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THE LOOKS OF A WINNER:
BEAUTY, GENDER, AND ELECTORAL SUCCESS

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THE LOOKS OF A WINNER: BEAUTY, GENDER, AND ELECTORAL SUCCESS

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 1,929 Finnish political candidates from 10,011 respondents (of which 3,708 were Finnish). An increase in beauty by one standard deviation is associated with an increase of 17–20 percent in the number of votes for the average non-incumbent candidate. The relationship is virtually always statistically significant for female candidates, and in most specifications also for male candidates.

JEL Code: D72, J45, J7.

Keywords: beauty, gender, elections, political candidates, beauty premium.

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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 Judith H. Langlois et al. (2000) – they might do better also in politics. Furthermore, the same meta-study suggests that good looks could serve as a signal of better health. Linda A. Jackson, John E. Hunter and Carole N. Hodge (1995) and Satoshi Kanazawa and Jody L. Kovar (2004) argue that they could also be a signal of higher intelligence. In the vocabulary of Nalini Ambady and Robert Rosenthal (1992), good looks could in this sense serve as a “thin slice” of information or as a heuristic in decision-making. Already Anthony Downs (1957) proposed that many voters are rather uninformed about the details of politics, a view that is further supported by Larry M. Bartels (1996). A consequence of this could be that voters focus on personal characteristics of the candidates rather than on political programs, as Martin P. Wattenberg (1991) argues is the case. 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 to what extent assessments of photos of political candidates can explain election outcomes.

Our main result is that beauty helps. We find that an increase in beauty by one standard deviation is associated with a 17- to 20-percent increase in the number of votes for the average non-incumbent. Beauty is more strongly correlated with success than either perceived competence or trustworthiness. Our empirical analysis also suggests that beauty matters more for female candidates.¹

Our study is based on four web surveys with over 1,900 facial photos of Finnish political candidates. Altogether, we collected assessments from 10,011 respondents. About 2,800 non-Finnish and about 3,700 Finnish respondents were told that the persons in photos are political candidates. About 3,500 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 have analyzed to what extent the candidates’ individual beauty scores (relative to the average beauty of competing candidates) are associated with their electoral success in the 2003 parliamentary or 2004 municipal elections.

The main contributions of this study can be summarized in three points. First, our investigation is the first to study the effects of facial appearance on the success of political candidates who compete against other candidates in the same party. This approach is made possible by the proportional electoral system in Finland.

A major benefit of focusing on within-party competition is that we avoid problems of reverse causality of between-party competition in one-member districts. Political parties are more likely to attract more popular (e.g. more beautiful) candidates in districts in which they have an electoral advantage. This problem could confound the intriguing finding by Alexander Todorov et al. (2005), that quick photo assessments of competence by Princeton undergraduate students help predict the outcomes of elections to the U.S. Congress. Unlike studies of between-party competition, we are able to construct our electoral-success variable in such a way – basically as 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.

¹ Throughout the paper, we use the terms “men” and “women” to denote respondents, i.e. those who participated in our study by evaluating political candidates, and “male” and “female” to denote political candidates.

In studying within- rather than between-party competition, we also automatically control for the effect of ideology on voter choice, as candidates of the same party in Finland are ideologically homogeneous, unlike candidates of different parties. This means that the effect of beauty on electoral success can be better isolated. The Finnish system also allows us to focus on 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.² 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. The stated primacy of political opinions for most voters supports our focus on within-party competition. Even so, personal appearance and style was important for one third of the voters (see Åsa Bengtsson and Kimmo Grönlund, 2005).

Our second contribution consists of a systematic investigation of the role of gender. If beauty matters for electoral success, then an important question is if it confers differential advantages on male and female candidates. Furthermore, we investigate whether men and women differ in their assessment of candidates' beauty and other traits. Finnish elections are unusually suited for gender analysis, since there is a sizable number of both male and female candidates in all districts.

We also think that some aspects of our research design form a contribution. Unlike most previous studies, we not only look at beauty but also at how four other traits are perceived by respondents and how these perceptions relate to electoral success. This may be important in order to see what inferences respondents draw from photos and how, e.g., beauty and competence assessments relate to each other. 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). The survey where 16 respondents assessed all photos of candidates for the Helsinki municipal election furthermore allows us to compare the precision of estimates obtained using a large number of respondents who each assessed a small number of photos with that of estimates obtained using a small number of respondents who each assessed a large number of photos. The latter approach is used in most previous studies. In addition, our survey where respondents were not told that the photos depict political candidates provides information about whether knowledge that the persons in photos are politicians affects assessments.

Extensive sensitivity analysis along several other dimensions (including the use of candidates' occupation and education as additional thin slices of information) confirms the basic result that beauty is positively related to electoral success, and more so for female candidates.

2. The Literature

Extensive research has established that it is good to be beautiful. In a meta-analysis of 102 studies, Langlois et al. (2000) report that the looks of people influence how they are perceived and treated by others, even by those who know them.³ As for gender, Langlois et al. (2000 p. 399) say:

The meta-analyses showed that, both within and across cultures, people agreed about who is and is not attractive. Furthermore, attractiveness is an advantage in a variety of important, real-life situations. We found not a single gender difference and surprisingly few age differences, suggesting that attractiveness is as important for males as for females and for children as for adults.

² Previous studies generally feature competition between an incumbent and a challenger. However, plurality-vote systems like the American one also contain within-party competition between candidates in the primary-election stage.

³ Cf. Alice H. Eagly et al. (1991) and Alan Feingold (1992a).

Economic research has demonstrated similar substantial benefits in the labor market. Beautiful people receive higher wages, a beauty premium. According to Daniel S. Hamermesh and Jeff E. Biddle (1994), workers of above-average beauty earn about 10 to 15 percent more than workers of below-average beauty. Other studies obtain similar results: see e.g. Biddle and Hamermesh (1998), Barry Harper (2000), Gerard A. Pfann et al. (2000), Daniel S. Hamermesh, Xin Meng and Junsen Zhang (2002), Michael T. French (2002) and Naci Mocan and Erdal Tekin (2006). Confirmation comes from experimental studies, e.g. Markus M. Mobius and Tanya S. Rosenblat (2006). As for gender, Hamermesh and Biddle (1994 p. 1187) conclude that there is an “absence of significantly larger penalties and premia, especially the latter, for women than for men.”

The role of beauty in politics has attracted academic interest only recently. Amy King and Andrew Leigh (2006) study beauty in Australian elections and report that it matters: a one standard deviation increase in beauty raises a candidate’s vote share by 0.7–1.8 percentage points. (Note that these numbers cannot readily be compared with our findings since the settings of electoral competition are different and since we define electoral success relative to list size.) Ulrich Rosar, Markus Klein and Tilo Beckers (forthcoming) study the role of facial appearance in a German state election in one-member districts. Their results indicate that an increase in beauty can increase a candidate’s vote share by at most 4 percentage points. Hamermesh (2006) looks at elections to the high offices of the American Economic Association, and his results indicate that there is a large and almost statistically significant effect of beauty on the electoral success of a male candidate; but also that there is virtually no such effect for a female candidate.

Our work is also related to voting research on the role of heuristics, information shortcuts, stereotyping, and thin slices of information. Downs (1957) stresses the uncertainty of voter decision-making and regards parties and ideologies as devices used to attract voters who are not all that familiar with detailed policies. Richard Lau and David Redlawsk (2001) find that voters low in political sophistication use candidate appearance as a heuristic.⁴ Among more recent studies, Todorov et al. (2005) find that inferences of competence from photos help predict the outcomes of elections to the U.S. Congress (71.6 percent of Senate races and 66.8 percent of House races). Daniel J. Benjamin and Jesse M. Shapiro (2006) report that about 20 percent of the variation of the actual vote shares in U.S. gubernatorial elections can be explained by predictions based on video clips. While these authors analyze photos or video clips as the only thin slice of information, we also study occupation and education, as reported on electoral lists. The meta-study by Ambady and Rosenthal (1992) further confirms that people – whether right or wrong – often form assessments and act on the basis of thin slices of information.⁵

3. Institutional Facts, Surveys and Data

3.1. Institutional Facts

The political setting for this study is Finland, and its electoral system is proportional.⁶ 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

⁴ Cf. Thomas Lee Budesheim and Stephen J. DePaola (1994 p. 339) and Redlawsk and Lau (2003).

⁵ This conclusion is supported further by Daniel Kahneman, Paul Slovic and Amos Tversky (1982), Herbert A. Simon (1985), Arthur Lupia (1994), C. Neil Macrae, Alan B. Milne and Galen V. Bodenhausen (1994), Bartels (1996), Gian Vittorio Caprara, Claudio Barbaranelli and Philip G. Zimbardo (1997), and Janine Willis and Alexander Todorov (2006).

⁶ See Tapio Raunio (2005).

are held every four years. The number of seats in the 14 mainland districts varies between seven and 32.

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, and which candidates are elected from each party is determined by their respective number of personal votes. In municipal elections, each municipality forms one district. The number of elected municipal councillors depends on the municipality's size, reaching a maximum of 85 in Helsinki. In the municipal elections each party is allowed to present one and a half as many candidates on its list as the number of seats in the municipal council. The maximum number of candidates that each party can present in Helsinki is 127.

In the 2003 parliamentary election, turnout was 69.7 percent. Female candidates received 42.6 percent of all votes, and 75 of the 200 elected members of parliament were women (Statistics Finland, 2006).

3.2. *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. As Hamermesh and Biddle (1994 p. 1175) put it: “within a culture at a point in time there is tremendous agreement on standards of beauty, and these standards change quite slowly.”⁷ On this basis, we have conducted four web surveys based on the same questionnaire, but with some modifications in each treatment. We did not only ask about beauty but also about four other possibly related traits in order to find out more precisely what determines electoral success and how the results are to be interpreted.⁸

The four surveys are described briefly in Table 1.

TABLE 1—THE FOUR SURVEYS

Name of survey	Nationalities of respondents	Information to respondents that the photos depict political candidates	Selection of photos shown to respondents	Number of respondents	Number of responses	Time when carried out
Survey 1: The main survey	Non-Finnish	Yes	Random (four per round)	2,772	16,218	Spring-summer 2006
Survey 2: The survey of Finns	Finnish	Yes	Random (four per round)	3,698	26,477	Fall 2006
Survey 3: The small survey	Swedish and Finnish	Yes	All (504 per round)	16	8,064	Winter 2007
Survey 4: The no-information survey	Non-Finnish	No	Random (ten per round)	3,525	38,985	Autumn-winter 2005/2006

Note: In the columns with the number of respondents and responses, only respondents who assessed at least one full round of photos (and their responses) are reported.

⁷ The same point is made by e.g. Feingold (1992b), Michael R. Cunningham et al. (1995) and Itzhak Aharon et al. (2001). We likewise find, in our main survey with non-Finnish respondents, that respondents in different countries make very similar assessments of the same photos (with the French possibly finding candidates a little less beautiful than Americans, Swedes, Germans, Danes and others).

⁸ We do not claim that the assessments represent true characteristics of the persons in the photos. This study is about perceptions and none of the relationships reported should be interpreted as claims of a relationship in any underlying true characteristics.

Our main survey, survey 1, was conducted in the spring and summer of 2006 outside of Finland. The main reason for using non-Finnish respondents is that they 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 also non-students, invitations to participate in our study 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 study separately 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.

Each respondent was shown four photos, one at a time, randomly chosen from the database of photos, in total two of each gender. 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, only males or a continued mixture. There was no time limit for looking at the photos.⁹ 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. Finnish political parties advertise their candidates on posters with individual photos of all candidates in a district. Since the participating political parties provided us with these photos, our respondents assessed the same photos as the voters were exposed to. This means that photo quality or what the candidates wear etc. are less important issues than if other photos had been used. Lastly, the candidates come from four parties: the Social Democratic Party, the National Coalition Party (a center-right party), the Left Alliance and the Green League. These parties represent 63 percent of elected members of parliament in the 2003 election.

Survey 2, the survey of Finns, was carried out in the fall of 2006 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 Jyväskylä, the University of Helsinki, and the University of Oulu. Respondents could participate in a lottery of 30 movie tickets.

Survey 3, the small survey, took place in early 2007 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 other 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 in the autumn-winter of 2005/2006. Respondents from outside of Finland were shown photos without any information on the persons appearing. This allows us to test whether assessments of beauty and other traits were affected by us telling that the persons in 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 7.

⁹ 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 pp. 1623–24, and Willis and Todorov, 2006).

3.3. Data

Our database contains 1,929 photos of Finnish political candidates – 1,009 of men and 920 of women, from the municipal (57 percent) and parliamentary level (43 percent). We only include assessments by respondents who assessed at least four photos. Except when studying hypothetical elections (part of our sensitivity analysis) we only include photos with at least three assessments. This gives us 1,786 photos. In Section 5, we divide the photos into two groups – those of non-incumbents (1,555 photos) and those of incumbents (231 photos). By “incumbents” is meant political candidates 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.

As indicated in Table 2, Americans and Swedes make up a majority of our 2,772 respondents. Large groups of respondents also come from France, Germany and Denmark.

TABLE 2—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	2,772	100

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

Through our four web surveys, we use more respondents than other studies of beauty or competence: 6,303 from outside of Finland and 3,708 from Finland, compared to four (Hamermesh, 2006), 50 (Mobius and Rosenblat, 2006), 264 (Benjamin and Shapiro, 2006) and 843 (Todorov et al., 2005).¹⁰

4. 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.¹¹ 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 percent for beauty and 7.9 percent 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 percent level.

However, men and women did not always agree on their assessments (Table 3). There is a clear tendency for men, on average, to give photos of female candidates less positive assessments than women do. There are smaller differences in the assessments of photos of male

¹⁰ Todorov et al. (2005) collected assessments of beauty from only 34 respondents.

¹¹ Using a cardinal scale of this kind is standard fare in the literature: see e.g. Hamermesh and Biddle (1994). As reported more fully in section 6.3, we have also used alternative variables based in ordinal assessments: the share of responses where a candidate was evaluated as the most beautiful, most competent and most trustworthy among four photos.

candidates; the only statistically significant difference is that men find male candidates more handsome or beautiful compared to what women find.

TABLE 3—ASSESSMENTS OF FIVE TRAITS

Variable	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)

Note: 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 not statistically significant. There is, lastly, no indication of a “dumb blonde syndrome,” which King and Leigh (2006) 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.¹²

5. Beauty and Electoral Success

5.1. *The Empirical Setting*

We estimate the importance of beauty and other perceived traits on 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 this and the following section are based on assessments by non-Finnish respondents in our main survey.¹³ We present results for other respondent groups, including Finns, in Section 7.

Like Hamermesh (2006), we first look at the share of the elected candidates who receive above-average assessments. In the case of beauty, about 62 percent of the elected non-incumbent candidates were assessed as being above average on their list. This indicates that although beauty may be an asset in politics, it is by no means a necessary requirement for being elected. However, again we find that there is a clear gender gap: whereas only 43 percent of the elected male candidates had a beauty rating above average, the corresponding number for female candidates is 74 percent. Compared to other non-incumbent candidates of their own gender, 57 percent of elected male candidates and 70 percent of elected female candidates were thought to be of above average beauty on their list. This gender gap suggests that it may be fruitful to analyze the effects of beauty for each gender separately.¹⁴

¹² For correlation coefficients, see Table A1 in the Appendix.

¹³ None of the 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, incorrectly, claimed to recognize. Ten answers were of the kind “I recognize her but don’t remember her name.”

¹⁴ We have done this throughout the paper but in general only report statistically significant gender differences.

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. One difference is that perceived competence is a bit higher among elected compared to non-elected male candidates. For beauty, the assessments of elected and non-elected male candidates are very close to each other.¹⁵ For female candidates the picture is quite different. Both men and women find elected female candidates more good looking than non-elected ones. Other differences are smaller, but not as small as for male candidates. Here one can mention that men seem to give elected female candidates higher competence assessments than they give to non-elected female candidates.¹⁶

Next we investigate to what extent beauty and other traits can be related to the relative success of candidates in the 2003 and 2004 elections. Unlike the previous literature we focus first on the large group of non-incumbent candidates (defined as political candidates who were not elected to the office in question and who were not members of the national or European parliaments at the time of the election) and then look at the full set of candidates, including incumbents. One reason for making this division is that incumbency is a very strong predictor of electoral success (see e.g. David S. Lee, forthcoming), and if a dummy variable fails to capture all of its effects on electoral success, other estimates risk being biased. Another reason is that appearance and other thin slices of information may be more important for less well-known candidates.¹⁷

The trait variables are constructed in two steps. First we compute the mean of all assessments of a particular photo. From this measure we then subtract the mean assessment for each trait for the candidates on the same list. That is, we use *relative* measures of the different traits, capturing how beautiful, competent and trustworthy a candidate is 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 :

$$(1) \quad \text{relative success}_{i,j} = (p_i / v_j) * 100$$

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 .¹⁸ When studying non-incumbents in section 5.2 we calculate both the trait measures and relative success based on non-incumbent candidates only. In section 5.3 the same measures are calculated for incumbent and non-incumbent candidates together. Each candidate's vote share would be a simpler and more direct choice of dependent variable. We use that measure in the sensitivity analysis, but the advantage of the relative success measure is that it makes election outcomes comparable, as list sizes differ (especially between parliamentary and municipal elections).

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.¹⁹ In our preferred specification we also include the age dummies *young*, which denotes an age under

¹⁵ See Figure A1 in the Appendix. However, incumbent candidates are seen as slightly better-looking than non-incumbent candidates (an average of 2.82 vs. an average of 2.73).

¹⁶ See Figure A2 in the Appendix.

¹⁷ We are able to study non-incumbents separately as Finland has a proportional electoral system with personal votes determining the order in which candidates are elected, resulting in within-party competition. A plurality-vote system, like that of the U.S., typically features competition between an incumbent and a challenger from different parties. Benjamin and Shapiro (2006) and King and Leigh (2006) both use a dummy for incumbency.

¹⁸ 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.

¹⁹ Beauty and likability showed a high correlation and intelligence and competence showed a high correlation. In section 6.4 we describe results from a specification that includes all five traits.

30, and old, which denotes an age over 60. This is a way to control for possible age effects – our data show, e.g., that both women and men consider younger candidates of both genders more beautiful than older candidates.

5.2. Non-Incumbent Candidates

We begin by looking at the effects in the parliamentary election for female and male non-incumbent candidates. Most notably, as reported in Table 4, 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.

TABLE 4—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	34.89*** (6.31)		31.17*** (6.55)	33.43*** (8.58)	29.85*** (11.25)
Competence		23.08*** (8.34)	10.95 (8.61)	5.441 (15.6)	11.70 (9.88)
Trustworthiness		9.94 (9.30)	6.07 (8.89)	15.27 (14.2)	-1.61 (12.3)
Male candidate	3.77 (6.37)	-0.05 (6.77)	4.72 (6.74)		
Young (age<30)	-18.93** (9.45)	-3.93 (9.54)	-16.23* (9.70)	-18.47 (12.4)	-17.15 (14.9)
Old (age>60)	11.59 (22.5)	0.74 (21.8)	8.19 (22.3)	-28.21 (20.3)	48.26 (38.5)
Number of candidates	641	641	641	343	298
Adjusted R-squared	0.06	0.02	0.06	0.09	0.04

Note: Robust standard errors in parentheses. The regressions include a constant term. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

In column 1, beauty is the only of the three traits that is included, and it is found to be highly statistically significant with a coefficient of almost the same size as when competence and trustworthiness are included as well (as in columns 3–5). In column 2, these other two traits are included while beauty is excluded. Then the size of the estimated coefficient for perceived 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 the number of personal votes, relative to the average number of votes for the non-incumbents on the list, by 20.3 percent for all candidates, 24.1 percent for female candidates, and 16.4 percent for male candidates.²⁰ The gender difference is however not statistically significant (which generally holds true for regressions results based on this main dataset). 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-percent increase in the number of votes for the average non-incumbent. One can also note that being young may be a disadvantage.

²⁰ The standard deviation is 0.65 for all candidates, 0.72 for female candidates and 0.55 for male candidates.

Table 5 reveals that the point estimate of beauty is only marginally smaller for the municipal elections. 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 16.6 percent for all candidates, 21.4 percent for female candidates and 19.4 percent for male candidates. Except among male candidates, the estimates for competence are statistically significant and larger than in the parliamentary election.

TABLE 5—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	25.58*** (6.74)	27.16** (11.30)	19.44*** (6.03)
Competence	18.54** (8.15)	33.27** (15.7)	7.278 (7.99)
Trustworthiness	-15.60* (8.17)	-14.20 (12.4)	-15.01 (10.8)
Male candidate	-27.82*** (6.53)		
young (age<30)	-22.82*** (7.86)	-26.58* (13.5)	-17.01** (7.88)
old (age>60)	-3.50 (12.8)	-20.76 (14.3)	11.69 (18.9)
Number of candidates	914	460	454
Adjusted R-squared	0.05	0.04	0.02

Note: Robust standard errors in parentheses. The regressions include a constant term. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

5.3. 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 6, of adding incumbents and an incumbency dummy.²¹

TABLE 6—RELATIVE SUCCESS IN THE PARLIAMENTARY AND MUNICIPAL ELECTIONS, INCUMBENTS AND NON-INCUMBENTS

	(1) Relative success parliamentary election	(2) Relative success municipal elections
Beauty	19.13*** (5.82)	17.36** (7.74)
Competence	11.57 (8.09)	5.49 (10.48)
Trustworthiness	6.41 (6.59)	-0.25 (12.16)
Incumbent	190.86*** (19.35)	352.91*** (35.40)
Male candidate	-2.57 (6.79)	-18.33** (9.12)
Young (age<30)	-19.27** (7.61)	-5.49 (10.08)
Old (age>60)	-14.72 (18.16)	-9.51 (17.63)
Number of candidates	743	1,043
Adjusted R-squared	0.36	0.39

Note: Robust standard errors in parentheses. The regressions include a constant term. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

²¹ To economize, in the tables reporting regression results from here on, we generally only report results corresponding to column 3 in Table 4, i.e. for female and male candidates together in a specification that includes a dummy for male candidates and age dummies. The reason for this choice is that when comparing the estimated beauty coefficients for female and male candidates, the difference is not statistically significant in regressions based on data from our main survey.

For the parliamentary election, reported in column 1, the beauty coefficient is close to its counterpart in the regression with non-incumbents only and implies that a one standard deviation increase in beauty is associated with an increase of relative success by 12.4 units. Perceived competence does not attain statistical significance. For the municipal elections, reported in column 2, beauty has a coefficient of almost the same size as in the regression with non-incumbents only, and the statistical significance of perceived competence that appeared in that regression vanishes.²²

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 candidates by one standard deviation combined with an equally large imaginary increase in the beauty assessment of the same number of non-elected candidates. Using the estimated beauty coefficients in Table 6, this hypothetical procedure adds to the relative success of non-elected candidates at the expense of the elected ones. This crude experiment shows that 15 percent 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 11 percent.

To summarize our findings, beauty emerges as an asset in politics.

6. Sensitivity Analysis

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

6.1. *Occupation and Education as Alternative Thin Slices of Information*

In Finland, the candidates are allowed to report their education and occupation on the official party lists that are placed in voting booths. Almost all candidates, 98 percent in our sample, report at least one of these pieces of information on their party list. This information on the candidates' education and occupation is also listed in most electoral ads. Therefore, voters have access to at least two other thin slices of information, in addition to photos.²³

Regression results taking these three different kinds of information into account indicate that the beauty coefficient is virtually unaffected, both in terms of size and statistical significance, when we include our battery of occupational and educational dummy variables. Listing oneself as a worker, artist or student is associated with lower electoral success when both occupational and educational dummies are included. Likewise, reporting upper-secondary education or comprehensive school or less is negatively related to electoral success. Details are reported in Table A2 in the Appendix; column 3 in Table 4 can be consulted for comparison.

²² Results without age dummies for Tables 4–6 are very similar and are available upon request.

²³ In fact, 37 percent of the voters who participated in the Finnish election study stated that a candidate's education had a considerable impact on their voting choice – see Bengtsson and Grönlund (2005 p. 245).

6.2. *Hypothetical Election*

To further see if there is a relationship between assessments of beauty and the propensity to choose a political candidate, we followed Todorov et al. (2005 p. 1625) and asked the respondents to vote for one of four candidates in a hypothetical election, or to abstain from voting.²⁴ If one looks at the share of the thus elected candidates who were also picked as the most extreme one (positively so) in the assessed traits, one actually finds that beauty obtains the lowest score: 45 percent of the respondents thought that the candidate they chose to vote for was also the most beautiful one. Competence seems to be the most important trait in this regard: 60 percent of the respondents thought that the candidate they chose to vote for was the most competent one.

If one looks at the share of hypothetically elected candidates among three groups of candidates, incumbents obtain the highest share (27.8 percent), followed by non-incumbents elected in the real elections (26.5 percent) and non-incumbents not elected in the real elections (24.6 percent). The relationship between the three categories is the same for female and male candidates, but all shares are higher for female candidates, for whom the differences between the shares are also larger. Incumbents thus do better also in the hypothetical election; and the hypothetical election preserves the ordering of elected and non-elected non-incumbents from the real elections.

We have also estimated a linear probability model with the respondents' choices of candidates in the hypothetical election as the dependent variable. The explanatory variables are dummy variables for choices as the most beautiful, the most competent and the most trustworthy candidate, and a dummy for male candidates. It turns out that both men and women prefer candidates of their own gender, a pattern which is especially strong for women. Beauty is less important than competence for both men and women, but still, the probability of being elected increases by 19 percentage points for a candidate who is ranked as the most beautiful in a group of four. Voting in a hypothetical election is of course quite different from voting in a real election, and for this reason we can only expect to capture general patterns and directions of relationships. But since it does seem clear that the assessments of traits play a role in the hypothetical election, the risk that the findings for the parliamentary and municipal elections reflect spurious relations is arguably reduced.

Furthermore, to see whether the effect of beauty is non-linearly related to being elected, we have replaced the beauty variable with dummies for each of the five beauty levels. Overall, the effect is approximately linear.

6.3. *Measures Based on Ordinal Assessments*

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. From this measure we then subtract its mean over the non-incumbents on the same list. The results reveal that the previous qualitative results of Tables 4 and 5 hold, as beauty dominates and retains statistical significance. An increase in the beauty share by one standard deviation is associated with an increase in the number of votes by 39 percent for the average non-incumbent candidate. These results indicate that the positive relation between beauty and

²⁴ The instruction reads: "Sometimes people have to vote in an election with only a little information. Let us assume that you would have to either vote for one of these persons as a member of Parliament [non-US respondents]/the House of Representatives [US respondents], or abstain from voting. Which would be your choice?"

electoral success is not just a consequence of the question used or the way we construct the explanatory variables.

6.4. *Sensitivity in Other Dimensions*

We have also made a number of minor changes in our main empirical specifications (in Tables 4 and 5). Here we report results from specifications where we exchange the dependent variable, redefine incumbency, include perceptions of additional traits, check for outliers, separate students and non-students, and use perceived instead of real age.

We begin by replacing relative success with vote share as the dependent variable in the regressions reported in Section 5, to see whether the results are qualitatively affected. Vote share is defined in the following way for candidate i on list j ,

$$(2) \quad \text{vote share}_{i,j} = (p_i / w_j) * 100$$

where p_i is non-incumbent candidate i 's number of personal votes and w_j is the number of all votes for non-incumbent candidates on list j . The relationship between this measure and relative success is that $w_j = v_j * \text{the number of non-incumbent candidates on list } j$. This variable is easier to interpret intuitively than relative success, but since the number of candidates differ between lists, the estimated coefficients for different lists are not readily comparable. It turns out that the results are qualitatively very similar to those of Table 4. Again and most notably, we find that beauty is by far our most important explanatory variable. Competence does not attain statistical significance. A higher beauty score of one standard deviation implies an increase of 1.61 percentage points in the vote share in the parliamentary election. In the municipal election, with more candidates on the lists, the corresponding figure is 0.15. Although these numbers may appear a small, note that the average vote share among all non-incumbents is 4.47 percent in the parliamentary election and 0.57 percent in the municipal elections. The corresponding averages for elected non-incumbents are 11.75 and 2.21.

The second change we make to test the sensitivity of our results is to redefine incumbency. Above, incumbents were defined as political candidates who served in the office in question or as members of the national or European parliaments at the time of the election. A more common definition of incumbency is to include only the candidates who served in the office *in question* (hence, regarding candidates who had been elected to some other office as non-incumbents). Using this definition, Tables 4–6 have been reproduced and no big differences appear, neither for the parliamentary nor for the municipal elections.

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 (e.g., intelligence can be expected to be conceptually quite similar to competence). 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 4 (the coefficient is 27.3 for the parliamentary election for all non-incumbent candidates, compared to 31.12 in Table 4); whereas the likability and intelligence coefficients do not attain statistical significance.²⁵

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 candi-

²⁵ Including five traits instead of three does not result in multicollinearity problems according to variance inflation factors.

dates and about the same number of non-incumbents on their lists. The rank correlation between beauty and relative success is especially strong for female candidates, for whom Spearman's ρ is 0.285. For male candidates, the correlation is 0.103 but not statistically significant. Combining female and male candidates we get a statistically significant correlation of 0.232.

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 as explanatory variables for electoral success. For both females and males, 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 perceived competence, trustworthiness, likability, or intelligence.

Unlike most previous studies, we use not only students as respondents. It turns out that the assessments by (undergraduate and graduate) students and other respondents are remarkably similar, with the only statistically significant differences being that students assess the candidates somewhat more negatively in beauty (average of 2.69 vs. 2.79 for non-students) and somewhat more positively in trustworthiness (average of 3.23 vs. 3.17 for non-students). In terms of regression results, looking at relative success, non-incumbent candidates and confining analysis to photos with at least three student assessments, beauty attains statistical significance and the size of the coefficient is 23.3 in the parliamentary and 21.0 in the municipal elections. Beauty remains important, even when just using this group of respondents (which is the one used in almost all previous studies).

Finally, as we asked respondents to estimate the age of each candidate, we have also exchanged the real age used in the regressions above with the age perceived by respondents. It turns out that the estimated coefficient of beauty is almost identical when perceived age is used.

7. Three Additional Surveys

In addition to the sensitivity analysis in the preceding section, with an investigation of the results derived from our main survey, we have also carried out three additional surveys, as was reported in Section 3.2. We have done this in order to study the effects of using respondents from Finland (who may recognize candidates), in order to compare our approach of having many respondents each of whom assesses a small number of photos with that of most previous studies (which use few respondents each of whom assesses a large number of photos) and, lastly, in order to see whether knowing that the photos depict political candidates affects the assessments.

7.1. 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 7, we report estimated beauty and competence coefficients stemming from regressions using the same set of variables as in Table 4, column 3 – i.e. beauty, competence, trustworthiness, male candidate, young and old. As before, we restrict ourselves to non-incumbents.

Column 1 contains results from when we include all candidates. Column 2 contains results from when we exclude individual assessments of candidates who respondents indicated were recognized by them (by giving a first name, a family name or both). Column 3 contains

results from when we exclude photos of candidates recognized by at least one respondent. Lastly, column 4 contains results (from Tables 4 and 5) from non-Finnish respondents who did not recognize a single candidate.²⁶ Hence, as one moves to the right from column 1 to 4, the probability of candidate recognition is gradually diminished.

TABLE 7—RELATIVE SUCCESS, NON-INCUMBENTS

	(1) Finnish respondents, including recognized candidates	(2) Finnish respondents, individual assessments of recognized candidates are excluded	(3) Finnish respondents, photos of candidates recognized by at least one respondent are excluded	(4) Non-Finnish respondents (from Tables 4 and 5)
Beauty, parliamentary election	30.37***	32.54***	19.48**	31.17***
Beauty, municipal elections	27.05***	32.50***	31.11***	25.58***
Competence, parliamentary election	39.62***	28.33**	55.42***	10.95
Competence, municipal elections	31.90**	6.034	17.14	18.54**

Note: The regression model used is that of Table 4, column 3, and Table 5, column 1. This table only reports the beauty and competence coefficients. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent (based on robust standard errors)

The beauty coefficients are rather stable, apart from in column 3. In contrast, the competence coefficients are quite unstable. Previous studies have either just excluded individual assessments of recognized candidates (Benjamin and Shapiro, 2006), excluded “well-known” candidates quite subjectively from the set of photos (King and Leigh, 2006), or both (Todorov et al., 2005).²⁷ 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. Having said that, we do not want to overemphasize the effects of recognition. The main message from the survey of Finns is to confirm that beauty is positively related to relative success in parliamentary and municipal elections.

7.2. 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.²⁸ The reason was to see whether this way of assessing photos – which is used in most of the other studies – gives rise to different overall assessments and results compared to the approach taken in our other surveys, where a much greater number of respondents each assessed only 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.²⁹

²⁶ The comparison of the Finnish and the main non-Finnish survey is complicated by the fact that the share of female respondents is 73 percent in the Finnish survey and 32 percent in the main survey.

²⁷ Benjamin and Shapiro (2006) did not ask their participants to evaluate candidates from Massachusetts, the state in which almost all of their participants resided, or to evaluate candidates from the state where they grew up. King and Leigh (2006) also use one non-Australian respondent to evaluate photos in a sensitivity test.

²⁸ The reason for using only this subset of all photos is that it would be too time-consuming for respondents to evaluate 1,929 photos at one time.

²⁹ The pairwise correlations of beauty assessments among our Swedish respondents range from 0.42 to 0.61, with an average of 0.52, compared to a range from 0.12 to 0.62 with an average of 0.42 for the Finnish respondents.

When looking at regression results, three new comparisons can be made: between results based on this small survey’s Swedish respondents (see column 1 in Table 8) and results from our main survey with non-Finnish respondents (column 3 in Table 8) restricted to the Helsinki municipal election; between the results based on this survey’s Finnish respondents (column 2 in Table 8) and results from our survey of Finns (column 4 in Table 8) restricted to the Helsinki municipal election; and between Swedish and Finnish respondents in the small survey.

TABLE 8—RELATIVE SUCCESS IN THE HELSINKI MUNICIPAL ELECTIONS, ALL CANDIDATES, NON-INCUMBENTS

	(1) Swedish respondents small survey	(2) Finnish respondents small survey	(3) non-Finnish respondents main survey	(4) Finnish respondents survey of Finns
Beauty	26.68**	24.77**	28.71**	28.69**
Competence	2.86	45.76**	21.36	43.61*

Note: The regression model used is that of Table 4, column 3. This table only reports the beauty and competence coefficients. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

The differences as far as beauty is concerned are very small irrespective of which comparison is made – and notably, beauty retains statistical significance throughout. Once again, there is a difference in the competence coefficients between, on the one hand, the Swedish and non-Finnish respondents in columns 1 and 3 and, on the other hand, between the Finnish respondents in columns 2 and 4. This difference, as we argue in Section 7.1, plausibly depends on the occurrence of recognition.

Thus, the two methods – using a small number of respondents who assess all photos and using a large number of respondents who assess a random selection of photos – seem to yield quite similar results.³⁰ We have investigated this tentative conclusion further, in order to see to what extent the results are sensitive to the composition of respondents. To do this we have composed different groups of four respondents and estimated regressions based on their assessments, along the lines of Hamermesh (2006) and King and Leigh (2006). In doing this we kept the groups balanced in terms of the age and gender of the included respondents. When studying Swedish respondents, this was done by letting each group be composed of two men and two women, including the oldest person of each gender. This restriction gives rise to four groups of Swedish respondents. We find that beauty coefficients are quite stable (ranging from 25.84 to 29.29) and always statistically significant. However, when combining the ten Finnish respondents in 16 different groups of four, the results are not as clear-cut, again plausibly reflecting the importance of recognition. The beauty coefficient ranged from 10.42 to 20.33 and was only statistically significant in six of the 16 regressions. This fluctuation suggests that surveys with a small number of respondents – four in this case – produce unstable results when respondents come from the same country as those they assess.

7.3. Respondents without Information about the Photos

We have furthermore conducted survey 4, the no-information survey, in which it was *not* revealed that the photos depict political candidates or that we are studying politics.³¹ Once more the same photos are used as in the main survey and in the large one with only Finnish respondents. When this survey is combined with the main survey, in both cases with non-Finnish respondents, each photo has received almost 30 ratings on average, rendering the results statistically very robust.

³⁰ This finding suggests that it is unproblematic to use a large number of respondents who are shown a random selection of photos, as e.g. in our main survey, even though they use different (subjective) scales when evaluating the photos.

³¹ 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.

In terms of average assessments of the traits, we find small differences, typically in the order of 0.1–0.2 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. In the parliamentary election, beauty retains statistical significance for all candidates, but it is somewhat less important in terms of estimated coefficient size, compared to the results of Table 4. In the municipal elections, beauty is somewhat more important for female candidates and less important for male candidates (compared to Table 5). Furthermore, tests of statistical significance indicate a difference between the beauty coefficients of female and male candidates, the latter being smaller and not statistically significantly different from zero.

In all, these findings indicate that assessments overall may be modestly affected by the knowledge that the photos depict political candidates. But beauty comes through as the dominant explanatory variable here too, especially for female candidates.

8. Concluding Remarks

We investigate how beauty is related to electoral success 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 percent increase in the number of votes for the average non-incumbent candidate. In the municipal elections, the figure is 17 percent. These results 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 for our analysis. It is proportional, each voter has to vote for one candidate on a party list and all parties have several male and female candidates on each list. Focusing on such a system with within-party competition holds three 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 very effectively, which enables us to better isolate the effects of beauty. Third, non-incumbent candidates can be studied separately, ruling out any confounding influence of incumbency advantage.

Extensive sensitivity analysis confirms the main results. Looking at the effects on electoral success of other thin slices of information (occupation and education), exploring choice in a hypothetical election, using measures based on ordinal assessments of beauty, competence and trustworthiness, as well as more minor specification changes – none of these modifications alter the qualitative findings. Furthermore, our three additional surveys, using Finnish respondents, using respondents who assessed all as opposed to a random selection of photos and using respondents who did not know that the photos depict political candidates, confirm the main result. Beauty matters.

Although the estimated effect of beauty is about the same for male and female candidates in our main regressions, there are some signs of beauty being more important for female candidates. First, beauty matters only for female candidates in some specifications in the municipal elections. Second, the Spearman rank correlation between beauty and our measure of electoral success is statistically significant only for female candidates (in the Helsinki municipal election). Third, the standard deviation of the candidates' beauty is higher for female than for male candidates, meaning that a larger share of female candidates can be found in the upper tail of the beauty distribution. In consequence, beauty seems more important for female candidates than for males. This stands in contrast to labor market studies, where the beauty premium has been found to benefit males more than females.

APPENDIX

TABLE A1—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

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

FIGURE A1—ASSESSMENTS OF ELECTED AND NON-ELECTED MALE CANDIDATES

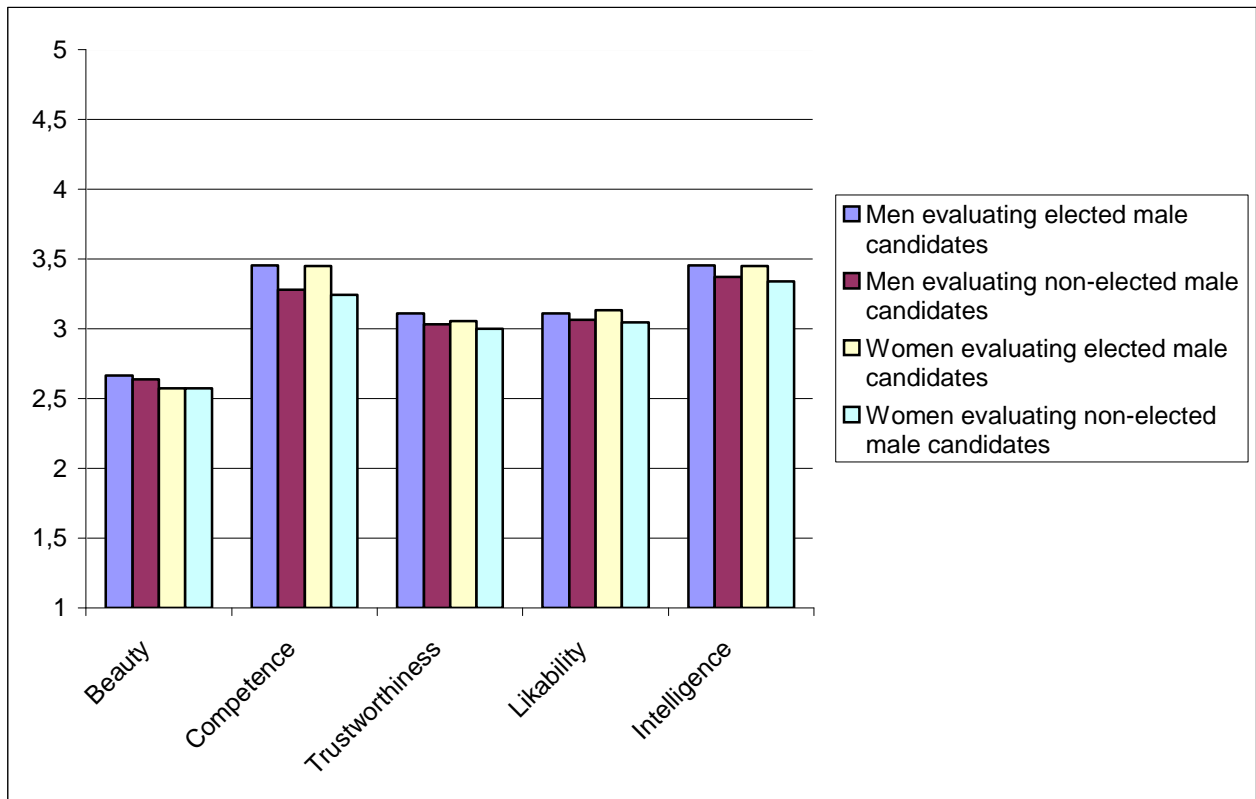


FIGURE A2—ASSESSMENTS OF ELECTED AND NON-ELECTED FEMALE CANDIDATES

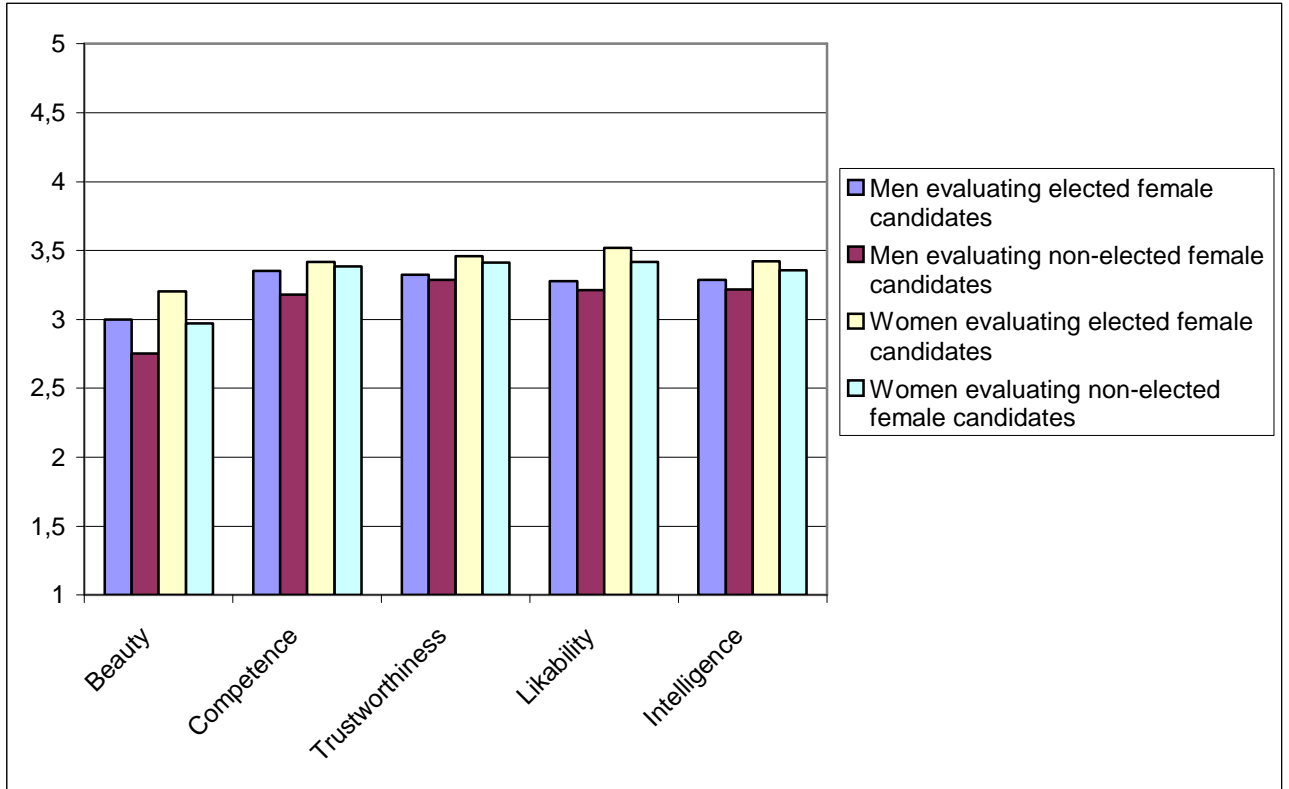


TABLE A2—RELATIVE SUCCESS IN THE PARLIAMENTARY ELECTION, WITH OCCUPATIONAL AND EDUCATIONAL DUMMIES

	Relative success non-incumbents	Relative success non-incumbents	Relative success non-incumbents
Beauty	29.58*** (6.22)	29.16*** (6.42)	28.79*** (6.22)
Competence	9.56 (8.22)	10.51 (8.58)	10.18 (8.25)
Trustworthiness	2.56 (8.52)	6.54 (8.72)	3.53 (8.54)
Party worker	16.12 (30.8)		14.77 (30.0)
Management	6.82 (18.5)		-0.01 (18.9)
Researcher	36.61 (27.8)		26.79 (28.1)
Teacher	-15.87 (14.9)		-25.54 (16.3)
Upper white collar	-8.38 (15.6)		-15.21 (16.4)
Medical doctor	-2.17 (17.7)		-14.43 (19.4)
Nurse	-19.58 (16.1)		-14.26 (17.5)
Lower white collar	-23.15 (14.9)		-23.31 (15.3)
Worker	-34.92** (14.1)		-30.07** (13.9)
Entrepreneur	-15.09 (17.8)		-16.32 (17.7)
Artist	-36.73** (16.2)		-39.49** (16.0)
Student	-53.25*** (17.8)		-34.23** (15.6)
Not employed	-38.37* (20.4)		-29.67 (19.6)
University education		17.14** (8.62)	13.15 (10.5)
Vocational education		-9.98 (8.86)	-4.70 (10.3)
Upper-secondary education		-35.18*** (12.5)	-25.33* (14.6)
Comprehensive school or less		-49.06*** (10.4)	-44.18*** (10.7)
Male dummy	3.80 (6.92)	6.14 (6.76)	4.83 (7.00)
Young (age<30)	-5.77 (12.2)	3.16 (12.7)	0.54 (13.1)
Old (age>60)	10.67 (22.5)	9.62 (21.5)	9.79 (21.9)
Number of candidates	641	641	641
Adjusted R-squared	0.09	0.09	0.10

Note: 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. The reference group for education is candidates who did not list their education. Robust standard errors in parentheses. The regressions include a constant term. * significant at 10 percent; ** significant at 5 percent; *** significant at 1 percent.

REFERENCES

- Aharon, Itzhak; Etcoff, Nancy; Ariely, Dan; Chabris, Christopher F.; O'Connor, Ethan and Breiter, Hans C. "Beautiful Faces Have Variable Reward Value: fMRI and Behavioral Evidence." *Neuron*, 2001, 32(3), pp. 537–51.
- Ambady, Nalini and Rosenthal, Robert. "Thin Slices of Expressive Behavior as Predictors of Interpersonal Consequences: A Meta-Analysis." *Psychological Bulletin*, 1992, 111(2), pp. 256–74.
- Bartels, Larry M. "Uninformed Votes: Information Effects in Presidential Elections." *American Journal of Political Science*, 1996, 40(1), pp. 194–231.
- Bengtsson, Åsa and Grönlund, Kimmo. "Ehdokasvalinta," ["Candidate Selection,"] in Heikki Paloheimo, ed., *Vaalit ja demokratia Suomessa [Elections and democracy in Finland]*. Helsinki: WSOY, 2005, pp. 229–51.
- Benjamin, Daniel J. and Shapiro, Jesse M. "Thin-Slice Forecasts of Gubernatorial Elections." National Bureau of Economic Research, Inc., NBER Working Papers: No. 12660, 2006.
- Biddle, Jeff E. and Hamermesh, Daniel S. "Beauty, Productivity and Discrimination: Lawyers' Looks and Lucre." *Journal of Labor Economics*, 1998, 16(1), pp. 172–201.
- Budesheim, Thomas Lee and DePaola, Stephen J. "Beauty or the Beast? The Effects of Appearance, Personality, and Issue Information on Evaluations of Political Candidates." *Personality and Social Psychology Bulletin*, 1994, 20(4), pp. 339–48.
- Caprara, Gian Vittorio; Barbaranelli, Claudio and Zimbardo, Philip G. "Politicians' Uniquely Simple Personalities." *Nature*, 1997, 385(6616), p. 493.

- Cunningham, Michael R.; Roberts, Alan R.; Barbee, Anita P.; Druen, Perry B. and Wu, Cheng-Huan.** “Consistency and Variability in the Cross-Cultural Perception of Female Physical Attractiveness.” *Journal of Personality and Social Psychology*, 1995, 68(2), pp. 261–79.
- Downs, Anthony.** *An economic theory of democracy*. New York: HarperCollins, 1957.
- Eagly, Alice H.; Ashmore, Richard D.; Makhijani, Mona G. and Longo, Laura C.** “What Is Beautiful Is Good, But...: A Meta-Analytic Review of Research on the Physical Attractiveness Stereotype.” *Psychological Bulletin*, 1991, 110(1), pp. 109–28.
- Feingold, Alan.** “Good-Looking People Are Not What We Think.” *Psychological Bulletin*, 1992a, 111(2), pp. 304–41.
- Feingold, Alan.** “Gender Differences in Mate Selection Preferences: A Test of the Parental Investment Model.” *Psychological Bulletin*, 1992b, 112(1), pp. 125–39.
- French, Michael T.** “Physical Appearance and Earnings: Further Evidence.” *Applied Economics*, 2002, 34(5), pp. 569–72.
- Hamermesh, Daniel S.** “Changing Looks and Changing 'Discrimination': The Beauty of Economists.” *Economics Letters*, 2006, 93(3), pp. 405–12.
- Hamermesh, Daniel S. and Biddle, Jeff E.** “Beauty and the Labor Market.” *American Economic Review*, 1994, 84(5), pp. 1174–94.
- Hamermesh, Daniel S., Meng, Xin and Zhang, Junsen.** “Dress for Success – Does Primping Pay?” *Labour Economics*, 2002, 9(3), pp. 361–73.
- Harper, Barry.** “Beauty, Stature and the Labour Market: A British Cohort Study.” *Oxford Bulletin of Economics and Statistics*, 2000, 62 (December), pp. 771–800.
- Jackson, Linda A., Hunter, John E. and Hodge, Carole N.** “Physical Attractiveness and Intellectual Competence: A Meta-Analytic Review.” *Social Psychology Quarterly*, 1995, 58(2), pp. 108–22.
- Kahneman, Daniel; Slovic, Paul and Tversky, Amos,** eds. *Judgement under uncertainty: Heuristics and biases*. New York: Cambridge University Press, 1986.
- Kanazawa, Satoshi and Kovar, Jody L.** “Why Beautiful People Are More Intelligent.” *Intelligence*, 2004, 32(3), pp. 227–43.
- King, Amy and Leigh, Andrew.** “Beautiful Politicians.” Unpublished Paper, 2006.
- Langlois, Judith H.; Kalakanis, Lisa; Rubenstein, Adam J.; Larson, Andrea; Hallamm, Monica and Smoot, Monica.** “Maxims or Myths of Beauty? A Meta-Analytic and Theoretical Review.” *Psychological Bulletin*, 2000, 126(3), pp. 390–423.
- Lau, Richard R. and Redlawsk, David P.** “Advantages and Disadvantages of Cognitive Heuristics in Political Decision Making.” *American Journal of Political Science*, 2001, 45(4), pp. 951–71.
- Lee, David S.** “Randomized Experiments from Non-Random Selection in U.S. House Elections.” *Journal of Econometrics* (forthcoming).
- Lupia, Arthur.** “Shortcuts Versus Encyclopedias: Information and Voting Behavior in California Insurance Reform Elections.” *American Political Science Review*, 1994, 88(1), pp. 63-76.
- Macrae, C. Neil; Milne, Alan B. and Bodenhausen, Galen V.** “Stereotypes as Energy-Saving Devices: A Peek Inside the Cognitive Toolbox.” *Journal of Personality and Social Psychology*, 1994, 66(1), pp. 37–47.
- Mobius, Markus M. and Rosenblat, Tanya S.** “Why Beauty Matters.” *American Economic Review*, 2006, 96(1), pp. 222–35.
- Mocan, Naci and Tekin, Erdal.** “Ugly Criminals.” National Bureau of Economic Research, Inc., NBER Working Papers: No. 12019, 2006.

- Pfann, Gerard A.; Biddle, Jeff E.; Hamermesh, Daniel S. and Bosman, Ciska M.** “Business Success and Businesses’ Beauty Capital.” *Economics Letters*, 2000, 67(2), pp. 201–07.
- Raunio, Tapio.** “Finland: One Hundred Years of Quietude,” in Michael Gallagher and Paul Mitchell, eds., *The politics of electoral systems*. Oxford: Oxford University Press, 2005, pp. 471–93.
- Redlawsk, David P. and Lau, Richard R.** “Do Voters Want Candidates They Like or Candidates They Agree With? Affect vs. Cognition in Voter Decision Making.” Unpublished Paper, 2003.
- Rosar, Ulrich; Klein, Markus and Beckers, Tilo.** “The Frog Pond Beauty Contest: Physical Attractiveness and Electoral Success of the Constituency Candidates at the North Rhine-Westphalia State Election 2005.” *European Journal of Political Research* (forthcoming).
- Simon, Herbert A.** “Human Nature in Politics: The Dialogue of Psychology with Political Science.” *American Political Science Review*, 1985, 79(2), pp. 293–304.
- Statistics Finland.** “Classification of Occupations 2001.” http://tilastokeskus.fi/tk/tt/luokitukset/lk_en/ammatti_index.html, 2001.
- Statistics Finland.** “Parliamentary Elections, 2003.” http://www.tilastokeskus.fi/tup/suoluk/suoluk_vaalit_en.html, 2003.
- Todorov, Alexander; Mandisodza, Anesu N.; Goren, Amir and Hall, Crystal C.** “Inferences of Competence from Faces Predict Election Outcomes.” *Science*, 2005, 308(5728), pp. 1623–26.
- Wattenberg, Martin P.** *The rise of candidate-centered politics: Presidential elections of the 1980s*. Cambridge, MA: Harvard University Press, 1991.
- Willis, Janine and Todorov, Alexander.** “First Impressions: Making Up Your Mind After a 100-Ms Exposure to a Face.” *Psychological Science*, 2006, 17(7), pp. 592–98.

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