Closest to the People? Incumbency Advantage and the Personal Vote in Non-Partisan Elections

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Abstract

Do incumbents dominate non-partisan elections because of an especially large personal vote? This paper uses three original datasets to estimate the size, persistence, and electoral consequences of the personal vote in a large non-partisan city. We first use survey data to compare voters assigned quasi-randomly by ward redistricting to their former incumbent or a new incumbent, finding that the absence of the personal vote decreases the probability of an incumbent vote by 10%. We use a second survey, one year later, to demonstrate the persistence of this effect. Finally, using an original dataset of election results, we test the significance of the personal vote for election outcomes in a simulation; we find that the personal vote is sufficiently large to affect one in four election outcomes. We conclude that the personal vote in non-partisan contests, while large and substantively important, is not sufficient to account for incumbent dominance in non-partisan elections.

1 Introduction

Few electoral arenas are more favourable to incumbents than non-partisan cities. Re-election rates among incumbent candidates in these contests regularly exceed ninety percent, and elections in which *every* incumbent candidate is successfully re-elected are so common as to merit little more than passing mention in post-election news coverage. For some, these success rates are a sign of serious trouble, an indication that non-partisan incumbents have little incentive to attend to their constituents' preferences (Bednar 2014). Others suggest that the opposite is true: incumbent success reflects the fact that non-partisan city politicians are "closest to the people", free from party discipline and distant travel and able to focus on the concrete interests and needs of their constituents (Oliver 2012).

The size of the "personal vote" – the relationship and reputation that incumbents cultivate with their constituents – thus has important implications for our empirical and normative understanding of incumbent success in non-partisan elections. If incumbents in non-partisan elections enjoy a substantial personal vote, this may indicate that local incumbent success rates are indeed a reflection of a distinctively close connection that non-partisan politicians enjoy with their constituents. By contrast, if incumbent success in non-partisan elections is driven by other factors, such as incumbency cues or challenger scare-off, the case for non-partisanship as a means to improved democratic representation is more tenuous. Providing evidence with which to adjudicate among these possibilities is especially important in an era in which non-partisan city politics is held up as a positive example of non-polarized, pragmatic, democratic policymaking (Barber 2013).

In this paper, we draw on three new data sources to identify the size, persistence, and electoral consequences of the personal vote in Calgary, Canada, one of the largest non-partisan cities in North America. We first leverage a natural experiment created by a 2017 ward boundary revision process, in combination with an individual-level election-period survey, to show that the probability of voting for an incumbent decreases by about ten percentage points in the absence of the personal vote. We then use a second survey, undertaken one year after the election, to demonstrate the persistence of the effects of the personal vote; even after a year, voters who are new to an incumbent are less likely to know about their councillor's background and less likely to be familiar with their councillor's ideology, policy issue positions, and performance in office. Finally, using a new dataset of nearly two hundred ward elections in the same city, we use a simulation to estimate the electoral consequences of the personal vote for incumbent candidates, finding that the personal vote is large enough to be decisive in just over one quarter of incumbent races.

Taken together, our results suggest that the personal vote in non-partisan city elections is very large - roughly double the average personal vote in U.S. Congressional elections. Municipal councillors in non-partisan cities *are* able to cultivate an espe-

cially strong reputation and relationship with their constituents. However, our results also suggest that the personal vote accounts for a minority fraction of incumbent success in non-partisan city elections. Despite the substantial size of the personal vote in these elections, other factors (such as incumbency cues and scare-off) appear to shape incumbent success even more powerfully. These findings have important consequences for our theories of incumbency advantage and candidate-centred elections, strengthening recent arguments about the role of strong parties in providing a steady supply of high-quality electoral challengers (Carson, Engstrom, and Roberts 2007). They also have consequences for our normative assessment of incumbent dominance in non-partisan elections. While non-partisan incumbents do cultivate especially strong connections with their constituents, incumbent dominance in non-partisan elections is not primarily a result of being "closest to the people."

2 Incumbency Advantage and the Personal Vote

Why are incumbents more likely to win elections than non-incumbents? While answers vary, most researchers agree that three factors are central to any satisfactory account of incumbents' electoral success (Fowler and Hall 2014, Gelman and King 1990, Levitt and Wolfram 1997). The first is *candidate quality*. Since incumbent candidates *became* incumbents by first winning an open race for their seat, they may simply be stronger on average than their challengers. Like prizefighters, incumbents go on winning for the same reason they won the first time: superior quality (Zaller 1998). Whatever the relevant elements of candidate quality may be in a given electoral environment – ideological match with constituents, relevant past experience, longstanding residence in the community, and so on – these qualities appeal to voters when the candidate is first elected and continue to appeal to voters after the candidate has become an incumbent (Ansolabehere et al. 2006; Cox and Morgenstern 1993; King 1991; Krebs 1998).

A second component of incumbent success is the *informational cue* that incumbency provides to voters. As long as voters have some reason to prefer incumbents

to non-incumbents – for instance, they may assume that incumbents are a lower-risk proposition (Eckles et al. 2014) or that having won in the past is an indicator of a baseline level of quality (Fowler 2018) – the mere fact of incumbency status may provide incumbent candidates with an advantage as long as the candidate's incumbent status is known to voters (Ansolabehere et al. 2006).

Finally, incumbent candidates benefit from the *personal vote* that they are able to cultivate with their constituents: the familiarity and reputation that accrues to the incumbent by virtue of their constituent service, visibility in the district, and pro-district policy stances in their legislature (Ansolabehere, Snyder, and Stewart 2000, Carey and Shugart 1995 Desposato and Petrocik 2003). The personal vote is conceptually distinct from candidate quality because it is available only to incumbents and is not fixed in time; it is the benefit that the incumbent gains as a result of increased familiarity with her performance and activities in office. The personal vote is also distinct from the incumbency cue, which represents the instantaneous benefit that a candidate enjoys once a voter is made aware of the fact that the candidate is the incumbent.

The personal vote is not a fixed "bonus prize" that all incumbents enjoy equally; past research by Ansolabehere et al (2000) and Desposato and Petrocik (2003) has provided compelling evidence that the personal vote varies systematically across electoral contexts and tends to be higher in more competitive races. This variation may reflect added incentives on the part of incumbents to cultivate personal connections with voters in anticipation of a competitive re-election bid, or it may reflect the higher probability of voting for a candidate, rather than a party, in competitive districts containing fewer highly committed partisans. Whatever the exact mechanism, the basic finding – variation in the personal vote by district competitiveness – has been consistent, at least in the American context.

2.1 Incumbency Advantage in Non-Partisan Contests

We have good reason to expect all three components of incumbency advantage to be operative in non-partisan elections. In the absence of gatekeeping and recruitment

from political parties, high-quality candidates might be unwilling to bear the costs of entering a difficult race against an incumbent, producing persistent differences in candidate quality between incumbents and challengers (Carson, Engstrom, and Roberts 2007, Lucas 2019b). Similarly, with few partisan cues available to voters in non-partisan elections, especially at the ward level, the incumbency cue may provide an especially useful heuristic for information-starved municipal voters (Crowder-Meyer, Gadarian, and Trounstine 2019, Moore, McGregor, and Stephenson 2017).

Most important for our purposes, however, is the role of the personal vote in non-partisan elections. Most models of elite political behaviour assume that elected legislators occasionally face competing demands from constituents and party. Legislators who have an interest in increasing their policymaking authority and advancing their careers within a party have a strong incentive to support their party's position even when it is not popular in their own district. However, legislators counterbalance these unpopular stances by securing goods and services for their districts and advocating for salient local issues in their legislatures. This personal vote provides some insulation from the occasional need to support locally unpopular party positions (Ansolabehere, Snyder, and Stewart 2000, Kam 2009, Muller and Strom 2010).

For critics of partisan politics, these competing pressures are precisely the problem with political parties. If parties create an incentive for politicians to take positions that they know to be unpopular with constituents, anti-partisan critics argue, the appropriate response is to weaken or abolish the parties. For more than a century, anti-partisan movements have sought to disrupt party systems with direct democracy, recall procedures, and plebiscitary processes if intra-partisan policy development. The result, these movements claim, will be politicians who are distinctively "close to the people," who cultivate a distinctively strong personal connection with their constituents (Copus et al. 2012).

Nowhere was the movement for non-partisanship stronger, and nowhere has it persisted with more success, than in municipal politics. In the United States, party affiliations are included on municipal election ballots in just eight of the country's thirty

largest cities (Cities 2016). In Canada, non-partisan elections run even deeper; not only are provincial and federal political parties almost totally absent from municipal electoral politics, but the party affiliation of candidates in Canadian municipal elections is often totally unknown to voters (Lightbody 1999, Lucas 2019b). These elections are both *de jure* non-partisan (no party labels on ballots) and *de facto* non-partisan (almost no partisan cues of any kind). This municipal non-partisanship is regularly celebrated both by high-profile municipal politicians and by academic observers as a strength of municipal politics, a model of pragmatism and democratic responsiveness from which other more polarized and partisan governments have much to learn (Barber 2013, Koentges 2014). Incumbent success rates in these elections thus reflect the distinctive advantages of non-partisanship, serving as an indicator of constituent satisfaction with incumbent performance and the careful cultivation of a strong personal vote (Oliver 2012).

This interpretation, however, may be too optimistic. Survey research on municipal voters in Canada and the United States has not discovered that voters are distinctively enthusiastic about the performance of their municipal councils (Lucas 2019a, **McGregor2019**). Moreover, research on the development of the American party system by Carson et al. (2007) suggests that increasingly candidate-centred elections in the U.S. Congress produced increased incumbency advantage, as political parties were less able to persuade high-quality challengers to contest elections against incumbents. If this logic holds true in non-partisan elections today, then incumbent success in non-partisan races may arise not because of an especially strong personal vote but rather from the near-total absence of incentives for high-quality challengers to face off against incumbents. Combined with other disadvantages of non-partisan elections – such as decreased turnout (Caren 2007), increased ballot name-order effects (Chen et al. 2014), and reduced citizen engagement (Schaffner and Streb 2002) – a finding that the personal vote does not explain incumbent success in non-partisan elections would strengthen the view that the benefits of non-partisanship probably do not outweigh its costs.

2.2 Identifying the Personal Vote

Despite high-quality research on the size of incumbency advantage in non-partisan cities in the United States (Benedictis-Kessner 2017, Trounstine 2011, Warshaw 2019) and Canada (Lucas 2019b), our understanding of the relative importance of each of the three main components of incumbent success is still in its infancy. One challenge is methodological; while the distinction among candidate quality, incumbency cues, and the personal vote is fairly clear at a conceptual level, developing empirical methods to distinguish among the three has proven to be a serious challenge, particularly in light of very limited data availability in non-partisan city elections.

In other electoral contexts, political scientists have developed a variety of approaches to isolate the distinctive contribution of each component of incumbent success Fowler and Hall 2014). To identify the role of the personal vote in incumbent success, Stephen Ansolabehere, James Snyder, and Charles Stewart proposed a novel approach: after district boundaries have changed, identify portions of each district in which voters are new to the incumbent and compare the incumbent's vote share among those "new voters" to portions of the district in which the incumbent retains her old voters. Since informational cues and candidate quality would be constant within each district, the difference in incumbent vote share between old and new areas would thus represent the personal vote (Ansolabehere, Snyder, and Stewart 2000). This approach, which uncovered a personal vote of about four percent, was employed in subsequent analyses by Carson et al. (2007) and at a finer-grained geographic level by Desposato and Petrocik (2003).

Ansolabehere et al's approach to the personal vote, while innovative, is vulnerable to two criticisms. First, if a district's new voters are less likely to know which candidate is the incumbent than old voters in the same district – and subsequent research by Seth McKee (2008) suggests that this may indeed be the case – the difference in vote share between the two portions of the district may represent the effects of an incumbency cue rather than the personal vote. Ansolabehere et al. address this issue in their own article, demonstrating that the difference between old and new voters persists over

time in a manner consistent with the personal vote as opposed to the instantaneous incumbency cue. We provide a similar demonstration in our own analysis below.

A more serious criticism of the Ansolabehere et al. approach has been articulated by Jasjeet Sekhon and Rocio Titiunik (2012). Even if assignment to "old voter" and "new voter" status were as good as random, this randomization process does not guarantee that members of the two groups in a particular district are comparable; the two groups have different histories and may react to the incumbent in their district in different ways as a result of those histories. "Random assignment," they argue, "does not make the previous history of both groups comparable...such comparability must be assumed in *addition* to the randomization" (37). This assumption of comparability, they argue, severely weakens the claim that the comparison of new voters and old voters in a district provides a clean estimate of the personal vote.

The most important consequence of Sekhon and Titiunik's critique is that the comparability of old and new voters must be demonstrated, rather than assumed, if the Ansolabehere et al. approach to the personal vote is to be persuasive. This is difficult to do with the aggregate data used in previous research on redistricting and the personal vote. In our case, however, we have the advantage of individual-level survey data with which to carry out such an analysis. As we will explain in more detail below, we can identify each respondent in incumbent races as either a new voter or an old voter and then systematically investigate the plausibility of the claim that members of the two groups do not differ on observable characteristics that are likely to be related to their vote choice. Robustness tests, including individual and ward-level controls and matching procedures, can provide additional confidence that our estimates capture the personal vote rather than other factors that may differ across the two groups. We explain these analyses in more detail below.

3 Data and Methods

Our data are drawn primarily from two related survey projects: the Canadian Municipal Election Study's Calgary pre-election and post-election surveys in the fall of 2017, and a follow up survey, the Calgary Year in Review, which was fielded in the same city in the fall of 2018. Respondents for these surveys were recruited by Forum Research via random digit dial and, upon agreeing to participate, received a link to complete the survey online. After quality checks, a total of 2,031 individuals completed the 2017 pre-election survey, 1,577 completed the 2017 post-election survey, and 1,975 completed the 2018 year in review survey.[1]

The city of Calgary is divided into more than two hundred official communities, each of which is assigned to one of the city's fourteen wards. These communities are well known to Calgary residents and in most cases are identical with informal neighbourhoods; when Calgarians are asked where in the city they live, they nearly always refer to their official community. This enabled us to ask each respondent about their community of residence and then assign each respondent to one of three categories: "open race voters" who voted in one of Calgary's four open races in 2017 and are excluded from this analysis; "old voters" whose incumbent had not changed; and "new voters" whose incumbent had changed as a result of redistricting. This allowed us to distinguish among voter types without relying on voters' own recall of whether or not they were redistricted. The distinction between old voters and new voters is the treatment variable of interest in all of the analyses below; in total, we have 1,494 respondents in these two groups in the 2017 pre-election survey, 968 in the 2017 post-election survey, and 1,458 in the 2018 survey.

Our principal outcome variables of interest are *vote intention* and *vote choice* in incumbent ward races in Calgary's 2017 municipal election. We code vote intention as (1) if the respondent indicated in the 2017 pre-election survey that they intended to vote for the incumbent, and (0) if they selected another candidate or had not yet

1. The 2017 surveys are a panel, while the 2018 survey is composed of a combination of existing panelists and new recruits.

decided.[2] We code vote choice as (1) if the respondent indicated in the 2017 post-election survey that they voted for the incumbent candidate, and (0) if they voted for any other candidate in the race. To maximize our sample size, we use *vote intention* as our main outcome variable in the analyses below, but we also show that our findings are substantively identical when using vote choice rather than vote intention.

In our 2018 survey, we asked respondents a series of questions about their familiarity with their city councillor as well as their city councillor's issue position, ideology, and performance in office. We will discuss each of these variables in more detail below, but in most cases, our outcome variable of interest is the probability that a respondent will *provide an answer* to these questions rather than selecting "don't know." Our goal in the follow-up analysis is thus to demonstrate that lower levels of knowledge and familiarity with incumbents – symptoms of the absence of a personal vote effect – persists over an extended period of time among new voters.

Finally, our simulation-based assessment of the consequences of the personal vote for actual election outcomes in Calgary is based on a dataset of ward-level election results for each of the 196 ward races in Calgary since the city adopted its current 14-ward structure in 1977. These results are drawn from official records available in the City of Calgary archives and the Calgary Public Library local history records, and include candidate names, incumbency status, ward name, election year, and vote share for each of the 732 individuals who participated in a ward race since 1977. We use these data to estimate of the consequences of the personal vote for election outcomes in Calgary; we explain these simulations in more detail below.

4 Redistricting in Calgary: A Natural Experiment?

Calgary, Alberta, a city of 1.2 million in western Canada, holds council elections in fourteen single-member wards every four years. According to the city's ward boundary review policy, a commission is to be appointed to draw revised ward boundaries after

2. We show in the supplementary materials (SM1) that our findings are robust to alternative codings of this variable.

every second election, or a little less than once each decade. Council is also authorized to create ad hoc boundary commissions at their discretion, should a more frequent review be necessary. Calgary's rapid population growth in recent decades has meant that population differences among wards can emerge rapidly; this is the principal reason for council's capacity to initiate ad-hoc reviews and, as we will see, the only major source of controversy in the redistricting process in Calgary. The city's policy requires that ward boundaries be drawn with an eye to equal population (with a target deviation of no more than 10-15 percent and a maximum deviation of 25 percent), and also includes standard redistricting objectives such as respecting community boundaries, drawing boundaries using identifiable features of the natural and built environment (such as rivers and arterial roads), and respecting historical ward boundaries when possible (Calgary 1993).

In 2015, an independent commission reviewed Calgary's ward boundaries and proposed redistricting scenarios to council and the public; these were then adjusted by city staff and council and the new boundaries were confirmed in the spring of 2016. This redistricting process meant that some residents became "new voters" – individuals whose ward election in 2017 was an incumbent race, but whose incumbent had changed – and other residents remained "old voters" whose incumbent did not change. Our task in this section is to evaluate the extent to which assignment to these "new voter" or "old voter" groups was as good as random; that is, we need to assess whether assignment to these groups was related directly or indirectly to factors that could affect a voter's probability of incumbent support. Following Dunning (2012), we do so in three ways: by assessing the opportunity for *subjects* to self-select into the two groups; by assessing the possibility that *policy-makers* assigned subjects to the two groups for reasons related to incumbent support; and lastly, by assessing whether the two groups are *balanced* on variables that we expect to be related to incumbent support.

Two interrelated reasons suggest that individual subjects had almost no capacity to self-select into a new incumbent ward or remain in their current ward. First, because the city's ward boundary policy explicitly requires that community boundaries be re-

spected as much as possible, it is usually whole neighbourhoods, rather than particular blocks or streets, that are moved from one ward to another. A resident or group of residents who wished to self-select into a particular group would need to persuade their whole community to advocate strongly for such a change. Second, and relatedly, there is no evidence that any communities engaged in such advocacy. The new ward boundaries came as a surprise to Calgary's community associations, who complained that a consultation process in the summer of 2015 gave them insufficient time to comment on the redistricting process (**Klingbiel2015**). The only community-level requests that *did* emerge from this consultation process concerned keeping whole communities together in a particular ward. Thus we have little evidence to suggest that individuals or community associations had the interest or the capacity to self-select into particular incumbent races.

Since Calgary's city council has final authority to approve the city's ward boundaries, we might also worry about strategic redistricting in which councillors "eject" low-support neighbourhoods to other wards and welcome more congenial neighbourhoods to their own. Here too, however, we have uncovered no evidence to suggest that this occurred in the 2015-16 process. The reason that city council decided to "tweak" the ward boundaries proposed by the independent commission had to do with *population*, not electoral calculation; the commission had proposed ward boundaries with high levels of population deviation (on the grounds that those boundaries would be more durable to future population growth), but councillors felt that the deviations would create unfair workload imbalances and sought to adjust the wards to create more balanced populations across wards (Howell 2015a, Howell 2015b, McCaffrey 2015). Through the entire process, just one incumbency-related accusation emerged – a city councillor accused the mayor of proposing that a neighbourhood be redistricted because the councillor lived in that neighbourhood, and thus would no longer live in his own ward – and the neighbourhood was ultimately left within the councillor's ward (Kauffman 2016). Just eight of our survey respondents live in this particular neighbourhood, and unsurprisingly, our findings are robust to its exclusion from the analysis. Thus despite

some public wrangling about the city's new ward boundaries in 2015 and 2016, qualitative evidence from newspaper sources and council meetings suggests that controversy about ward boundaries was almost exclusively related to councillors' concerns about their jobs – concerns about equitable distribution of workload – rather than about how the changes would affect their electoral prospects.

We can also assess the plausibility of as-good-as-random assignment to old and new voter status using quantitative data from our surveys. In table 1 below, we report the results of a series of bivariate balance tests on a suite of variables related to incumbent support. The first of these are the socio-demographic variables age, gender, and education; past research has shown these variables to be related to *risk tolerance* (Ehrlich and Maestas 2010, Kam and Simas 2010), which is itself related to the probability of incumbent support (Eckles et al. 2014). The second set of variables measure individual partisanship and ideology; individuals who are strongly anchored to a particular party or ideological position are less likely to be swayed by their incumbent's performance or responsiveness in office (Desposato and Petrocik 2003, Eggers and Spirling 2017). Here we include specific partisanship (measured as moderate or strong identification with a particular party) and ideology (measured on a 0-10 self-placement scale), as well as more general variables capturing whether the respondent is a partisan of any stripe ("partisan") and the respondent's distance in either direction from the ideological centre ("ideologue"). Third, we include a set of variables related to voter satisfaction and retrospection: the voter's perception of how home values have changed in the past year, the performance of the Calgary economy in the past year, and satisfaction with the mayor's performance. Finally, we include each incumbent's margin of victory in 2017, since imbalance on this variable – for example, if new voters were disproportionately in more competitive wards than old voters – would have obvious confounding effects on our estimates. In each case, the table reports OLS regression coefficients, p-values, and for any variables within range of a generous 90% interpretation of statistical significance, the direction of the relationship.[3]

3. We use OLS here, rather than t-tests, to enable easy comparison with the fixed effects tests in the

Table 1: **Balance Tests: New Voters vs. Old Voter**

	Overall			Ward Fes		
Socio-Demographics	**coef**	**p**	**Direction**	**coef**	**p**	**Direction**
Age	0.11	0.912		0.0002	0.716	
Gender	-0.00197	0.951		-0.008	0.689	
Education	-0.02	0.38		0.003	0.855	
Partisanship and Ideology						
Federal Liberal	-0.0246	0.296		-0.033	0.239	
Federal Conservative	0.04	0.159	+	0.048	0.023	+
Federal NDP	-0.0034	0.803		-0.037	0.432	
Provincial Conservative	0.057	0.1	+	0.0467	0.042	+
Provincial NDP	-0.00052	0.799		-0.0279	0.379	
Federal Partisan	0.023	0.435		0.0221	0.317	
Provincial Partisan	0.0423	0.163		0.033	0.121	
Ideology	0.2769	0.064	+	0.013	0.006	+
Ideologue	-0.212	0.039	+	-0.011	0.092	+
Retrospection and Context						
Home Values	0.0622	0.352		0.0083	0.44	
Economy	-0.082	0.097	-	-0.022	0.098	-
Mayoral Satisfaction	-0.1014	0.167		-0.0135	0.138	
Margin of Victory	-0.0019	0.906				

In general, the results suggest that new voters and old voters in our sample are similar: old voters do not differ from new voters in terms of socio-demographic characteristics, most aspects of ideology and partisanship, most retrospective variables, or their ward's margin of victory. A test of joint significance including all variables in table 1 is also far from statistical significance (p=0.59). However, new voters do appear to be slightly more likely to be both partisan and ideological conservatives; new voters have a 4-5% higher probability of being partisan Conservatives and are about 0.3 points to the right of old voters on a 0-10 ideological self-placement scale. New voters are also slightly more pessimistic about the performance of the local economy than old voters.[4]

These are substantively modest differences, and we provide evidence in the supplementary materials (SM2) that they are probably the result of chance variation; even so, we provide analyses that control for these potentially imbalanced variables below.

Before moving to our results, we must also briefly discuss the right-hand column

right-hand column of the figure.

4. We expect that these variables are picking up on a common underlying "type" of resident, a right-of-centre Calgarian who is displeased with the performance of Calgary's centre-left mayor. Unsurprisingly, the three variables are correlated with each other. In any case, this imbalance is modest and we show in the analysis below that our findings are robust to controlling for these variables.

of table 1, which reports the same balance tests with ward fixed effects. Intuitively, ward fixed effects would seem to be a good approach in our analysis, since a fixed effects model would allow us to compare "apples to apples" within each distinctive ward-level electoral environment. However, as Sekhon and Titiunik have persuasively argued, district-level analysis does *not* create an apples to apples comparison, and as the table demonstrates, ward fixed effects do not improve imbalance on partisan, ideology, or retrospection variables. While we will report results with ward fixed effects to demonstrate the robustness of our results below, we believe that the city-wide estimates, comparing all new voters to all old voters, provide the best estimate of the personal vote given the well-balanced individual-level data available to us.

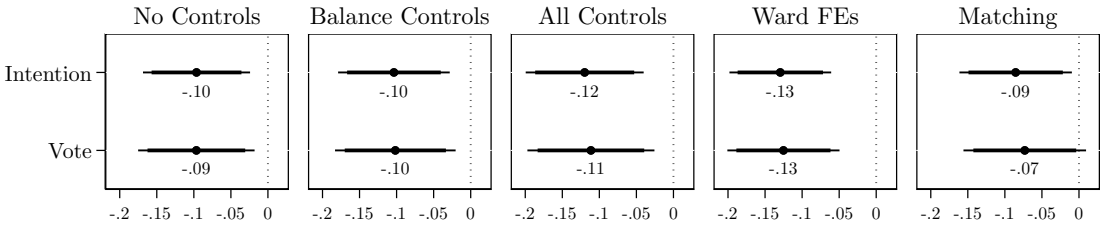
5 Results

We now turn to our findings. Table 1 reports the results of a regression of incumbent vote intention (top coefficient) and vote choice (bottom coefficient) on our treatment variable (old vs. new voter) using several specifications.[5] In the first column, a simple bivariate regression, we find that new voters are ten percentage points less likely to support the incumbent than old voters. The second column adds controls for the three variables – Conservative partisanship, ideology, and economic retrospection – for which we noted balance concerns above, and the third contains controls for the full suite of variables listed in table 1. In both cases, the estimates are substantively similar and statistically indistinguishable from those in the first column.

In the fourth column, we use coarsened exact matching to further test the robustness of our estimate (Blackwell et al. 2009). We began by coarsening one of our three imbalanced variables, ideology, into three categories: left (0-3), centre (4-6), and right (7-10). We also coarsened ward-level margins of victory into close races (0-10% margin of victory), moderately competitive races (11-25% margin of victory), and blowouts

5. All results are OLS. Marginal effects from a logistic regression are substantively identical to those reported here. For those results, along with complete regression tables and additional specifications, see SM1 and SM5.

Figure 1: **Decreased Likelihood of Incumbent Vote Among New Voters**



Description: these plots show the change in the probability of stated vote intention or reported vote choice for incumbents among new voters in Calgary across five specifications. Negative coefficients indicate that new voters are less likely to vote for incumbents than old voters. All models use OLS. Thicker whiskers are 90% confidence intervals; thin whiskers are 95% confidence intervals. For full tables, see SM5.

(above 25% margin of victory). With these coarsened variables in hand, we matched each respondent to other respondents who were an exact match on three individual variables (coarsened ideology, Conservative partisan, and economic retrospection) and two ward-level variables (coarsened margin of victory and number of incumbent terms). Column four estimates the average difference between new voters and old voters within each of the resulting matched groups; once again the resulting point estimate is similar to and statistically indistinguishable from the estimates in the first three columns.

As an additional robustness test, column five estimates the average difference between new voters and old voters with ward fixed effects; here too, the point estimate is statistically indistinguishable from those on the other columns. In SM4, we provide an additional robustness test of this finding, using mayoral incumbent intention and vote in place of council incumbent intention and vote. We find that new voter status has no effect on mayoral incumbent intention or vote, providing us with additional confidence that we are capturing the personal vote in this estimate rather than some other factor that affects new voters' incumbent preferences or satisfaction with council in general.

Across all columns of figure 1, then, our results indicate that new voters are substantially less likely than old voters to support their incumbent candidate. This is a very large personal vote effect, roughly double the effect uncovered by Ansolabehere et al. (2004) and Desposato and Petrocik (2003) in aggregate analyses of American Congressional elections. Put simply, incumbent councillors in non-partisan elections

do appear to be able to cultivate an especially strong connection with their voters.

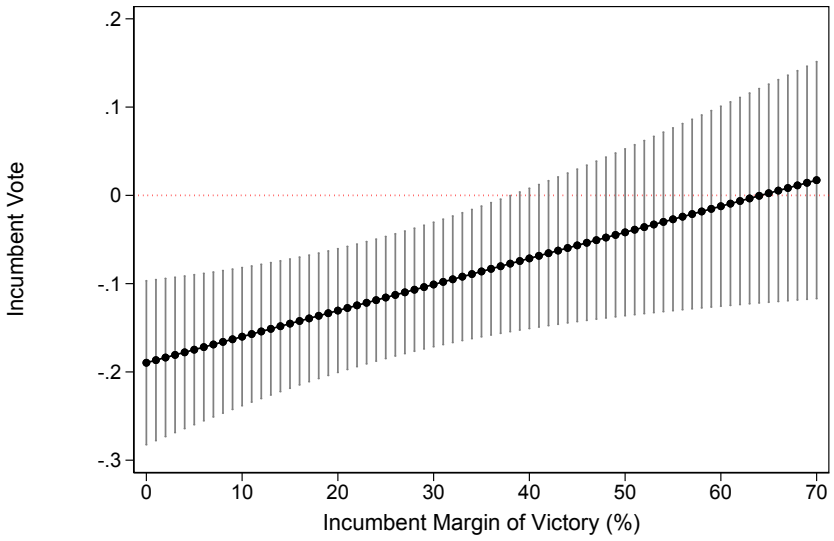
5.1 Variation in the Personal Vote

Past research on the personal vote has found that the size of the personal vote varies in relation to district competitiveness; as a district becomes more competitive, the personal vote tends to increase, perhaps as a reflection of the added effort required of incumbents in competitive districts to cultivate a personal connection in a more "hostile" environment (Ansolabehere, Snyder, and Stewart 2000, Desposato and Petrocik 2003). We expect a similar dynamic in non-partisan elections. Incumbents who anticipate that their election will be competitive – an expectation based on past electoral experience and their knowledge of current sentiment in the ward – have an incentive to work especially hard to cultivate a good reputation and personal relationship with their constituents.

To test for this possibility, we constructed a multilevel model that includes our treatment variable (old or new voter), the incumbent's margin of victory, and the interaction between the two; we allow ward intercepts and the slope of the margin of victory coefficient to vary randomly by ward. The resulting interaction is displayed in figure 2. On the y-axis, we plot the difference in the probability of an incumbent vote among new voters as compared to old voters. On the x-axis, we plot the margin of victory by which the incumbent won the race. Each point in the figure can thus be interpreted as the predicted change in incumbent support between old and new voters for a given margin of victory.

As expected, the size of the personal vote effect is largest in competitive races and decreases as the incumbent's margin of victory grows. In the most competitive races, the difference between new voters and old voters approaches twenty percent; the difference declines to zero at a margin of victory of about 65 percent, but ceases to be statistically significant at a margin of victory of 40 percent. The results confirm our expectation, based on past research, that the personal vote varies systematically across electoral contexts and is larger in more competitive electoral districts. We will return

Figure 2: **Decreased Incumbent Support Among New Voters, by Incumbent Margin of Victory**



Description: Description: this figure displays the difference in the probability of incumbent support among new voters compared to old voters as the incumbent's margin of victory changes.

to this finding in our simulation below.

5.2 The Persistence of the Personal Vote

Thus far, we have shown that new voters are substantially less likely than old voters to support their incumbent, and that this difference between new voters and old voters varies by district competitiveness. It is possible, however, that this difference is attributable to an incumbency cue – the mere awareness of which candidate is the incumbent in a particular race – rather than the personal vote. To test for this possibility, and to provide additional insight into the character of the personal vote, we now turn to data from our follow-up survey undertaken in Calgary one year after the municipal election.

Five questions in the 2018 follow-up survey are directly relevant to our analysis here.[6] First, we asked respondents if they agreed or disagreed with two statements

6. Note that these five questions comprise the complete list of questions about respondents' city councillors in the 2018 follow-up survey. We include them all in this analysis not only because they capture different dimensions of a respondent's relationship to his councillor but also to avoid any concerns about selection

about their councillor: whether they felt that they knew a lot about their councillor's background and character, and whether they would recognize their councillor if they passed each other on the street. To eliminate any persistent incumbency cue effects (such as a difference in name retrieval among new and old voters), we programmed the survey to provide respondents with their incumbent's full name in the preamble to these questions. If the personal vote reflects a relationship and reputation among voters which takes substantial time and effort to cultivate, we would expect to see lower levels of agreement with both of these statements among new voters when compared with old voters.

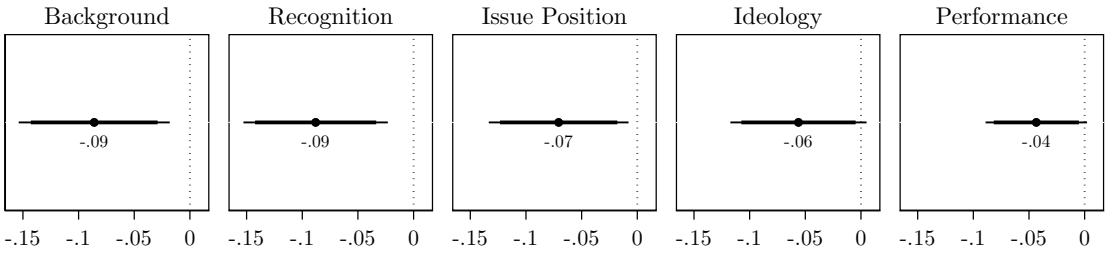
Three additional questions in the 2018 survey are relevant to our analysis. Because our 2018 survey was fielded immediately after a high-profile plebiscite on a possible bid for the 2026 Winter Olympics in Calgary, we asked respondents if, to their knowledge, their councillor supported or opposed an Olympic bid. This question provides us with information on respondents' knowledge of their councillor's *issue position* on an issue of high salience and publicity in Calgary. We also asked respondents to place their councillor on a 0-10 left-right ideology scale, providing us with information on respondent's knowledge of their councillor's perceived *ideological position*. Finally, we asked respondents how satisfied they were with their councillor's performance. For each of these questions, we provided respondents with a "don't know" option.[7] Once again, if the difference we have found between new and old voters is due to personal vote rather than incumbency cues, and if a personal relationship and reputation takes substantial time to cultivate, we would expect new voters to be less familiar with their councillor than old voters, and thus more likely to select "don't know" in response to these questions about their councillor's issue position, ideological position, and performance in office.

Figure 3 reports the results of this analysis. Once again our treatment variable is

from a larger pool of available questions.

7. Don't know responses were far from rare on these questions: 41% chose "don't know" for the Olympics issue position question, 35% chose "don't know" for the councillor ideology question, and 13% chose "don't know" for the satisfaction question.

Figure 3: **Persistent New/Old Voter Differences in Councillor Knowledge, 2018**



Description: this figure displays the change in probability between new voters (1) and old voters (0) that respondents will agree that they know about their councillor (first plot), would recognize their councillor(second plot), and know about their councillor's issue position (third plot), ideology (fourth plot), and performance (fifth plot). Responses are drawn from 2018 survey. Thicker whiskers are 90% confidence intervals; thin whiskers are 95% confidence intervals.

coded (1) for new voters and (0) for old voters, and each of the outcome variables are coded positively if the respondent agreed with the recognition and knowledge questions or provided a response other than "don't know" for the issue position, ideology, and performance questions. The negative coefficients across all five outcome variables thus indicate that new voters are consistently less familiar with their councillors than old voters: they are about nine percentage points less likely to agree that they know about their councillor or would recognize their councillor on the street; they are 6-7 percentage points less likely to provide a response when asked about their councillor's issue position or ideology; and they are about four percentage points less likely to provide a response when asked about their councillor's performance. These results provide strong evidence that the personal vote effect persists over time; even a full year after the election, and even when provided with their councillor's name, we see consistent differences between new voters and old voters. The results also demonstrate that the personal vote affects constituents' familiarity with their representative across a wide range of politically salient dimensions, from basic recognition through to issue position, ideology, and performance.

5.3 The Consequences of the Personal Vote

New voter status – that is, the absence of the personal vote – substantially decreases the probability of incumbent support and durably reduces individuals' familiarity with their representatives. These findings confirm that the personal vote is an important component of incumbent success in non-partisan elections. Thus far, however, our findings tell us little about the consequences of the personal vote for actual election *outcomes* for incumbents in non-partisan cities. Given the estimates above, how much does the personal vote shape who actually wins and loses elections in non-partisan cities?

To address this question, we combine two data sources to simulate how election outcomes might change in the absence of the personal vote. The first source of information is the personal vote estimate described above. The second is a new dataset we have compiled from official archival sources containing complete election results for each of the 196 ward races in Calgary since the city adopted its current fourteen-ward structure in 1977. The dataset contains a total of 149 incumbent races, 133 of which were incumbent victories.[8] To translate our personal vote estimates above into an aggregate figure for the simulation, it is useful to notice that an aggregate vote share of, say, 60 percent for a given candidate means that the average probability that each individual voter will support that candidate is also 60 percent. If we reduce the individual probability of incumbent support by ten percent, this translates into an aggregate loss of ten percentage points in the incumbent's vote share. Thus by combining these two data sources – an estimate of the personal vote and a distribution of actual vote shares – we can sample from the distribution of vote shares and subtract the personal vote to simulate the consequences of the personal vote on election outcomes. More specifically, the simulation unfolds as follows:

1. Create a normal distribution of the personal vote using the estimates above; this distribution has a mean equal to the point estimate of the personal vote coefficient above (-0.0964) and a standard deviation equal to the standard error

8. See SM3 for more detail on the election results dataset, including the distribution of incumbent margins of loss and victory across the 149 incumbent races.

of that estimate (0.0368).[9]

2. Make a random draw of one incumbent victory from the election results dataset.
3. Make a random draw of an estimated personal vote from the personal vote distribution described in step one. Subtract this estimate from the vote share of the incumbent selected in step two.
4. Reallocate the subtracted votes from the incumbent to the challenger candidates in proportion to their share of the challenger vote - that is, the total vote received by candidates other than the incumbent.
5. Code the outcome as (1) if, after subtraction and re-allocation, the runner-up's vote share is higher than the incumbent's vote share; otherwise code the outcome as (0). Thus (1) indicates that the election outcome (an incumbent victory) would have been different (an incumbent loss) in the absence of the personal vote.
6. Repeat steps two through five 1,000 times, storing the 0 or 1 result from step five each time.
7. Calculate the mean value of the 1,000 draws to estimate the proportion of elections in which the outcome has changed as a result of the subtraction and reallocation of the personal vote.
8. Finally, repeat the entire process (steps two through seven) 1,000 times, storing each estimate to create an overall distribution of the average proportion of election outcomes affected by the personal vote.

An example may help illustrate this simulation procedure. Let us assume that a personal vote effect of -10% was randomly drawn from the personal vote distribution and that we have randomly drawn an election result in which the incumbent "Jane" received 50%, the runner-up "Joe" received 40%, and a third candidate "Sally" received 10%. Subtracting the personal vote reduces incumbent Jane's vote share to 40%. We then reallocate the personal vote to the challengers; since Joe received four fifths of the challenger vote, he receives four fifths of the reallocated vote share - eight percent - increasing his vote share to 48%. Since Joe's vote share is now larger than Jane's, the subtraction and reallocation process in this case has resulted in a changed outcome - an incumbent loss, rather than an incumbent victory - and would therefore be entered as a (1). We repeat this procedure 1,000 times to generate a vector of 0s and 1s, which we then use to calculate the percentage of elections changed; assume for the sake of the example that the resulting overall percentage equals 19%. We then store that number,

9. All simulations and reported simulated results were obtained in R. We use the rnorm package to create the personal vote distributions of coefficient estimates. Our supplementary material includes all necessary script to reproduce our simulated results.

19%, in a new vector and repeat the entire process 999 more times, adding each new overall percentage to the final vector to create a distribution of average changed election outcomes. The result of this procedure is a distribution of plausible estimates of the proportion of incumbent election outcomes affected by a personal vote of the size that we have estimated in our analysis above.

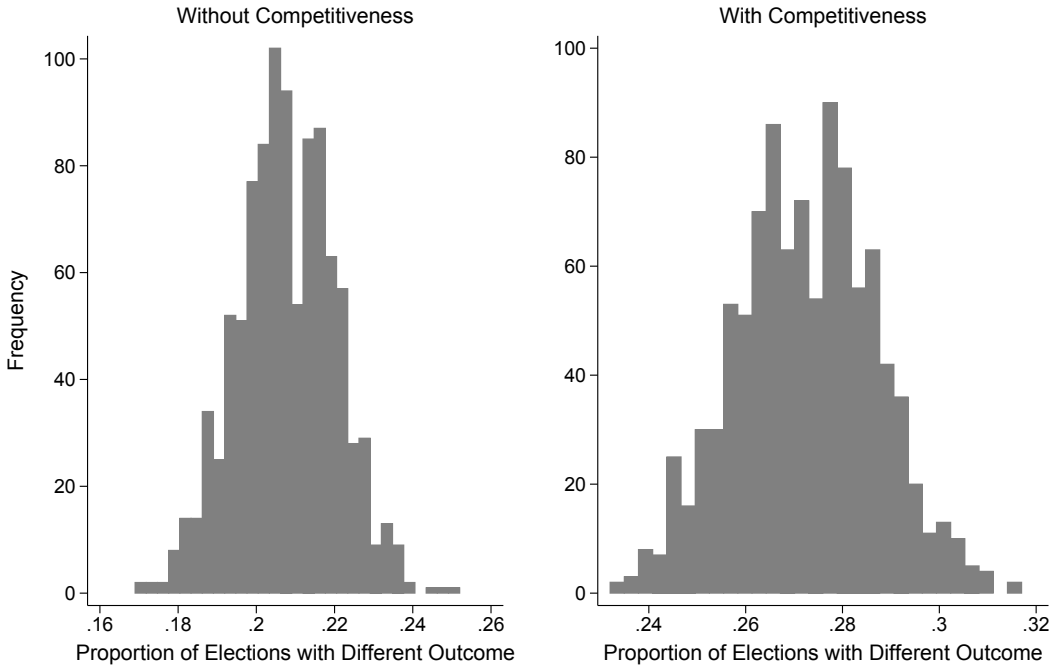
This first simulation assumes that the size of the personal vote varies randomly around a single mean value. However, given past findings in the literature, as well as our discussion of variation in the personal vote above, we undertake a second simulation which seeks to incorporate variation in the personal vote in relation to the competitiveness of the election. In our second simulation, we follow the same procedure as above, but instead of drawing from a single personal vote distribution, we use the estimates described in figure 2 to create a distinct distribution for each of the 39 increments of margin of victory for which the effect of the personal vote is statistically significant (that is, margins of victory of 0-38%). We can then draw from those more specific distributions in our simulation, as follows:

1. Create a normally-distributed distribution of the personal vote for each 1% increment of margin of victory in the entire range of marginal effect estimates that are statistically significant in the previous section. Each distribution has a mean equal to the point estimate of the coefficient obtained for the personal vote (ranging from -.190 when MV=0.0 to -.077 when MV=0.38) and a standard deviation equal to its standard error.
2. Make a random draw of one incumbent victory from the election results dataset and record the margin of victory in that election.
3. Make a random draw of an estimated personal vote from the personal vote distribution that corresponds to the margin of victory selected in step two.
4. Repeat steps 3-8 above.

Once again, an example may help to illustrate how this second simulation accounts for competitiveness. Before the simulation begins, we create a distribution of the personal vote at each value of the margin of victory (increments of 0.01), starting from 0.0 and ending at 0.38, the last point at which the marginal effect of the personal vote is statistically significant. Assume that we have drawn the same race as above in this second simulation – Jane versus Joe and Sally. Since the margin of victory in that

race was 10%, we randomly draw a personal vote estimate from the distribution for that particular margin of victory; in this case, assume that we draw an estimate of the personal vote effect of -15%. Once again, we subtract this effect from Jane's vote share (it now equals 35%) and once again reallocate four fifths of the subtracted vote share to Joe, the runner-up candidate (thus 12% + 40% = 52%). Since subtraction and reallocation did change the election outcome, the result is recorded as a (1). Creating 1,000 of these simulated outcomes, and then running the full process 1,000 times, creates an overall distribution of the simulated effect of the personal vote on election outcomes when accounting for competitiveness.

Figure 4: **Personal Vote and Election Outcomes: Simulations**



Description: this figure summarizes results drawn from two simulations. On the left, we summarize the proportion of elections in which the personal vote is large enough to change an incumbent win to an incumbent loss. On the right, we summarize the same outcome but incorporate variation in the size of the personal vote based on the competitiveness of the race.

Figure 4 provides a visual summary of the distributions produced by the two simulations. The figure on the left, which does not account for the competitiveness of the race, ranges from 17% to 25%, with a mean value of 21%. Thus the figure suggests

that the personal vote is large enough to affect the outcome of about one in every five incumbent victories. However, this proportion is larger in the right-hand figure, which incorporates variation in the personal vote based on the competitiveness of the race; in that case, the distribution ranges from 23% to 32%, with a mean value of 27%. The right-hand plot thus suggests that, once we take competitiveness into account, the personal vote is sufficiently large to affect the outcomes of just over one quarter of incumbent victories.

It is important to be clear about the meaning of this simulation. Our intention is not to simulate what the world might look like in the absence of the personal vote; if the personal vote were somehow to disappear, many related aspects of non-partisan elections would change as well, such as challenger scare-off effects. Instead, our goal is more modest: to provide a data-informed picture of how much the personal vote is likely to shape election outcomes based on actual election results from the same city as the survey data discussed above. Our intention is thus to provide some sense of the size of the personal vote relative to the size of incumbent victories themselves. The results in figure 4 suggest that the personal vote, while substantively large and undoubtedly important, accounts for a minority fraction of the overall success of incumbent candidates in Calgary.

6 Discussion and Conclusion

How important is the personal vote for incumbent success in non-partisan elections? In our analysis above, we leveraged a ward boundary revision process, in combination with an original survey, to estimate that the absence of the personal vote decreases the probability of incumbent support by about ten percentage points. This effect is more than double the size of personal vote estimates for the United States Congress, suggesting that non-partisan incumbents are indeed able to cultivate especially large personal votes. We also found, in keeping with past research, that the size of the personal vote effect varies substantially, peaking at 18% in highly competitive races

and declining to statistical insignificance when incumbent margins of victory exceed 40%.

Our follow-up survey, undertaken one year after the 2017 election, provided further confirmation of the importance and durability of the effects of the personal vote in non-partisan contests. Even after a full year, new voters – those with a new incumbent, rather than their former incumbent, as a result of the redistricting process – remained significantly less likely to be familiar with their councillors along a number of dimensions, including general knowledge and recognition, issue position, ideology, and performance. These findings demonstrate that the personal vote is distinct from an instantaneous incumbency cue and takes substantial time for politicians to cultivate.

Those who celebrate the non-partisan character of elections in major cities such as Calgary might interpret these results as strong support for the view that non-partisan local politicians are distinctly "close to the people" and that especially high rates of incumbent success in non-partisan elections is principally a result of this personal connection. However, our simulations suggested that this interpretation is only part of the story. Even with a personal vote of the size that we estimate in Calgary, our simulations indicate that the personal vote is sufficiently large to plausibly affect the outcome of one in every four incumbent victories. Put simply, the personal vote appears to explain a substantial but minority fraction of incumbent success in non-partisan cities.

Why would so large a personal vote have so modest an effect on outcomes in non-partisan elections? We believe that the answer lies in the *other* ways that non-partisan elections affect both candidate and voter behaviour. In the absence of political parties to recruit, encourage, and support high-quality challengers – and in some cases, to provide assurances that the candidate will have other opportunities should their electoral challenge fail – high-quality challengers are much less likely to volunteer to bear the costs of an uphill battle against an incumbent (Carson, Engstrom, and Roberts 2007). In the absence of these party motivations to run candidates of at least moderate quality in every race, incentives for strong challengers to face off against incumbents are

minimal, and scare-off effects have the potential to be enormous.

Relatedly, the absence of partisan cues makes for a much more challenging information environment. Voters in large, non-partisan elections such as Calgary must work especially hard to learn about challenger candidates even when high-quality challengers *are* in the race. Past research in the United States has confirmed the consequences of this informational deficit on voter engagement, turnout, and incumbent support (Schaffner, Streb, and Wright 2001, Schaffner and Streb 2002), and the consequences are likely to be even more pronounced when elections are not just formally non-partisan (that is, parties are absent from the ballot), but, as in Calgary, the party affiliations of most candidates are completely unknown to voters (Lucas and Smith 2019). In these genuinely non-partisan elections, incumbency often looms large as the only easily accessible and high-quality informational cue available. This, too, has the potential to powerfully benefit incumbents.

Thus, while we have uncovered strong evidence that incumbents in non-partisan elections are able to cultivate an especially strong personal vote, this personal vote is not sufficiently large to assuage concerns about incumbent dominance and possible accountability deficits in non-partisan city elections. In the face of accumulating evidence that non-partisan city elections are much more than mere referenda on the managerial performance of incumbents and have important policy consequences for constituents (Einstein and Kogan 2016, Tausanovitch and Warshaw 2014), we see little reason to celebrate the extraordinary success rates of incumbent candidates in these elections.

Much work remains to be done. While the circumstances we have exploited in this paper are relatively rare – a redistricting process occurring simultaneously with individual-level data collection, along with an administrative environment allowing us to distinguish old voters from new voters without depending on respondents' own recall – we expect that opportunities for replication and extension of our personal vote estimates will surely arise among the thousands of non-partisan elections that are contested across North American and European democracies. Additional work on the relationship between competitiveness and the personal vote would be particularly informative,

helping to illuminate the mechanisms that connect the one to the other. Replications of our individual-level approach in other non-partisan and partisan contexts – across multiple levels and scales of electoral politics – would also strengthen and clarify the findings we have discussed here.

Additional research on the role of other components of incumbency advantage in non-partisan elections is also worth pursuing. Studies of incumbent name recognition and incumbency cues across election types (non-partisan vs. partisan, mayoral vs. council) and levels of government (local, regional, national) will help us more clearly distinguish between instantaneous cues and deeper personal vote connections; (2018) has recently provided a useful model for such work. Analysis of scare-off effects in non-partisan races is also vital, and requires careful thinking about the measurement of candidate quality in local and other non-partisan races. This research promises to improve our knowledge not only of incumbency advantage in non-partisan elections, but also to inform ongoing and increasingly important debates about the advantages and disadvantages of non-partisanship in an era of considerable skepticism about the value of political parties for democratic representation and accountability.

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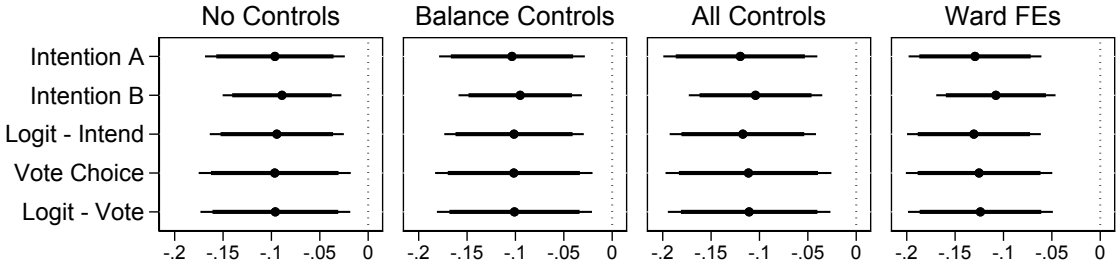
Supplementary Materials

June 11, 2019

1 Personal Vote Estimates: Robustness Tests

Figure 1 provides four coefficients for each of the four main models presented in the main text. The two coefficients displayed in the main paper are "Intention A" and "Vote". The first two coefficients, "Intention A" and "Intention B", compare two alternative codings of the vote intention variable. Intention A (used in the main paper) excludes those who had not yet decided on a council candidate; Intention B codes "don't know" responses as non-incumbent votes. We feel that the first coding strategy is superior to the second, but the figure indicates that the results are very similar regardless of the coding approach.

Figure 1: **Robustness Tests: Alternative Coding and Models**

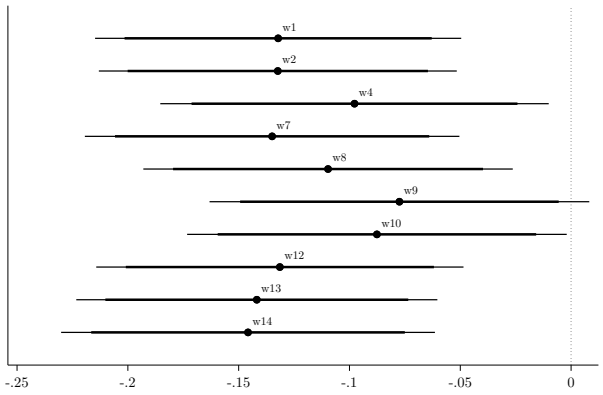


Description: this figure compares coefficients drawn from the main text (these are "Intention A" and "Vote Choice") with an alternative coding of the incumbent intention variable ("Intention B") and with marginal effects of the treatment variable drawn from logit models for both outcome variables of interest ("Logit - Intend" and "Logit - Vote"). The similarities among the coefficients demonstrate that the findings are robust to alternative modelling and coding choices.

Because our dependent variable is dichotomous, we also provide a third coefficient, labelled "Logit - Intend," which provides the marginal effect of new voter status on incumbent vote intention drawn from a logit model. Once again the results are essentially identical to the probabilities estimated from the OLS model. The same is true of "Logit - Vote", which provides the marginal effect of new voter status on vote choice, again drawn from a logit model.

Finally, figure 2 assesses the sensitivity of our results to the exclusion of each ward from the analysis. Given our findings in the main text regarding the variability of the personal vote across wards in Calgary, we would expect to see some movement in the coefficient when dropping each ward from the analysis; however, we do not want to find that our findings are driven by some peculiarities of a particular ward. Each of the coefficients in the figure reports the personal vote estimate when that ward is dropped from the analysis. Because dropping respondents from a given ward may have substantial effects on covariate balance, these coefficients include the controls listed in the balance test in the main text. While we do see clear variation in the point estimate when dropping wards, the coefficient is statistically significant at 95% in all but one case and at 90% in all cases.

Figure 2: **Robustness Tests: Ward Sensitivity Test**



Description: this figure displays our estimate of the personal vote while dropping each incumbent race from the analysis.

2 Follow-Up Survey: Details and Robustness

We begin with table 1, which provides a balance test equivalent to the balance test table for the main analysis in the main text (note that some variables are missing because we did not ask about federal partisanship in the 2018 survey.) As is clear in the table, covariate balance between new and old voters in the follow-up survey is very good. In the absence of ward fixed effects, just one variable - university education - shows some imbalance. This imbalance disappears with ward FEs, but ward fixed effects create two new problems: significant differences between new voters and old voters in home value assessments along with some evidence of imbalance on economic retrospection. As in the main text, ward fixed effects appear to create more problems than they solve while also suffering from the design flaws discussed in the main text.

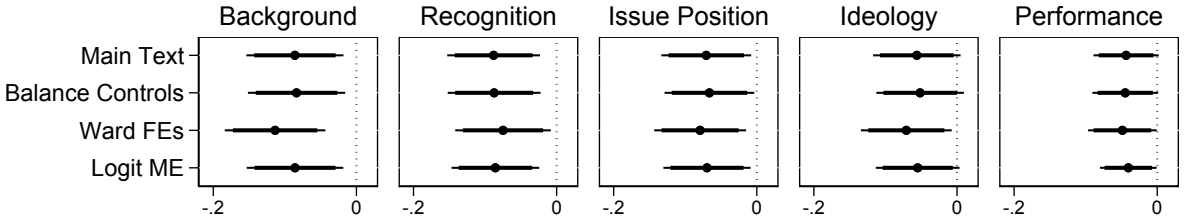
Table 1: **Robustness Tests: Alternative Coding and Models**

	Overall			Ward Fes		
Socio-Demographics	**coef**	**p**	**Direction**	**coef**	**p**	**Direction**
Age	0.0002	0.76		0.0002	0.83	
Gender	0.027	0.20		0.018	0.38	
Education	-0.04	0.06	-	-0.0128	0.55	
Partisanship and Ideology						
Provincial Conservative	-0.012	0.59		0.0019	0.93	
Provincial NDP	0.032	0.34		0.0084	0.80	
Ideology	0.002	0.58		0.0055	0.24	
Retrospection and Context						
Home Values	-0.0067	0.59		-0.0267	0.03	-
Economy	-0.019	0.25		-0.0237	0.14	-
Mayoral Satisfaction	0.0053	0.58		0.0056	0.55	
Margin of Victory	-0.0054	0.90				

Description: to test for balance between new and old voters in the 2018 survey, this table replicates the balance test from the main text using the 2018 follow up survey.

It is also worth noting that the balance test coefficients in table 1 provide further evidence to support our claim in the main text that the differences between new voters and old voters in our survey on ideology, partisanship, and economic retrospection are due to chance variation rather than some systematic selection process.

Figure 3: **Robustness Tests: Alternative Coding and Models**



With these balance test results in hand, we can now test the robustness of our findings from the follow-up survey in a similar manner to the main analysis. Figure 3 provides four coefficients for each outcome variable: the simple bivariate relationship reported in the main text ("Main Text"), a coefficient from a model that controls for university education, the only variable with balance concerns in the follow-up survey ("Balance Controls"), a coefficient from a model that includes ward fixed effects ("Ward FEs"), and a marginal effect drawn from a logit model. The coefficients are very similar, and our findings are substantively identical, across all of these models.

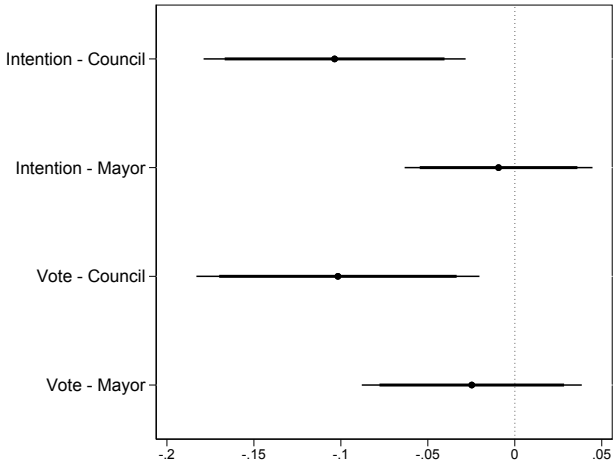
3 Election Results Dataset: Additional Details

Calgary election results are taken from official election records in the Clerk's Correspondence, City Clerks Fonds, City of Calgary Archives. These records are mixed amongst other correspondence; the City of Calgary Archives Clerks Correspondence Finding Aid is necessary for locating election results for each year. More recent election results are available at Calgary Public Library and were provided to the author directly by the City of Calgary Elections Office. Candidate incumbency was verified using official results as well as **Hunter2013**

4 Robustness Test: Mayoral Vote Intention

Figure 4 compares the effect of new voter status on mayoral incumbent vote intention and vote choice to the effect of new voter status on council incumbent vote intention and vote choice. We include our three imbalance variables (see the main text) in all of these analyses to control for the role of ideology and partisanship in both mayoral and council vote choice (this is particularly important in the mayoral context, because both ideology and partisanship played a role in the Calgary mayoral election). If our analysis is capturing the personal vote, rather than some other characteristic of new voters that makes them less satisfied with incumbents in general, we should see no effect on mayoral vote choice. As figure 4 illustrates, this is precisely what we find.

Figure 4: **Robustness Test: Council vs. Mayoral Incumbent Vote**



Description: this figure replicates the vote intention and vote choice variables from the main text for incumbent councillors and adds the same test for incumbent mayoral vote intention and vote choice. All models include controls for the imbalanced variables from the 2017 survey: Conservative partisanship, ideology, and economic retrospection.

5 Personal Vote Estimates: Full Tables

Table 2 provides coefficients for the vote intention analysis in the main text. Table 3 provides coefficients for the vote choice analysis in the main text.

Table 2: **Full Table: Vote Intention**

	(1) No Controls	(2) Balance Controls	(3) All Controls	(4) Ward FEs	(5) Matching
New Voter	-0.0964	-0.104	-0.120	-0.129	-0.0854
	(0.0368)	(0.0384)	(0.0406)	(0.0350)	(0.0386)
Conservative		0.0811	0.0865		
		(0.0385)	(0.0461)		
Ideology		-0.00715	-0.00504		
		(0.00834)	(0.00980)		
Economy		0.0388	0.0481		
		(0.0212)	(0.0248)		
Age			0.00202		
			(0.00113)		
Woman			-0.00337		
			(0.0334)		
Univ. Ed.			-0.000238		
			(0.0331)		
Liberal			-0.0550		
			(0.0518)		
NDP			-0.143		
			(0.0835)		
Home Val.			-0.0268		
			(0.0176)		
Mayor Sat.			0.0364		
			(0.0183)		
Ward FEs	No	No	No	Yes	No
_cons	0.609	0.617	0.414	0.583	0.612
	(0.0164)	(0.0418)	(0.108)	(0.0457)	(0.0172)
N	1121	1045	909	1121	930

Standard errors in parentheses

Table 3: **Full Table: Vote Choice**

	(1) No Controls	(2) Balance Controls	(3) All Controls	(4) Ward FEs	(5) Matching
treat2	-0.0966	-0.102	-0.111	-0.125	-0.0731
	(0.0400)	(0.0415)	(0.0437)	(0.0386)	(0.0418)
conservative		0.134	0.127		
		(0.0427)	(0.0503)		
ideology		-0.0199	-0.0127		
		(0.00922)	(0.0111)		
econ		0.0289	0.0197		
		(0.0235)	(0.0274)		
age			-0.0000637		
			(0.00125)		
woman			-0.0363		
			(0.0367)		
unied			-0.00579		
			(0.0367)		
liberal			-0.0247		
			(0.0560)		
ndp			-0.0512		
			(0.0901)		
homeval			-0.0213		
			(0.0186)		
mayorsat			0.0309		
			(0.0200)		
Ward FEs	No	No	No	Yes	No
_cons	0.550	0.603	0.514	0.463	0.560
	(0.0180)	(0.0454)	(0.119)	(0.0487)	(0.0186)
N	961	900	781	961	774

Standard errors in parentheses