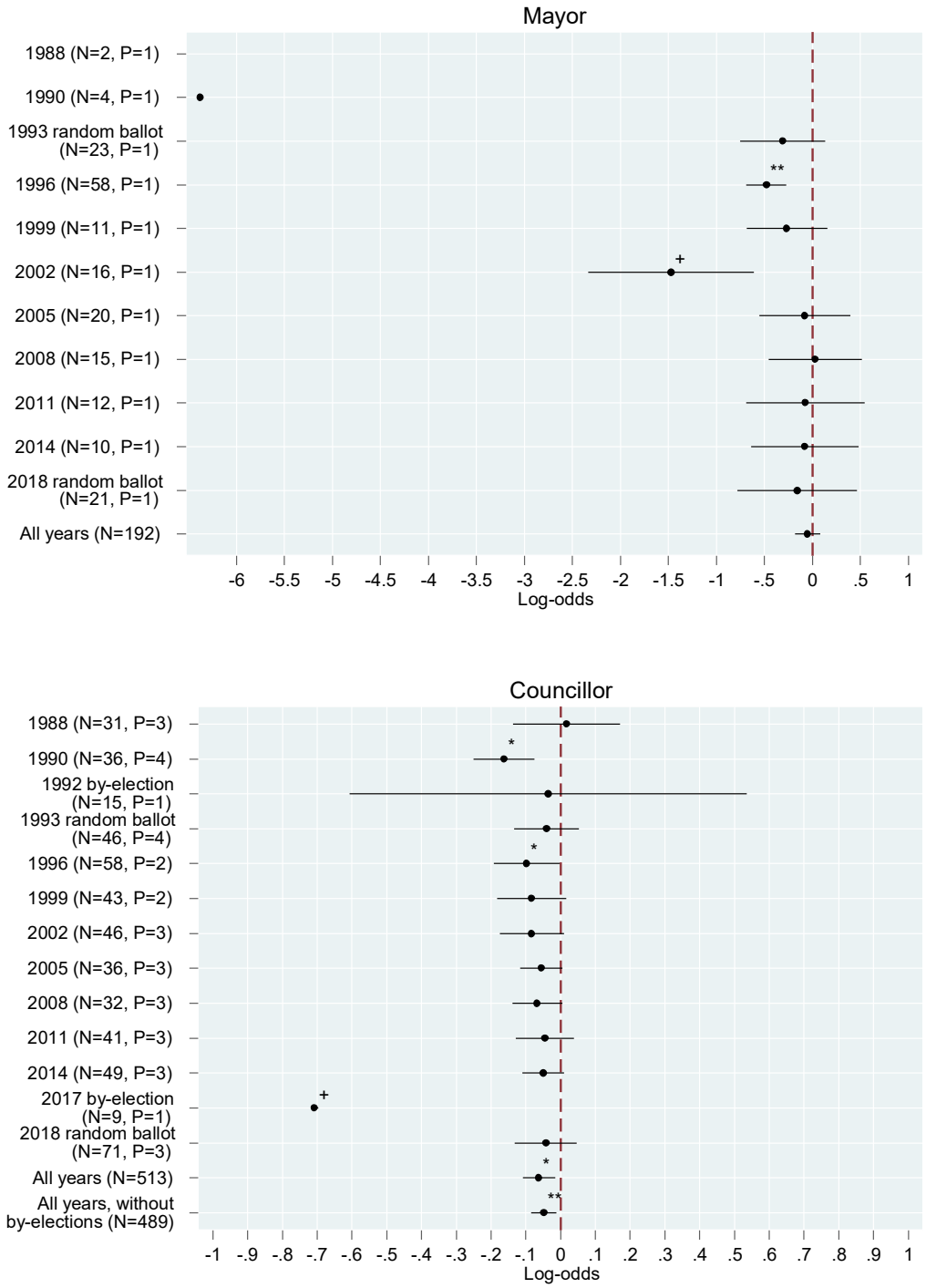
Appendix 1: Additional figures

Figure 0.A. Percentage of votes received by candidates' ballot rank in elections for councillor, with 1992 and 2017 by-elections



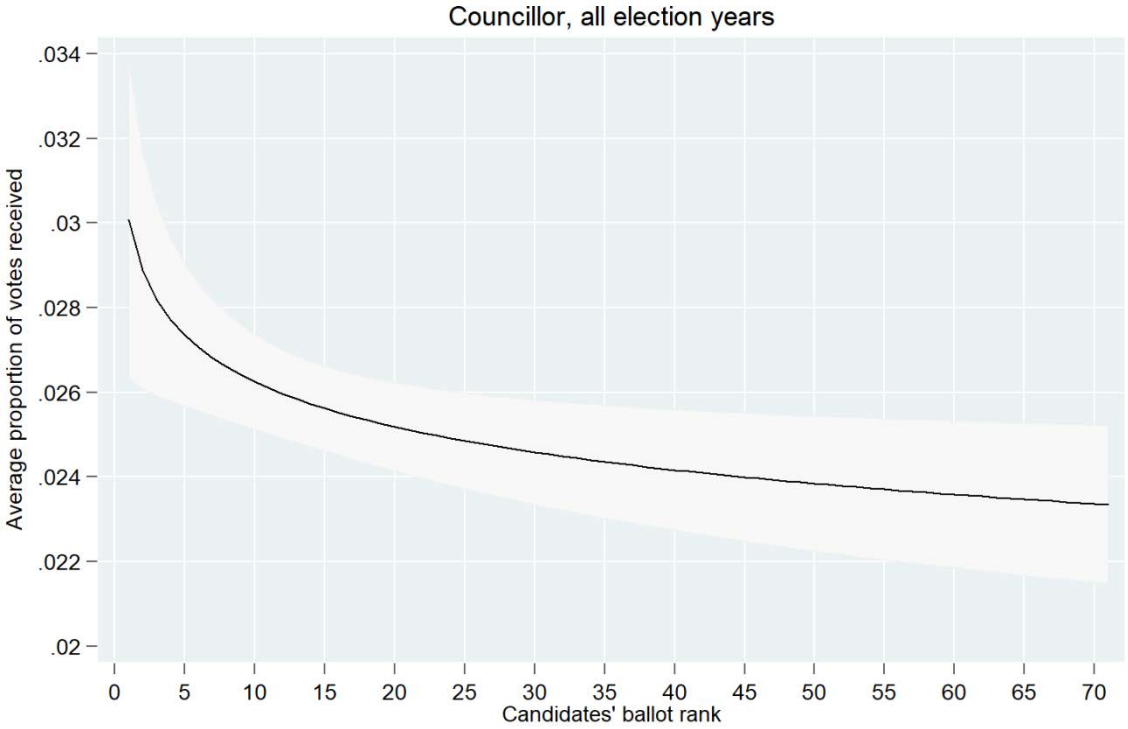
Note: The "Total" plot includes all 513 candidates running for councillor between 1988 and 2018 and their vote shares. A greater number of candidates running in a race tends to result in a lower average vote share. This might partly explain the downward slope in the "Total" plot.

Figure 0.B. The effect of candidates' ballot order (logged) on the proportion of votes received in two types of elections. For each election year separately and all years combined. Coefficient estimates obtained from beta regressions



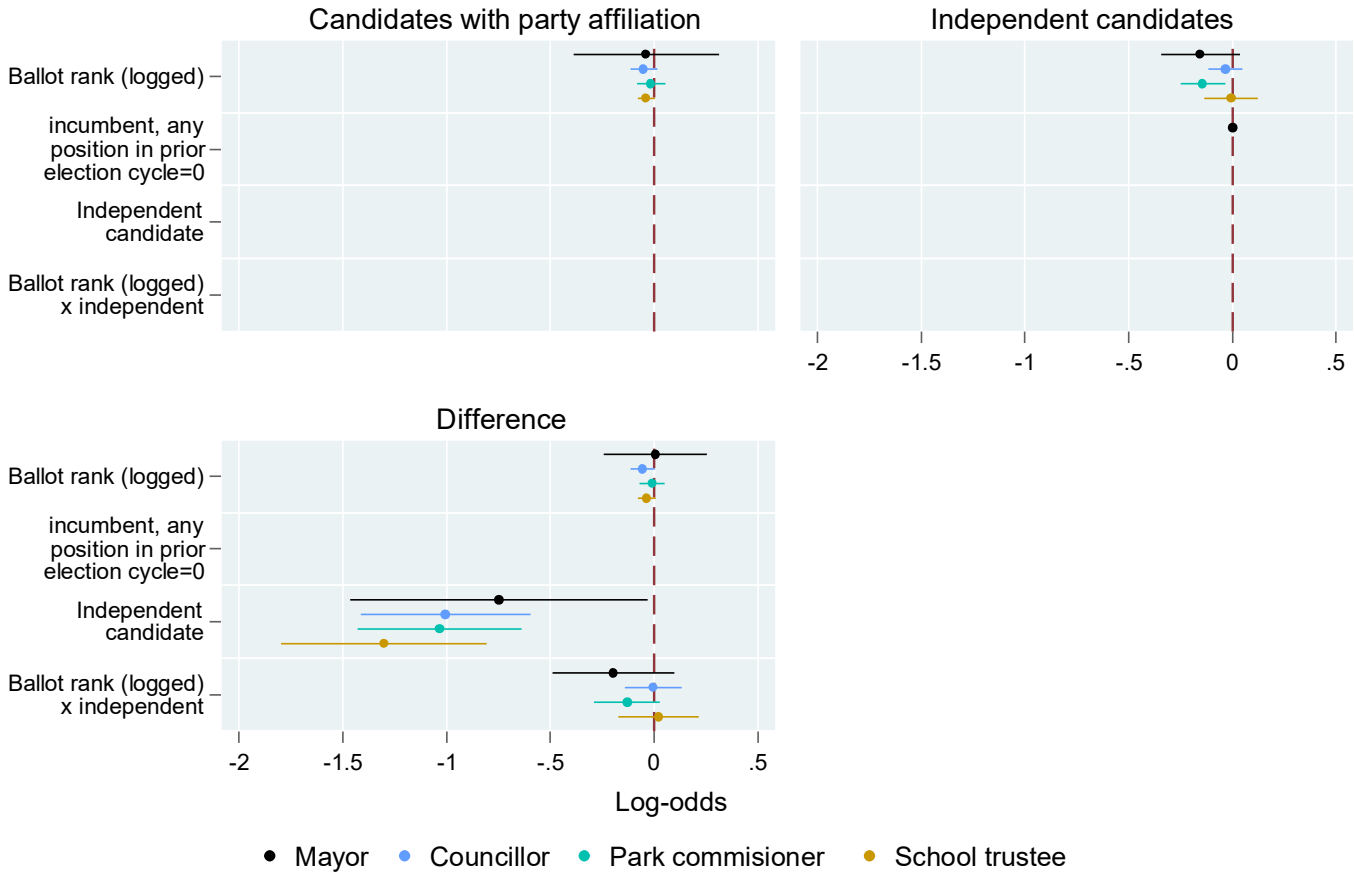
*Note: N: number of candidates running. P: position of race on the ballot. Controls for candidates' gender, ethnic/racial background, incumbency and political party affiliation and elections years included, but not shown. + p < .1, * p < .05, ** p < .01, *** p < .001.*

Figure 0.C. Estimated proportion of votes received by candidates' ballot rank in council elections with 95%-confidence bands



Note: Estimates are based on the models presented in Figure 4.E.

Figure 0.D. The effect of candidates' ballot rank (logged) on the proportion of votes received in four types of elections. For party affiliated and independent candidates separately. Coefficient estimates obtained from beta regressions



Note: 1992 and 2017 by-election council races not included. Controls for candidates' gender, ethnic/racial background, incumbency and elections years included, but not shown. We calculated p-values for the interaction effects using 5000 random permutations; only the interaction effect for park commissioner is significant with a p-value<.10, indicating that the ballot order effect for candidates for park commissioner is more negative for independent candidates than for candidates affiliated with a political party.

Appendix 2: Further information on Vancouver elections

General

City of Vancouver election website
https://vancouver.ca/your-government/civic-elections.aspx

Provides links to information about previous municipal elections and by-elections.

Municipal election results data sets
https://opendata.vancouver.ca/explore/dataset/municipal-election-results/information/

This is the webpage for the data sets of official municipal election results since 1996. The data sets for each year are available in the "Table" tab, and the whole dataset for all years is available on the "Export" tab.

Anonymous ballot marking data set
https://opendata.vancouver.ca/explore/dataset/anonymous-ballot-marking/information/

This is the webpage for the anonymous ballot markings of each ballot cast in the 2017 by-election and the 2018 election. The data markings for each year are available in the "Table" tab, and the whole dataset for all years is available on the "Export" tab.

Vancouver Charter
http://www.bclaws.ca/civix/document/id/complete/statreg/vanch_00

The *Vancouver Charter* is the statute that incorporates Vancouver. It includes regulations about the governance of Vancouver, such as election proceedings.

Vancouver Election By-law No. 9070
https://bylaws.vancouver.ca/9070c.PDF

This is the by-law governing municipal election procedures in Vancouver. The linked version of the by-law does not include the amendment passed on June 19, 2018 that changed the order of candidate names to randomized (see below, By-law No. 12145).

Randomized/alphabetical ballot

July 9, 1996: Administrative Report to Council on amending the Election By-law
https://council.vancouver.ca/previous_years/960723/a21.htm

In this report, the City Manager recommends amending the order of candidate names back to alphabetical after the 1993 election had used randomized ballots.

July 23, 1996: Regular Council Meeting
https://council.vancouver.ca/previous_years/960723/ag960723.htm

This is the Council Meeting at which the July 1996 report (above) was discussed.

April 26, 2018: Report from staff on randomized ballot
https://council.vancouver.ca/20180606/documents/cfsc4.pdf

This report recommends that Council adopt a by-law to randomize the order of candidate names on the 2018 municipal election ballots. This by-law was eventually adopted on June 19, 2018.

June 19, 2018: By-law No. 12145, Amendment to Election By-law
https://bylaws.vancouver.ca/consolidated/12145.PDF

This is an amendment to Vancouver's Election By-law (No. 9070), changing the order of names on the ballot from the default alphabetical order, to the random lot model.

March 26, 2019: 2018 Municipal Election Review
https://council.vancouver.ca/20190515/documents/pspc3.pdf

The report details the results of a post-election survey of voters, outlines how staff took measures to improve accessibility and timeliness, and discusses the next steps, including "a review of advance voting locations, outreach methods and opportunities to better engage marginalized members of the community" (46). It also includes some discussions of voter reactions to the randomized ballot, noting that "[a]lthough some voters experienced challenges with the random listed ballots, the overall consensus is a preference for this approach—primarily because of 'fairness.'" (32).

July 24, 2019: Council meeting where the random ballot issue was revisited
https://csg001-harmony.sliq.net/00317/Harmony/en/PowerBrowser/PowerBrowserV2/20190528/-1/13099?mediaStartTime=20190724093723&mediaEndTime=20190724183320&viewMode=3

The video contains the discussion of the motion to revisit the issue of a randomized ballot. This starts around 3:13pm.

July 24, 2019: Council Meeting Minutes
https://council.vancouver.ca/20190724/documents/cfsc20190724min.pdf

The motion about revisiting the randomized ballot issue begins at page 4 of these Meeting Minutes. The resolution approved by Council was:

> A. THAT Council direct staff to engage with appropriate Resident Advisory Committees for their feedback on the use of an alphabetical vs random order ballot as permitted by Sections 78 and 79 of the *Vancouver Charter*, including the Racial and Ethno-Cultural Equity Advisory Committee, Urban Indigenous People's Advisory Committee, Persons with Disabilities Advisory Committee, and Seniors Advisory Committee, with the goal of identifying a ballot that achieves equity and effectiveness;
>
> FURTHER THAT such review include consideration of ease and clarity of alphabetical vs random ballot types, as well as the benefits and drawbacks of strategies such as numbering candidates on a randomized ballot, or having multiple randomized lots of ballots vs just one random version.
>
> B. THAT staff report back to Council by Q2 2020 with Committee feedback and recommendations related to whether or not to return to an alphabetically ordered ballot for the next Vancouver municipal election or retain a random form ballot, including possible recommendations for by-law enactment per the provisions of Section 79 of the *Vancouver Charter*.

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