

The looks of a winner: Beauty and electoral success

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ABSTRACT

We study the role of beauty in politics using candidate photos that figured prominently in electoral campaigns. Our investigation is based on visual assessments of 1929 Finnish political candidates from 10,011 respondents (of which 3708 were Finnish). As Finland has a proportional electoral system, we are able to compare the electoral success of non-incumbent candidates representing the same party. An increase in our measure of beauty by one standard deviation is associated with an increase of 20% in the number of votes for the average non-incumbent parliamentary candidate. The relationship is unaffected by including education and occupation as control variables and withstands several other robustness checks.

JEL classification:

D72, J45, J7

Keywords:

Beauty, Elections, Political candidates, Appearance, Competence, Trustworthiness

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Acknowledgements

The authors wish to thank the Editor (Amy Finkelstein), three anonymous referees, John Antonakis, Bryan Caplan, Mikael Elinder, Justina Fischer, Daniel Hamermesh, Katarina Keller, Daniel Klein, Claus Thustrup Kreiner, Markku Lanne, Mikael Priks, Roope Uusitalo; participants at the 2006 IIPF conference, the 2007 Annual Meeting of Finnish Economists, the 2007 World Meeting of the Public Choice Society, the 2007 CESifo Public Sector Area Conference, and the 22nd congress of the European Economic Association; and participants at seminars at Bocconi University, Brunel University, Copenhagen Business School, ETH Zürich, George Mason University, HUI Stockholm, KU Leuven, Lund University, the Ratio Institute, Stockholm University, TU Dresden, Umeå University, University of Gävle, University of Helsinki, and Uppsala University for helpful comments and suggestions, all respondents and those who helped us attract them (especially our colleagues, who advertised the study to their students in several countries, and several bloggers), as well as Otto Kässi for excellent research assistance, Karl Bengtsson for outstanding technical assistance, and the Torsten and Ragnar Söderberg Foundations (Berggren and Jordahl), the Jan Wallander and Tom Hedelius Foundation (Jordahl) and the Yrjö Jahnsson Foundation (Poutvaara) for financial support. The first version of this study appeared as IZA DP 2311 in September 2006.

1. Introduction

Are good looks an advantage in politics? For several reasons they could be. If good-looking people are more persuasive, are treated better in social interaction and achieve higher occupational success – as evidenced in a meta-study by Langlois et al. (2000) – they might also do better in politics.

In the vocabulary of Ambady and Rosenthal (1992), good looks could function as a “thin slice” of information or as a heuristic in decision-making. Already Downs (1957) proposed that many voters are rather uninformed about the details of politics, a view that is further supported by Bartels (1996). Perhaps as a result voters focus on personal characteristics of the candidates, as Wattenberg (1991) argues. Or for that matter, people might just prefer to look at beautiful people as suggested by the importance of looks in the entertainment industry. Against this background, we investigate if visual assessments of political candidates can explain election outcomes.

Our main result is that beauty seems to help. We find that an increase in beauty by one standard deviation is associated with a 20% increase in the number of votes for the average non-incumbent parliamentary candidate. Beauty is more strongly correlated with success than either perceived competence or trustworthiness. The positive relationship between beauty and electoral success holds for both male and female candidates. The analysis is based on four web surveys with over 1900 facial photos of Finnish political candidates. Altogether, we collected assessments from 10,011 respondents. About 2800 non-Finnish and about 3700 Finnish respondents were told that the persons in photos are political candidates. About 3500 respondents from outside of Finland were not told anything about the persons in photos. In these three surveys with a large number of respondents, each respondent was shown a random selection of photos and was asked to assess the candidates’ beauty, as well as perceived competence, trustworthiness, likability and intelligence. In the fourth survey with 16 respondents, each respondent assessed *all* 504 photos of candidates in the Helsinki municipal election. For each survey, we investigate to what extent the candidates’ individual beauty scores (relative to the beauty of competing candidates) are associated with their electoral success in the 2003 parliamentary or 2004 municipal elections.

Our main contributions can be summarized in three points. First, we are the first to study the effects of facial appearance on the success of political candidates who compete against other candidates from the same party. Second, we are able to focus on competition between a large number of non-incumbent candidates – about most of whom voters can be expected to have little or no information other than party, occupation, education, and visual cues. Both of these advances are made possible by the proportional electoral system in Finland.¹ And while we focus on competition between non-incumbent candidates, we can also analyze incumbency effects. Finnish voters who are unsatisfied with an incumbent can vote for a challenger from the same party. Our third contribution consists of a systematic investigation of the role of gender. If beauty matters for electoral success, then an important question is if it gives different advantages to male and female candidates. Finnish elections are unusually suited for gender analysis, since there is a sizable number of both male and female candidates in all districts.

The role of facial appearance in politics can be related to earlier findings of a “beauty premium” in the labor market (see Hamermesh and Biddle, 1994) but has attracted academic interest only recently. Todorov et al. (2005) find that inferences of competence from photos help predict the outcomes of elections to the U.S. Congress (72% of Senate races and 67% of House races). King and Leigh (2007), Rosar et al. (2008), Antonakis and Dalgas (2009), Benjamin and Shapiro (2009), Leigh and Susilo (2009) and Atkinson et al. (in press) also find that candidate appearance helps to predict electoral outcomes in various countries, each focusing on competition in one-member districts.

A major benefit of focusing on within-party competition is that we avoid problems of reverse causality which may plague studies based on between-party competition in one-member districts. Political parties may be more likely to attract more popular (e.g., more beautiful) candidates in districts in which they have an electoral advantage (Carson et al., 2007). This problem could confound the intriguing finding by Todorov et al. (2005) and other papers that focus on one-member districts.

¹ According to Reynolds et al. (2005), there are proportional electoral systems with party lists in 68 countries including Finland.

Unlike studies of between-party competition, we are able to construct our electoral-success variable in such a way – the vote share on a list featuring competition against candidates from the same party – that the relationship between expected electoral outcomes of various parties and candidate selection is unlikely to influence the results.

By studying within-party competition, we also control for the effect of ideology on voter choice, as candidates of the same party in Finland are ideologically quite homogeneous, unlike candidates of different parties. In the Finnish election study from the 2003 parliamentary election, most voters said that political opinions and party were crucial for their choice of candidate. Even so, personal appearance and style was important for one third of the voters. As over half of the voters considered a candidate's political experience important and over a third valued a candidate's education, most voters think that a candidate's personal characteristics and expected competence, not just political party, matter (see Bengtsson and Grönlund, 2005).

Studying within-party competition in Finland offers interesting insights also for countries with one-member electoral districts, like the United States. Most obviously, party primaries are an important stage in American federal and state-level elections. Our study provides reliable estimates on the relative importance of several aspects of candidate appearance at this stage of the electoral process. As ideological considerations are more important in general elections, our results arguably give an upper bound for the effects of various aspects of candidate appearance in between-party competition. However, there is no reason to expect the relative importance of various aspects of personal appearance to differ between within-party and between-party competition. With or without ideological competition, voters tend to prefer competent, trustworthy and likable politicians.²

We also think that some aspects of our research design form a contribution. By having respondents from Finland and from many other countries and by studying their assessments separately, we are able to say that the results hold irrespective of the nationality of the respondents (who, in the case of Finns, may recognize the candidates). In addition, our survey where respondents were not told that the photos depict political candidates provides information about whether knowing this affects the assessment.

In order to see how reliable our findings are, we include occupation and education, as reported on electoral lists, as alternative explanations of electoral success. Since occupation and education serve as signals of competence we can test if beauty has an effect of its own that is independent of its signalling competence. The relationship between beauty and electoral success is unaffected by including education and occupation as control variables and also withstands several other robustness checks.

2. Institutional facts, surveys and data

2.1. Institutional facts

The political setting for this study is Finland, and its electoral system is proportional. Finland has a one-chamber legislature, and the country is divided into fourteen mainland districts electing in total 199 legislators and the autonomous province of Åland electing one. Elections are held every four years. The number of MPs elected from the 14 mainland districts varies between six and 33. In each parliamentary district, parties present lists of their candidates, typically in alphabetical order but sometimes with incumbents listed first, and each voter chooses one candidate on one list. The number of candidates that a party can present equals the number of representatives elected from the district, if this is 14 or more. In small districts with less than 14 seats, parties can present 14 candidates. The legislature seats of a given district are allocated based on party vote shares to the candidates in accordance with their "competitive indices", using the d'Hondt seat-allocation rule. In each party, the candidate with the highest number of votes receives as his or her competitive index the total number of votes obtained by his or her party, the candidate with the second highest number of votes obtains an index calculated as half of the party votes, the third candidate gets an index equal to a third of the party votes, etc. Then all candidates are ranked on the basis of their indices, and from this list, there

² Although we believe that the study of within-party competition constitutes a methodological improvement, for the reasons outlined, it is still the case that candidate entry could be endogenous to beauty and other characteristics, which could induce a correlation with unobservables. This should be kept in mind when interpreting our results.

will be elected as many candidates as there are seats in the electoral district. In the municipal elections, competitive indices are calculated in a similar way, with each municipality forming a district.

In the 2003 parliamentary election, turnout was 69.7%. Female candidates won 75 of the 200 seats in parliament (Nurmi and Nurmi, 2004).³

2.2. The surveys

In order for beauty to be a meaningful variable for social scientists to study, perceptions of it need to be quantified as well as reflect somewhat of a stable consensus. Langlois et al. (2000) in fact find that there is considerable agreement about who is and who is not attractive, both within and across cultures. On this basis, we have conducted four web surveys based on the same questionnaire, but with some modifications in each treatment. In addition to asking about beauty, we also included questions about four other traits in order to find out more precisely what determines electoral success and how the results are to be interpreted.⁴ By collecting responses from several countries we are also able to check for cross-cultural differences. We find, in our main survey with non-Finnish respondents, that respondents in different countries make similar assessments. The four surveys are described briefly in Table 1.

Table 1
The four surveys

| Name of survey | Nationality of respondents | Respondents told that photos depict political candidates | Selection of photos shown | Number of respondents | Number of photo assessments | Time when carried out |
|-------------------------------------|----------------------------|--|---------------------------|-----------------------|-----------------------------|-------------------------|
| Survey 1: The main survey | Non-Finnish | Yes | Random (four per round) | 2772 | 16,218 | Spring-summer 2006 |
| Survey 2: The survey of Finns | Finnish | Yes | Random (four per round) | 3698 | 26,477 | Fall 2006 |
| Survey 3: The small survey | Swedish and Finnish | Yes | All (504 per round) | 16 | 8064 | Winter 2007 |
| Survey 4: The no-information survey | Non-Finnish | No | Random (ten per round) | 3525 | 38,985 | Autumn-winter 2005/2006 |

In the columns with the number of respondents and responses, only respondents who assessed at least four photos (and their responses) are reported.

Our main survey, survey 1, was conducted outside of Finland. Non-Finnish respondents can be expected not to recognize any of the candidates, which is an advantage when analyzing whether visual images function as thin slices of information. With the help of dozens of colleagues, students in various universities were invited to participate, either in lectures or by e-mail. The biggest participant numbers, more than 100 from each, came from Sciences Po in France and Uppsala University in Sweden. To attract non-students, invitations were sent to Uppsala University alumni as well as to members of two professional associations (International Institute of Public Finance and European Public Choice Society). We also cooperated with several blogs that advertised our study. Our data collection method allows us to compare traditional student respondents and respondents recruited in other ways. The respondents had the option to participate in a lottery of 100 euros and could also order a future summary of the results.

After replying to some personal background questions, each respondent was shown four photos (two of each gender), one at a time, randomly chosen from the database of photos. In connection with each photo, several questions were asked. There was an option, after having assessed four photos, to assess additional rounds of four photos, this time with a choice as to whether to assess only females,

³ For more facts about the Finnish political system, see Raunio (2005).

⁴ We do not claim that the assessments represent “true” characteristics of the political candidates. This study is about perceptions and none of the relationships reported should be interpreted as claims of a relationship among any underlying true characteristics.

only males or a continued mixture. There was no time limit for looking at the photos.⁵ The size of the photos was approximately 5 x 3.5 centimeters (2 x 1.4 inches), and they depicted faces only. No other information than the photo was given about any candidate. The candidates come from four parties with 63% of the elected members of parliament in the 2003 election: the Social Democratic Party, the National Coalition Party (a center-right party), the Left Alliance, and the Green League.

Importantly, we use photos that the political parties displayed on their campaign posters. All parties make extensive use of posters that display the names and photos of all candidates in the district. As all parties have a large number of such posters outdoors during the electoral campaign and as the same photos are also displayed in newspaper ads, it is likely that a large majority of voters have seen most or all of the candidate photos from the parties that they consider voting for. Since the participating political parties provided us with these photos, our respondents assessed the same photos as the voters were exposed to.

There are two potential problems related to the use of candidate photos. The first one is reverse causality: successful politicians could have access to stylists and better photographers. The second one is omitted variables, if some politicians both “dress for success” and do other unobserved things, like visit large numbers of voters, which help them getting elected. However, we expect both problems to be smaller when using official candidate photos. Our investigation does not suffer from the problem that more successful or better financed candidates hire better photographers: official candidate photos taken by the same photographer offer a more equal playing ground. Moreover, a “bad hair day” would produce measurement error for a candidate if photos from the press were used, whereas with official candidate photos, one expects an unflattering picture exposed in numerous posters to be detrimental for electoral success. In any case, Hamermesh, Meng, and Zhang (2002) find that attempts to improve one’s looks, in the realm of clothing and cosmetics, only have a small impact on how beautiful one is perceived by others.

Survey 2, the survey of Finns, was carried out in Finland. This time, we attracted mainly student participants. This survey allows us to investigate how recognition of candidates affects assessments and to verify that assessments by Finnish respondents are broadly in line with patterns of non-Finnish respondents. The biggest participant numbers, more than 300 from each, came from the University of Helsinki, the University of Jyväskylä, and the University of Oulu. Respondents could participate in a lottery of 30 movie tickets.

Survey 3, the small survey, took place in Finland and Sweden with 16 respondents of varying age and gender. This time, each respondent assessed all 504 photos of candidates in the Helsinki municipal election. The main reason was to see whether this way of assessing candidates – used in labor market studies – yields similar results as our large-scale surveys where each one of a large number of respondents assesses a small number of randomly selected photos.

Survey 4, the no-information survey, was conducted with respondents from outside of Finland who were shown photos without any information about the candidates. This allows us to test whether assessments of beauty and other traits were affected by the knowledge that the persons in the photos are political candidates.

We focus our investigation on the main survey with non-Finnish respondents who knew that they were assessing political candidates, and discuss results from the three other surveys in section 6.

2.3. Data

Our database contains 1929 photos of Finnish political candidates – 1009 of men and 920 of women, from the municipal (57%) and parliamentary level (43%). We only include assessments by respondents who assessed at least four photos. We only include photos with at least three assessments. This gives us 1786 photos. In section 4, we divide the photos into two groups – those of non-incumbents (1555 photos) and those of incumbents (231 photos). By *Incumbent* is meant a political candidate who served in the office in question, or as members of the national or the European parliaments at the time of the election. On average, each photo was assessed by nine respondents in the main survey.

⁵ Presumably, respondents have used different periods of time when looking at the photos, but this need not be a problem. Ambady and Rosenthal (1992) document that studies using longer periods of observation do not yield greater predictive accuracy, something which seems to hold, not least, with regard to faces (cf. Todorov et al., 2005; Willis and Todorov, 2006).

Americans and Swedes make up a majority of our 2772 respondents. Large groups of respondents also come from France, Germany and Denmark. Through our four web surveys, we use more respondents than other studies of beauty: 6303 from outside of Finland and 3708 from Finland, compared to four respondents (Hamermesh, 2006, Leigh and Susilo, 2009), five (King and Leigh, 2007), 50 (Mobius and Rosenblat, 2006), and 903 (Rosar et al., 2008).⁶

3. Perceptions of beauty and other traits

Each photo was assessed in the five dimensions beauty, competence, trustworthiness, likability, and intelligence using five reply options, which we have converted to a five-number scale. The lowest possible beauty rating corresponds to 1, and the highest possible to 5, etc. In assessing each trait, respondents had an option to abstain. In our main survey, the share of those who abstained varied between 0.5% for beauty and 7.9% for trustworthiness. There is substantial agreement among respondents; if we concentrate on two groups of beauty assessments — above average (4 and 5) and below average (1 and 2) — the kappa coefficient of inter-rater agreement is 0.48 and highly statistically significant. The corresponding coefficients for the other four traits range from 0.18 to 0.23, all of them statistically significant at the 1% level.

Men and women did not always agree on their assessments (Table 2). There is a tendency for men to give female candidates less positive assessments than women do. There are smaller differences in the assessments of male candidates; the only statistically significant difference is that men find male candidates more beautiful compared to what women find.

Table 2
Assessments of five traits

| Trait | Men assessing male candidates | Women assessing male candidates | Men assessing female candidates | Women assessing female candidates |
|-------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| Average beauty | 2.64 (0.90) | 2.57 (0.91) | 2.79 (1.06) | 3.01 (0.97) |
| Average competence | 3.30 (0.88) | 3.27 (0.88) | 3.21 (0.84) | 3.39 (0.85) |
| Average trustworthiness | 3.04 (0.86) | 3.02 (0.89) | 3.29 (0.82) | 3.42 (0.83) |
| Average likability | 3.07 (0.92) | 3.06 (0.95) | 3.23 (0.93) | 3.37 (0.94) |
| Average intelligence | 3.38 (0.83) | 3.35 (0.82) | 3.23 (0.79) | 3.37 (0.79) |

Standard deviations in parentheses. The figures are from our main survey.

On average, men perceive male candidates to be more intelligent and competent than female candidates, and female candidates to be more beautiful, likable and trustworthy. Women give female candidates more positive assessments of all traits, even though the difference in the assessment of intelligence is small and statistically insignificant. There is, lastly, no indication of a “dumb blonde syndrome,” which King and Leigh (2007) suggest as an interpretation of their results. There is a strong positive relationship, both for female and for male candidates, between beauty and perceived competence and between beauty and perceived intelligence. This holds irrespective of the gender of the respondents or the age of the candidates. A general pattern is that assessments of any pair of traits are positively correlated with each other, but correlations are far from perfect.

4. Beauty and electoral success

4.1. The empirical setting

In this section we investigate the relationship between beauty and electoral success. Given that assessments by Finnish voters could be influenced by their knowledge of the candidates, there is a risk that using Finnish respondents would create systematic measurement error. To avoid this, the results in

⁶ Among studies focusing on competence, Todorov et al. (2005) also collected assessments of beauty from 34 respondents.

this and the following section are based on assessments by non-Finnish respondents in our main survey.⁷ We present results for other respondent groups, including Finns, in section 6.

We first look at the share of candidates with a beauty assessment above the median. This share is 53% among elected and 47% among non-elected candidates. However, there is a clear gender gap: whereas only 39% of the elected male candidates have a beauty rating above the list median, the corresponding number for female candidates is 64%. This gender gap suggests that it may be fruitful to analyze the effects of beauty for each gender separately.

A more detailed picture emerges if we look at average assessments and also take the gender of the respondents into account. Both men and women assess elected and non-elected male candidates similarly, apart from somewhat higher perceived competence among elected male candidates. For female candidates the picture is quite different. Both men and women find elected female candidates better-looking than non-elected ones, and men give elected female candidates higher competence assessments. Other differences are smaller, and most of them statistically insignificant.

Next we investigate to what extent beauty and other traits can be related to the electoral success of candidates in the 2003 parliamentary election. Unlike other studies we focus first on the large group of non-incumbent candidates and then look at the full set of candidates, including incumbents. The main reason for making this division is that appearance and other pieces of information may be more important for less well-known candidates. As an incumbency dummy (interacted with beauty and other traits) may not fully capture such differences the estimates for non-incumbents risk being biased if incumbents are included.

We include list fixed effects in our regressions, which is equivalent to using relative measures of the traits capturing how beautiful, competent and trustworthy a candidate is perceived to be in relation to his or her competitors on the list. The dependent variable, *Relative success*, is defined in the following way for candidate i on list j :

$$Relative\ success_{i,j} = (p_i / v_j) * 100 \quad (1)$$

where p_i is candidate i 's number of personal votes and v_j is all votes for candidates on list j divided by the number of candidates on list j .⁸ When studying non-incumbents in section 4.2, we calculate relative success based on non-incumbent candidates only. In section 4.3, the same measures are calculated for incumbent and non-incumbent candidates together.

As regressors, we use the three trait variables *Beauty*, *Competence* and *Trustworthiness*. These three were selected to keep the analysis simple by focusing on dissimilar traits.⁹ The trait variables are constructed in two steps. First we compute the mean of all assessments of each photo. Then we divide each mean assessment by the standard deviation of all the mean assessments of that trait so that the trait variables all have a standard deviation of one. In our preferred specification we also include the dummy *Male candidate* as well as the age dummies *Young*, which denotes an age under 30, and *Old*, which denotes an age over 60.

4.2. Non-incumbent candidates

We begin by looking at non-incumbent candidates in the parliamentary election. Most notably, as reported in Table 3, we find that Beauty is clearly our most important explanatory variable of relative success both for female and for male candidates, and the only regressor that consistently attains statistical significance.

⁷ None of the non-Finnish respondents correctly recognized anyone of the candidates. In 17 cases the respondent mistook a candidate for another politician. Tarja Halonen was the only Finnish politician that anyone, although incorrectly, claimed to recognize. Ten answers were of the kind "I recognize her but don't remember her name."

⁸ The mean of relative success is 100, capturing that on average each candidate must receive a share of the votes equal to 1 / list size. The average of relative success for elected candidates (incumbents and non-incumbents) is 338. That is, they receive 3.38 times the votes of the average candidate.

⁹ Assessments of beauty and likability showed a high correlation as did assessments of competence and intelligence. In section 5, we describe results from a specification that includes all five traits.

Table 3
Relative success in the parliamentary election, non-incumbents

| | (1) | (2) | (3) | (4) | (5) |
|----------------------|--|--|--|---|---|
| | Relative success all non-incumbents | Relative success all non-incumbents | Relative success all non-incumbents | Relative success female non-incumbents | Relative success male non-incumbents |
| Beauty | 22.91*** (3.73) | | 20.49*** (3.92) | 21.17*** (4.55) | 17.86** (7.34) |
| Competence | | 10.81** (4.45) | 5.04 (4.48) | 1.92 (6.52) | 4.66 (5.09) |
| Trustworthiness | | 4.44 (4.37) | 2.72 (4.38) | 8.66 (6.97) | 1.06 (6.30) |
| Male candidate | 3.74 (6.21) | -0.08 (7.48) | 4.79 (7.37) | | |
| Young (age<30) | -20.08* (10.54) | -4.16 (10.85) | -17.24 (10.36) | -16.92 (12.54) | -14.25 (17.33) |
| Old (age>60) | 12.77 (16.06) | 0.88 (16.32) | 9.02 (16.13) | -23.71 (27.14) | 57.73 (43.82) |
| Number of candidates | 641 | 641 | 641 | 343 | 298 |
| R-squared | 0.05 | 0.02 | 0.06 | 0.08 | 0.05 |

Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

In column 1, Beauty is the only of the three traits that is included, and it is found to be highly statistically significant. The coefficient of Beauty becomes marginally smaller when Competence and Trustworthiness are included (in columns 3–5). When we exclude Beauty in column 2, the size of the estimated coefficient for Competence is substantially higher than in columns 3–5 and also attains statistical significance. This suggests that as perceptions of beauty and competence are positively correlated, the claim in Todorov et al. (2005) that voting preferences are anchored on inferences of competence from facial appearance may need to be reconsidered.

The three last columns include all three traits. A higher Beauty score of one standard deviation implies an increase in Relative success of 20.5% for all candidates, 21.2% for female candidates, and 17.9% for male candidates. The gender difference is, however, not statistically significant (which generally holds true for regression results based on this main dataset). According to a Wald test, the Beauty coefficient is larger than the Competence coefficient ($p < 0.05$). To facilitate the interpretation of the estimated impact of Beauty, note that an increase of one unit in Relative success means a one-percentage point increase in the number of votes, relative to the average number of votes of all candidates on the same list. Accordingly, an increase in the Beauty assessment by one standard deviation is associated with a 20% increase in the number of votes for the average non-incumbent.

The point estimate of the effect of Beauty is only marginally smaller for the municipal elections, the detailed results for which are reported in the online supplement. A higher Beauty score of one standard deviation implies an increase in the number of personal votes, relative to the average number of votes for the non-incumbents on the list, by 16.8% for all candidates, 19.4% for female candidates and 13.3% for male candidates, but as in the parliamentary election, the gender difference is not statistically significant. Except among male candidates, the estimates for Competence are larger than in the parliamentary election and statistically significant at the ten percent level.

4.3. All candidates (incumbents and non-incumbents)

The previous literature has focused on plurality-vote systems and has not studied competition between non-incumbents. We now investigate what the effect would be, as shown in Table 4, of including incumbents in our sample of candidates.

Table 4

Interaction of beauty, competence and trustworthiness with incumbency, parliamentary election

| | Relative success, all candidates |
|---------------------------|----------------------------------|
| Beauty | 17.21*** (3.34) |
| Beauty*Incumbent | -39.16** (16.67) |
| Competence | 6.26* (3.59) |
| Competence*Incumbent | -7.86 (12.93) |
| Trustworthiness | 0.07 (2.96) |
| Trustworthiness*Incumbent | 12.86 (16.26) |
| Incumbent | 348.46*** (129.38) |
| Male candidate | -7.26 (6.26) |
| Young (Age<30) | -23.38*** (8.33) |
| Old (Age>60) | -14.16 (16.15) |
| Number of candidates | 743 |
| R-squared | 0.36 |

Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

The estimated coefficients suggest that a positive relationship between beauty and electoral success holds for non-incumbents only; we cannot reject ($p>0.1$) that the estimated effect of beauty equals zero for incumbents. Clearly, being an incumbent is more important than looking good: the incumbency coefficient exceeds that of beauty by an order of magnitude.

Finally, we have carried out some hypothetical and purely mechanical calculations in order to roughly see how many non-elected candidates that could have been elected if they had had better looks. On each list, this was done by an imaginary reduction of the beauty assessment of all elected non-incumbent candidates by one standard deviation combined with an equally large imaginary increase in the beauty assessment of the same number of non-elected non-incumbent candidates (the ones closest to being elected). The beauty assessments of incumbents were left unchanged. This hypothetical procedure adds to the relative success of non-elected candidates at the expense of the elected ones. We find that 12% of the candidates elected in the parliamentary election would be replaced by competitors who were made more beautiful through this procedure. The corresponding figure in the municipal elections is 5%.

4.4. Occupation and education as alternative pieces of thin slices of information

Finnish candidates are allowed to report their education and occupation on the official party lists that are placed in voting booths. Almost all candidates – 98% in our sample – report at least one of these pieces of information on their party list. The education and occupation of candidates are also listed in most electoral ads. Therefore, voters have access to at least two other thin slices of information, in addition to photos.

Regressions are reported in Table 5 and indicate that the beauty coefficient is virtually unaffected, both in terms of size and statistical significance, when we include our wide range of occupational and educational dummy variables (column 3 in Table 3 can be consulted for comparison). Reporting upper-secondary education or comprehensive school or less is negatively related to electoral success, whereas the coefficient for a university education is positive. To summarize our findings, beauty appears to be an asset in politics.

Table 5

Relative success in the parliamentary election, with educational and occupational dummies

| | Relative success non-incumbents | Relative success non-incumbents |
|------------------------------|------------------------------------|------------------------------------|
| Beauty | 18.94*** (3.84) | 18.59*** (3.66) |
| Competence | 4.92 (4.50) | 4.70 (4.40) |
| Trustworthiness | 2.74 (4.29) | 1.30 (4.28) |
| University education | 21.53** (9.35) | 17.67* (10.38) |
| Vocational education | -9.53 (8.82) | -2.83 (11.16) |
| Upper-secondary education | -35.21*** (12.11) | -22.97 (17.30) |
| Comprehensive school or less | -57.50*** (7.61) | -51.79*** (9.79) |
| Male candidate | 5.81 (6.99) | 3.99 (7.39) |
| Young (age<30) | 3.61 (13.08) | 0.80 (13.65) |
| Old (age>60) | 11.63 (15.60) | 12.36 (15.61) |
| Occupational dummies | No | Yes |
| Number of candidates | 641 | 641 |
| R-squared | 0.11 | 0.14 |

Comprehensive school or less corresponds to at most 10 years of schooling. Upper-secondary education corresponds to 12 years of schooling, and vocational education 10–12 years. Upper-secondary education usually serves as preparation for university-level education, and many of the candidates with upper-secondary education listed as highest education have started, but not completed, university studies. Vocational education includes, e.g., basic nurses, nurses, commercial school graduates, clerks, and artisans. University education refers to those who completed their education and obtained degrees. The reference group for education is candidates who did not list their education. The occupational dummies used are party worker, management, researcher, teacher, upper white collar, medical doctor, nurse, lower white collar, worker, entrepreneur, artist, student, and not employed – for estimates, see the online supplement. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

4.5. Interpretation

Having established a link between beauty assessments and electoral success, we next bring together our results to evaluate alternative explanations of why beauty matters. Mobius and Rosenblat (2006) find that beauty can influence payoffs even if it is uncorrelated with productivity, and Todorov et al. (2005) find that perceived competence is the most important predictor of electoral success. With our data we are able to offer some tentative conclusions. We can discriminate between, on the one hand, the explanation that voters favor good-looking candidates because they enjoy watching them or because good-looking politicians are more successful in social interaction, and, on the other hand, the explanation that beauty matters as a signal related to competence or similar traits.

We have already reported in Table 3 that beauty assessments are a more robust explanatory variable of electoral success than competence or trustworthiness assessments. This is our first piece of evidence suggesting that beauty plays a role of its own, rather than just serving as a signal of competence. Also our finding that beauty retains its statistical significance when dummies for occupation and education are included in the regressions suggests that beauty does not only matter as a signal of competence.

Our inclusion of several trait assessments and of information about occupation and education thus suggests that voters favor good-looking candidates because they enjoy watching good-looking politicians, or because good-looking politicians are more successful in social interaction. Another possibility – which we cannot rule out with our data – is that beauty serves as a signal for some other characteristics than competence, intelligence, likability or trustworthiness. To investigate this is an important topic for future research. Not least, if such other characteristics do play a role, it would be interesting to disentangle the extent to which they are related to the “true” quality of politicians and the extent to which voters merely think they are. Furthermore, pinpointing the exact mechanisms

through which beauty affects electoral success could also be studied further. One possible mechanism, consistent with our reasoning in this section, is that beauty entails higher exposure, through the media or party activists, and that higher exposure leads to more votes.

5. Sensitivity analysis of the main survey

We will now investigate to what extent the results reported so far are sensitive to various alternative ways of examining the relationship between beauty and electoral success. We report the results briefly, but all details are available upon request. Our finding that beauty is strongly associated with electoral success is maintained in each alternative specification.

Beauty, competence and trustworthiness have so far been measured cardinally. We have also used alternative measures based on ordinal assessments. Like our previous trait variables, these variables, Beautyshare, Competenceshare, and Trustshare, are constructed in two steps. First we compute the share of assessments where a candidate was found to be the most beautiful, most competent and most trustworthy, when presented with three other randomly chosen candidates. We then divide this measure by its standard deviation so that these alternative trait variables also have a standard deviation of one. The results reveal that the previous qualitative results of Table 3 hold, as beauty dominates and retains statistical significance. Just like in Table 3, an increase in Beautyshare by one standard deviation is associated with an increase in relative electoral success of 17% for the average parliamentary candidate. This result indicates that the positive relation between beauty and electoral success is not just a consequence of the question used or the way we construct the explanatory variables.

Next, we examine whether redefining incumbency affects the results. More specifically, we test if the presence of candidates who were incumbents in the past influences the results in the parliamentary election. We find that the beauty coefficient is unaffected by including a dummy variable for non-incumbent candidates who were incumbents for some time between 1983 and 1999.

In the empirical models reported so far, we have included three of the five traits that were assessed by our respondents: beauty, competence and trustworthiness. We excluded Likability and Intelligence in order to simplify the analysis and keep the focus on three dissimilar traits (intelligence is conceptually similar to competence, while likability assessments are highly correlated with beauty assessments). We have conducted the analysis with all five traits included, and it shows that the exclusion is an innocuous one. Beauty retains its statistical significance and remains about as important in terms of coefficient size compared to Table 3 (the coefficient is 17.9 for the parliamentary election for all non-incumbent candidates, compared to 20.5 in Table 3); whereas the Likability and Intelligence coefficients are small and statistically insignificant.¹⁰

To further pinpoint the relationship between beauty and electoral success, and to see whether the relationship is driven by outliers, we have computed Spearman rank correlations for the 444 non-incumbent candidates in the Helsinki municipal elections. The Helsinki municipal elections are best suited for this, since all four parties have a large number of candidates and about the same number of non-incumbents on their lists. The rank correlation between Beauty and Relative success is always statistically significant and especially strong for female candidates, for whom Spearman's rho is 0.29. For male candidates, the correlation is 0.14. Combining female and male candidates we get a correlation of 0.26.

The analysis of Spearman rank correlations also allows us to compare the relationship between electoral success and the assessments of the five different traits one at a time and to implement a horse race between these traits. For both male and female candidates, the Spearman rank correlation between electoral success and Beauty is larger and has a higher level of statistical significance than the rank correlation between electoral success and Competence, Trustworthiness, Likability, or Intelligence.

Unlike several other studies, we have substantial numbers of both students and non-students among our respondents. It turns out that the assessments by (undergraduate and graduate) students and other respondents are remarkably similar, and that regression results based on photos with at least three student assessments are also close to what we get when including all respondents.

¹⁰ Including five traits instead of three does not result in multicollinearity problems according to variance inflation factors.

We have also used age and age squared, instead of dummies for young and old candidates, in our main regressions. This does not change the results. Finally, as we asked respondents to estimate the age of each candidate, we have exchanged the age dummies with dummies based on the age perceived by respondents. The estimated coefficient of Beauty is unaffected by this replacement.

6. Three additional surveys

6.1. Finnish Respondents

We have undertaken a survey based on the same set of political candidates with only Finnish respondents (survey 2). The results indicate only small differences compared to our main survey with non-Finnish respondents. As we asked the Finnish respondents to indicate if they recognized candidates, we are able to study how results differ in the degree of recognition. In Table 6, we report estimated beauty and competence coefficients stemming from regressions using the same set of variables as in Table 3, column 3 – i.e., Beauty, Competence, Trustworthiness, Male candidate, Young and Old. As before, we restrict ourselves to non-incumbents.

Column 1 contains regression results for all candidates. Column 2 contains results from regressions where we exclude individual assessments of candidates that the respondents recognized (by giving a first name, a family name or both). In column 3 we exclude photos of candidates recognized by at least one respondent. Lastly, column 4 contains results from non-Finnish respondents based on the same sample of candidates.¹¹ Hence, as one moves to the right from column 1 to 4, the probability of candidate recognition is gradually diminished.

Table 6
Relative success, non-incumbents, parliamentary election

| | (1) | (2) | (3) | (4) |
|----------------------|--|---|--|-------------------------|
| | Finnish respondents, including recognized candidates | Finnish respondents, individual assessments of recognized candidates are excluded | Finnish respondents, photos of candidates recognized by at least one respondent are excluded | Non-Finnish respondents |
| Beauty | 16.66*** | 18.08*** | 10.82** | 18.83*** |
| Competence | 13.38*** | 9.70** | 18.46*** | 5.91 |
| Number of candidates | 704 | 704 | 559 | 559 |

The regression model used is that of Table 3, column 3. This table only reports the Beauty and Competence coefficients. To facilitate comparability, the sample in column 3 and 4 is adjusted to contain the same set of candidates. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

The beauty coefficients are rather stable. The competence coefficients are in contrast quite unstable. Previous studies have either just excluded individual assessments of recognized candidates (Benjamin and Shapiro, 2009), excluded “well-known” candidates from the set of photos (King and Leigh, 2007; Rosar et al., 2008), or both (Todorov et al., 2005). Since recognition can be partial and unconscious, we think that the results of previous studies should be interpreted with some caution, as they are based on assessments by respondents of the same nationality as the political candidates and do not systematically test if the use of foreign respondents produces similar results. This entails a risk for non-reported recognition which we avoid in our main study with non-Finnish respondents. In particular, the unstable competence coefficients point at a possible problem with the results of Todorov et al. (2005), who find that perceived competence is a good predictor of electoral success.

6.2. Respondents assessing all photos

We have also conducted survey 3, with a small number of respondents who each assessed *all* 504 photos of Helsinki municipal candidates.¹² The reason was to see whether this way of assessing photos – used in labor market studies – gives rise to different overall assessments and results

¹¹ Since coefficients do not change much when we adjust the sample of candidates (compare column 4 with column 3 in Table 3), the differences that we do observe seem not to be driven by sample composition, but instead by recognition.

¹² The reason for using only this subset of all photos is that it would be too time-consuming for a respondent to evaluate 1929 photos.

compared to the approach taken in our other surveys, where a much greater number of respondents each assessed a randomly drawn small number of photos. We have ten Finnish and six Swedish respondents in this survey. For both nationalities, one half of the respondents are men and the other half women. The youngest respondent is 22 and the oldest 70, with 36 as the mean age.¹³ We find that the estimated Beauty coefficient is about the same, whether one uses evaluations by Finnish or Swedish respondents, and is similar to the coefficients reported earlier for a large number of non-Finnish or Finnish respondents. The Competence coefficient varies in the same way between Finnish and non-Finnish respondents, whether using a large number of respondents evaluating only a few photos each, or a small number of respondents evaluating a large number of photos each.

6.3. Respondents without information about the photos

We have furthermore conducted a survey (survey 4 in Table 1) in which it was *not* revealed that the photos depict political candidates or that we are studying politics.¹⁴ Once more, the same photos are used as in the main survey and in the survey with only Finnish respondents.

In terms of average assessments of the traits, we find small differences (below 0.1 units on the five-point scale) compared to when respondents knew that the photos depicted political candidates. We have also carried out regressions for the parliamentary and municipal elections for non-incumbents. Beauty retains statistical significance, but it is slightly less important in terms of estimated coefficient size, compared to the results based on the main survey.

7. Conclusions

We investigate how beauty is related to electoral success in Finland and find that candidates who look better than their list competitors are more successful. In the parliamentary election, an increase in beauty of one standard deviation is associated with a 20% increase in the number of votes for the average non-incumbent candidate. In the municipal elections, the corresponding increase is 17%. The figures are based on assessments by non-Finns in order to make sure that candidates were not recognized.

The Finnish electoral system provides an ideal testing ground. It is proportional and each voter has to vote for one candidate on a party list, which makes it possible to examine the effect of beauty in within-party competition. Studying within-party competition holds several advantages. First, studies of between-party competition may face a reverse-causality problem if a party is more successful in recruiting good-looking candidates in districts where it enjoys strong support. Second, within-party competition allows us to control for ideology. Third, we can study non-incumbent candidates separately in addition to a sample of both incumbents and non-incumbents.

Why does beauty matter? We try to discriminate between two possible explanations. On the one hand, voters may favor good-looking candidates either because they enjoy watching them or because good-looking politicians are more successful in social interaction. On the other hand, beauty may be used to infer competence or similar traits. This explanation accords well with the results of Todorov et al. (2005), indicating that competence assessments predict electoral success.

Our tentative conclusion is that voters favor good-looking candidates either because they enjoy watching them, or because good-looking politicians are more successful in social interaction, rather than use beauty as a signal of competence. We reach this conclusion as beauty retains its positive relationship with electoral success when evaluations of competence and other traits, and when education and occupation, are controlled for. There are at least three potential reasons for why Todorov et al. obtain a different result: unreported candidate recognition, reverse causality, or differences between the electoral systems.

Our main results hold also in a survey with Finnish respondents, a survey with respondents who assessed all as opposed to a random selection of photos, and a survey with respondents who did not

¹³ The pairwise correlation coefficients of beauty assessments among our Swedish respondents range from 0.43 to 0.61, with an average of 0.52, compared to a range from 0.13 to 0.62 with an average of 0.42 for the Finnish respondents.

¹⁴ In this survey, respondents had to evaluate at least ten photos. Another difference was that there was no option of choosing “Do not know / Do not want to answer” when evaluating the photos.

know that the photos depict political candidates. Still, there is certainly more work to be done to better understand the channels through which beauty and electoral success are related.

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Supplementary material to **The looks of a winner: Beauty and electoral success**

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Pertaining to section 1:

More on voters' stated grounds for choosing a candidate to vote for

There were 753 respondents in the Finnish election study from the 2003 parliamentary election, and these are the percentages of respondents who replied that a certain factor was “pivotal or fairly important” for their choice of candidate, as reported by Bengtsson and Grönlund (2005, 245):

- candidate's opinions and positions taken: 82%
- candidate supports the same party as respondent: 74%
- candidate's previous experience from politics: 56%
- candidate's educational background: 37%
- candidate's gender: 33%
- candidate's external habitus and style: 32%
- candidate is publicly known: 32%
- candidate's age: 28%
- electoral campaigning and advertisements: 19%
- candidate recommended by a friend or relative: 10%
- candidate supported by NGOs: 4%.

Pertaining to section 2.2:

The surveys

In Fig. S1, we show an excerpt from the web surveys, of the precise questions asked and the reply alternatives. The order of the questions was always the one presented here.

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What is your evaluation of the physical appearance or attractiveness of this person compared to the average among people living in your country of residence?

Very unattractive

Below average

Average

Above average

Very handsome or beautiful

Cannot say/Prefer not to answer

What is your evaluation of the competence of this person compared to the average among people living in your country of residence?

Very incompetent

Below average

Average

Above average

Very competent

Cannot say/Prefer not to answer

What is your evaluation of the likability of this person (i.e. how nice, pleasant, and agreeable do you find this person) compared to the average among people living in your country of residence?

Very unlikable

Below average

Average

Above average

Very likable

Cannot say/Prefer not to answer

What is your evaluation of the trustworthiness of this person (i.e. how ethical, honest, and responsible do you find this person) compared to the average among people living in your country of residence?

Very untrustworthy

Below average

Average

Above average

Very trustworthy

Cannot say/Prefer not to answer

What is your evaluation of the intelligence of this person compared to the average among people living in your country of residence?

Very unintelligent

Below average

Average

Above average

Very intelligent

Cannot say/Prefer not to answer

What is your evaluation of the age of this person? Use your keyboard to fill in the age in the box below.

Pertaining to section 2.3:

More on the respondents

In Table S1, we show the number of respondents per country and their shares of all respondents.

Table S1

Respondents by country

| Country | Number | Percent |
|---------------|--------|---------|
| USA | 859 | 31.0 |
| Sweden | 850 | 30.7 |
| France | 261 | 9.4 |
| Germany | 220 | 7.9 |
| Denmark | 156 | 5.6 |
| Other country | 426 | 15.4 |
| Total | 2772 | 100 |

Respondents denote those who assessed at least four photos (one full round). 66% were men, 34% women. 32% were undergraduate students, and 14% were graduate students. Average age: 31 (32 for men and 30 for women).

Pertaining to section 3:

More details about the relationship between beauty and competence/intelligence

At the end of the section, on p. 9, we write:

There is, lastly, no indication of a “dumb blonde syndrome,” which King and Leigh (2007) suggests an interpretation of their results. There is a strong positive relationship, both for female and for male candidates, between beauty and perceived competence and between beauty and perceived intelligence. This holds irrespective of the gender of the respondents or the age of the candidates.

In Fig. S2, we report the average competence assessment for each beauty score for all candidates, for candidates of each gender, and for three age groups. In Fig. S3, we report corresponding results for average intelligence assessments.

The figures show that average assessments of competence and intelligence are strictly increasing in beauty, except for old candidates where the average assessments of competence and intelligence fall slightly for the most beautiful candidates. This decline is, however, not statistically significant since there are only seven old candidates who were given the highest beauty assessment by any respondent. In fact the decline is entirely driven by a single assessment of a candidate who was given a score of one for both competence and intelligence.

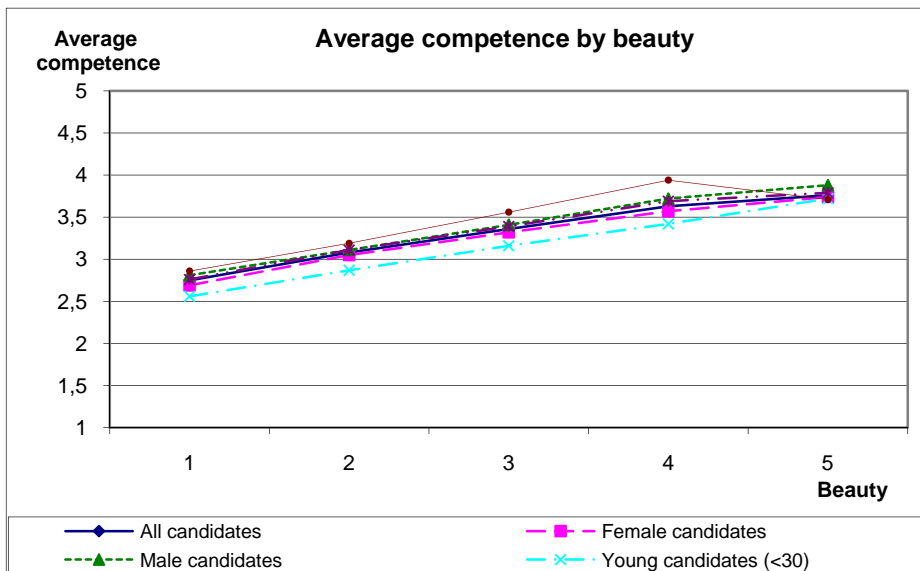


Fig. S2. Average competence by beauty.

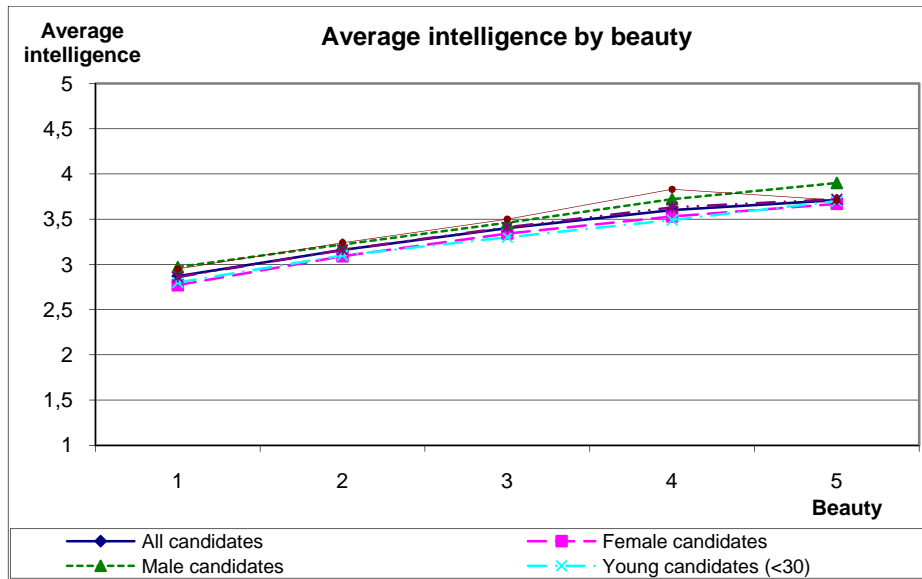


Fig. S3. Average intelligence by beauty.

In Table S2, we show correlation coefficients between our five traits.

Table S2

Correlation matrix

| | Beauty | Competence | Trustworthiness | Likability | Intelligence |
|-----------------|--------|------------|-----------------|------------|--------------|
| Beauty | 1.00 | | | | |
| Competence | 0.32 | 1.00 | | | |
| Trustworthiness | 0.22 | 0.38 | 1.00 | | |
| Likability | 0.41 | 0.32 | 0.51 | 1.00 | |
| Intelligence | 0.28 | 0.65 | 0.36 | 0.28 | 1.00 |

All of the reported traits exhibit statistically significant correlations with each other.

Pertaining to section 4.1:

More on elected non-incumbents

We look at the share of the elected candidates who receive above-average assessments on their list and present the results in Table S3.

Table S3

Share of elected non-incumbent candidates with scores above average

| Trait | All elected non-incumbents | Elected female non-incumbents | Elected male non-incumbents |
|--|----------------------------|-------------------------------|-----------------------------|
| Beauty | 61.8 % | 73.9 % | 43.3 % |
| Competence | 64.5 % | 60.1 % | 70.0 % |
| Trustworthiness | 57.9 % | 71.7 % | 36.7 % |
| Likability | 56.6 % | 69.6 % | 36.7 % |
| Intelligence | 57.9 % | 58.7 % | 56.7 % |
| Number of elected non-incumbent candidates | 76 | 46 | 30 |

In Figs. S4 and S5, assessments of elected and non-elected candidates are compared, for male and female candidates respectively. We also differentiate between respondents on the basis of their gender.

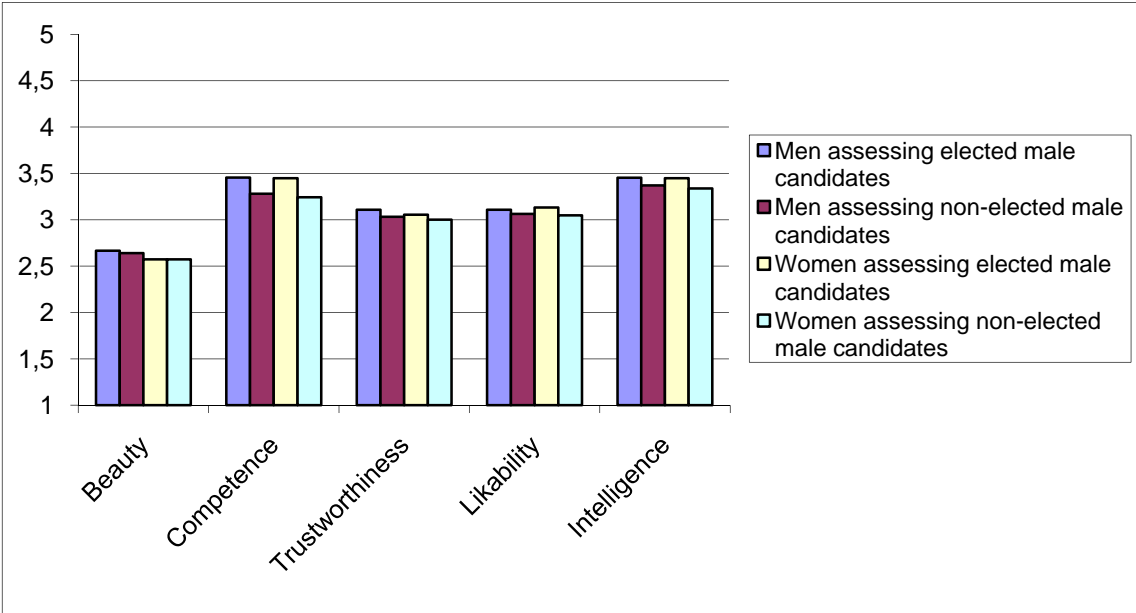


Fig S4. Assessments of elected and non-elected male candidates.

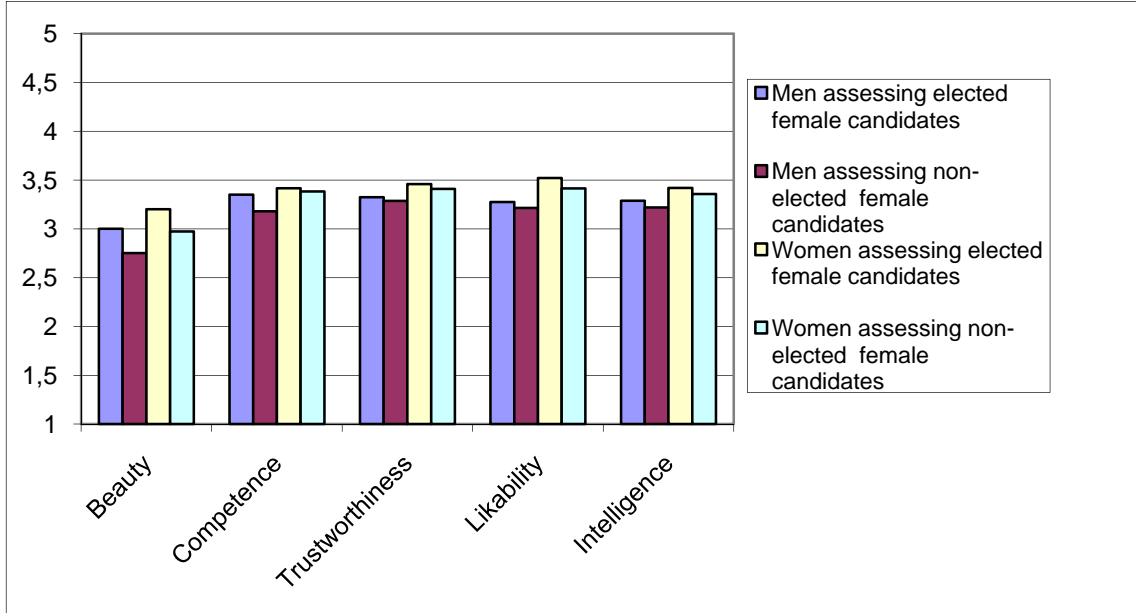


Fig S5. Assessments of elected and non-elected female candidates.

Lastly, incumbent candidates are seen as slightly better-looking than non-incumbent candidates (the averages are 2.83 and 2.74 and the difference is statistically significant).

**Pertaining to sections 4.2–4.3:
Results for municipal candidates**

Table S4 presents regression results for the municipal elections, non-incumbents, and it corresponds to Table 3 in the paper, where such results for the parliamentary election are presented. Unlike in the parliamentary election, the difference between the Beauty and Competence coefficients is not statistically significant (in column 1) according to a Wald test ($p > 0.1$).

Table S4
Relative success in the municipal elections, non-incumbents

| | (1) Relative success all non-incumbents | (2) Relative success female non-incumbents | (3) Relative success male non-incumbents |
|----------------------|---|--|--|
| Beauty | 16.80*** (4.16) | 19.44** (7.45) | 13.31** (4.34) |
| Competence | 8.66* (4.60) | 14.19* (7.17) | 2.50 (4.34) |
| Trustworthiness | -7.10** (2.66) | -6.66 (3.84) | -6.64 (4.52) |
| Male candidate | -28.28** (11.40) | | |
| Young (age<30) | -23.58** (7.91) | -29.01* (16.01) | -21.01** (8.84) |
| Old (age>60) | -3.44 (13.99) | -16.69 (14.74) | 8.79 (13.44) |
| Number of candidates | 914 | 460 | 454 |
| R-squared | 0.06 | 0.05 | 0.03 |

Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Table S5 presents regression results for all candidates in the municipal elections when the three trait variables are interacted with a dummy for incumbency; it corresponds to Table 4 in the paper, where results for parliamentary candidates are presented. While the estimated coefficient of beauty for non-incumbents is still positive and statistically significant, it is smaller than in Table S4. We find no statistically significant effect of incumbency on electoral success for the municipal elections.

Table S5
Interaction of beauty, competence and trustworthiness with incumbency, municipal elections

| | Relative success, all candidates |
|---------------------------|----------------------------------|
| Beauty | 10.07*** (2.85) |
| Beauty*Incumbent | 15.89 (37.65) |
| Competence | 7.65** (2.97) |
| Competence*Incumbent | -52.18 (49.36) |
| Trustworthiness | -5.81** (1.95) |
| Trustworthiness*Incumbent | 41.54 (41.73) |
| Incumbent | 373.38 (296.03) |
| Male candidate | -20.36*** (6.12) |
| Young (Age<30) | -7.56 (8.15) |
| Old (Age>60) | -5.42 (15.27) |
| Number of candidates | 1 043 |
| R-squared | 0.40 |

Robust standard errors clustered at the list level in parentheses. The estimated model includes list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Regression models without age dummies

Table S6 relates to Table 3 in the paper and Table S4 above and reports regressions results for the parliamentary and municipal elections, for non-incumbents, without including age dummies. As can be seen, the results do not depend on the age dummies.

Table S6

Relative success in the parliamentary and municipal elections, non-incumbents

| | (1) Relative success all parliamentary non-incumbents | (2) Relative success all municipal non-incumbents |
|----------------------|--|--|
| Beauty | 18.38*** (4.02) | 13.21** (4.81) |
| Competence | 6.26 (4.61) | 10.80* (5.03) |
| Trustworthiness | 3.04 (4.27) | -6.44** (2.64) |
| Male candidate | 5.73 (7.30) | -27.79** (11.26) |
| Number of candidates | 641 | 914 |
| R-squared | 0.06 | 0.05 |

Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Pertaining to section 4.4:

Occupation and education as alternative thin slices of information

Table S7 presents the full results of Table 5 for the column including the educational and occupational dummies, and also contains estimates from a specification with occupational but without educational dummies.

Table S7

Relative success in the parliamentary election, with occupational and educational dummies

| | Relative success non-incumbents | Relative success non-incumbents |
|------------------------------|------------------------------------|------------------------------------|
| Beauty | 19.27*** (3.75) | 18.59*** (3.66) |
| Competence | 4.27 (4.45) | 4.70 (4.40) |
| Trustworthiness | 0.99 (4.21) | 1.30 (4.28) |
| Party worker | 15.66 (31.97) | 14.44 (31.05) |
| Management | 9.53 (21.25) | 1.49 (21.36) |
| Researcher | 39.00 (29.95) | 27.71 (29.27) |
| Teacher | -15.91 (16.19) | -27.01 (17.47) |
| Upper white collar | -8.93 (18.65) | -16.11 (19.09) |
| Medical doctor | -1.47 (20.84) | -16.95 (22.47) |
| Nurse | -22.11 (17.45) | -17.63 (19.36) |
| Lower white collar | -25.02 (18.58) | -25.43 (19.91) |
| Worker | -40.68*** (15.00) | -35.36** (15.38) |
| Entrepreneur | -11.22 (20.13) | -10.90 (19.77) |
| Artist | -40.84*** (14.66) | -41.88*** (14.76) |
| Student | -55.81*** (18.64) | -37.33* (18.70) |
| Not employed | -42.50** (19.90) | -30.40 (18.30) |
| University education | | 17.67* (10.38) |
| Vocational education | | -2.834 (11.16) |
| Upper-secondary education | | -22.97 (17.30) |
| Comprehensive school or less | | -51.79*** (9.79) |
| Male candidate | 3.29 (7.54) | 3.99 (7.39) |
| Young (age<30) | -5.82 (13.32) | 0.799 (13.65) |
| Old (age>60) | 13.09 (15.46) | 12.36 (15.61) |
| Number of candidates | 641 | 641 |
| R-squared | 0.12 | 0.14 |

The occupational classification follows Statistics Finland (2001), though we have merged certain occupational categories with a small number of candidates and listed party workers as a group of their own. The reference group for occupation is candidates who did not list their occupation. Comprehensive school or less corresponds to at most 10 years of schooling. Upper-secondary education corresponds to 12 years of schooling, and vocational education 10–12 years. Upper-secondary education usually serves as preparation for university-level education, and many of the candidates with upper-secondary education listed as highest education have started, but not completed, university studies. Vocational education includes, e.g., basic nurses, nurses, commercial school graduates, clerks, and artisans. University education refers to those who completed their education and obtained degrees. The reference group for education is candidates who did not list their education. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Pertaining to section 5: **More on ordinal assessments**

Here, we use alternative measures of the three traits based on ordinal assessments. The ordinal assessments were collected by showing the respondent four photos together, after each had been evaluated individually, and asking the respondent to choose the most beautiful among those, and similarly for other traits. The variables Beautyshare etc. are then calculated in two steps. First we compute the share of assessments where a candidate was found to be the most beautiful, most competent and most trustworthy, when presented with three other randomly chosen candidates. Then we divide the share by the standard deviation of all the shares so that the trait variables all have a standard deviation of one. The results are reported in Table S8.

Table S8
Relative success and alternative trait measures, non-incumbents

| | (1) Relative success parliamentary election | (2) Relative success municipal elections |
|----------------------|---|--|
| Beautyshare | 17.45*** (3.81) | 10.31** (3.60) |
| Competenceshare | 8.97** (3.86) | 2.71 (5.79) |
| Trustshare | 2.26 (3.93) | 1.28 (4.50) |
| Male dummy | 6.60 (6.52) | -22.18* (10.47) |
| Young (Age<30) | -12.82 (11.00) | -18.52** (6.73) |
| Old (Age>60) | 11.76 (16.44) | -3.80 (15.11) |
| Number of candidates | 641 | 914 |
| R-squared | 0.06 | 0.03 |

The share variables measure the (standardized) share of responses where a candidate was assessed as the most beautiful, most competent and most trustworthy among four. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

More on incumbency

The regression results from our specification with a dummy for past incumbents are presented in Table S9.

Table S9
Relative success, non-incumbents,
parliamentary election

| | |
|----------------------|---------------------|
| Beauty | 22.17*** (3.95) |
| Competence | 4.80 (4.39) |
| Trustworthiness | 2.23 (4.36) |
| Past incumbent | 85.26*** (28.80) |
| Male candidate | 3.63 (7.32) |
| Young (Age<30) | -15.84 (10.18) |
| Old (Age>60) | 8.06 (15.47) |
| Number of candidates | 641 |
| R-squared | 0.09 |

Past incumbent is a dummy for candidates who were not incumbents in 2003, but were MPs or MEPs between 1983 and 1999. Robust standard errors clustered at the list level in parentheses. The estimated model includes list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

More on including evaluations of likability and intelligence

The regression results from our specification with evaluations of Likability and Intelligence are presented in Table S10.

Table S10

| | Relative success, non-incumbents, parliamentary election |
|----------------------|---|
| Beauty | 17.93*** (4.01) |
| Competence | 2.53 (6.41) |
| Trustworthiness | -0.44 (4.45) |
| Likability | 5.84 (3.80) |
| Intelligence | 4.07 (4.96) |
| Male candidate | 3.96 (7.25) |
| Young (Age<30) | -18.97* (10.55) |
| Old (Age>60) | 9.21 (16.31) |
| Number of candidates | 641 |
| R-squared | 0.07 |

Robust standard errors clustered at the list level in parentheses. The estimated model includes list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

More on the sensitivity analysis

The Spearman rank correlations for Helsinki are presented in Table S11.

Table S11

Spearman rank correlations for Helsinki, non-incumbent candidates

| | | All candidates | Female candidates | Male candidates |
|-----------------|--|-----------------|-------------------|-----------------|
| Beauty | Spearman's ρ | 0.260 | 0.289 | 0.148 |
| | Test of H0: beauty and relative success are independent | p-value = 0.000 | p-value = 0.000 | p-value = 0.029 |
| Competence | Spearman's ρ | 0.131 | 0.184 | 0.062 |
| | Test of H0: competence and relative success are independent | p-value = 0.006 | p-value = 0.005 | p-value = 0.365 |
| Trustworthiness | Spearman's ρ | 0.106 | 0.036 | -0.079 |
| | Test of H0: trustworthiness and relative success are independent | p-value = 0.026 | p-value = 0.587 | p-value = 0.245 |
| Likability | Spearman's ρ | 0.148 | 0.149 | 0.047 |
| | Test of H0: likability and relative success are independent | p-value = 0.002 | p-value = 0.034 | p-value = 0.493 |
| Intelligence | Spearman's ρ | 0.055 | 0.186 | 0.006 |
| | Test of H0: intelligence and relative success are independent | p-value = 0.251 | p-value = 0.005 | p-value = 0.932 |
| | Number of candidates | 444 | 226 | 218 |

Pertaining to section 6.1:

More detailed results based on data from the large survey of Finns

In addition to what we already report in the section, average assessments can be compared, as reported for Finns in Table S12 and for non-Finns in Table 2 in the paper. The overall pattern is the same. Unlike in our main study, Finnish women give more positive assessments than Finnish men of male candidates' competence ($p=0.01$). The differences for beauty, trustworthiness and intelligence are not statistically significant. Our Finnish respondents thus do not deviate from the cross-country

agreement about beauty that we find for several other nationalities, and that is – more generally – put forward in Langlois et al. (2000).

Table S12

Average assessments by Finnish respondents

| Variable | Men assessing male candidates | Women assessing male candidates | Men assessing female candidates | Women assessing female candidates |
|-----------------|-------------------------------|---------------------------------|---------------------------------|-----------------------------------|
| Beauty | 2.70 (0.88) | 2.68 (0.85) | 2.87 (1.00) | 3.15 (0.84) |
| Competence | 3.20 (0.85) | 3.25 (0.79) | 3.09 (0.81) | 3.34 (0.76) |
| Trustworthiness | 3.02 (0.87) | 3.02 (0.82) | 3.25 (0.81) | 3.40 (0.77) |
| Likability | 2.97 (0.89) | 3.03 (0.88) | 3.16 (0.92) | 3.35 (0.86) |
| Intelligence | 3.30 (0.81) | 3.32 (0.73) | 3.17 (0.75) | 3.34 (0.68) |

The assessments have not been standardized. Standard deviations in parentheses. Excluding individual assessments where the candidate was recognized.

In Table S13, we also report correlation coefficients on the basis of the data generated from Finnish respondents. The correlations are similar to the ones in Table S2, which are calculated using data from non-Finnish respondents.

Table S13

Correlation matrix

| | Beauty | Competence | Trustworthiness | Likability | Intelligence |
|-----------------|--------|------------|-----------------|------------|--------------|
| Beauty | 1.00 | | | | |
| Competence | 0.32 | 1.00 | | | |
| Trustworthiness | 0.24 | 0.36 | 1.00 | | |
| Likability | 0.42 | 0.28 | 0.51 | 1.00 | |
| Intelligence | 0.25 | 0.57 | 0.36 | 0.25 | 1.00 |

The full regression results underlying columns 1–3 in Table 6 in the paper are reported in Table S14.

Table S14

Parliamentary election, non-incumbents

| | (1) | (2) | (3) | (4) |
|----------------------|--|---|--|-------------------------|
| | Finnish respondents, including recognized candidates | Finnish respondents, individual assessments of recognized candidates are excluded | Finnish respondents, photos of candidates recognized by at least one respondent are excluded | Non-Finnish respondents |
| Beauty | 16.66*** (4.19) | 18.08*** (4.54) | 10.83** (4.44) | 18.83*** (4.20) |
| Competence | 13.38*** (4.76) | 9.701* (5.62) | 18.46*** (4.80) | 5.91 (4.64) |
| Trustworthiness | -11.18** (4.28) | -9.98** (4.33) | -11.81** (4.98) | -1.24 (4.53) |
| Male dummy | -4.53 (7.61) | -2.66 (7.55) | -6.53 (7.62) | -0.33 (6.62) |
| Young (age < 30) | -12.00 (10.58) | -14.19 (10.25) | -12.12 (11.86) | -23.11** (10.85) |
| Old (age > 60) | 13.34 (18.54) | 13.80 (18.13) | -7.00 (17.83) | -6.29 (17.84) |
| Number of candidates | 704 | 704 | 559 | 559 |
| R-squared | 0.05 | 0.04 | 0.05 | 0.05 |

To facilitate comparability, the sample in columns 3 and 4 is adjusted to contain the same set of candidates. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

In Table S15, we report results for the municipal elections that correspond to those in Table S14. The conclusions are similar as the ones for the parliamentary election – see our discussion of the results of Table 6 in the paper – but it bears noting that competence only retains its statistical significance in column (1) here. This lends further support to the instability of competence assessments as the probability of recognition is increased.

Table S15
Municipal elections, non-incumbents

| | (1) | (2) | (3) | (4) |
|----------------------|--|---|--|-------------------------|
| | Finnish respondents, including recognized candidates | Finnish respondents, individual assessments of recognized candidates are excluded | Finnish respondents, photos of candidates recognized by at least one respondent are excluded | Non-Finnish respondents |
| Beauty | 14.81*** (3.97) | 18.05*** (4.04) | 16.82*** (3.72) | 15.54*** (3.63) |
| Competence | 10.83*** (3.97) | 2.04 (4.04) | 3.40 (3.62) | 6.43 (4.81) |
| Trustworthiness | 0.05 (4.15) | 1.88 (4.26) | 4.17 (3.88) | -6.61*** (2.13) |
| Male dummy | -15.86** (7.61) | -13.78* (7.63) | -8.09 (7.02) | -22.40** (9.57) |
| Young (age < 30) | -25.02*** (8.54) | -28.59*** (8.58) | -28.54*** (7.98) | -24.21*** (7.23) |
| Old (age > 60) | -5.74 (11.92) | -3.74 (11.96) | -16.40 (10.61) | -15.60** (5.15) |
| Number of candidates | 965 | 965 | 799 | 799 |
| R-squared | 0.06 | 0.05 | 0.06 | 0.05 |

To facilitate comparability, the sample in columns 3 and 4 is adjusted to contain the same set of candidates. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Furthermore, in Table S16, we report the average values for relative success and the beauty assessment for non-excluded and excluded candidates in the parliamentary election. The non-excluded candidates are those who were not recognized even by a single respondent (i.e. those not excluded from Table S14, column 3), and the excluded candidates are those that were recognized by at least one respondent (i.e. those included in Table S14, column 1, but excluded in Table S14, column 3). It turns out that the excluded (i.e. recognized) candidates are better-looking and also more successful electorally. This pattern is similar for both male and female candidates.

Table S16
Average values for non-excluded and excluded parliamentary candidates

| | Non-excluded candidates | Excluded candidates |
|--------------------------|-------------------------|---------------------|
| Average relative success | 94.8 | 136.0 |
| Average beauty | 2.85 | 3.03 |
| Number of candidates | 615 | 89 |

Non-excluded candidates are those included in Table S14, column 3. Excluded candidates are those that are included in Table S14, column 1, and excluded from Table S14, column 3.

Pertaining to section 6.2:

More detailed results based on data from respondents assessing all photos

We begin by presenting facts about the 16 respondents, who each assessed all 504 photos of political candidates in the Helsinki municipal election. Facts about gender, home country, mean beauty

assessment and the standard deviation of the beauty assessment are found in Table S17a for the Swedish respondents and in Table S17b for the Finnish respondents.

Table S17a

Facts about Swedish respondents

| Number | Gender | Age | Home country | Mean beauty | Std dev beauty |
|--------|--------|-----|--------------|-------------|----------------|
| 1 | Male | 39 | Sweden | 3.42 | 0.75 |
| 2 | Male | 29 | Sweden | 2.53 | 0.67 |
| 3 | Female | 36 | Sweden | 2.86 | 0.69 |
| 4 | Male | 30 | Sweden | 2.60 | 0.93 |
| 5 | Female | 35 | Sweden | 3.18 | 0.62 |
| 6 | Female | 70 | Sweden | 3.54 | 1.00 |

Table S17b

Facts about Finnish respondents

| Number | Gender | Age | Home country | Mean beauty | Std dev beauty |
|--------|--------|-----|--------------|-------------|----------------|
| 1 | Female | 26 | Finland | 3.27 | 0.66 |
| 2 | Male | 28 | Finland | 3.77 | 0.72 |
| 3 | Male | 61 | Finland | 2.96 | 0.81 |
| 4 | Female | 26 | Finland | 3.14 | 0.65 |
| 5 | Male | 28 | Finland | 2.99 | 0.81 |
| 6 | Female | 67 | Finland | 3.13 | 0.81 |
| 7 | Male | 34 | Finland | 3.00 | 0.69 |
| 8 | Female | 25 | Finland | 2.75 | 0.64 |
| 9 | Female | 27 | Finland | 3.11 | 0.44 |
| 10 | Male | 22 | Finland | 2.78 | 0.85 |

In Tables S18a and S18b, we report pairwise correlation coefficients between the Swedish respondents' beauty assessments and the corresponding figures for the Finnish respondents. For the Swedish respondents, the lowest correlation between any two respondents is 0.42 and the highest is 0.62. The average correlation is 0.52. For the Finnish respondents, the lowest correlation is 0.12 and the highest is 0.62. The average correlation is 0.42.¹⁵ Cronbach's alpha, which measures the extent to which a set of test items can be treated as measuring a single latent variable, is 0.93 for beauty for Swedish respondents and 0.88 for Finnish respondents, both very high numbers.

Table S18a

Pairwise correlation coefficients between the Swedish respondents, beauty

| Respondent | 1 | 2 | 3 | 4 | 5 | 6 |
|------------|------|------|------|------|------|------|
| 1 | 1.00 | | | | | |
| 2 | 0.46 | 1.00 | | | | |
| 3 | 0.57 | 0.50 | 1.00 | | | |
| 4 | 0.52 | 0.43 | 0.52 | 1.00 | | |
| 5 | 0.55 | 0.48 | 0.62 | 0.53 | 1.00 | |
| 6 | 0.55 | 0.43 | 0.58 | 0.48 | 0.61 | 1.00 |

Table S18b

Pairwise correlation coefficients between the Finnish respondents, beauty

| Respondent | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|------------|------|------|------|------|------|------|------|------|------|----|
| 1 | 1 | | | | | | | | | |
| 2 | 0.24 | 1 | | | | | | | | |
| 3 | 0.46 | 0.23 | 1 | | | | | | | |
| 4 | 0.49 | 0.13 | 0.46 | 1 | | | | | | |
| 5 | 0.48 | 0.20 | 0.62 | 0.49 | 1 | | | | | |
| 6 | 0.47 | 0.24 | 0.55 | 0.34 | 0.44 | 1 | | | | |
| 7 | 0.47 | 0.25 | 0.55 | 0.43 | 0.53 | 0.43 | 1 | | | |
| 8 | 0.41 | 0.18 | 0.50 | 0.34 | 0.54 | 0.40 | 0.44 | 1 | | |
| 9 | 0.49 | 0.23 | 0.51 | 0.40 | 0.52 | 0.41 | 0.53 | 0.43 | 1 | |
| 10 | 0.48 | 0.19 | 0.49 | 0.49 | 0.51 | 0.40 | 0.50 | 0.36 | 0.48 | 1 |

¹⁵ The correlations reported by King and Leigh (2007) are between 0.39 and 0.56 for the pairs among their five respondents.

The corresponding correlation figures for competence and trustworthiness are reported in Table S19.

Table S19

Pairwise correlation coefficients between the Swedish and between the Finnish respondents, competence and trustworthiness

| | Competence Swedish respondents | Competence Finnish respondents | Trustworthiness Swedish respondents | Trustworthiness Finnish respondents |
|---------------------|-----------------------------------|-----------------------------------|--|--|
| Lowest correlation | -0.01 | -0.01 | 0.03 | -0.06 |
| Highest correlation | 0.33 | 0.38 | 0.25 | 0.26 |
| Average correlation | 0.14 | 0.22 | 0.12 | 0.10 |
| Cronbach's alpha | 0.52 | 0.73 | 0.45 | 0.51 |

In Table S20, we report regression results from the survey with a small number of respondents, first for Swedish (column 1) and then for Finnish respondents (column 2). We also include results from our main survey for the Helsinki municipal election (column 3) and from our survey of Finns for the Helsinki municipal election (column 4), for comparison.

Table S20

Relative success in the Helsinki municipal elections, non-incumbents

| | (1) Relative success all non-incumbents small survey Swedish respondents | (2) Relative success all non-incumbents small survey Finnish respondents | (3) Relative success all non-incumbents main survey | (4) Relative success all non-incumbents survey of Finns |
|----------------------|--|--|--|--|
| Beauty | 26.64* (7.37) | 23.80* (8.63) | 18.74 (8.01) | 23.04** (5.59) |
| Competence | 1.60 (7.45) | -2.65 (5.49) | 10.12 (8.44) | -6.26 (12.83) |
| Trustworthiness | -2.76 (3.78) | 5.67 (3.48) | -12.50 (7.83) | -2.32 (4.24) |
| Male candidate | -30.96 (21.17) | -28.42 (20.63) | -45.00* (17.80) | -33.30 (21.04) |
| Young (age<30) | -25.82 (16.72) | -27.63 (18.17) | -24.20 (14.17) | -31.68 (15.40) |
| Old (age>60) | 10.01 (30.00) | 8.13 (30.48) | 6.96 (30.51) | 11.21 (32.23) |
| Number of candidates | 444 | 444 | 444 | 444 |
| R-squared | 0.05 | 0.08 | 0.05 | 0.05 |

As each respondent evaluated all photos under study, we first normalized the ratings by using deviations from each respondent's average rating and dividing this difference by the standard deviation of the respondent's ratings before constructing the trait measures as described in section 4.1. Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

Pertaining to section 6.3:

More detailed results based on data from the survey without information about the photos

In addition to what we already report in the section, average assessments by non-Finns who were not informed that the photos depict political candidates (reported in Table S21) can be compared with those by non-Finns who were informed about this (reported in Table 2 in the paper). The overall pattern is the same.

Table S21

Average assessments by non-Finnish respondents who had not been informed that the photos depict political candidates

| Variable | Men assessing male candidates | Women assessing male candidates | Men assessing female candidates | Women assessing female candidates |
|-----------------|----------------------------------|------------------------------------|------------------------------------|--------------------------------------|
| Beauty | 2.58 (0.90) | 2.51 (0.93) | 2.74 (1.04) | 2.99 (0.95) |
| Competence | 3.23 (0.86) | 3.25 (0.85) | 3.12 (0.79) | 3.29 (0.81) |
| Trustworthiness | 3.03 (0.83) | 3.03 (0.87) | 3.23 (0.77) | 3.35 (0.84) |
| Likability | 3.00 (0.87) | 3.03 (0.91) | 3.19 (0.88) | 3.35 (0.90) |
| Intelligence | 3.29 (0.83) | 3.32 (0.76) | 3.12 (0.76) | 3.27 (0.77) |

Standard deviations in parentheses.

In Table S22, we report correlation coefficients on the basis of the data generated from non-Finnish respondents who were not informed that the photos depict political candidates (i.e. our survey 4), to be compared with Table S2, which is based on assessments from non-Finnish respondents who were informed about this.

Table S22
Correlation matrix

| | Beauty | Competence | Trustworthiness | Likability | Intelligence |
|-----------------|--------|------------|-----------------|------------|--------------|
| Beauty | 1.00 | | | | |
| Competence | 0.33 | 1.00 | | | |
| Trustworthiness | 0.21 | 0.39 | 1.00 | | |
| Likability | 0.40 | 0.32 | 0.51 | 1.00 | |
| Intelligence | 0.27 | 0.66 | 0.38 | 0.28 | 1.00 |

In Table S23, we report regression results from the no-information survey.

Table S23
Relative success in the parliamentary election, non-incumbents

| | Relative success all non-incumbents |
|----------------------|--|
| Beauty | 16.61*** (3.685) |
| Competence | 8.185 (5.707) |
| Trustworthiness | -1.278 (4.370) |
| Male candidate | 1.545 (6.775) |
| Young (age<30) | -13.12 (12.34) |
| Old (age>60) | 12.81 (17.38) |
| Number of candidates | 639 |
| R-squared | 0.05 |

Robust standard errors clustered at the list level in parentheses. The estimated models include list fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%.

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