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# Race and Gender Affinities in Voting: Experimental Evidence

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# RACE AND GENDER AFFINITIES IN VOTING: EXPERIMENTAL EVIDENCE

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*We analyze the results of a large-scale experiment wherein subjects participate in a hypothetical primary election and must choose between two fictional candidates who vary by sex and race. We find evidence of affinities along these dimensions in voting behaviour. A number of phenomena regarding these affinities and their interactions are detailed and explored. We find that they compete with each other on the basis of race and gender. Neuroeconomic metrics suggest that people who vote for own race candidates tend to rely more on heuristics than those who do not.*

**Keywords:** gender, prejudice, race, voting

**JEL Classification:** D72, C90, J15, J16

## 1. INTRODUCTION

When faced with choices amongst political candidates, do voters prefer “one of their own”? There is ample reason to believe that this may be the case, as race and gender interactions have been shown to matter in many other contexts. Students perform better academically when matched with teachers of the same race (Dee, 2004; Fairlie et al., 2014; Egalite et al., 2015; Penney, forthcoming), and it has been speculated that this may be due to increased teacher attention to these students. When matched with a female instructor, women in university perform better in math and science classes and are more likely to graduate with a STEM degree (Carrell et al., 2010). Guiliano et al. (2009, 2011) present evidence that

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managers tend to hire own race employees at higher rates than those of other races, and that these employees are in general less likely to be fired, less likely to quit, and are more likely to be promoted.

Recent elections in the United States have provided additional circumstantial evidence that race and gender affinities in voting may exist. President Barack Obama, the first African American candidate for a major political party in American history, won 95% and 93% of the black vote in the 2008 and 2012 United States Presidential elections respectively, the highest shares since the 1964 election.<sup>2</sup> The 2016 presidential race between Republican Donald J. Trump and Democrat Hillary Clinton shows a clear difference in support by gender, with each candidate holding a substantial lead among their own gender according to polling data. Political parties may have begun to take notice of these voting patterns: the 2015 Canadian Federal election saw a record number of minority candidates running for office.<sup>3</sup>

In this paper, we conduct a thorough investigation to determine the extent of voting affinities according to gender and race. We introduce three different concepts with regards to race and gender affinities and how they can interact with each other: affinity distortion, competing affinities, and affinity complementarity. We then construct a simple theoretical model based on Alesina (1988) to hypothesize how a rational voter can choose between candidates while taking both policy positions and affinities into consideration. The empirical analysis is performed using a survey experiment of 2,502 white and visible minority participants from across Canada.<sup>4</sup> The analysis is conducted by separately examining the propensity to vote for a candidate of the same gender and to vote for a candidate of the same race;<sup>5</sup> we simultaneously consider the other cue (race in the gender regressions and gender in the race regressions) in order to examine how the affinities interact with each other. We conduct a power analysis to determine whether the sample sizes are sufficient to rule out small or large effects of our affinities of interest in the regressions. OLS and unconditional quantile regressions involving the response times of the subjects are analyzed in order to glean insight on the cognitive processes involved in determining candidate choice in the presence of racial and sex-based affinities.

This is the first paper that uses a large-scale experimental dataset in an attempt to analyze voting affinities; previous studies have largely relied on observational data or experiments with small student populations. The sampling of diverse respondents, the use of a non-student population, the inclusion of visual stimuli in the form of pictures of the hypothetical candidates to cue candidate race and gender, the tracking of the response times for the voting decisions, and exposure to more than one choice of candidate are all innovations in the research design. Moreover, this is the first paper that investigates how the various affinities can interact with each other; for example, how a voter chooses between one

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<sup>2</sup>Joint Center for Political and Economic Studies: Blacks and the 2012 Democratic National Convention; Pew Research Center: A Closer Look at the Parties in 2012.

<sup>3</sup>Andrew Griffith. "Visible Minority Candidates in the 2015 Election: Making Progress." Policy Options. October 17, 2015. <http://policyoptions.irpp.org/2015/10/17/visible-minority-candidates-in-the-2015-election-making-progress/>. Accessed 09/06/2016.

<sup>4</sup>Although contested, we follow Statistics Canada's definition of "visible minority" to refer to any individuals who are non-white and non-Caucasian in race or skin colour. In this paper, we use the term "white" to refer to individuals who are not of a visible minority background according to this definition.

<sup>5</sup>Although no votes are actually being cast, we define the subject's choosing of one candidate over another as a vote for purposes of exposition.

candidate that shares the same race versus another that is of the same gender.

The main findings of the empirical analysis are as follows. We find evidence that both men and women prefer to vote for candidates of the same gender, but women do so at a significantly higher rate. Non-Chinese visible minorities have a distaste towards voting for same-gender candidates. When a voter must choose between two candidates with one of the same gender and the other of the same race, much of the gender affinity disappears: this is evidence that gender and racial affinities can compete with each other. In terms of racial affinities, Chinese subjects appear much more likely to vote for Chinese candidates than candidates of other races. There is no evidence of a preference for white candidates by white voters. A power analysis confirms that small effects of some of the examined racial and gender affinity interactions, such as whether there is a complementarity between the two or whether the affinities can be distorted when both candidates the voter must choose from both either do not share the voter’s race or gender, cannot be ruled out due to a lack of statistical power. An examination of the response time regressions shows that there is no evidence that the cognitive process of vote choice is different when choosing between candidates of different genders. However, people who vote for candidates of the same race tend to take approximately 2.6 fewer seconds to do so. The unconditional quantile regressions uncover that this propensity to vote for people of the same race faster almost entirely appears within the first four deciles of the response time distribution, suggesting that those who vote for same race candidates tend to rely more on heuristics than those who do not.

The paper is organized as follows. The past literature on voting affinities according to race and gender are discussed in Section 2. A theoretical model of voter choice is outlined in Section 3. The experimental data are described in Section 4. Section 5 contains a description of the affinities of interest and the empirical analysis. The paper concludes with a discussion in Section 6.

## 2. LITERATURE REVIEW

The determinants of vote choice are a central preoccupation of the political behaviour literature. Sociodemographic characteristics can structure the vote in various ways, from undergirding partisanship and vote choice, policy positions, and the like, to influencing preferences amongst candidates, which is the topic of this paper. When voters and candidates share a common sociodemographic trait, particularly one that is visible and politically salient, this can lead to a bond or affinity with the candidate from the perspective of the voter. There is a diverse set of literature on the mechanics of affinity effects between voters and candidates. Theories include heuristics, intergroup relations, and group consciousness.

### 2.1. Gender

Existing research suggests voters do seem to have “baseline gender preferences” for same-sex political representation (Sanbonmatsu, 2002, p. 20), and there is some evidence of affinities between voters and candidates on the basis of gender (Zipp and Plutzer, 1985; Tolleson-Rinehart, 1992; Plutzer and Zipp, 1996; Dolan, 1998, 2004, 2005, 2008, 2010; O’Neill, 1998; Sanbonmatsu, 2002; King and Matland, 2003; Brians, 2005; Goodyear-Grant, 2010). Studies also seem to indicate that voters are predisposed toward candidates that are closer to them

sociodemographically in part because such characteristics are used to approximate or make inferences about a candidates traits and policy positions (Cutler, 2002).<sup>6</sup> Voters will sometimes go so far as to temporarily defect from their partisan loyalties to choose an in-group candidate. This literature has focused, for example, on women who switch parties to vote for women, which is an example of the cross pressuring of partisanship and gender (Plutzer and Zipp, 1996; Fox, 1997; Brians, 2005). Typically, this scenario sees Republican women voting for female Democrats when the Republican candidate in a district is a man, an effect amplified in states that have relatively liberal Republican identifiers and elites (Plutzer and Zipp, 1996).

The literature on gendered voter-candidate affinities is clear that in-group bias does not happen all of the time: in-group favoritism is context dependent, leading to variance in its occurrence across electoral cycles and institutional configurations. One of the key factors across electoral cycles appears to be cuing. Some elections are more likely to cue or activate in-group considerations than others. For example, while women were on average nine percentage points more likely than men to vote for women in US House elections from 1990 to 2000 (Dolan, 2004), the clearest evidence for a gender affinity effect between American women voters and candidates comes from the 1992 “Year of the Woman” congressional elections. This is a race in which gender was primed considerably during the campaign (Dolan, 1998). It appears that when women candidates run against a backdrop of gender equality issues, women voters may be poised to vote for women. The electoral environment essentially activates a connection with female candidates. In other contexts, shared gender does not seem to have affected voters’ candidate preferences (McDermott, 1997; Thompson and Steckenrider, 1997; King and Matland, 2003; Goodyear-Grant and Croskill, 2011), due either to a lack of gender cues, the presence of some more salient campaign issue, or institutional constraints that hinder candidate considerations from affecting the vote all that much (Bird 2011; Goodyear-Grant and Croskill, 2011) which is a point that we expand upon in more detail below. In some unusual cases, the gender affinity relationship has been flipped, and men have voted in greater proportions than women for female candidates (Dolan, 2004).

## 2.2. Race

Some of the gender findings are mirrored in the literature on the impact of race on candidate vote choice (Tate, 1993; Terkildsen, 1993; Sigelman et al., 1995; Stokes-Brown, 2006; Barreto, 2007; Philpot and Walton, 2007; Sullivan, 2010). This research focuses even more on the United States than that on gender affinities, possibly owing in part to the relative size and cohesion of the black voting population, particularly when compared to the more heterogeneous and diffuse visible minority voting populations in Canada and elsewhere. In contrast to the gender affinity literature’s focus on whether women vote for women, American minority voting research concentrates significantly on the question of whether white voters discriminate against minority candidates, particularly black candidates, but also Hispanic candidates and Asian Americans to a somewhat lesser extent. Work that focuses on out-group discrimination rather than in-group favouritism is perhaps a natural consequence

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<sup>6</sup>For example, research has found that female candidates are stereotyped as less competent and lacking the leadership qualities of their male counterparts (Schneider and Bos, 2014), and they are typically viewed as more liberal (Huddy and Terkildsen, 1993).

of the history of race relations in the United States.

Some early American research reports that candidate race was not a determinant of the ballot choice made by white voters (Pettigrew, 1976; Citrin et al., 1990). Exit polls during 1996 and 1998 Congressional elections showed little reluctance among white voters to support black candidates (Highton, 2004); however, other research suggests that white voters harbour prejudicial attitudes toward black candidates, resulting in negative assessments of such candidates (Terkildsen 1993). Indeed, Terkildsen found that white voters are less likely to vote for a black candidate than a white candidate even when the two competitors have identical issue stances, personal characteristics, and qualifications. Barreto (2007, 2010) provides convincing evidence more generally that racial affinity elevates both turnout and support for co-ethnic candidates among Hispanic voters,<sup>7</sup> and this preference seems to persist even when these voters are presented with a more qualified, non-Hispanic candidate (Manzano and Sanchez, 2010).

The negative effect of race is theorized to be indirect, occurring because voters use candidate race as a basis for inferences about their policy preferences, suitability and overall qualifications. McDermott's (1998) study of the impact of demographic stereotypes in low-information electoral contexts found that voters use race as a cue to determine both the beliefs and traits of candidates. Black candidates are more likely to be viewed as "liberal" than a candidate whose race is unknown; they were also viewed as more likely to help the poor and more interested in issues related to race.<sup>8</sup> Of course, this does not mean that candidates' ideology and viability are not important: these also affect candidate preferences, regardless of shared race (Tate, 1993). The impact of candidate race on vote choice is less apparent among more educated and informed voters and in higher information settings where partisan identification may serve as a strong cognitive cue (Bird, 2009).

In Canada, only a few studies have been conducted, but they also uncover evidence of racial affinity effects. For example, using a survey experiment of candidate preferences, Besco (2013) finds same-group racial affinity, but also affinities across racialized groups more generally. Specifically, there is some evidence that Chinese and South Asian respondents were more likely to vote for a minority candidate of a different ethnic background than they were to support a white candidate, although his findings are mixed given that some parts of his analyses uncover no significant evidence for inter-minority affinities. Unlike Besco, Bird (2011) found that non-South Asian visible minority voters are more likely to prefer white candidates than South Asian candidates, although her research design was based on candidate ratings, rather than a choice between competing alternatives. Bird also found evidence of co-ethnic affinity and notes that this exists not just among South Asian respondents but also among whites, although the effect was stronger for the minority respondents. Nonetheless, when evaluating candidates, South Asian voters provide stronger support for white candidates than white voters provide for South Asian candidates (Bird, 2011). This suggests that while all groups appear to prefer "one of their own," South Asian voters look more favourably upon the white out-group than white voters look upon the South Asian out-group. Other Canadian researchers have found that minorities tend to give more positive

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<sup>7</sup>"Co-ethnic" is an umbrella term that refers to individuals who share cultural characteristics that may include race, religion, or language.

<sup>8</sup>These are sometimes referred to as "minority concerns".

attribute ratings to whites than to other minorities and to indicate they are “more similar” to the former than to the latter (Berry and Kalin, 1979; Kalin and Berry, 1996). Landa et al. (1995) tested a variety of hypotheses generated from a “group homogeneity” voting model using riding level and census-tract data during a provincial election in Metropolitan Toronto. Their analyses suggest that as the ethnic density of a neighbourhood increases, so too does support for the party of the co-ethnic candidate, regardless of ethnic groups’ baseline voting preferences. Findings in other countries have turned up similar evidence. In Brazil, for example, in-group bias affects vote choice as the number of names on the ballot grows – an effect of a complex information environment, in part. The same study finds that regardless of ballot structure, blacks in Brazil always prefer black candidates (Aguilar et al., forthcoming).

### 2.3. Gender and Race

Very few analyses of candidate preference look at race and gender together. The scant work that does exist appears to indicate that both gender and race have an impact on vote choice, and in some contexts the two appear to have mutually reinforcing effects; Wilcox (1997) refers to this as a “contagion” effect (see also Simien and Clawson, 2004). Philpot and Walton’s (2007) work demonstrates convincingly that black women are the strongest supporters of black female candidates. For example, in the experimental portion of their study, all black voters preferred black candidates to white ones. When both candidates were black and the only source of variation was gender, 78% of black women chose the black female candidate over the black male candidate, versus 60% of male voters, a difference of 18 percentage points. Notably, a majority of both black men and black women preferred the black female candidate over the black male candidate. They argue that “gender and race interact to create a separate consciousness whereby race trumps gender but the intersection of the two trumps both” (Philpot and Walton 2007, p. 49). This conclusion puts a new perspective on the notion that minority women face “double disadvantage” at the polls, but also proposes a hierarchy of identities whereby the salience of each to candidate preferences is contingent on other markers of difference.

Based on this evidence, it seems that situations wherein a voter and candidate share two visible and politically-salient markers of difference has a powerful influence on candidate preferences, a view that is not consistent with past work suggesting that “black women use race at the expense of gender in their political evaluations” (see also Mansbridge and Tate, 1992; Gay and Tate, 1998; Philpot and Walton, 2007, p. 59). In her municipal voting experiment, Bird (2011) found that while female candidates are rated the most highly among all voters regardless of gender or racial background and that South Asian female candidates receive considerable support from South Asian male voters, but much less from white women and other visible minorities. However, because Bird’s research design did not involve a choice between candidates (subjects assessed only a single candidate), it cannot shed light on what voters do when they are faced with a choice between selecting a candidate with a shared racial or shared gender identity.

In terms of comparing a gender affinity versus a racial affinity, an analysis by Philpot and Walton’s (2007, p. 59) finds that, when faced with the choice of a white male candidate or black female candidate, gender trumps race as a basis for candidate choice among white



women. However, this study does not examine the case of a white female candidate versus a black male candidate, limiting its generalizability of the competing affinities. The variable effect of gender compared with what appear to be stronger or more consistent effects of race on the vote is typically thought to signal a difference in group consciousness. Philpot and Walton (2007) propose that group consciousness is stronger among blacks than among women, claiming that “African Americans are more likely to see themselves as a group than women are” (Sigelman and Sigelman, 1982; Tate, 2003; Philpot and Walton, 2007, p. 59). They conclude that “the level of support in ascending order for black female candidates is as follows: white male, white female, black male, black female” (Philpot and Walton 2007, 53) an observation with important implications for our analyses below.

It bears noting that party, experience, and incumbency often diminish the effects of gender and race on the vote. In the case of voting for a black female House candidate (Philpot and Walton 2007) incumbency, a partisan match between voter and candidate, and previous office holding eliminate gender and race effects on the vote.<sup>9</sup> In other words, “If there is an initial reluctance on the part of white voters to vote for a black female candidate, it subsides when the candidate is an incumbent or has held public office prior to running for Congress” (Philpot and Walton, 2007, p. 58).

### 3. MODEL

Many formal models of voter choice are based on the assumption of a unidimensional spectrum of political beliefs (such as left wing versus right wing) wherein a given voter will cast their ballot for the candidate who is closest to them on the political spectrum (e.g. Alesina, 1988); that is, the distance between the voter’s political beliefs and the candidate’s stated policy positions are minimized. We begin with this simple model and add uncertainty over a candidate’s policy positions. Let  $p_i$  be voter  $i$ ’s bliss point, and  $c_j$  be the stated policy positions of candidate  $j$ . The uncertainty of candidate  $j$ ’s positions by voter  $i$  is given as a distribution over their possible policy distributions  $f_i(c_j)$ . The voter seeks to maximize the following expression:

$$- \int u(|p_i - c_j|)f_i(c_j)dc_j \quad (1)$$

where  $u$  is a concave increasing continuous single-peaked utility function. The global maximum of this function is 0: a situation wherein there is no uncertainty over a candidate’s perceived political positions, that is  $\int c_j f_i(c_j)dc_j = c_j$ , and that the candidate’s positions line up exactly with those of the voter,  $c_j = p_i$ .

Past research into voting behaviour has yielded two key insights to understanding the distribution of a candidate’s perceived political positions  $f_i(c_j)$ : Cutler (2002) finds that people use race and gender to make inferences about a candidate’s policy positions, and Philpot and Walton (2007) find that incumbency reduces the race and gender effects on the vote. Therefore, we assume that for two otherwise identical candidates  $k$  and  $l$ , a voter who is more confident about candidate  $k$ ’s policy positions compared to candidate  $l$  (for reasons such as racial affinity) will have  $f_i(c_l)$  as a mean-preserving spread of  $f_i(c_k)$ . With this setup, we prove two properties of the model.

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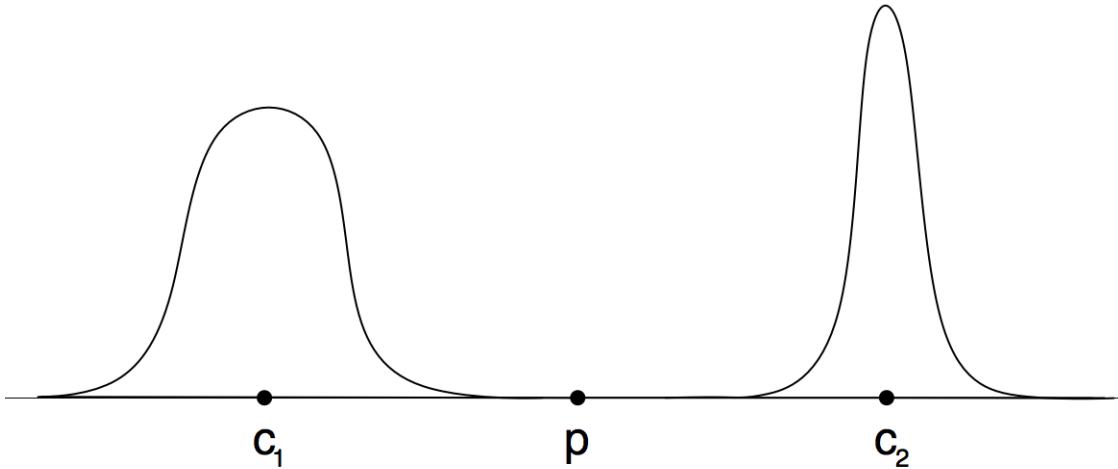
<sup>9</sup>See also Dolan (2008) and Goodyear-Grant and Croskill (2011) on the “party-sex overlap”.

**Proposition 1.** Consider two candidates  $k$  and  $l$  whose policy positions  $c_j$  for  $j = 1, 2$  are equidistant from the voter's bliss point  $p_i$ , and suppose that the voter is more confident about candidate  $k$ 's policy positions than candidate  $l$ . Then, voter  $i$  will choose to vote for candidate  $k$ .

*Proof.* Since  $f_i(c_l)$  is a mean-preserving spread of  $f_i(c_k)$  and by the convexity of  $-u(\cdot)$ ,  $-\int u(|p_i - c_k|)f_i(c_k)dc_k > -\int u(|p_i - c_l|)f_i(c_l)dc_l$  for any arbitrary set of perceived positions  $f_i(c_k)$ , and therefore the voter will select candidate  $k$ .  $\square$

A graphical illustration of this model is presented in Figure 1. As displayed on the graph, the distance between the bliss point  $p$  and the positions of the two candidates  $c_1$  and  $c_2$  are the same, but  $f(c_1)$  is a mean preserving spread of  $f(c_2)$ . Therefore, this particular voter will elect to choose candidate 2.

Figure 1: Model Illustration



**Proposition 2.** There exists a candidate  $m$  whose stated policy positions are further away than those of candidate  $l$ , i.e.  $|p_i - c_l| < |p_i - c_m|$ , that voter  $i$  will nonetheless vote for.

*Proof.* From Proposition 1, we see that  $-\int u(|p_i - c_k|)f_i(c_k)dc_k > -\int u(|p_i - c_l|)f_i(c_l)dc_l$  for any arbitrary set of perceived positions  $f_i(c_k)$ . By the continuity of  $u$ , there exists a set of perceived policy positions  $f_i(c_m)$  such that  $-\int u(|p_i - c_k|)f_i(c_k)dc_k > -\int u(|p_i - c_m|)f_i(c_m)dc_m > -\int u(|p_i - c_l|)f_i(c_l)dc_l$  for which  $|p_i - c_l| < |p_i - c_m|$ , and thus  $m \succeq_i l$ .  $\square$

Returning to the graph, we are able to nudge the point and distribution about  $c_2$  to the right and the voter will still elect to choose candidate 2 given the high uncertainty over candidate 1's positions, even though the stated positions of candidate 1 are closer to the bliss point  $p$  of the voter.

This simple model helps to explain two voting phenomena: one, a voter may prefer one otherwise identical candidate over another simply due to an affinity based on race or gender; two, a voter may prefer to vote for a candidate whose stated policy positions are even further away on the political spectrum than their own compared to a competitor due to a racial or gender affinity. Note that the proof can be trivially extended to the case of  $n > 2$  candidates.

## 4. DATA

### 4.1. Survey Experiment

This study uses data from an online survey experiment of 2,502 Canadian residents.<sup>10</sup> The 40-question survey was conducted in English, with participants from every province except Quebec. The survey questions covered a wide variety of topics such as political attitudes, opinions about Canadian identity, feelings about various groups such as immigrants and Muslims, as well as questions concerning age, income, social class, and the like. The participants were recruited by Abingdon Research, which uses online ads, co-offers, and random digit dialing to maintain a bank of potential survey respondents. Individuals are contacted periodically and asked if they would like to receive nominal compensation to participate in a survey; screener questions help to ensure sufficient numbers of white and visible minority participants are included. Our sample is not representative of the population in that minorities were over-sampled in order to obtain enough respondents from which to draw meaningful conclusions. That said, variances within variables such as age, income, education, and others important to political choice are robust in our sample, and correspond relatively well with population figures.<sup>11</sup>

Table 1: Treatment Assignments

Treatment	Candidate 1	Candidate 2	N	In gender sample	In race sample
1	Chinese woman	Chinese man	417	yes	no
2	Chinese woman	white man	417	yes	yes
3	Chinese woman	white woman	417	no	yes
4	Chinese man	white man	417	no	yes
5	Chinese man	white woman	418	yes	yes
6	white woman	white man	416	yes	no

Notes: Numbers calculated from sample data. N denotes the number of observations that were assigned the given treatment.

At the candidate selection stage of the survey, each candidate’s name, colour photograph, and biography were displayed side by side. Sample respondents were randomly assigned to one of six treatments, each featuring two candidates from which to choose; Table 1 displays details of the various treatments. The experiments consist of varying combinations of a white man, white woman, Chinese man, and Chinese woman. Prototypical male and female names for people of Chinese and Anglo-Saxon descent were chosen for the candidates: Steve Peterson for the white male, Susan Murphy for the white female, John Wang for the Chinese male, and Julie Lo for the Chinese female. Their names and photographs were set, and their biographies, written to be generic and neutral, were randomized. The ordering of the

<sup>10</sup>A second experiment was conducted in this survey as well; see Besco (2013) for details.

<sup>11</sup>Our sample skews toward the highly-educated compared to the population: about 3% of the sample did not complete high school and 51% had at least one university degree. Compared to the 2006 Canadian Census data of the general population, these figures are 15% and 23%, respectively. This skewing towards more highly-educated individuals is common in online surveys.

candidates was also randomized within treatments. Candidate biographies, photographs, and other details are available in Appendix A.

The empirical analysis is conducted using two different samples using data from these experiments, with the response variables being (i) whether a respondent votes for a candidate of the same gender, and (ii) whether a respondent votes for a candidate of the same race. Some treatments are excluded from these samples because they lack the necessary identifying variation: for example, treatment 4 pits a Chinese man against a white man, so selecting one over the other does not provide any information about gender preferences.

In the experiment, respondents were instructed to imagine that they were attending a candidate nomination meeting for their preferred political party.<sup>12</sup> We use a partisan nomination meeting rather than general election as the context for assessing race and gender affinities for two reasons. First, the extent to which party preferences dictate vote choice tends to wash out nearly all other ballot box criteria in Canada and in other Westminster systems (Tossutti and Najem, 2002; Blais et al., 2003; Black and Erickson, 2006).<sup>13</sup> Second, some researchers have criticized studies in which there is an “absence of partisan content” (Murakami, 2012, p. 3). Sometimes, in an effort to control for its effects, researchers opt to exclude party affiliation altogether from the research design (Bird, 2011); however, this may limit the authenticity and generalizability of the findings. Given these facts, we assess affinities at the candidate nomination stage as this would assuage both concerns: our respondents do not have to imagine themselves or the candidates stripped of a partisan preference, but nor do we have to deal with the complexity of separating race and gender affinities with party affinities. In addition, the party nomination stage is an important site of study not just for methodological reasons but also because it is here that candidates may face the most significant hurdles in their quest to enter the political arena, as work on candidate supply and selection has tended to indicate (Niven, 1998; Trimble and Arscott, 2003; Lawless and Fox, 2005, 2010; Sanbonmatsu, 2006; Cheng and Tavits, 2011).

Presenting photographs of the candidates during the experiment was intended to lend a sense of authenticity to the choice and to enhance the connection between the stimuli and the political phenomena we are analyzing; it was also motivated by findings regarding the power of visual stimuli to cue intergroup considerations, particularly in the case of race (Gilens, 1999). However, there is a potential risk that differing levels of attractiveness would become a competing explanation for any differences in candidate preferences. While research on the impact of candidate appearance on vote choice comes to mixed conclusions (Sigelman et al., 1987; Nixon and Pollom, 2006; Berggren et al., 2010), it nonetheless seemed prudent to choose candidates who were perceived to be similarly attractive and of roughly the same age. To help ensure of this, we tested the attractiveness of 16 headshots, which included

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<sup>12</sup>Earlier in the questionnaire, respondents are asked to indicate their preferred political party or political affiliation.

<sup>13</sup>This may be due to the characteristic party discipline of parliamentary democracy: elected representatives are rarely afforded the opportunity to vote their conscience and must instead vote the way their party leader requests them to. Failure to do so very frequently results in the member being ejected from the party. There are however exceptions to this general rule: for example, during its most recent tenure as the governing party from 2006 to 2015, the Conservative Party of Canada has held a number of votes in which individual members of parliament may vote the way they choose with no consequences; these are known as “free votes” in Canadian parlance.

four images each of an ethnic Chinese woman, a white woman, an ethnic Chinese man and a white man. The headshots were taken from stock photography websites as well as the promotional materials of several American legislators, including candidates for Senate, state legislature, and mayor. Using Amazon’s Mechanical Turk, we recruited 115 testers who rated the attractiveness, approximate age, and ethnicity of each candidate. The headshots selected for inclusion in the study received mean attractiveness ratings that ranged from 3.58 to 4.01 on a 5-point scale (all received median ratings of 4 on a 5-point scale), and estimated ages between 39 and 43 years; specific scores for the hypothetical candidates that were used in the survey experiment are presented in Appendix A.

Given Canada’s racial heterogeneity and the fact that there is not really one dominant minority group in terms of representation meant that when deciding what race to assign to the visible minority candidates in our treatments, there was no clear answer. Other Canadian research has used South Asian or Chinese candidates (Bird, 2011; Besco, 2013), which are logical choices given these are the country’s largest visible minority groups. There are also a number of notable South Asian and Chinese-origin politicians, including Ujjal Dosanjh, a former premier of Indian origin, and Olivia Chow, a Member of Parliament who immigrated to Canada from Hong Kong. In the end, we selected candidates with Chinese origins for two reasons: first, while both the Chinese and South Asian populations have considerable internal heterogeneity, the latter is arguably more diffuse in that it encompasses individuals whose origins include a number of countries (e.g., India, Pakistan, Sri Lanka, Bangladesh), religions (e.g., Sikh, Islam, Hindu) and languages (e.g., Punjabi, Tamil, Urdu, Hindi, Gujarati). By contrast, Chinese Canadians tend to originate from a more closely clustered group of countries (China, Hong Kong, and Taiwan), speak either Mandarin or Cantonese, and generally report no religious affiliation. This relative cohesion helps to mitigate against out-group response biases with non-racial foundations. A second reason for selecting candidates with purportedly Chinese racial backgrounds is more geographical: although Canadians of South Asian and Chinese backgrounds are both heavily concentrated in Ontario and British Columbia, the Chinese Canadian community is somewhat more diffuse in part because they have a more significant presence in Alberta than their South Asian counterparts. As a result, the likelihood that respondents across provinces would encounter a candidate with Chinese origins is slightly higher than the likelihood of encountering a candidate of South Asian background. Again, this increases the authenticity of the experiment.

## 4.2. Summary Statistics

The summary statistics of the data are displayed in Table 2. We begin by defining the variables. The Non-Chinese visible minority category, which we call on the table visible minority, includes all non-white and non-Chinese respondents. Western Canada is defined as the provinces of British Columbia, Alberta, Saskatchewan, and Manitoba; the Maritimes include the provinces Newfoundland and Labrador, Prince Edward Island, New Brunswick, and Nova Scotia. Low family income denotes \$30,000 or less per year. A person is flagged as left leaning if they rate themselves as less than 4 on a 0 to 10 scale where 0 is left wing and 10 is right wing. “Attends church” is a dummy variable equal to 1 if the person attends church more often than once per month. Observations are listed as having high political

Table 2: Summary Statistics

Variable	Full sample	Gender sample	Race sample
Female	0.500 (0.500)	0.497 (0.500)	0.532 (0.499)
White	0.393 (0.489)	0.393 (0.488)	0.596 (0.491)
Chinese	0.271 (0.445)	0.276 (0.447)	0.404 (0.491)
Visible minority	0.335 (0.472)	0.331 (0.471)	0.000 (0.000)
Age	43.681 (13.569)	43.771 (13.711)	44.545 (13.999)
Born in Canada	0.390 (0.488)	0.392 (0.488)	0.330 (0.470)
Live in Western Canada	0.325 (0.468)	0.329 (0.470)	0.338 (0.473)
Live in Maritimes	0.055 (0.228)	0.055 (0.227)	0.058 (0.234)
Low family income	0.095 (0.293)	0.098 (0.298)	0.094 (0.291)
College degree	0.510 (0.500)	0.499 (0.500)	0.497 (0.500)
Attends church	0.293 (0.455)	0.293 (0.455)	0.232 (0.422)
Left leaning	0.165 (0.371)	0.161 (0.367)	0.169 (0.375)
High political knowledge	0.431 (0.495)	0.416 (0.493)	0.434 (0.496)
Pro-immigration	0.260 (0.439)	0.258 (0.438)	0.223 (0.417)
Pro-feminism	0.513 (0.500)	0.508 (0.500)	0.500 (0.500)
Observations	2502	1668	1101

Notes: Numbers calculated from sample data. Variables are defined in the text. Standard deviations are in parentheses.

knowledge if they correctly answer three questions about Canadian politics.<sup>14</sup> A person is said to be pro-immigration if they strongly or somewhat agree to the statement “Canada should have more immigrants than we have now”, and is counted as pro-feminism if they strongly or somewhat agree to the statement “Feminists are a valuable part of Canadian society”.

The summary statistics reveal that the samples are quite similar,<sup>15</sup> with the only major difference being the lack of non-Chinese visible minorities in the “Vote same race” sample;<sup>16</sup> this is the primary reason why the “vote same race” sample is smaller than the “vote same gender” sample. The sample does not include observations from the French-speaking province of Quebec, nor any that live in the territories. More than half the sample reside in Ontario, the most populous province. About one in ten observations have a family income of under \$30,000 per year.<sup>17</sup> The sample is highly educated, with approximately half holding a bachelor’s degree or more. Of particular note is that fewer than one in five respondents are classified as left-leaning. Approximately half of the sample have positive feelings towards feminism.

Table 3: Gender Affinities

Voter	Not vote same gender	Vote same gender	Total
male	445 <i>53.04%</i>	394 <i>46.96%</i>	839 <i>100%</i>
female	343 <i>41.38%</i>	486 <i>58.62%</i>	829 <i>100%</i>
Total	788 <i>47.24%</i>	880 <i>52.76%</i>	1,668 <i>100%</i>
Fisher’s exact test p-value			0.000

Notes: Numbers calculated from sample data. The figures indicate the number of observations in each cell, and percentages correspond to the number of observations in the cell for the given row.

Table 3 displays the raw gender affinity voting patterns for men and women. It appears that men are slightly more favoured to vote for women than they are for men, while women prefer to vote for women by almost 3 to 2. The Fisher’s exact test p-value confirms that men and women do not vote for same-gender candidates at the same rate. This initial evidence suggests that both genders favour voting for female candidates over male candidates.

The analogous results for the simple affinities in terms of race are displayed in Table 4. Whites appear to favour voting for Chinese candidates over white candidates, while the

<sup>14</sup>Specifically, the respondent must correctly identify the then-current Prime Minister, the political party in official opposition, and who in the government is responsible for declaring a law to be constitutional.

<sup>15</sup>The samples share those who received treatments 2 and 5, which comprise roughly half the observations for each.

<sup>16</sup>Non-Chinese visible minorities are excluded in this sample since they are never given the opportunity to vote for a candidate of the same race, as the candidates are either Chinese or white.

<sup>17</sup>This places households of two or more people roughly in the low-income category as officially defined by Statistics Canada, the country’s official statistical agency.

Table 4: Racial Affinities

Voter	Not vote	Vote	Total
	same race	same race	
white	353 <i>53.81%</i>	303 <i>46.19%</i>	656 <i>100%</i>
Chinese	165 <i>37.08%</i>	280 <i>62.92%</i>	445 <i>100%</i>
Total	518 <i>47.05%</i>	583 <i>52.95%</i>	1,101 <i>100%</i>
Fisher’s exact test p-value			0.000

Notes: Numbers calculated from sample data. The figures indicate the number of observations in each cell, and percentages correspond to the number of observations in the cell for the given row.

Chinese exhibit an extremely strong preference to do so - stronger than the preference women had to vote for women in the previous table. The dissimilarity between the voting patterns of the two races are confirmed with Fisher’s exact test.

## 5. EMPIRICAL ANALYSIS

### 5.1. Affinities of Interest

We begin by outlining the various complex interactions between race and gender affinities, first recalling one mentioned in previous literature and then defining two new concepts.

We propose the concept of **affinity distortion**. This is the theory that affinity to a person’s race is distorted when the voter must choose between two candidates where neither of which share the voter’s gender; or, alternatively, the affinity to a candidate’s gender is distorted when a voter must between two candidates for whom neither of which share the voter’s race. As an example, a white male voter having to choose between a Chinese male candidate and a Chinese female candidate may exhibit less of a preference towards voting in favour of the male compared to a situation where he would have the choice between a white male and a white female. Should such an effect be present, it would indicate that the intensity of a person’s affinity towards a person’s gender (race) depends on whether the choice of candidates share the voter’s race (gender) or not.

The concept of **competing affinities** is the idea that a person’s preference to vote for someone of the same gender can compete with that same person’s preference to vote for someone of the same race; for example, a white female voter having to choose between a white male candidate and a Chinese female candidate. This concept has seen some limited analysis in previous literature. Examining the competing affinities in the following analysis will tell us affinity to which in-group people generally see as taking priority, either race or gender.

A second concept that we have developed is that of **affinity complementarity**: the preference a voter exhibits for one candidate that share both the same gender and the same race as the voter when the other candidate shares neither of these attributes. For instance,



consider a situation where a Chinese female voter must choose between a Chinese female candidate and a white male candidate: here, two affinities are activated towards a single candidate. It may be that in situations like this, the voter exhibits a higher propensity to vote for the same-race same-gender candidate than what being the same-gender *or* being the same-race would alone grant.

We test for the presence of these affinities using the model we describe in the next subsection. This is accomplished through the use of dummy variables for each particular situation, since for any given voter, only one of these affinities is tested. For example, when a black female voter must choose between a white male candidate and a white female candidate, only affinity distortion is being tested; for this observation, the dummy for affinity distortion is equal to 1, and the dummies for the other complex affinities will be equal to 0.

In addition to the complex affinities described in this section, we also examine simple affinities based on race and gender; in particular, we investigate whether women, men, whites, Chinese, and people of other races are more or less likely to vote for people of the same gender and the same race.

## 5.2. Results

In order to analyze the various affinities, we run two sets of regressions: one where the response variable is a dummy variable equal to 1 if the respondent votes for the candidate of the same gender and 0 otherwise, and the other an analogous setup but for voting for someone of the race. The regression of interest, which we set up as a linear probability model, is as follows:

$$y_i = \beta_0 + \beta_1 \mathbf{A}_i + \beta_2 \mathbf{X}_i + u_i \quad (2)$$

where  $y$  is the previously defined dependent variable,  $\mathbf{A}_i$  is a vector containing the previously described simple and complex affinity variables,  $\mathbf{X}_i$  is a vector of controls, and  $u_i$  is the usual random error term. For each dependent variable, we have three sets of regression results: the first without any controls, the second adds observable characteristics, and the last includes the attitudinal variables.

The results for the regression where the response variable is whether the subject voted for the candidate of the same gender are displayed in Table 5. In all three models, women exhibit a much stronger preference to vote for female candidates than men do for male candidates, *ceteris paribus*. The effect is particularly large: in the neighbourhood of 11 percentage points. The gender affinities displayed in Table 3 show approximately a 17 percentage point gap, so the inclusion of the simple and complex affinities, observables, and attitudinal variables explains about a third of the propensity for women to vote for each other. This preference to vote for same gender candidates appears to vary by race: non-Chinese and non-white respondents are much less likely to vote for such candidates, to the tune of about 7 percentage points. Chinese voters do not appear to have a strong preference to vote for candidates of their own gender. The affinity distortion variable is of the expected sign, but the effect is imprecisely estimated. The affinity complementarity is of the incorrect sign and is also imprecisely estimated. We find strong statistical evidence that competing affinities matter: when a voter must choose between a candidate of the same race and one of the same gender, they are much less likely to vote for someone of the same gender. In

Table 5: Voting Affinities Regressions

	Vote same gender			Vote same race		
Affinity distortion	-0.042 (0.041)	-0.043 (0.042)	-0.041 (0.042)	0.019 (0.042)	0.019 (0.042)	0.019 (0.042)
Competing affinities	-0.085 <sup>†</sup> (0.041)	-0.085 <sup>†</sup> (0.041)	-0.081 <sup>†</sup> (0.041)	-0.052 (0.042)	-0.052 (0.042)	-0.055 (0.042)
Affinity complementarity	-0.053 (0.042)	-0.052 (0.042)	-0.049 (0.042)	0.011 (0.043)	0.008 (0.043)	0.007 (0.043)
Female	0.118 <sup>‡</sup> (0.024)	0.113 <sup>‡</sup> (0.025)	0.125 <sup>‡</sup> (0.025)	-0.035 (0.030)	-0.032 (0.030)	-0.022 (0.031)
Chinese	-0.006 (0.030)	-0.003 (0.033)	-0.010 (0.034)	0.167 <sup>‡</sup> (0.030)	0.195 <sup>‡</sup> (0.035)	0.184 <sup>‡</sup> (0.035)
Visible minority	-0.072* (0.039)	-0.074* (0.041)	-0.078* (0.041)			
Age/100		-0.221 <sup>†</sup> (0.093)	-0.250 <sup>†</sup> (0.097)		0.036 (0.113)	0.081 (0.117)
Born in Canada		-0.036 (0.028)	-0.038 (0.028)		-0.030 (0.036)	-0.038 (0.036)
Live in Western Canada		0.028 (0.027)	0.028 (0.027)		-0.048 (0.033)	-0.049 (0.033)
Live in Maritimes		0.056 (0.054)	0.053 (0.054)		-0.060 (0.064)	-0.039 (0.063)
Low family income		-0.015 (0.041)	-0.014 (0.041)		0.078 (0.051)	0.064 (0.051)
College degree		0.010 (0.025)	0.008 (0.026)		-0.036 (0.032)	-0.019 (0.032)
Attends church		0.036 (0.027)	0.028 (0.028)		0.006 (0.035)	0.005 (0.036)
Left leaning			-0.046 (0.034)			-0.034 (0.041)
High political knowledge			0.011 (0.027)			-0.037 (0.033)
Pro-immigration			0.056* (0.030)			-0.020 (0.037)
Pro-feminism			-0.029 (0.026)			-0.104 <sup>‡</sup> (0.032)
Constant	0.538 <sup>‡</sup> (0.034)	0.626 <sup>‡</sup> (0.057)	0.640 <sup>‡</sup> (0.058)	0.487 <sup>‡</sup> (0.036)	0.497 <sup>‡</sup> (0.068)	0.551 <sup>‡</sup> (0.070)
p-value Ho: constant = 0.5	0.253	0.027 <sup>†</sup>	0.016 <sup>†</sup>	0.713	0.971	0.468
Observations	1668	1668	1668	1101	1101	1101

Notes: \* denotes statistical significance at the 10% level, † the 5% level, and ‡ the 1% level. Affinity distortion, competing affinities, and affinity complementarity are defined in the text in Section 5.1. Heteroskedasticity-robust standard errors are in parentheses. Visible minority refers to any visible minority that is not Chinese.

the case of white and Chinese female voters, the affinity towards women is stronger than the racial affinity, but most of the gender affinity effect that is specific to women is wiped out. We include on this table a test of whether sufficient evidence exists to conclude that the constant is equal to 0.5; if a person exhibits no preference in terms of gender after controlling for the covariates, the constant term should equal 0.5, meaning a voter is just as likely to choose a same gender candidate as a candidate of the opposite gender. The model that only includes the simple and complex affinity variables yields a constant that is greater than 0.5, suggesting that men (the baseline gender category) also exhibit a preference to vote for male candidates, but it is statistically insignificant. In the models with additional controls, the constant moves even further away from 0.5 and it is statistically significant. Therefore, we conclude that both men and women prefer to vote for candidates of the same gender, but women do so at a much higher rate. This preference for men to vote for candidates of the same gender is surprising since in the gender affinities analysis of Table 3 which does not control for covariates, men prefer to vote for women by a margin of about 6 percentage points. We do find some interesting results in the covariates: the propensity to vote for same gender candidates appears to diminish with age, perhaps indicating that older Canadians exert cognitive effort when choosing their candidate instead of relying on their gender as a cue. The magnitude of the age coefficient is such that much of the affinity that people have for same gender candidates is wiped out by around age 60. Finally, voters who favour more immigration tend to vote for candidates of the same gender. It is difficult to speculate as to exactly why this occurs.

The analysis for the same race response variable are displayed in the last three columns of Table 5. The results here are much less conclusive than for the same gender analysis: our only statistically significant coefficients are for Chinese voters and for voters who hold pro-feminist viewpoints. Chinese voters exhibit a heavy preference to vote for Chinese candidates at a magnitude of approximately 18 percentage points. As was the case with women and their preference for same gender candidates, including covariates reduces the raw affinities displayed in Table 4 by approximately one-third. There is insufficient evidence to conclude that white voters, who make up the baseline category, exhibit a systematic preference towards voting for white candidates, as the p-value for the hypothesis that the constant equals 0.5 is not statistically significant; moreover, the point estimate in two of the three columns is quite close to 0.5. A result analogous to the perplexing finding that pro-immigration voters are less likely to support for candidates of the same gender is that pro-feminist voters are less likely to support same-race candidates. The magnitude is quite high at 10 percentage points, and the result is very precisely estimated. The effects for the complex affinities are imprecisely estimated.

### 5.3. Power Analysis

The lack of statistically significant results where some are expected in the previous section motivates a power analysis to determine whether the sample exhibits sufficient power to obtain statistically significant results given the residual variation and the variation in the various treatments. For both the “vote same gender” and “vote same race” regressions, I examine the sample sizes that would be required to detect two effect sizes at the 5% level

of significance with a power of 0.8:<sup>18</sup> a large effect size of 10 percentage points, and a small effect size of 5 percentage points. The results of this exercise are displayed in Table 6.

Table 6: Sample Sizes Required to Reach a Power of 0.8

	Vote same gender		Vote same race	
	Detect	Detect	Detect	Detect
	$\tau=0.10$	$\tau=0.05$	$\tau=0.10$	$\tau=0.05$
Affinity distortion	2283	9076	1529	6061
Competing affinities	2275	9041	1490	5905
Affinity complementarity	2358	9375	1545	6128
Female	839	3300	847	3335
Chinese	1495	5922	1090	4308

Notes: The figures indicate the minimum number of observations needed to detect an effect of a given magnitude  $\tau$  at the 95% level of confidence with a statistical power of 0.80.

We see that, for the complex affinities, the sample employed falls somewhat short of the desired level of power. Small effects on the order of 5 percentage points cannot be ruled out for the complex affinities. However, the sample size is generally sufficient for obtaining power at the desired levels of significance for the female and Chinese dummy variables. Thus, we are fairly certain of our null result that Chinese voters do not exhibit differential preference to vote towards the same gender, at least at or above a magnitude of 10 percentage points. We come to a similar conclusion for female voters when they are given the choice as to whether to vote for a candidate of the same race.

#### 5.4. Response Time Analysis

For the experimental part of the survey, response times were tracked to record how long it took for the respondents to answer the voting questions. We elected to gather the response times in order to help determine what neuroeconomic processes were at work when voters were asked to make their choices. Choices can be broadly classified into one of three types: cognitive, which involve a reasoning process; instinctive, which involve instinct; and reasonless, which appear to be choices taken at random (Rubinstein, 2007). While it is difficult to conclusively classify any specific choice, choices that require additional cognitive effort require longer response times on average Rubinstein (2007, 2008).

For the data used in this section, we have trimmed the upper 2% of response times, which corresponds to approximately two minutes or more, about 3.5 times the average response time. The reason we do this is because since the people have taken the survey in their homes (and are thus unsupervised), people may have stepped away from their computers when answering this question. We thus categorize the upper end of these distributions as data recording errors, which we discard. The results of this paper are also extremely similar if

<sup>18</sup>Experiments in psychology and other disciplines, where samples are frequently collected whose size allows for the obtaining of statistical significance with magnitudes that have practical significance, aim for a sample size that satisfies these conditions.

we only cut the upper 1% of response times, which is approximately three minutes or longer (approximately 5.5 times the average response time).

Table 7: Response Time Regressions

	Vote same gender			Vote same race		
No	34.04 <sup>‡</sup>	14.32 <sup>‡</sup>	12.88 <sup>‡</sup>	35.47 <sup>‡</sup>	19.88 <sup>‡</sup>	18.67 <sup>‡</sup>
	(0.72)	(2.09)	(2.12)	(0.94)	(2.54)	(2.61)
Yes	33.97 <sup>‡</sup>	14.82 <sup>‡</sup>	13.52 <sup>‡</sup>	32.90 <sup>‡</sup>	17.72 <sup>‡</sup>	16.81 <sup>‡</sup>
	(0.71)	(2.04)	(2.08)	(0.85)	(2.61)	(2.68)
Female		2.65 <sup>‡</sup>	2.67 <sup>‡</sup>		2.35*	2.45*
		(0.98)	(0.99)		(1.25)	(1.28)
Chinese		0.79	2.46*		-1.16	-0.10
		(1.33)	(1.35)		(1.45)	(1.46)
Visible minority		0.51	1.39			
		(1.18)	(1.18)			
Age		0.39 <sup>‡</sup>	0.35 <sup>‡</sup>		0.29 <sup>‡</sup>	0.24 <sup>‡</sup>
		(0.04)	(0.04)		(0.04)	(0.04)
Born in Canada		2.60 <sup>†</sup>	2.94 <sup>‡</sup>		2.87 <sup>†</sup>	3.46 <sup>†</sup>
		(1.11)	(1.09)		(1.46)	(1.43)
Live in Western Canada		-1.44	-1.49		0.75	0.63
		(1.05)	(1.03)		(1.36)	(1.35)
Live in Maritimes		2.92	3.30		4.35	3.64
		(2.31)	(2.30)		(2.81)	(2.77)
Low family income		0.64	0.75		1.17	1.32
		(1.70)	(1.66)		(2.37)	(2.39)
College degree		-0.20	-1.20		0.71	-0.23
		(1.03)	(1.03)		(1.31)	(1.30)
Attends church		-0.10	1.04		-0.59	0.39
		(1.10)	(1.11)		(1.49)	(1.48)
Left leaning			4.21 <sup>‡</sup>			2.66
			(1.36)			(1.64)
High political knowledge			5.61 <sup>‡</sup>			5.95 <sup>‡</sup>
			(1.03)			(1.28)
Pro-immigration			-4.18 <sup>‡</sup>			-3.52 <sup>†</sup>
			(1.17)			(1.47)
Pro-feminism			0.69			0.79
			(1.01)			(1.29)
p-value Ho: No = Yes	0.95	0.61	0.51	0.04 <sup>†</sup>	0.09*	0.14
Observations	1606	1606	1606	1066	1066	1066

Notes: Coefficients are in seconds. \* denotes statistical significance at the 10% level, † the 5% level, and ‡ the 1% level. Heteroskedasticity-robust standard errors are in parentheses.

We begin with an examination of the response times at the mean by running the following regression:

$$y_i = \beta_0 \text{no}_i + \beta_1 \text{yes}_i + \beta_2 \mathbf{a}_i + \beta_3 \mathbf{X}_i + u_i \quad (3)$$

where *yes* and *no* are dummy variables with the voter’s choice being equal to 1 and the other equal to 0,  $\mathbf{a}_i$  being a vector containing only the simple affinities,  $\mathbf{X}_i$  a vector of controls, and  $u_i$  being the usual error term. Note that this regression does not include a constant term: this is so that  $\beta_0$  and  $\beta_1$  in the regression without covariates will contain the average response times for people who voted for each alternative.

The results of these regressions are displayed in Table 7. The first column displays the amount of time it took for people to either vote for or against the candidate of the same gender, and the fourth column the analogous information about voting for the same race. We see that the response time for the same gender situation is almost identical at the mean, varying by only 0.07 seconds. This difference is not statistically significant. However, there is a statistically significant difference of 2.5 seconds between those that have voted for and those that have voted against the candidate of the same race. This suggests that the cognitive processes between the same gender and same race voting decisions may differ, with the latter relying more on heuristics (instinctive processes).

Adding covariates yields some insight on the decision making process. There is evidence that women deliberate more when voting, taking approximately 2.5 seconds longer than men. Older voters also take longer to vote. We believe this is due to them actually thinking more rather due to slower cognitive function due to their age; we base this on the fact that they were earlier found to be less likely to vote for the same gender at that the magnitude of the preference was quite high, which suggests that they are less reliant on heuristics (e.g. same gender preferences) when making their choice. Those born in Canada take about 3 seconds longer to vote than those born outside the country, but there is no evidence of regional differences in response times according to region of residence within the country. Left-leaning respondents took more time to answer, but the difference is only statistically significant in the “vote same gender” regression. This suggests that left-leaning people may deliberate slightly more when choosing to vote. Those with high political knowledge take much more time to make their choice, about six seconds more, compared to those who do not. A perplexing finding is that the attitude of being pro-immigration correlates to lower response times in the decision for whom to vote.

We examine the distributions of the response times in order to gather additional information on the decision making process. Figures 2 and 4 display the cumulative distribution functions of the response times for the voting questions. The distribution of response times for those who have voted for a candidate of the same gender is extremely similar to the one where the subject did not, which is in agreement of the results that were obtained at the mean. However, the timing distribution for the racial scenario is quite different: there is a substantial gap between the two early in the distribution (those who answered faster than 30 seconds), and a minor difference near the tail; in both cases, those who voted for the candidate of the same race voted faster.

The differences in the cumulative distribution functions motivates a formal examination of whether the differences in response times are statistically significant at the different quantiles

Figure 2: Vote Same Gender Response Times

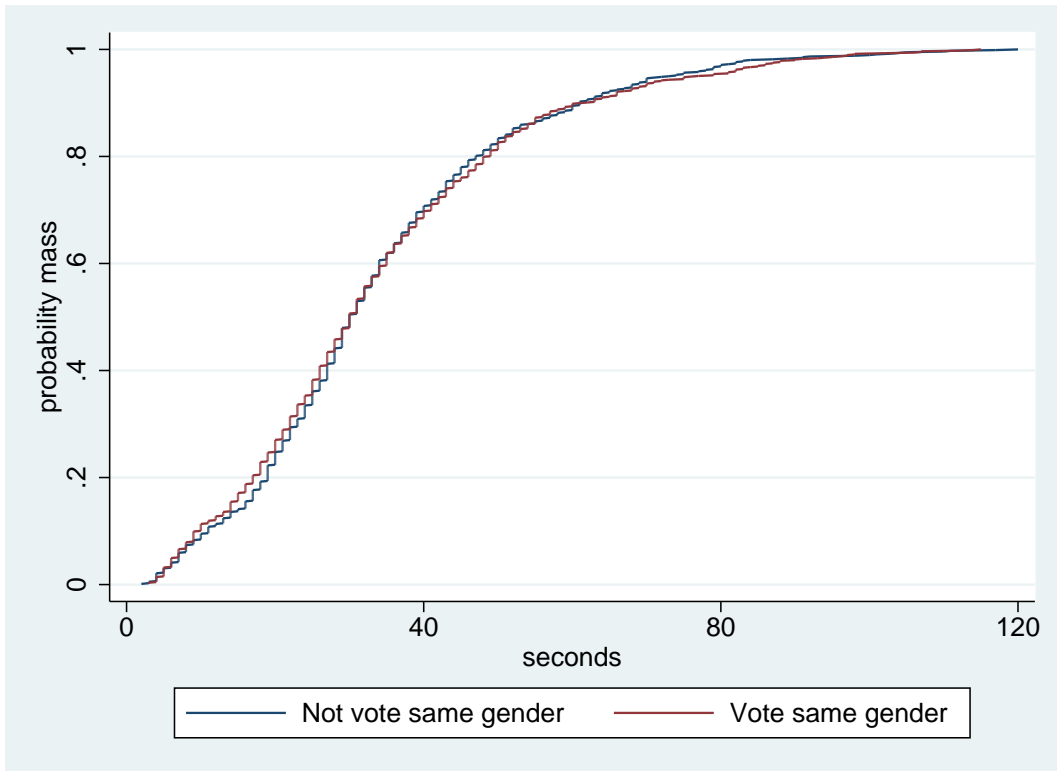
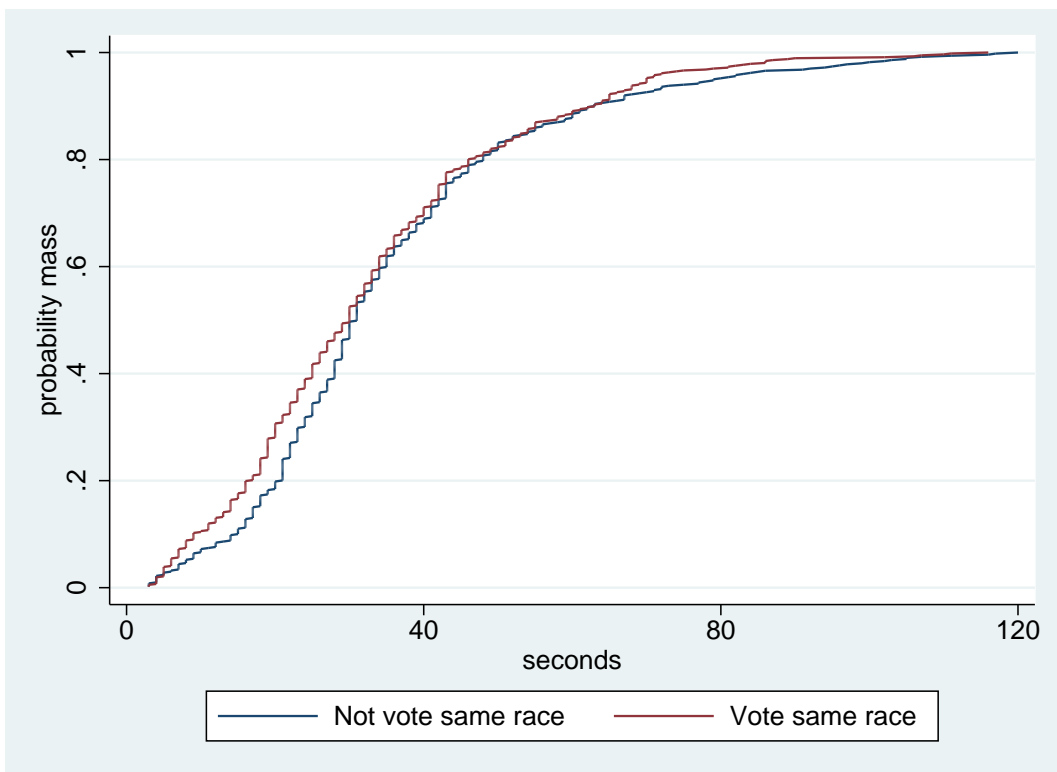


Figure 3: Vote Same Race Response Times



using unconditional quantile regression introduced by Firpo, Fortin, and Lemieux (2009).<sup>19</sup> We run the following regression at each decile for the gender and race regressions:

$$y_i = \beta_0 + \beta_1 yes + u_i \quad (4)$$

where the baseline category is not voting for the candidate of the same gender or race (as the case may be). Therefore, the coefficients on  $\beta_1$  will be those that correspond to the difference in response times between the two unconditional distributions at the respective deciles.<sup>20</sup>

Table 8: Response Time Unconditional Quantile Regressions

Quantile	Vote same gender	Vote same race
0.1	-1.294 (1.148)	-3.605 <sup>†</sup> (1.418)
0.2	-1.479 (1.046)	-2.912 <sup>†</sup> (1.146)
0.3	-0.916 (1.003)	-3.455 <sup>‡</sup> (1.152)
0.4	-1.114 (0.981)	-2.966 <sup>†</sup> (1.203)
0.5	0.058 (1.017)	-1.266 (1.256)
0.6	0.099 (1.161)	-0.822 (1.427)
0.7	0.770 (1.477)	-0.853 (1.767)
0.8	1.408 (1.789)	-1.052 (2.345)
0.9	-0.782 (3.083)	0.017 (3.517)
Observations	1606	1066

Notes: Coefficients are in seconds. \* denotes statistical significance at the 10% level, † the 5% level, and ‡ the 1% level. Heteroskedasticity-robust standard errors are in parentheses. Coefficient estimates are derived using the OLS variation of unconditional quantile regression derived in Firpo et al. (2009). The regressions contain only a dummy for having voted for the same gender or race (depending on the column) and a constant term.

The results of these regressions are displayed in Table 9. As expected, no statistically significant differences are seen in the “vote same gender” regression distributions. The “vote

<sup>19</sup>This methodology comes in three flavours; we elect to use the OLS variation, which is by far the most common in the applied literature.

<sup>20</sup>Note that these are properly called *marginal* distributions; the decision to use the phrase unconditional distribution was made in Firpo et al. (2009) in order to avoid the confusion related to the term marginal, which usually refers to marginal effects (derivatives) in economic parlance.



same race” distributions do have a significant difference according to how people voted: for those who voted for a candidate of the same race, the first four deciles of the distribution show a statistically significant difference of 3 seconds. This suggests that those who relied more on mental shortcuts based on racial affinities to answer the question did so to answer the question more quickly and vote for the candidate of the same race; once a voter deliberated enough, that is at approximately the median response time, the decision was no more based on cognition rather than heuristics regardless of how they voted.

## 6. DISCUSSION

Motivated to appear race-inclusive, white respondents may have over-reported preferences for Chinese candidates, an outcome consistent with the so-called “Bradley Effect”, a hotly debated theory in American research to explain discrepancies between reported vote intentions and actual outcomes in mixed-race elections. In certain contexts, whites may over-report intentions to vote for black candidates to avoid being perceived as racist (e.g. Reeves, 1997; Hopkins, 2009). We express doubt that any Bradley effect could be at play in our data. First, self-administered surveys are less susceptible than other modes to social desirability biases. The absence of an interviewer means that less pressure is felt by respondents to provide answers that fit social norms (e.g. Holbrook and Krosnick, 2010). Second, the political party being held constant means there may be less potential for racial cues to influence voting decisions. Third, the Bradley effect has never been observed in Canada. Lastly, that the candidates were fictional may imply that there was less pressure to vote for them, since social pressures would presumably be absent in this situation.

We do not believe that a Bradley-type effect can be present for gender wherein males would overreport their preference for female candidates. Hopkins (2009) finds no similar discrepancy in voters’ intentions toward and election outcomes for female candidates in mixed-candidate contests, suggesting that voters do not feel the same pressure to appear more gender-inclusive than they actually are.

What do our findings mean for electoral politics in Canada? Given the country’s multicultural reputation, it is somewhat surprising that racial affinity appears to be salient for Chinese Canadians. Combined with the fact that whites do not appear to exhibit a racial preference when choosing candidates, and assuming that the results for Chinese Canadians extend to other visible minority groups,<sup>21</sup> these results suggest that the micro-targeting and “ethnic courting” strategies that have been adopted by political parties are potentially effective and likely do not cost them many votes from white Canadians which form the majority of the electorate. That said, given that racial affinity effects appear to be strongest among minorities with a shared racial background, visible minorities may have limited room to grow in Canadian electoral politics: this is because visible minority candidates are typically nominated in ridings with large visible minority populations, and the number of such ridings is actually quite small (Black and Hicks 2006). Most ridings, in fact, contain a mix of visible minority and white Canadians. If there were an appetite to increase the number of visible minorities in elected office, our findings suggest that the American practice of creating

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<sup>21</sup>Our results are roughly consistent with Bird (2011), a study that used South Asian candidates, which gives us confidence in the wider generality of our findings.

majority-minority electoral districts may be fruitful north of the border. Certainly, electoral boundaries commissions are empowered to consider “communities of interest” when they draw the electoral map, but they have generally not recognized racial groups as a community of interest (Pal and Choudhry 2007).<sup>22</sup>

The conclusions that can be drawn for the gender affinity results in terms of electoral politics are less strong. That both men and women exhibit gender affinities but the latter exhibit theirs more strongly means that there isn’t as clear an implication for political parties in terms of selecting candidates for ridings.

This study lacked the statistical power to make strong conclusions about the complex affinities other than the fact that race and gender affinities can compete with each other. That gender tends to be evenly split in the population and that the implications of the gender affinities are not clear means that the practical applications of competing affinities do not have any strong implications for candidate selection.

## APPENDIX A. CANDIDATE DETAILS

The candidate biographies shown during the survey experiment are as follows.

1. [Candidate name] is a family physician with a successful medical practice. [S/he] was a lead organizer of the Play Safe initiative and has canvassed for the Canadian Cancer Society. [S/he] is dedicated to improving the quality of life in our community. [S/he] is married with two children.
2. [Candidate name] is a civil engineer who has worked on a number of the city’s infrastructure projects. [S/he] coaches [her/his] children’s soccer team and is a member of the Eastboro Community Association. [S/he] would welcome the opportunity to represent you. [S/he and her/his husband/wife] have two daughters.
3. [Candidate name] is an insurance adjuster for Sun Life Assurance. [S/he] recently spearheaded an initiative to upgrade the Bond Street Community Centre. [S/he] would bring this same drive and determination to Parliament. [S/he] is married with three kids.
4. [Candidate name] is a guidance counselor at Elmvale Secondary School. [S/he] is the teacher supervisor of the drama club and was recently awarded a National Teachers Award. [S/he] is as passionate about politics as [s/he] is about [her/his] students. [S/he and her/his husband/wife] have one son.

The following is a table of statistics compiled from the results of testing the photographs with 115 MTurk testers. The average age corresponds to the average of the estimated ages by the testers, and the candidate appearances were rated on a 1 to 5 scale.

The candidate photographs are below. From left to right, they are: Steve Peterson, Susan Murphy, John Wang, Julie Lo. During the experiment and during the MTurk testing, the photographs were provided in colour.

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<sup>22</sup>However, it is important to note that the most politically successful visible minorities in Canada have tended to have Chinese and South Asian origins, whereas other groups – notably blacks and Arabs – remain relatively excluded (Andrew et al. 2008).

Table 9: Ratings of Fictional Candidates

Candidate	Steve Peterson	Susan Murphy	John Wang	Julie Lo
Attractiveness, mean	3.9	4.0	3.6	3.9
Attractiveness, median	4	4	4	4
Average age	40.0	41.0	39.3	43.2

Figure 4: Photographs of the Fictional Candidates



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