Descriptive Misrepresentation by Social Class: Do Voter Preferences Matter?[*]

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This draft:
March 8, 2018

Abstract

This paper presents the results of a conjoint survey experiment in which Swiss citizens were asked to choose among parliamentary candidates distinguished by occupation, education, and income. Existing survey-experimental literature on this topic suggests that voters are indifferent to the class profiles of candidates or biased against candidates with high-status occupations and incomes. We find that the bias against upper middle-class candidates holds only for citizens in the lower half of the education/income distribution. We also find that all voters are biased against low-skill working-class candidates. As ideological proximity matters greatly to voter preferences for different candidates, we argue that partisan polarization renders the class profile of candidates less salient to voters and that this might explain why descriptive misrepresentation by social class is more pronounced in the US than in Switzerland.

1 Introduction

The topic of descriptive misrepresentation by social class has recently attracted the interest of many students of American as well as comparative politics. Scholars of the United States (US) Congress have documented that, by virtually any measure of social class, congressmen are vastly better off than most American citizens (Matthews 1954; Domhoff 2006; Carnes 2012, 2013). According to an analysis by the Center for Responsive Politics (2014), the median net worth of members of Congress was about one million dollars in 2012, roughly 15 times the median net worth of American households (The Balance 2017). Comparative studies suggest that descriptive misrepresentation by social class is in fact a pervasive feature of contemporary democracies (Blondel 1973; Matthews 1984; Best and Cotta 2000; Best 2007; Carnes and Lupu 2015). Two questions immediately arise. First, does it matter that elected representatives are better off than the citizenry at large? And second, why is it that democratic elections commonly generate such discrepancies between representatives and the citizens they are supposed to represent?

Regarding the first question, a growing literature indicates that, along with rising economic inequality, government policy tends to increasingly cater to the preferences and interests of the better-off (Bartels 2008; Hacker and Pierson 2010; Gilens 2012). Several studies provide evidence that this bias in substantive representation is at least in part due to class differences in policy-makers' personal preferences. For the US Congress, Carnes (2012) shows that, especially since the 1940s, legislators from withe-collar backgrounds voted substantially and increasingly more conservatively on economic issues than legislators from working-class backgrounds. Focusing more narrowly on the congressional battle over the federal estate tax in 2005-2006, Griffin and Anewalt-Remsburg (2013) find that wealthy legislators were more likely to co-sponsor and vote for bills seeking to repeal or reduce the estate tax. A similar pattern emerges in comparative research on class differences in legislators' preferences. Carnes and Lupu (2015) show, based on data from 18 Latin American democracies, that white-collar legislators have more conservative attitudes on economic issues than legislators from the working class and, based on data from Argentina, that the former are also more likely than the latter to co-sponsor bills that are economically conservative. Besides legislators' personal preferences, differences in information might be another source of bias

in substantive representation. As argued by Butler (2014), legislators have an incentive to focus on issues about which they have prior knowledge and personal backgrounds are an important source of such knowledge. This implies that if the less well-off are descriptively underrepresented in parliament, the issues they care about are unlikely to receive the same time and attention as the issues important to the well-off.

In this article, we therefore proceed on the assumption that descriptive misrepresentation by class does matter to legislative processes and outputs. Our goal is to advance the literature that seeks to answer the second of the above questions, that is, why elections so systematically produce parliaments that are dominated by representatives who are better off than most citizens. A simple answer to this question is to argue that voters prefer to be represented by the well-to-do. After all, prejudice against the less well-off is common (Baron, Albright and Malloy 1995; Cozzarelli, Wilkinson and Tagler 2001) and the belief that wealthy politicians have financial resources at their disposal that make them independent of special interests is widespread (McCormack 2005; Steen 2006). However, several recent studies call this line of reasoning into question. Carnes and Lupu (2016) conducted survey experiments in Argentina, Britain, and the US in which respondents were presented with a choice between a "business owner" and a "factory worker" as candidates for a local political office. They find that respondents in all three countries were indifferent between the white-collar and the working-class candidate. Campbell and Cowley (2014a) report that, for parliamentary candidates described as either a self-made businessman or an employee of an international finance company, British survey respondents tend to prefer candidates with an average rather than a high income, regardless of occupation. For the US, Sadin (2015) also reports a bias against candidates with a high income relative to candidates with a moderate (but above the median household) income. As argued most forcefully by Carnes and Lupu (2016), these results suggest that the descriptive misrepresentation has to do with the supply of candidates for elected office—the kinds of individuals that aspire to elected office and are selected by parties—rather than voter preferences in favor of candidates with high-status occupations and high incomes.

In this paper, we present and discuss the results of a conjoint survey experiment in which Swiss citizens were asked to choose among parliamentary candi-

dates distinguished by occupation, education, and income (as well as other characteristics). We seek to go beyond existing survey-experimental literature, which focuses either on occupation (Carnes and Lupu 2016) or on income (Campbell and Cowley 2014a; Sadin 2015), by taking into account the effects of all three candidate characteristics.[1] In addition, and more importantly, we explore the effects of "social class" understood as a combination of occupation, education, and income. The setup of the experiment allows us to estimate voter preferences between candidates with the following class profiles: (1) a low-skill working-class candidate with a low income, (2) a high-skill working-class candidate with an average income, (3) a middle-class candidate with an average income, and (4) an upper-middle-class candidate earning three times the average income.

To anticipate, our results indicate that Swiss voters are biased against very affluent middle-class candidates, but also against low-skill working-class candidates. While the bias against upper-middle-class candidates is primarily a bias among respondents with levels of education and incomes below the median, the bias against low-skill working-class candidates is shared by all respondents. Akin to Carnes and Lupu (2016), and drawing on insight from social psychology (see below), we explore the mechanisms behind voter preferences for different candidates by asking survey respondents to rate candidates on competence and ability to understand the concerns of "people like me." Our results indicate that high-skill working-class candidates as well as middle-class candidates suffer only a small "competence penalty" and enjoy a large "understanding bonus" relative to upper-middle-class candidates. Not surprisingly, we also find that ideological proximity matters greatly to voter preferences for different candidates. Against this background, we argue that partisan polarization renders the class profile of candidates less salient to voters and that this might explain why descriptive misrepresentation by social class is far more pronounced in the US than in

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[1]Campbell and Cowley (2014a) also varied candidate occupation and education in addition to income. However, all hypothetical candidates had a university education and a high-skill occupation, so these characteristics exhibit limited variation in terms of class. Sadin (2015) conducted three other experiments in addition to the one mentioned above. Two of these three experiments presented respondents with information about candidate occupation and education but not income. The third experiment also presented respondents with information about candidate wealth (in addition to occupation and education), but as the wealth attribute could only take on the value "$19-25 million" or provide no information at all, there were no candidates with average or below-average wealth. Furthermore, all candidates with a net worth of $19-25 million had the same occupation (CEO of an investment firm on Wall Street), so it is not possible to disentangle the effect of wealth from the effect of that particular occupation.

Switzerland.

The remainder of the article is organized as follows. In Section 2, we present our theoretical framework and discuss how the class profile of candidates influences voters' decisions. In Section 3, we provide some details about descriptive misrepresentation by class in Switzerland and how it compares to the US. Section 4 describes the design of the conjoint survey experiment and Section 5 presents the results. Finally, in Section 6, we conclude the article and offer tentative explanations for the difference in class misrepresentation between Switzerland and the US.

2 The Effect of Candidate Class on Voting Behavior

A theoretical account of how candidates' social class affects voting behavior must answer two fundamental questions. First, to what extent and under what circumstances do voters rely on candidate class to evaluate and ultimately choose among the candidates on offer? Second, if voters take candidate class into account, how does it affect their evaluation and choice of candidates? Democratic elections typically present voters with a simultaneous choice among parties, candidates, and policies associated with parties and candidates (Blais 2013). Canonical models of voting behavior place different emphasis on these elements of voters' choice set. The "Michigan model" emphasizes the importance of voters' identification with political parties. Voters form their political attitudes and cast their votes primarily on the basis of long-standing partisan loyalties, while candidate characteristics and policy positions tend to be less important to their attitude formation and voting decisions (Campbell et al. 1960). Rational choice approaches, on the other hand, emphasize the importance of policies and policy outcomes. In spatial voting models, reelection-seeking parties (or candidates) choose policy positions so as to maximize their expected vote share and voters choose parties (candidates) on the basis of ideological proximity (Downs 1957; Davis, Hinich and Ordeshook 1970). In retrospective voting models, voters make decisions based on events and outcomes that are, at least loosely, related to government policy (such as economic performance) as these inform their evaluations of incumbent parties' and candidates' competence in office (Key 1966; Fiorina 1981).

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Candidate characteristics such as social class do not figure prominently in any of the canonical models of voting behavior. Therefore, a number of studies have attempted to identify more systematically whether and under what conditions the personal characteristics of candidates or party leaders have a bearing on voters' decision-making (Butler and Stokes 1974; Miller and Shanks 1996; Cutler 2002; King 2002; Hayes 2009; Aarts, Blais and Schmitt 2013). These studies show that the effects of candidate characteristics on voters' decisions tend to be small relative to those of other factors such as voters' party identification, policy preferences, and evaluations of how competing parties and candidates have performed in office. However, contextual factors may condition the effects of candidate characteristics. Aarts, Blais and Schmitt (2013) provide some evidence that candidates' personal characteristics are more important in plurality/majoritarian electoral systems than in closed-list proportional representation (PR) systems as well as in elections that are characterized by low party polarization. Possible reasons for these findings are that plurality/majoritarian systems are more candidate-centered than closed-list PR systems (Bawn and Thies 2003) and that voters evaluate and choose candidates based on personal characteristics when they cannot differentiate them based on information about policy positions (Popkin 1991; Green and Hobolt 2008).

When voters do base their candidate evaluations and choices on personal characteristics, how do these characteristics affect their decision-making? Work in social psychology has shown that people evaluate individuals and groups along two primary dimensions: warmth and competence (Fiske et al. 2002; Fiske, Cuddy and Glick 2007; Russell and Fiske 2008). In this regard, Fiske et al. (2002, 879) argue that

> [w]hen people meet others as individuals or group members, they want to know what the other's goals will be vis à vis the self or ingroup and how effectively the other will pursue those goals. That is, perceivers want to know the other's intent (positive or negative) and capability; these characteristics correspond to perceptions of warmth and competence, respectively.

Perceptions of warmth and competence are determined by structural features of interpersonal and intergroup relationships, respectively. First, individuals and groups are perceived as relatively warm to the extent that their goals are compat-

ible with those of the perceiver and as relatively cold to the extent that their goals are incompatible or competing with those of the perceiver. Second, individuals and groups are perceived as more competent to the extent that they are powerful and have high socio-economic status and as less competent to the extent that they are powerless and have low socio-economic status (Fiske et al. 2002, 881). The reason for the latter relationship may be what Gilbert and Malone (1995) refer to as a "correspondence bias," or what Ross (1977) calls a "fundamental attribution error," which describes the tendency to draw inferences about a person's dispositions from outcomes that can be explained by structural and situational factors. A correspondence bias leads people to assume that high-status individuals are personally responsible for their success and low-status individuals are to blame themselves for their circumstances (Forgas, Morris and Furnham 1982; Kluegel and Smith 1986; Smith and Stone 1989).

It is therefore of little surprise that different social classes elicit different perceptions of warmth and competence. Studies reported by Fiske et al. (2002) consistently showed that the rich are perceived as highly competent but not warm, possibly because they are assumed to use their control over resources to further their own interests. The poor and welfare recipients are viewed as neither warm nor competent, perhaps because they are seen as "parasites" on society who are unable to succeed on their own. In contrast, the middle class is viewed in an unmixed, positive way as both warm and competent (although somewhat less competent than the rich).

Research in political science suggests that people rely on warmth and competence not only when evaluating ordinary people in everyday life, but also when assessing the personality of political candidates (Miller and Miller 1976; Markus 1982; Kinder 1986; Rahn et al. 1990; Stewart and Clarke 1992; McCurley and Mondak 1995; Funk 1996a,b, 1999). Further evidence for the saliency of warmth and competence in people's candidate evaluations comes from the way (re)election-seeking politicians behave. Fenno (1978, 56-60) finds that in order to build and maintain constituent trust, candidates for the US House of Representatives make an effort to present themselves as competent for the job and caring about the problems of their constituents. Politicians thus seem to think that voters respond favorably to competence and warmth-related qualities. Our expectation is that voters favor candidates with a socio-economic status high enough

so that they perceive them as competent but not as high so that they would deem them out of touch and cold. In terms of class position, such "favorable" candidates could span the spectrum from high-skill working class to middle class. Compared to these candidates, we expect candidates from the low-skill working class to be perceived as similarly warm but less competent and candidates from the upper-middle class as similarly competent but less warm. Accordingly, we derive our first hypothesis as follows:

Hypothesis 1. *Citizens, on average, prefer high-skill working-class and middle-class candidates over low-skill working-class and upper-middle-class candidates.*

Note that we do not form an expectation of whether citizens on average prefer low-skill working-class candidates over upper-middle-class candidates, or vice versa. Fiske et al. (2002) have shown that blue-collar workers are perceived as warmer than the rich, while the rich are seen as relatively more competent. Which type of candidates citizens prefer is, in our view, an empirical question that depends on the weights citizens attach to candidate warmth and competence, respectively. Further, our argument implies that citizens also prefer high-skill working-class and middle-class candidates over lower-class and upper-class candidates: lower-class candidates are likely to be perceived as even less competent (and perhaps also less warm) than low-skill working-class candidates and upper-class candidates are likely to be perceived as even colder than upper-middle-class candidates. We do, however, not test these implications in our empirical analysis.

If, as our results suggest, Hypothesis 1 is true and all citizens were equally likely to vote, then we would expect parliaments to be populated by a mix of highly-skilled working-class and middle-class members. However, upper-middle-class candidates commonly fare well in parliamentary elections and not all citizens are equally likely to turn out to vote. Numerous studies have found that the less affluent and the less educated are less likely to participate in elections than their respective counterparts (Wolfinger and Rosenstone 1980; Powell 1986; Blais 2000; Rosenstone and Hansen 2003). One plausible explanation for why upper-middle-class candidates win elections is, therefore, that more affluent and educated citizens, or the likely voters, do not exhibit bias against them relative to candidates from the high-skill working class or the middle class. We consider this explanation plausible because the extent to which an individual perceives another individual or the members of a group as warm depends on how com-

patible their goals are (Fiske et al. 2002). Affluent and educated citizens might have goals that are not unlike the goals of upper-middle-class candidates. If this is the case, then these citizens will not only reward upper-middle-class candidates for their competence, but they will also not perceive them as much colder than working-class and middle-class candidates. Therefore, upper-middle-class candidates might not be at a disadvantage compared to high-skill working-class and middle-class candidates in the eyes of affluent and educated citizens. We formulate our second hypothesis as follows:

Hypothesis 2. *Affluent and educated citizens are not biased against upper-middle-class candidates relative to high-skill working-class and middle-class candidates.*

Another explanation for why upper-middle-class candidates do well in elections is that parties (or, more generally, "selectors") favor them in the candidate nomination process (Carnes and Lupu 2016). This explanation is plausible so long as voters' bias against upper-middle-class candidates is not strong enough to make them vote for a competing party. As mentioned above, the effects of candidates' personal characteristics on voters' decisions tend to be small relative to those of party identification and policy preferences. However, they may become more important in contexts characterized by low party polarization, where party labels are less informative and candidates share similar policy positions. We expect candidate class to have a decisive effect on voting behavior when polarization is low, but this effect should decrease in importance as elections become more polarized. Our expectation implies that it is in polarized elections where parties have the most leeway to favor upper-middle-class candidates without risk of losing voters. Specifically, our third hypothesis is as follows:

Hypothesis 3. *Candidates' class profiles have a decisive effect on voters' decisions in elections characterized by low ideological polarization between candidates and the importance of this effect decreases as elections become more polarized.*

3 Descriptive Misrepresentation by Social Class in Switzerland

In order to test the hypotheses presented above, we conducted an online conjoint experiment among Swiss citizens. The Swiss parliament is no exception in terms

of descriptive misrepresentation by social class. Pilotti (2015) reports that in 1980, 2000, and 2010, on average, 30.8% of the members of the Swiss parliament were lawyers or entrepreneurs. He also reports that the majority of Swiss MPs have a university degree, while in the Swiss population this share is currently 27.0%.[2] Figure 1 shows based on data from the Selects candidate surveys for the 2007 and 2011 elections to the Swiss parliament (FORS 2009a, 2012a) the number of candidates and candidates' electoral success by income group (based on candidates' gross monthly household income). The figure shows that most successful candidates had a substantially higher income than the median household, but this is not true for the population of all candidates. Median monthly household income was somewhat below CHF 8,000 in 2006-2008 and somewhat above CHF 8,000 in 2009-2011.[3] Of the 2,883 candidates who reported their income in the 2007 and 2011 Selects candidate surveys, 1,712 (59.4%) reported incomes higher than CHF 8,000. Of 221 successful candidates, 190 had incomes higher than CHF 8,000 (86.0%). In the Swiss case, then, descriptive misrepresentation appears to emerge primarily in the election phase, not in the candidate selection phase. It is particularly noteworthy that low-income candidates very rarely succeed.[4]

Candidates to the lower chamber of the Swiss parliament (the National Council) are elected in a system of proportional representation (PR) with open party lists.[5] Parties can "pre-cumulate" candidates, i.e., putting them twice on a list, so that these candidates will receive two votes from a voter. The higher suc-

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[2]Data on educational attainment in the Swiss population come from the Swiss Labor Force Survey (SLFS) of the Swiss Federal Statistical Office (FSO) (see `https://www.bfs.admin.ch/bfs/de/home/statistiken/bildung-wissenschaft/bildungsstand-kompetenzen/bevoelkerung.assetdetail.2662056.html`, last accessed on January 6, 2018).

[3]Data on the distribution of household income come from the Household Budget Survey (HBS) of the FSO (see `https://www.bfs.admin.ch/bfs/de/home/statistiken/kataloge-datenbanken/tabellen.assetdetail.308364.html`, last accessed on January 4, 2018).

[4]The response rate of the Selects candidate surveys is fairly low: 1,719 (54.0%) of the 3,181 candidates in the 2007 election and 1,676 (47.3%) of the 3,547 candidates in the 2011 election participated in the survey. In addition, 173 (10.1%) of the 1,719 candidates participating in the 2007 survey and 339 (20.2%) of the 1,676 candidates participating in the 2011 survey did not report their household income. Survey or item nonresponse could be more likely among affluent candidates seeking to "hide" their affluence, which would mean that Figure 1 understates descriptive misrepresentation by income. There is no obvious reason why survey or item nonresponse bias would be greater for successful than for unsuccessful candidates.

[5]Six of the 26 Swiss cantons, which serve as electoral districts for elections to the federal parliament, are represented by a single representative in the National Council. In these cantons, candidates to the National Council are effectively elected by majority vote. Candidates to the upper chamber (the Council of States) are elected by majority vote, with the exception of two cantons, where candidates are elected by PR.

Figure 1: Number of Candidates and Electoral Success by Household Income Group for the 2007 and 2011 elections to the Swiss Parliament
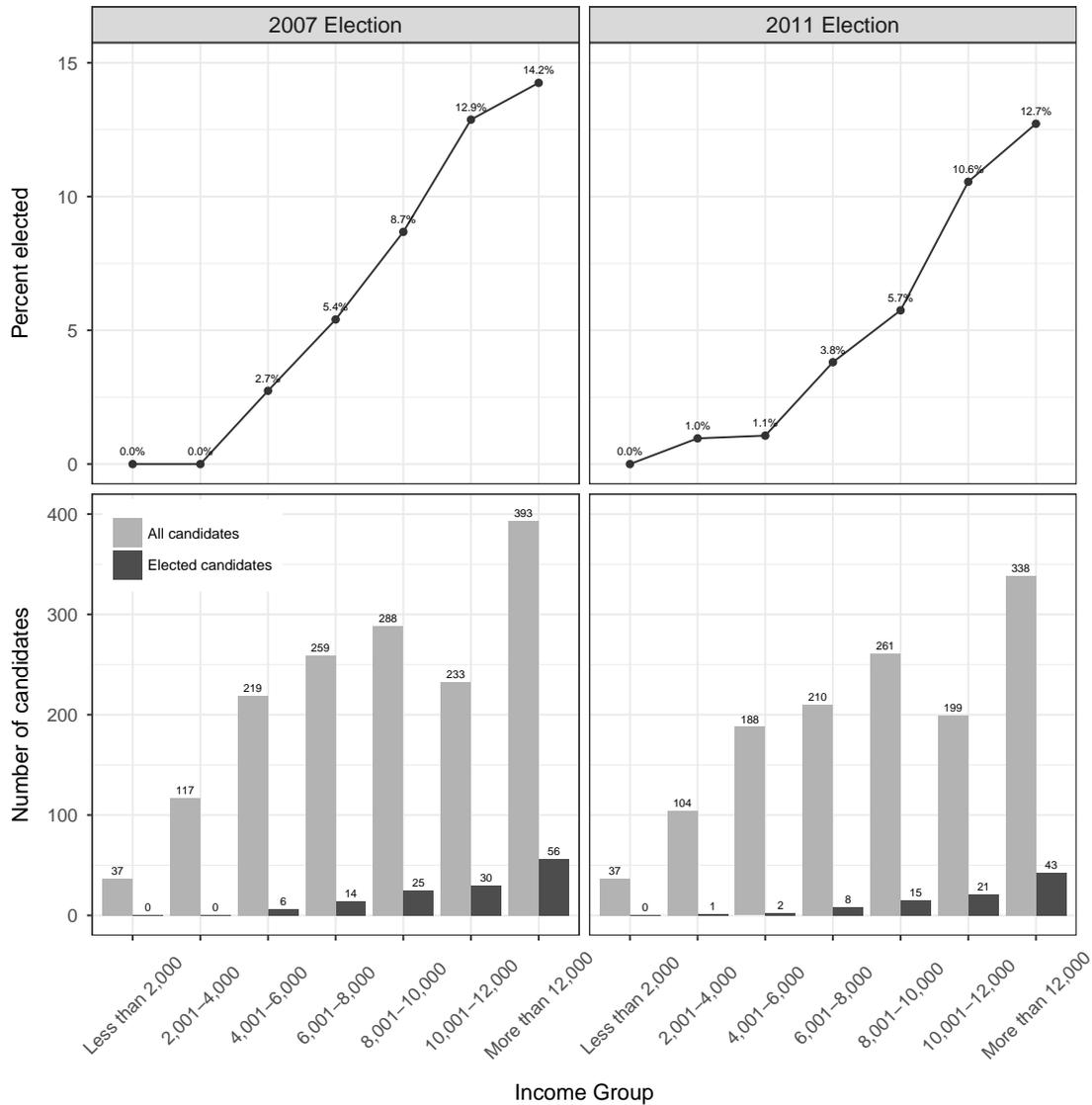
Note: The figure shows the number of candidates and candidates' electoral success by income group (based on candidates' gross monthly household income) for the 2007 and 2011 elections to the Swiss parliament. Income data are missing for 173 (10.1%) of the 1,719 candidates who participated in the 2007 survey (out of a total of 3,181 candidates) and for 339 (20.2%) of the 1,676 candidates who participated in the 2011 survey (out of a total of 3,547 candidates). Source: 2007 and 2011 Selects candidate surveys.

cess rate for affluent candidates might be, at least in part, due to them being pre-cumulated more often than less affluent candidates are (i.e., bias in the candidate selection process). However, voters voting for a particular list can express their preferences over candidates by removing candidates from that list, adding candidates from other lists, and cumulating candidates that are not yet twice on the list. Lutz (2011, 167) reports for the 2007 election that 54% of voters exercised some form of preferential voting, while the remaining 46% voted for a party list in its original form. Parties might also favor affluent candidates by placing them higher on their lists. Lutz (2010) shows that higher-ranked candidates are more likely to be cumulated and less likely to be removed from party lists. But note that campaign financing is primarily party-based and personal economic resources therefore seem unlikely to provide affluent candidates with a big advantage. Under these conditions, Swiss parties should have little incentive to rank more affluent candidates higher, or pre-cumulate them more often, than less affluent candidates.

While there is clearly some descriptive misrepresentation by income in Switzerland, it should be noted that this phenomenon is not nearly as pronounced as it is in the US. Applying Hout's (2004) formula for dealing with open-ended top income categories to the Selects data, and assigning candidates to the midpoint of their income category, we estimate that the average household income of successful candidates to the Swiss parliament was 1.6 times as large as the average Swiss household income in both 2007 and 2011.[6] In 2008, the corresponding figures for members of the US House of Representatives and the US Senate were 35.0 and 91.9, respectively.[7] In the concluding section, we shall return to the question of why descriptive misrepresentation is less pronounced in Switzerland than in the

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[6]Data on Swiss household income come from the HBS of the FSO (see `https://www.bfs.admin.ch/bfs/de/home/statistiken/wirtschaftliche-soziale-situation-bevoelkerung/einkommen-verbrauch-vermoegen/haushaltsbudget.assetdetail.3865767.html`, last accessed on January 5, 2018).

[7]Data on US household income come from the Current Population Survey (CPS) of the Bureau of Labor Statistics and the Census Bureau (see `https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-06.2008.html`, last accessed on January 5, 2018). Data on the income of House and Senate members come from Carnes (2016). Note that the latter data only consider personal income (and not household income). Personal income consists of "outside" income and the congressional salary. If we were to exclude congressional salary, which was $169,300 in 2008, from the above calculations, the corresponding figures for the House and Senate would be 32.6 and 89.4, respectively (see `https://www.senate.gov/senators/SenateSalariesSince1789.htm` for data on congressional salaries; last accessed on January 5, 2018).

US.

4   Experimental Design

Our online conjoint experiment presented respondents with hypothetical candidates to the Swiss National Council. In the experiment, we varied candidates' social class, defined in terms of occupation, education, and income, as well as a number of other potentially important candidate attributes (Hainmueller, Hopkins and Yamamoto 2014). The occupation attribute could take on one of four possible levels: "retail salesperson," "engineer," "lawyer," or "business executive." The education attribute could as well take on one of four levels: "basic vocational education," "higher vocational education," "university education with a master's degree" or "university education with a doctoral degree."[8] The income attribute, finally, could take on one of three levels: "CHF 5,000," "CHF 10,000," or "CHF 30,000."[9]

In addition to these social class attributes, we determined, based on a review of recent literature, what other candidate characteristics may influence voters' decision-making. A number of studies have identified a candidate's ideology or policy preferences, political experience, gender, and local roots as being particularly important (Huddy and Terkildsen 1993; Herrnson, Lay and Stokes 2003; Shugart, Valdini and Suominen 2005; Johnson and Rosenblatt 2007; Górecki and Marsh 2012; Cowley 2013; Campbell and Cowley 2014*b*). Therefore, each candidate profile in our experiment was composed of the following eight attributes:

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[8]According to the SLFS of the FSO, in 2016, 37.8% of the Swiss population had basic vocational education, 14.3% had higher vocational education, and 27.0% had university education (the educational attainment of the remaining 21% was either obligatory school or general education at the secondary level).

[9]According to the 2014 Swiss Earnings Structure Survey (ESS) of the FSO, the median monthly salary in the private sector was CHF 6,189. However, there is substantial variation across economic sectors: the median salary was CHF 4,761 in the retail industry, CHF 6,969 in architecture and engineering, CHF 7,824 in law and audit, and CHF 9,792 in the financial sector (see `https://www.bfs.admin.ch/bfs/de/home/statistiken/arbeit-erwerb/loehne-erwerbseinkommen-arbeitskosten/lohnniveau-schweiz.assetdetail.193164.html`, last accessed on January 9, 2018). The 90th percentile of the salaries of the top management in the financial sector was CHF 34,530 (see `https://www.bfs.admin.ch/bfs/de/home/statistiken/arbeit-erwerb/loehne-erwerbseinkommen-arbeitskosten/lohnniveau-schweiz/kaderloehne-tiefloehne.html`, last accessed on January 9, 2018). Therefore, CHF 5,000 is a salary below the overall median, CHF 10,000 a salary above the median, and CHF 30,000 a salary of a top earner in the financial sector.

occupation, education, gross monthly salary before entering parliament, political party, political ideology, previous experience in the National Council, gender, and residence.[10] For each attribute, a value was randomly drawn from a set of possible values. Following the advice of Hainmueller, Hopkins and Yamamoto (2014, 26), we imposed a number of randomization restrictions to exclude candidate profiles that would appear highly unrealistic or that are impossible (e.g., a university degree is required for lawyers and engineers).[11] Table 2 in the Appendix lists all possible values for each dimension. Providing respondents with information about candidate attributes in addition to social class has two main advantages. First, we will be able to compare the effect of candidates' social class on voters' preferences to the effects of other important candidate characteristics. Second, several of the attributes may confound the effects of social class. For example, respondents told that a candidate has been working as a business executive might infer that this candidate is also a member of a right-wing party. We can control for such confounding by specifying additional information about candidates (Dafoe, Zhang and Caughey 2017).

The experiment was fielded in May 2017 to a sample of over 4,500 Swiss citizens between 18 and 79 years of age.[12] We presented respondents with pairs of hypothetical candidates.[13] Following each candidate pair, we asked the respondent multiple questions about his or her voting intentions. First, we asked which candidate the respondent would vote for if he or she had to vote for one of the

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[10]The candidate attributes were presented in a randomized order for each respondent. However, to reduce the cognitive burden for respondents, we held the order of attributes fixed for all profiles a respondent evaluated throughout the experiment (see also Hainmueller, Hopkins and Yamamoto 2014, 4).

[11]We imposed restrictions on the possible combinations of candidate occupation, education, and income and those of candidate party and ideology. First, retail salespeople must have a basic vocational education or a higher vocational education and cannot have a master's or doctorate degree, while the reverse is true for engineers, lawyers, and business executives. Second, retail salespeople can have a monthly salary of either CHF 5,000 or CHF 10,000 (but not CHF 30,000) and business executives can have a monthly salary of either CHF 10,000 or CHF 30,000 (but not CHF 5,000). Finally, members of the Social Democratic Party (SPS) must have a left-wing or center-left political ideology, members of the Christian Democratic People's Party (CVP) a center-left or center ideology, members of the Liberal Democratic Party (FDP) a center or center-right ideology, and members of the Swiss People's Party (SVP) a center-right or right-wing ideology.

[12]The sample was randomly drawn from an online panel maintained by the LINK Institute, a Swiss market research firm. See the Supplementary Information for more information on our sample and the online panel.

[13]Each respondent evaluated two pairs of candidate profiles throughout the experiment. The profiles of a pair of candidates were presented side-by-side and each pair on a separate screen.

two candidates ("forced-choice" design). Second, we asked for each candidate how likely the respondent would be to vote for that candidate in an election to the National Council ("vote-propensity" design). These questions were followed by a series of questions about how respondents' perceive the competence and warmth of the candidates. Specifically, we asked respondents to state for each candidate how qualified the candidate would be for the office of member of parliament and how likely the candidate would be to understand the problems facing people like themselves.[14]

5   Results

Before testing our hypotheses, we present the effects of individual candidate attributes on respondents' vote intentions.[15] Here we confine ourselves to the analysis of respondents' vote propensity for candidates and defer the analysis of their forced-choice voting behavior to the Supplementary Information (the results are not substantially different).[16] Following Hainmueller, Hopkins and Yamamoto (2014), we used the candidate profile as the unit of analysis and estimated an ordinary least squares regression of vote propensity on dichotomous indicator variables for the attribute levels, with the exception of the baseline level for each attribute in the regression. This yields the average marginal component effect (AMCE) of each candidate attribute relative to the respective baseline. Standard errors are clustered by respondent because each respondent evaluated multiple candidate profiles. We rescaled the dependent variable to range from 0 (very unlikely to vote for a candidate) to 1 (very likely to vote for a candidate), so that the AMCE of an attribute shows the average change in the likelihood that a respondent will vote for a candidate on a 0 to 1 scale. Respondents who answered "don't know" were excluded from the analysis.

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[14]Six answer categories were provided for the vote-propensity, competence, and warmth questions. They ranged from "very likely" to "very unlikely" (plus "don't know") for the vote-propensity and warmth questions and from "very qualified" to "not at all qualified" (plus "don't know") for the competence questions.

[15]In all of our analyses, we weighted our data according to the joint distribution of linguistic region (German, French, and Italian), gender, and age group (18-29, 30-44, 45-59, and 60-79) as well as the marginal distributions of work status (working, not working) and household size (1-2 and 3 or more) among Swiss citizens.

[16]In our view, the vote-propensity design resembles voter decision-making in an open-list PR system more closely than does the forced-choice design, as it allows respondents to express their preference for more than one candidate.

Figure 2 shows aggregate results for all respondents. On average, respondents favor candidates earning CHF 10,000 over candidates earning CHF 30,000, but they tend to be indifferent between candidates earning CHF 10,000 and those earning CHF 5,000. In other words, there is a clear bias against high-income candidates, but not against low-income candidates, relative to average-income candidates. Turning to the candidates' occupation and education, we find that respondents favor salespersons with basic or higher-level vocational education over lawyers and executive managers with a master's or PhD degree (although the latter effect fails to reach statistical significance), but they are indifferent between salespersons with vocational training and engineers with university education. The effects of a candidate having an average rather than a high income and a candidate being a salesperson with vocational training rather than a university-educated lawyer or executive manager are similar in magnitude to the effects of other attributes that have been shown in the literature to be important to voters. Specifically, having an average income (relative to having a high income) or being a salesperson with vocational training (relative to being a lawyer or executive manager with university education) provides about the same advantage in terms of respondents' support as having four years' previous experience in the National Council (relative to having no such experience) and at least as great an advantage as having lived since birth in the respondent's canton (relative to having lived there for six years). A noteworthy and at first sight perhaps surprising result is the large negative effect of running for the right-wing Swiss People's Party (SVP), which by the end of the 1990s became the strongest party in the National Council. However, the SVP has not been able to substantially increase its number of seats in the upper chamber, the Council of States, which, with the exception of two out of 26 cantons, is elected by majority rule (Kriesi and Trechsel 2008, 191f.). This means that candidates of the SVP often find it difficult to garner support among center and left-wing voters.[17]

We now turn to a test of our first hypothesis, which states that citizens, in the aggregate, prefer high-skill working-class and middle-class candidates to both

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[17]It might also seem counterintuitive that female candidates have an advantage over male candidates, given that women are underrepresented in parliament—currently, 67 (33.5%) of the 200 MPs in the National Council are female MPs (see `https://www.parlament.ch/de/%C3%BCber-das-parlament/fakten-und-zahlen/zahlen-ratsmitglieder`, last accessed on March 2, 2018). However, it is important to remember that Figure 2 shows the "isolated" effect of a female candidate for all respondents.

Figure 2: AMCEs of Candidate Attributes on Vote Propensity
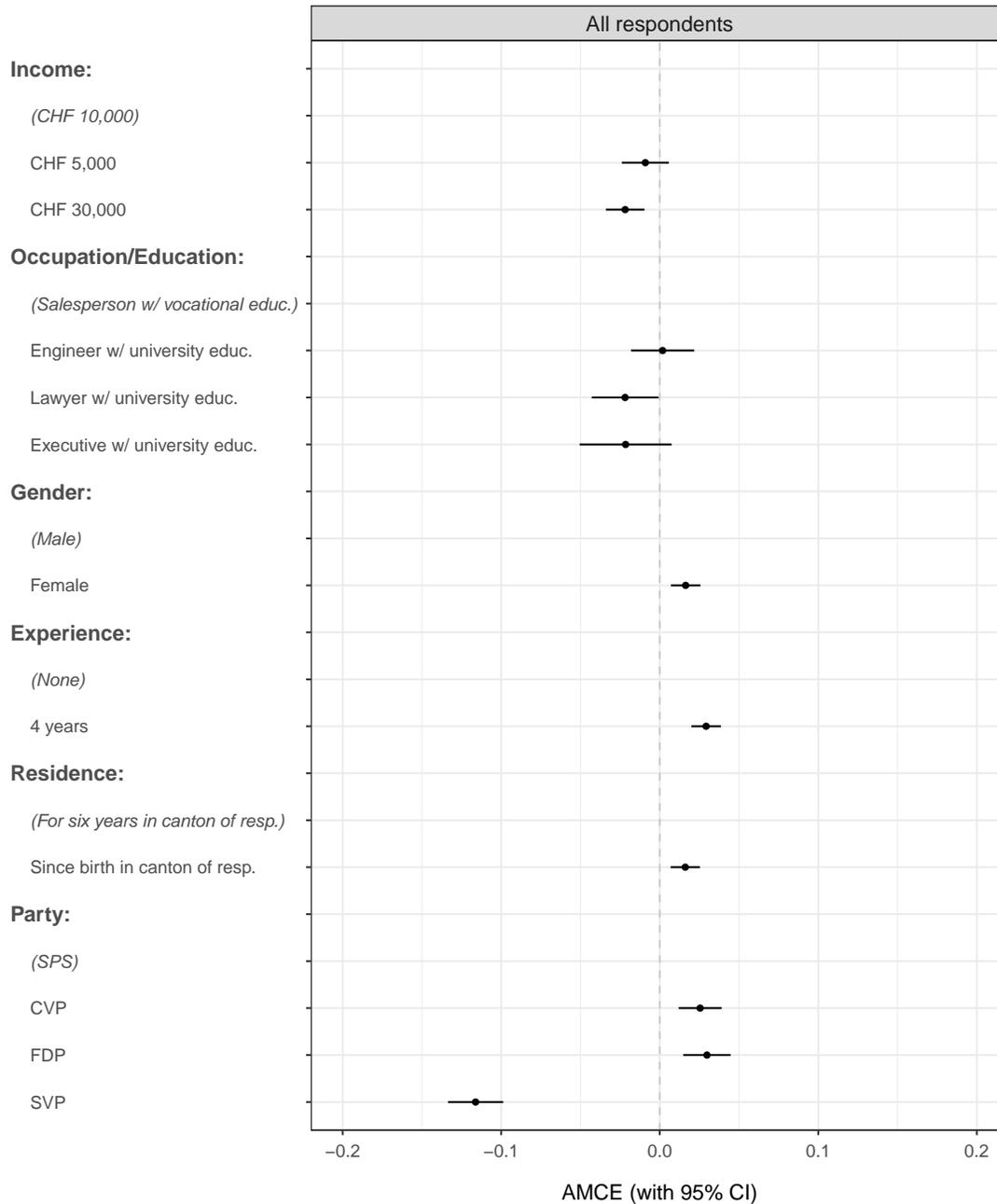
Note: The figure shows the point estimates and 95% confidence intervals (CIs) for the average marginal component effects (AMCEs) of candidate attributes on respondents' vote propensity. Vote propensity was rescaled to range from 0 (very unlikely to vote for a candidate) to 1 (very likely to vote for a candidate), so that the AMCE shows the average change in the likelihood that a respondent would vote for a candidate on a 0 to 1 scale. Respondents who answered "don't know" were excluded from the analysis. The reference category for each attribute level is shown italicized in parentheses.

low-skilled working-class and upper-middle-class candidates. Based on the three class attributes included in our experiment, we define these candidate types as follows. The low-skill working-class candidate is a retail salesperson with basic vocational training and an income of CHF 5,000. The high-skill working-class candidate is a retail salesperson with higher vocational training and an income of CHF 10,000.[18] The middle-class candidate is an engineer with a master's degree and an income of CHF 10,000. Finally, the upper-middle-class candidate is a lawyer with a PhD and an income of CHF 30,000 (note that our results do not change substantially when we use a business executive instead of a lawyer as our upper-middle-class candidate).

The top panel of Figure 3 pits the high-skill working-class candidate, the middle-class candidate, and the upper-middle-class candidate against the low-skill working-class candidate (the baseline). The bottom panel pits the high-skill working-class candidate and the middle-class candidate against the upper-middle-class candidate (the baseline). The results support our first hypothesis. Respondents clearly prefer both the high-skill working-class candidate and the middle-class candidate to the low-skill working-class candidate. They also prefer the high-skill working-class and middle-class candidates to the upper-middle-class candidate. We did not form an expectation of whether respondents prefer the upper-middle-class candidate over the low-skill working-class candidate or vice versa, and instead considered it an empirical question. Figure 3 shows that respondents have a slight preference for the upper-middle-class candidate over the low-skill working-class candidate, but this effect is not statistically significant.

Turning now to the reasoning behind respondents' preferences for candidates with different class profiles, Figure 4 summarizes how our respondents assess the competence or qualification of candidates from different classes, while Figure 5 summarizes their assessments of candidates' warmth or inclination to understand the "problems facing people like them" (see the Supplementary Information for the AMCEs of individual candidate attributes on perceived competence and warmth). The results are in line with our theoretical argument. The middle-class candidate, the upper-middle-class candidate, and, to a lesser extent, also the high-skill working-class candidate are all deemed to be substantially more qualified for

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[18]Note that our working-class candidates are service-sector workers, reflecting the post-industrial employment structure of Switzerland (and other advanced democracies such as the US).

Figure 3: AMCEs of Candidates' Social Class on Vote Propensity
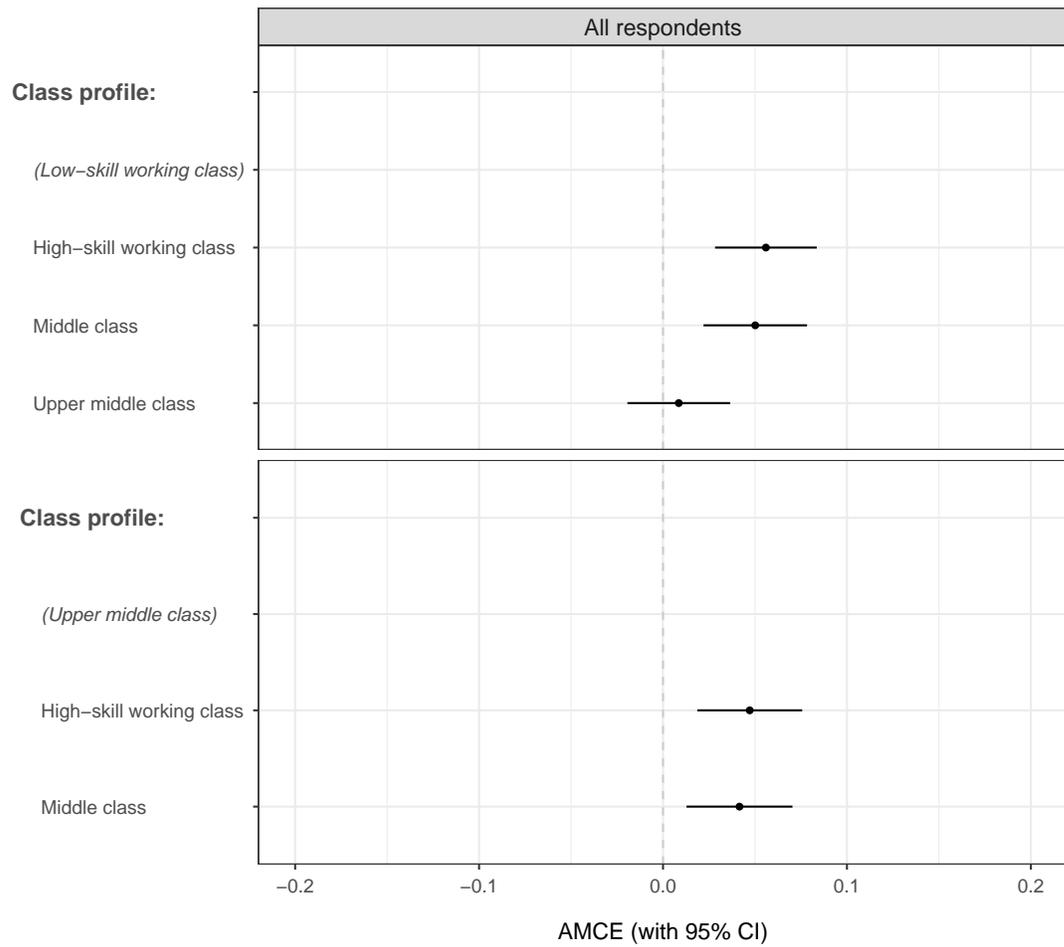
Note: The figure shows the point estimates and 95% confidence intervals (CIs) for the average marginal component effects (AMCEs) of candidates' social class on respondents' vote propensity. Respondents who answered "don't know" were excluded from the analysis. The reference category is the low-skill working-class candidate for the top panel and the upper-middle-class candidate for the bottom panel.
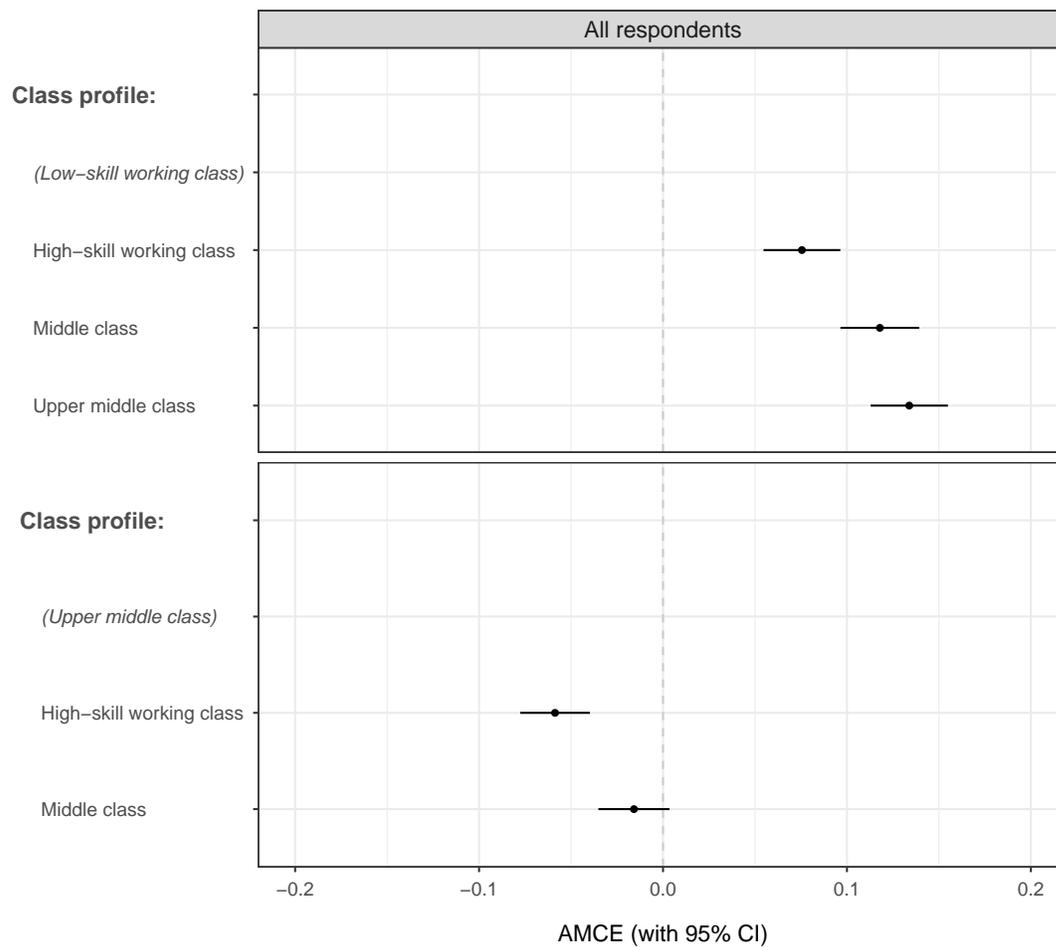
office than the low-skill working-class candidate. The upper-middle-class candidate is perceived as more qualified than the high-skill working-class candidate and the middle-class candidate, but these effects are less pronounced and the difference between the upper-middle-class candidate and the middle-class candidate is not statistically significant. On the other hand, the low-skill and high-skill working-class candidates are deemed to be more capable of understanding the problems of ordinary people, especially as compared to the upper-middle-class candidate. The middle-class candidate takes an intermediate position, as he or she is perceived as more capable of understanding the problems of ordinary people than the upper-middle-class candidate, but less so than the low-skill and high-skill working-class candidates. In short, high-skill working-class candidates enjoy the same "understanding bonus" as do low-skill working-class candidates, while they suffer only a small "competence penalty" compared to middle-class and upper-middle-class candidates. Middle-class candidates, on the other hand, enjoy the same competence bonus as do upper-middle-class candidates, while they suffer only a small understanding penalty compared to low-skill and high-skill working-class candidates. This explains why high-skill working-class and middle-class candidates are the most preferred candidates overall.

The results presented so far would lead us to expect that most, if not all, representatives in the Swiss parliament would be members of the high-skill working class or the middle class. There are undoubtedly a large number of such individuals in the Swiss parliament, but candidates with a higher socio-economic status also fare quite well in Swiss elections. One plausible explanation why this is so has to do with unequal electoral turnout. Citizens with high income and education have been shown to be more likely to vote than citizens with low income and education, and we proposed in Hypothesis 2 that the former are not biased against upper-middle-class candidates relative to high-skill working-class and middle-class candidates.

To test this hypothesis, Figure 6 replicates Figure 3 with respondents split into two roughly equally-sized groups: "low-resource" respondents with low income and education and "high-resource" respondents with high income and education.[19] The results are straightforward and quite revealing. Low-resource and

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[19]We define respondents as low-income if their monthly household income does not exceed CHF 8,000 and as high-income otherwise. We define respondents as low-education if they have secondary education or less and as high-education if they have tertiary education (i.e., higher

Figure 4: AMCEs of Candidates' Social Class on Perceived Candidate Competence

Figure 5: AMCEs of Candidates' Social Class on Perceived Candidate Warmth
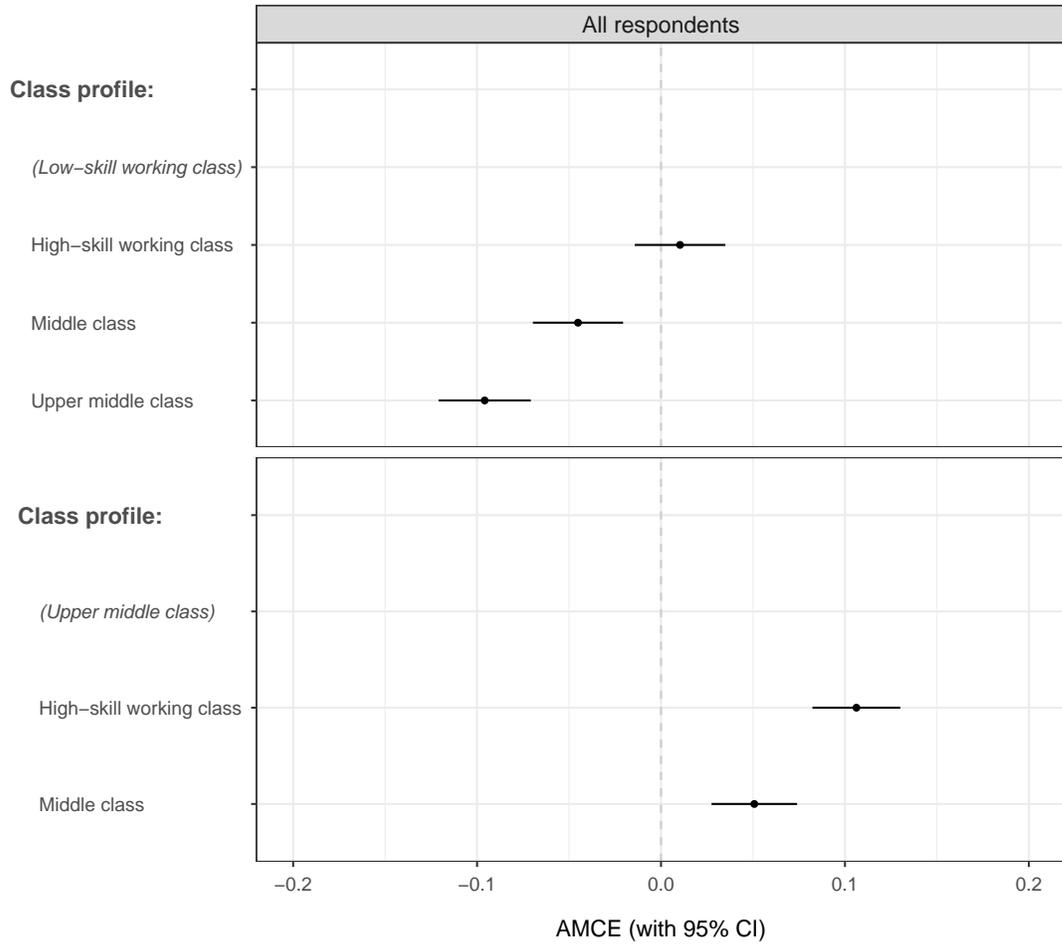
Note: The figure shows the point estimates and 95% confidence intervals (CIs) for the average marginal component effects (AMCEs) of candidates' social class on respondents' perception of candidate warmth. Candidate warmth was rescaled to range from 0 (candidate is very unlikely to understand respondents' problems) to 1 (candidate is very likely to understand respondents' problems), so that the AMCE shows the average change in the likelihood that a respondent perceives a candidate as warm on a 0 to 1 scale. Respondents who answered "don't know" were excluded from the analysis. The reference category is the low-skill working-class candidate for the top panel and the upper-middle-class candidate for the bottom panel.

high-resource respondents alike tend to prefer the high-skill working-class candidate over the low-skill working-class candidate and the middle-class candidate over the upper-middle-class candidate. However, with the exception of the difference between the middle-class candidate and the upper-middle-class candidate for low-resource respondents, these effects fail to reach statistical significance. In all other races, the preferences of low-resource and high-resource respondents diverge noticeably. Low-resource respondents prefer the low-skill working-class candidate or high-skill working-class candidate over the upper-middle-class candidate, while they are indifferent between the low-skill working-class candidate and the middle-class candidate. By contrast, high-resource respondents prefer the middle-class candidate or the upper-middle-class candidate over the low-skill working-class candidate and they are indifferent between the high-skill working-class candidate and the upper-middle-class candidate. Overall, these results provide at least partial support for the hypothesis that citizens with high income and education exhibit no bias against upper-middle-class candidates (it is partial because high-resource citizens tend to prefer middle-class candidates over upper-middle-class candidates).[20]

The implication of these results is that if only citizens with high income and education voted, all working-class candidates would likely lose, while middle-class and upper-middle-class candidates would compete in tight races (with the former having an advantage over the latter). Table 1 shows based on Selects survey data how (reported) turnout in the 2007 and 2011 elections to the National Council varied between respondents with high income and education (high-resource respondents) and respondents with low income and education (low-resource respondents) (FORS 2009*b*, 2012*b*).[21] The available evidence indicates that voter

vocational or university education). As noted above, the median monthly household income was somewhat above CHF 8,000 in 2009-2011 (this is the most recent information available for the median). According to the SLFS of the FSO, in 2016, 58.8% of the population had secondary education or less and the remaining 41.2% had tertiary education.

[20]Low-resource respondents and high-resource respondents alike consider the low-skill and high-skill working-class candidates to be more understanding than the upper-middle-class candidates, but the effects are more pronounced for the former than for the latter. Low-resource respondents, but not high-resource respondents, also think that the working-class candidates are more understanding than the middle-class candidate. High-resource respondents rate the competence of the middle-class and upper-middle-class candidates significantly higher than do low-resource respondents. However, both groups of respondents agree that middle-class and upper-middle-class candidates have similar competence (see Supplementary Information).

[21]As with respondents in our survey experiment, we define respondents in the Selects surveys

Figure 6: AMCEs of Candidates' Social Class on Vote Propensity by Respondents' Income and Education
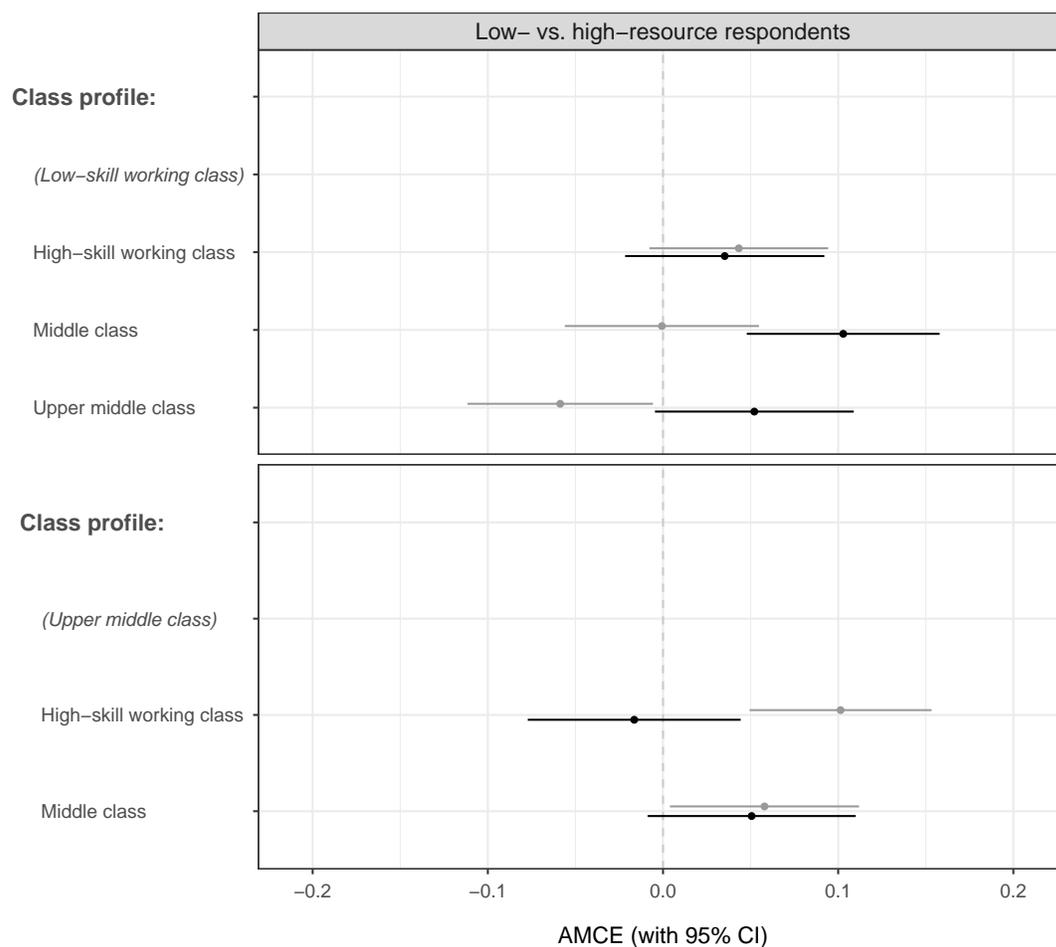
Note: The figure shows the point estimates and 95% confidence intervals (CIs) for the average marginal component effects (AMCEs) of candidates' social class on the vote propensity of low-resource respondents (in gray) and high-resource respondents (in black). Respondents who answered "don't know" were excluded from the analysis. The reference category is the low-skill working-class candidate for the top panel and the upper-middle-class candidate for the bottom panel.

turnout in Switzerland varies by income and education, but it is unlikely that this variation accounts for the unequal descriptive representation in the Swiss parliament documented above (Figure 1). It also deserves mention that survey-based estimates of electoral turnout are fraught by potential bias: more affluent and more educated citizens have been shown to be more likely to overreport voting (Silver, Anderson and Abramson 1986; Bernstein, Chadha and Montjoy 2001; Karp and Brockington 2005).

Table 1: Reported Turnout in the 2007 and 2011 Elections to the National Council Among High-Resource and Low-Resource Respondents

	2007 Election	2011 Election
Turnout among high-resource respondents	81.4%	89.5%
Turnout among low-resource respondents	63.2%	79.3%
Difference in turnout (in %-points)	18.2%	10.2%
	(0.00)	(0.00)

Note: The numbers in parentheses are the *p*-values from (two-tailed) tests for equality of proportions.

Our results have shown that high-skill working-class and middle-class candidates are the most preferred candidates overall and that, although citizens who are more likely to vote exhibit little bias against upper-middle-class candidates, turnout alone is unlikely to account for the unequal descriptive representation observed in the Swiss parliament. Is it possible that upper-middle-class candidates are able to win elections because voters are not willing to vote for candidates who are less ideologically similar even when they come from a more "favorable" class? The importance of candidates' class for voters likely depends on the context in which an election takes place. Specifically, we suggested in Hypothesis 3 that candidates' class profiles have a decisive effect on voters' decisions in elections characterized by low ideological polarization and that the importance of this effect decreases as elections become more polarized. To test this hypothesis, we estimated the effect on vote propensity of a candidate coming from the low-skill working class or the upper middle class, each relative to a candidate coming from the high-skill working class, for three electoral contexts: one in which

as low-income if their monthly household income does not exceed CHF 8,000 and as high-income otherwise, and we define respondents as low-education if they have secondary education or less and as high-education otherwise.

the respondent and the high-skill working-class candidate share a similar ideology (low polarization), one in which their ideologies differ moderately (moderate polarization), and one in which they differ substantially (high polarization).[22] The respondent and the low-skill working-class or upper-middle-class candidate always have the same ideology in all three contexts.[23]

The results support our hypothesis. In the low-polarization context, the class advantage of the high-skill working-class candidate offsets his or her slight ideological disadvantage, so that respondents are indifferent between this candidate and the ideologically identical low-skill working-class or upper-middle-class candidate. By contrast, in the moderate- and high-polarization contexts, the effect of ideological proximity dominates the effect of candidate class: respondents are substantially more likely to vote for the ideologically identical candidates, despite them coming from the low-skill working class or the upper middle class.

6 Conclusion

Our Swiss survey experiment uncovers three biases that previous survey experiments on voter preferences for candidates with different socio-economic profiles have missed. First, Swiss voters are biased against low-skill working-class candidates. This tends to hold for voters with low income and education as well as voters with high income and education. Secondly, voters with low income and education are biased against upper-middle-class candidates, but this is not the case for voters with high income and education. Taking into account unequal turnout by income and education, both these biases might be invoked to explain the over-representation of the middle and upper-middle classes in the Swiss parliament. Thirdly, class misrepresentation might also result from a strong bias voters have

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[22]We focus here on the profile comparisons for which our analysis presented in Figure 3 revealed the largest class effects.

[23]In the experiment, the ideology of candidates could take on one of five values: left, center-left, center, center-right, and right. Respondents were asked to indicate their ideology on a 11-point scale ranging from 0 (left) to 10 (right). Collapsing the 11-point scale into five ideological categories (left $\in \{0, 1, 2\}$, center-left $\in \{3, 4\}$, center $\in \{5\}$, center-right $\in \{6, 7\}$, and right $\in \{8, 9, 10\}$), we define a choice setting as low-polarization when the respondent and the candidate are one category apart, as moderate-polarization when they are two categories apart, and as high-polarization when they are four categories apart. A respondent and a candidate have the "same" ideology when they are in the same ideological category. 325 (7.2%) of our 4520 respondents did not indicate their ideology, so we had to remove them from the analysis.

Figure 7: AMCEs of Candidates' Social Class on Vote Propensity in Low-, Moderate-, and High-Polarization Elections
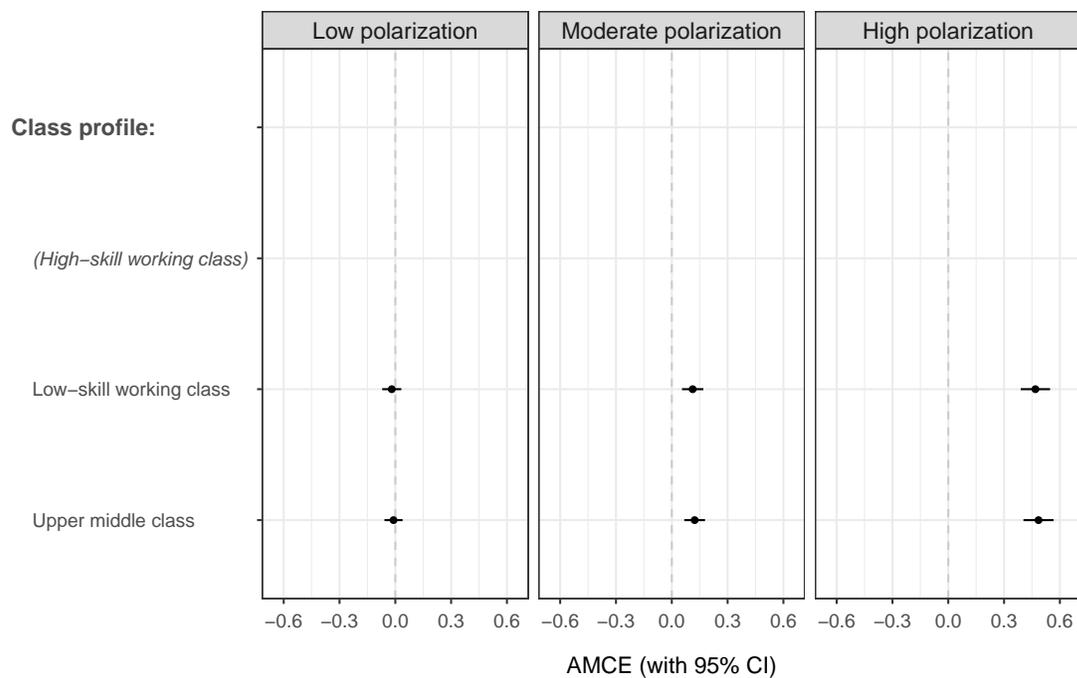
Note: The figure shows the point estimates and 95% confidence intervals (CIs) for the average marginal component effects (AMCEs) of candidates' social class on respondents' vote propensity in three contexts: one in which the high-skill working-class candidate and the respondent have a similar ideology (low polarization), one in which their ideologies differ moderately (moderate polarization), and one in which they differ substantially (high polarization). The respondent and the low-skill working-class or upper-middle-class candidate always have the same ideology in all three contexts. Respondents who answered "don't know" to the vote propensity question or who did not indicate their ideology were excluded from the analysis. The reference category is the high-skill working-class candidate for all panels.

in favor of ideologically proximate candidates. In elections characterized by moderate or high party polarization, ideological proximity trumps candidate class in voters' decision-making, so that voters prefer ideologically proximate candidates with unfavorable class backgrounds over ideologically distant candidates with favorable class backgrounds.

Our discussion raises several questions that we wish to pursue in future research, including new survey experiments. To begin with, it is an unfortunate feature of our first survey experiment that we did not include candidates with incomes between CHF 10,000 (more or less an average monthly Swiss income) and CHF 30,000. As a result, we cannot tell whether the income penalty that we have identified extends across this entire range or pertains only to very high-income candidates. A new survey experiment will be necessary to address this question.

A second question concerns the selection of candidates and ranking of candidates by political parties. As noted above, a large share of Swiss voters (46% in the 2007 elections) choose not to exercise the option to express their preferences for particular candidates and simply vote for their party's list of candidates in its original form. Voter biases might be invoked to explain some of the descriptive misrepresentation that we observe in the Swiss case, but it is perfectly possible that biases in internal party decision-making also play a role. In our next paper, we will seek to assess whether the candidate lists of some or all parties consistently favor some class profiles over others. A reasonable hypothesis emerging from the preceding discussion is that parties with weak ideological profiles—in the first instance, "centrist" parties—will be more likely to feature affluent workers and middle-class candidates in prominent positions.

We see no *a priori* reason to suppose that the biases revealed by our survey experiment are uniquely Swiss, but we are keen to explore this question by undertaking similar experiments in other countries. Assuming that voter preferences for candidates with different class profiles are more or less similar across countries, the relationship between class differences in electoral turnout and descriptive misrepresentation by social class becomes an important topic for comparative inquiry. As suggested above, we also want to leverage cross-national variation to test the hypothesis that partisan polarization is associated with descriptive misrepresentation by social class.

We now return to the question of why descriptive misrepresentation by class is so much more pronounced in the US than in Switzerland. One obvious reason why we observe a larger gap between citizens and representatives in the US could be the higher costs of election campaigns and the fact that candidates bear a much larger share of these costs in the US (perhaps indirectly, through donors). Even all else being equal, US citizens may well prefer average candidates, much like Swiss citizens do, but this preference is likely trumped by the advantages that affluent candidates enjoy in terms of fund raising (Steen 2006).

The preceding discussion suggests two additional reasons that deserve further theoretical consideration and empirical research. First, our results have shown that high-skill working-class and middle-class candidates are the ideal candidates overall. Arguably, the supply of such candidates is not as plentiful in the US, partly for lack of an extensive vocational training system, and perhaps also due to greater labor-market polarization triggered by technological changes over the last 20-30 years (Acemoglu 1999; Autor, Katz and Kearney 2006; Goldin and Katz 2007).

Secondly, and more importantly for our purposes, candidates in Switzerland and the US are elected under different electoral systems. In a PR system, parties maximizing their expected seats will place themselves along the ideological continuum. Faced with a choice among ideologically homogeneous candidates, voters are more likely to rely on social class and other personal characteristics of candidates to make up their minds. This provides parties with an incentive to recruit and nominate candidates from the high-skill working class or the middle class, as these candidates enjoy an electoral advantage over candidates from the low-skill working class or the upper-middle class. For first-past-the-post systems, such as the one of the US, the median voter model predicts that candidates will converge to the center of the political spectrum—specifically, to the median voter (Downs 1957). However, recent research has pointed to increased polarization of the US party system (McCarty, Poole and Rosenthal 2006). This gives parties (or "selectors") leeway in their selection of candidates: as ideological considerations become more important to voters relative to candidate class, parties can select candidates from the upper-middle class without the risk of losing voters to their competitors. Future research will need to establish whether these patterns generalize.

Appendix

Candidate Attributes and Attribute Levels

Table 2 describes the attributes, attribute levels, and randomization restrictions we used to randomly generate the candidate profiles in our conjoint experiment.

Table 2: Attributes and Possible Values in the Candidate Choice Experiment

Attribute	Possible Values	Randomization Restriction
Gender	• Male	–
	• Female	–
Political party	• SPS	Political ideology $\in$ {Left, Center-left}
	• CVP	Political ideology $\in$ {Center-left, Center}
	• FDP	Political ideology $\in$ {Center, Center-right}
	• SVP	Political ideology $\in$ {Center-right, Right}
Political ideology	• Left	Political party = SPS
	• Center-left	Political party $\in$ {SPS, CVP}
	• Center	Political party $\in$ {CVP, FDP}
	• Center-right	Political party $\in$ {FDP, SVP}
	• Right	Political party = SVP
Previous experience in the National Council	• None	–
	• 4 years	–
Education	• Vocational education (VET)	Occupation = Retail salesperson
	• Higher vocational education (Advanced Federal PET Diploma)	Occupation = Retail salesperson
	• University/ETH (master)	Occupation $\in$ {Engineer, Lawyer, Executive board of an international company}
	• University/ETH (doctorate)	Occupation $\in$ {Engineer, Lawyer, Executive board of an international company}

Attribute	Possible Values	Randomization Restriction
Occupation	• Retail salesperson	Education ∈ {Vocational education (VET), Higher vocational education}
	• Engineer	Education ∈ {University/ETH (master) University/ETH (doctorate)}
	• Lawyer	Education ∈ {University/ETH (master) University/ETH (doctorate)}
	• Executive board of an international company	Education ∈ {University/ETH (master) University/ETH (doctorate)}
Gross monthly salary before entering the legislature	• CHF 5,000	Occupation ∈ {Retail salesperson, Engineer, Lawyer}
	• CHF 10,000	–
	• CHF 30,000	Occupation ∈ {Engineer, Lawyer, Executive board of an international company}
Residence	• Lives for 6 years in respondent's canton	–
	• Lives since birth in respondent's canton	–

Note: The shows the attributes, attribute levels, and randomization restrictions we used to randomly generate the candidate profiles in our conjoint experiment.

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