Looking the part:
Television leads less informed citizens to vote based on candidates' appearance

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Abstract: Several recent studies indicate that candidates who look more capable or attractive perform better in elections. These studies are potentially troubling for democratic representation, because they suggest that citizens judge candidates on their appearance rather than on their true ability or policy positions. In this article, we test a key observable implication of claims about candidate appearance – that it should be more pronounced among those who know little about politics but are exposed to visual images of the candidates. We do so by combining appearance-based assessments of U.S. Senate and gubernatorial candidates with individual-level survey data measuring vote choice, political knowledge, and television exposure. We find that the way politicians look disproportionately influences the decisions of less knowledgeable individuals who watch a good deal of television. These findings have implications for debates about the nature of the heuristics that voters employ, the nature of media effects, and the role of television in American political life.

Keywords: Media effects, television, image, appearance, candidates, elections, voting, personal vote, representation, political psychology

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1. Introduction

A flurry of recent studies indicate that candidates who simply look more capable or attractive are more likely to win elections (Atkinson, Enos, and Hill 2008; Ballew and Todorov 2007; Banducci et al. 2007; Berggren, Jordahl, and Poutvaara 2006; King and Leigh 2006; Klein and Rosar 2006; Lawson et al. 2009). For instance, Todorov et al. (2005) find that candidates in U.S. Senate and House elections who appeared more competent to naïve student subjects enjoyed markedly greater electoral success, even though the subjects' judgments were based on split-second exposure to unlabeled, black-and-white photographs of the candidates in question. The results, they conclude, "suggest that rapid, unreflective inferences can contribute to vote choices" (2005, 1623).

These findings are consistent with psychological research indicating that people often judge unfamiliar individuals based on their appearance, inferring personality traits such as competence, intelligence, honesty, and trustworthiness from facial features alone (Bar, Neta, and Linz 2006; Hassin and Trope 2000; Zebrowitz 1997; Zebrowitz et al. 2002), despite the fact that their inferences are generally no better than chance (Alley 1988; Berry 1991; Cohen 1973; Hamermesh and Biddle 1994; Hassin and Trope 2000; Holahan and Stephan 1981; Mueller and Mazur 1996; Zebrowitz et al. 1998; Zebrowitz, Voinescu, and Collins 1996).[1] People rely more heavily on such impressionistic assessments when they know little else about individuals — that is, they use appearance as a low-information heuristic (Hassin and Trope 2000).

This paper contributes to the burgeoning literature on faces and voting by testing a key observable implication of claims about candidate appearance. If individuals do indeed use appearance as a low-information heuristic, as recent studies conclude, then citizens should rely disproportionately on faces when they know little else about candidates except what they look like. However, for voters to judge candidates based on their appearance, they must know what the candidates look like. For some kinds of races, such as

[1] A growing literature investigates the neurological bases of these judgments (Engell, Haxby, and Todorov 2007; Spezio et al. 2008; Todorov, Baron, and Oosterhof 2008; Winston et al. 2002).

gubernatorial and Senate elections, the politically uninformed might only know what the candidates look like if they watch a good deal of television. We therefore test whether the effect of appearance is more pronounced among those know little about politics but watch a good deal of TV.

Using individual-level voting data for 2006 gubernatorial and Senate elections, we find strong support for this prediction. People who are poorly informed about politics but exposed to TV cast their ballots disproportionately based on the way politicians look. The pattern is almost identical in both types of contests, and it holds when controlling for campaign spending, incumbency, candidate quality, electoral competitiveness, and a number of other variables.

These findings have potentially wide-ranging implications for the study of democratic politics. First, they lend further credence to the notion that candidate appearance influences citizens' voting decisions, at times favoring candidates who "look the part" over candidates who share citizens' policy views or who would be more effective representatives; as we discuss below, alternative explanations for these findings are unlikely to predict the low knowledge/TV interaction. Second, our results speak to some of the concerns scholars have long held about the influence of television on electoral politics. As critics of that medium have argued, exposure to television does indeed encourage image-based voting. Finally, our findings underscore the importance of visual images embedded in media messages (Graber 1996; Iyengar, Peters, and Kinder 1982; Lau and Redlawsk 2006; Mendelberg 2001; Valentino, Hutchings, and White 2002). Although researchers have often failed to find evidence that television or other mass media influence voting behavior (Finkel 1993; McGuire 1969; Patterson and McClure 1976; Semetko and Schoenbach 1996), our findings suggest that they might have more luck if they focus on less on textual cues and more on pictures.

2. The effect of appearance

Most recent studies on candidate appearance follow the same general design. Naïve subjects view images of candidates with all identifying information removed and either rate the candidates on various traits (e.g., apparent competence), guess the outcome of the election, cast votes in hypothetical contests, or

offer some other summary judgment. Researchers then use these responses to predict candidates' actual election returns. Studies employing this approach have documented impressive effects of appearance in a range of contests: U.S. House, Senate, and gubernatorial races (Atkinson, Enos, and Hill 2008; Ballew and Todorov 2007; Todorov et al. 2005), national and municipal legislative contests in Finland (Berggren, Jordahl, and Poutvaara 2006), English zoning board elections (Banducci et al. 2007), Australian parliamentary (King and Leigh 2006) and town council races (Martin 1978), German single-member district legislative elections (Klein and Rosar 2006), Canadian federal parliamentary contests (Efron and Patterson 1974), run-off elections for the French parliament (Antonakis and Dalgas 2009), Mexican gubernatorial and presidential races (Lawson et al. 2009), and Brazilian gubernatorial and Federal Deputy contests (Lawson et al. 2009). The magnitude of these effects varies from one study to another, but it can be quite large. In both Todorov et al. (2005) and Antonakis and Dalgas (2009), naïve coders correctly predicted the outcome of approximately 70 percent of races. In Banducci (2007)'s study -- which focused on a low-information contest in where photographs of the candidates appeared on the ballot -- contenders who scored highest on a trait index had close to a 90 percent chance of winning; their less appealing-looking rivals had only a 10 percent chance.[2]

There are, of course, potential alternative explanations for these findings. One such explanation is that raters may be more familiar with winners, even though they report not recognizing them, and so rate them as more competent or more likely to win (Zajonc 1968; Zajonc 1980; Zajonc 2001). However, the effects of appearance hold when researchers use ratings from people living in other countries: Americans, French, and others rating Finnish candidates (Berggren, Jordahl, and Poutvaara 2006), an American coder rating Australian candidates (King and Leigh 2006), and American undergraduates rating Mexican and Brazilian candidates (Lawson et al. 2009). They also hold when participants rated candidates' faces before an election (Todorov et al. 2005).

[2] Earlier research investigated appearance effects using alternative approaches (Rosenberg, Kahn, and Tran 1991; Rosenberg and McCafferty 1987; Sigelman 1990; Sigelman et al. 1990; Sigelman, Sigelman, and Fowler 1987).

A second possibility is that raters and voters may be responding to candidates' race, gender, or age, rather than to their facial features. Several studies attempt to account for these factors by examining only candidates who are matched on race and gender or controlling statistically for such factors after the effect. Todorov et al. (2005), for example, find that the appearance effect is larger in the matched samples, and holds when controlling for perceptions of age (see also, Lawson et al. 2009). Laboratory studies in which researchers consciously altered politicians' faces demonstrate that these changes alter the inferences subjects draw, indicating that people do indeed respond to politicians' facial features when deciding which candidates they prefer (Keating, Randall, and Kendrick 1999; Little et al. 2007).

A third potential confounding factor concerns the quality of images that researchers have used – in particular, the danger than stronger candidates might have better photographs. Direct evidence about the quality of images used in many studies, however, suggests that campaign effort does not affect coders' ratings. For instance, Klein and Rosar (2006) find that candidate appearance remains highly significant when the images were standard shots taken by professional photographers and when elements of the pictures that did happen to differ from one photograph to the next (e.g., extent of visible light) are taken into account. Likewise, Antonakis and Dalgas (2009) effectively control for image quality by using official photographs of candidates who held office. In addition, Lawson et al. (2009) find that facial inferences remain a significant predictor of election outcomes in both Brazilian and Mexican races when controlling for the resolution of candidate photographs and candidates' facial expressions, as coded by a separate set of raters.

A fourth set of alternative explanations concerns campaign effort and candidate quality. Candidates who put more effort into their campaign (raise more money, make more appearances, kiss more babies, etc.) or who receive more support from their party presumably achieve greater electoral success. Higher quality candidates may also look better in the media -- and thus in the pictures available for rating -- because they can afford image consultants and expensive hairdressers. Campaign effort (whether by the candidate or party) could thus make it appear as if candidate appearance had influenced voters. Researchers have addressed this fourth set of confounding factors from several angles. A number have

attempted to account for candidate quality by using only contests in which candidates should be of reasonably comparable electability. For example, Antonakis and Dalgas (2009) confine their analysis to run-off races (and therefore to competitive candidates). Likewise, Benjamin and Shapiro (2006) find that participants' ratings are equally predictive of victory in close races. They also find that candidates who appeared more confident in the video clips they used did not do better at the polls, nor were they rated as more likely to do so by student subjects. Both they and Atkinson et al. (2008) have also attempted to address these concerns by directly controlling for candidate spending.

Researchers have used a different approach to take into account party strength and incumbency, both of which are strong predictors of electability. Several studies show that face ratings remain a significant predictor when controlling for historical partisan tendencies (Benjamin and Shapiro 2006; King and Leigh 2006; Klein and Rosar 2006; Lawson and Lenz 2009). Appealing-looking candidates also perform disproportionately well in systems where legislators compete against members of their same party (Berggren et al. 2006; Lawson et al. 2009),[3] in non-partisan contests (Banducci et al. 2007; Martin 1978), and in primaries (Schubert et al. 1998). Attractive incumbents even perform disproportionately well against other incumbents of their own party (Berggren et al. 2006).[4] Finally, facial inferences remain predictive in U.S. Senate and gubernatorial analyses with electoral district-fixed effects, thereby holding constant the average partisan tendencies in a particular political unit. Figure 1(a) presents the relationship between candidates' facial ratings and their actual vote share in U.S. Senate elections, from 1990 to 2002, where candidates shared the same race and gender. Specifically, it plots the Democratic candidate's percent of the two-party vote by the share rating the Democratic candidate as more competent. As in other studies, there is a substantial, linear relationship between perceptions of politicians based on their facial features and their success at the polls. Figure 1(b) presents data for the same set of elections but using the *change* in the

[3] That is, party fixed effects in multimember districts.
[4] That is, party and incumbency fixed effects in multimember districts. It is possible, of course, that candidate appearance could be causally prior to variables like incumbency or campaign spending. If so, taking into account such factors could lead researchers to underestimate the effects of appearance.

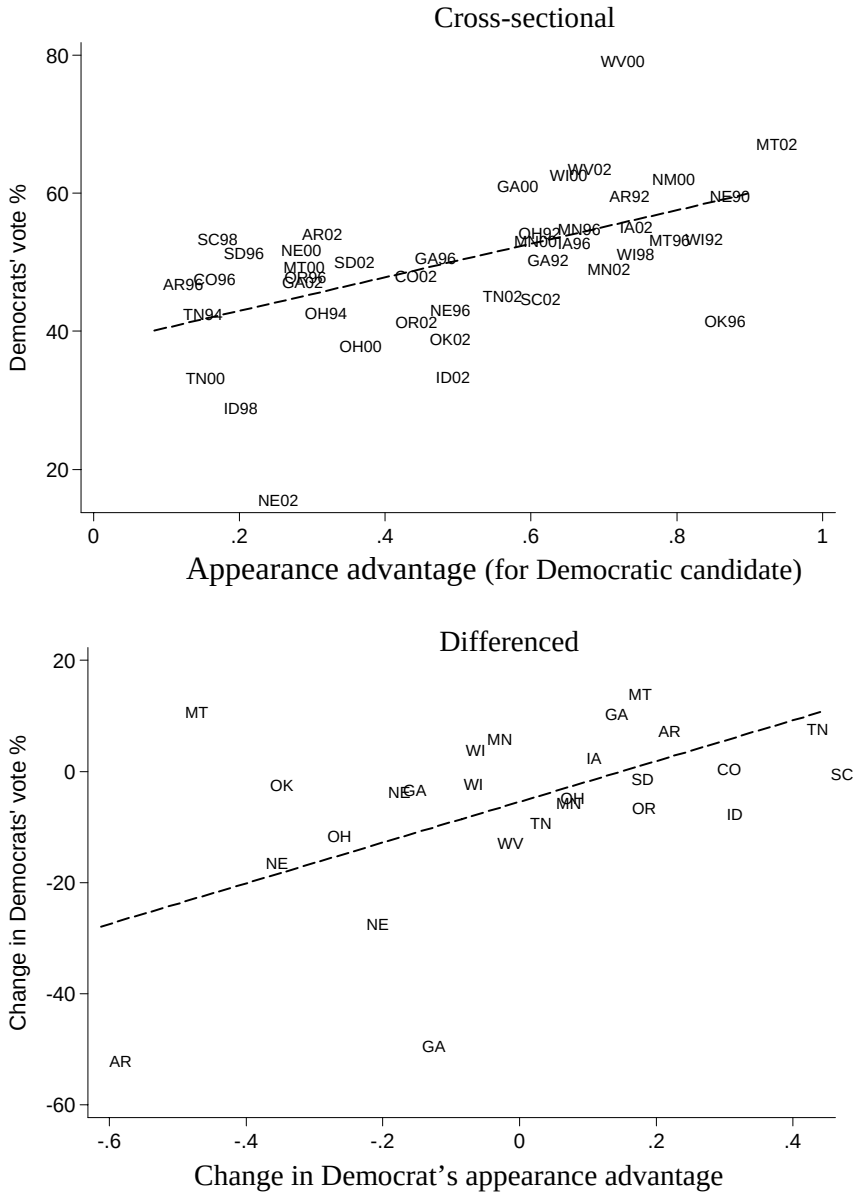
Democratic candidate's face ratings to predict the *change* in vote share within each state.[5] As the figure indicates, the effect of appearance remains.

A fifth (and related) set alternative explanations concerns strategic behavior by high quality candidates. Stronger candidates will likely gravitate to races in which conditions favor them. For example, parties may more easily recruit better-looking candidates when parties' electoral fortunes are promising (Atkinson, Enos, and Hill 2008; Benjamin and Shapiro 2006). If so, Republican candidates would tend to be better looking than their Democratic rivals when they come from Republican leaning U.S. states. Evidence does indeed suggest that stronger parties field better-looking candidates and vulnerable incumbents attract better-looking challengers (Atkinson, Enos, and Hill 2008). Nevertheless, the appearance effect remains a significant predictor of vote share even when taking this dynamic into account by controlling for perceived competitiveness long before Election Day (Atkinson, Enos, and Hill 2008).

A sixth and final set of explanations has to do with the nature of the appearance effect. This effect could represent an unreflective bias in favor of appealing-looking candidates, but it could also represent a judgment about actual candidate quality: voters might believe that appearance reflects the influence of genes, health, or some other factor, which in turn makes better-looking politicians more effective leaders (e.g., Case and Paxson 2006). However, the correlation between appearance and personality traits are weak (e.g., trustworthiness); the relationship between looks and ability is weaker still (Berry 1991; Hamermesh and Biddle 1994; Hassin and Trope 2000; Holahan and Stephan 1981; Mobius and Rosenblat 2006; Mueller and Mazur 1996; Zebrowitz 1997; Zebrowitz et al. 2002). So far, scholars have not explicitly tested which mechanism might be at work, nor have they come to a clear consensus on how tenuous the relationship is between appearance and effectiveness in office.

[5] For the gubernatorial results, see the supporting materials: http://www.mit.edu/~glenz/lp_supporting.pdf.

Figure 1: Candidate appearance and Senate returns



Note: Figure 1(a) presents the relationship between facial competence and actual vote share for U.S. Senate elections, showing only those races where the candidates share the same race and gender. It shows the Democratic candidate's percent of the two-party vote by the share rating the Democratic candidate's face more competent. Figure 1(b) differences these variables, showing the change in vote share within a state by the change in facial competence rating. The facial competence ratings from 2000-2002 are from the Princeton students (Todorov et al. 2005); those from 1990-1999 are from MIT students.

Taken as a whole, recent studies indicate that looks matter for election outcomes. Nevertheless, no one study accounts for all the alternatives, and questions remain about the precise nature of the effect of appearance. The fact that several of the studies are so new that they have not yet been published also suggests that further vetting of their findings is warranted.

The psychological literature on appearance suggests that, as people learn more about a person, they become less likely to rely on appearance (Hassin and Trope 2000). Extended to the electoral realm, candidate image should influence vote more among those who know little about politics than among those who know something. Those who know something about politics can draw on other considerations and thus may be less inclined to rely on low-information heuristics like appearance (Lau and Redlawsk 2001).[6]

For poorly informed individuals to be directly influenced by appearance, however, they must know what the candidates look like. Although people have been able to see visual images of leaders long before TV – whistle stop appearances, buttons bearing candidates' pictures, photographs in newspapers and posters, newsreels, etc. – the emergence of TV dramatically increased voters' exposure to real-life images of politicians. Thus, voters who watch more TV should be more likely to see images of the candidates. For these reasons, we would expect the effect to be most pronounced among those who watch a good deal of TV (high exposure) but know little about politics (low information).

If the effect of appearance is larger among politically knowledgeable individuals who watch little TV, it seems unlikely that appearance directly influences vote choice; that finding would be more compatible with the notion that appearance correlates with some other factor like campaign effort or actual quality (which in turn influences the decisions of people who pay attention to the race). By contrast, if we find that TV exacerbates the effect of appearance among those who know little about politics, controlling for other factors, it is more likely that candidate appearance directly influences vote choice.

[6]Citizens with greater contextual knowledge may also be better equipped to process the information they receive about candidates from media messages that contain both visual and non-visual cues (Miller and Krosnick 2000; Zaller 1992). Of course, well informed individuals may be too partisan to judge candidates based on actual quality or performance (Zaller 2004), and in that sense will be less able to accurately process new information from the media.

3. Data

To test this expectation, we combine individual-level measures of vote, political knowledge, and TV exposure with data about candidates' faces for 2006 gubernatorial and Senate elections. For the individual-level measures, we use the 2006 Cooperative Congressional Election Study (Ansolabehere 2007), which interviewed about 36,500 respondents.[7] The CCES is an opt-in Internet panel that uses a novel approach to achieve a representative sample. Hill, Lo, Vavreck, and Zaller (2007) find that responses in this survey are not too dissimilar from phone surveys, with the principal exception that the 2006 CCES under-represents those with lower levels of political knowledge.[8]

We use the CCES because its sample is sufficiently large to assess the effects of media exposure by political knowledge in state-level contests, because it contains a richer battery of political knowledge and television items than do other large surveys, and because it asks about gubernatorial and Senate vote. To the extent that the CCES over-represents politically knowledgeable individuals, it may lead us to treat moderately informed individuals as if they were poorly informed. That fact, of course, would lead us to underestimate the actual difference in the effect of appearance between low-knowledge and high-knowledge Americans.

For the dependent variable, we use Democratic vote intention, coded 1 if the respondent planned to vote for the Democratic candidate and 0 if she planned to vote for the Republican (*Vote)*. To measure political knowledge, we create a 21-item scale from questions in the CCES (reliability of .90, see Appendix for details), which we then divide into four quartiles. Many of the items ask about the gubernatorial and Senate candidates, such as correctly reporting their parties, placing the Democratic candidate to the left of

[7] For details, see http://web.mit.edu/polisci/portl/cces/index.html. We explain the CCES sampling procedure in the supporting materials. The only other data with which we could potentially test these predictions are the National Annenberg Election Studies. However, these surveys lack questions about gubernatorial vote and only have usable questions about Senate vote in their postelection interviews (providing too small of a sample to conduct these analyses). Even if they did have larger samples with Senate vote, however, they also contain fewer political knowledge items (most of which are about presidential candidates, not Senate candidates), and ask fewer questions about television exposure (focusing mostly on news).

[8] For a list of published studies using CCES (e.g., Gartner 2008; Tolbert, Bowen, and Donovan 2009), see http://web.mit.edu/polisci/portl/cces/papers.html.

the Republican on the ideological scale, etc.[9] Finally, to measure exposure to TV, we rely on self-reported viewing. Approximately half of the CCES respondents were asked nine questions about how frequently they had watched particular genres of TV in the week before their interview, such as national news, local news, sports news, and entertainment shows (reliability = .70, see Appendix for details).[10] In the analyses below, we use both an unweighted average of answers to these items (*TV*) and an indicator variable for an above-the-median score on an unweighted average (*High TV*,). Subtracting out those respondents who did not get the battery on TV exposure, we have an average of 266 respondents per state who expressed a vote intention in the gubernatorial contests and 314 who did so in the Senate races.[11]

For measures of candidate appearance, we rely on data from Todorov and his collaborators, who collected ratings of candidates from a large number of U.S. congressional and gubernatorial races (Todorov et al. 2005, Ballew and Todorov 2007). To generate the ratings, student subjects viewed pairs of similarly sized, black-and-white, head-and-shoulders photographs of the main candidates. The photos contained no identifying information, and both the position of the winning candidate and the order in which pairs were presented was randomized. After seeing the pair of photographs for a short time (typically one second or less), participants reported which candidate in the pairing seemed more appealing on several dimensions: competence, likeability, intelligence, etc. Todorov and his collaborators then recorded the proportion of students who rated the winning candidate more highly on each trait. In their analysis of Senate and House races, Todorov et al. (2005) found that an average of evaluations related to ability – which candidate was "more competent," "more intelligent," and "a stronger leader" – best predicted vote share. Ballew and Todorov (2007) later replicated this result for gubernatorial contests. We thus employ these ratings in our analysis, recoding them as the proportion rating the Democratic candidate more able than the Republican (*Appearance advantage*).

[9]We explored whether using only factual questions about Senate candidates changed the results for either set of races, but the general political knowledge measure outperformed candidate specific measures.
[10]To the extent that self-reported measures of media exposure are error-prone, it will likely be harder to detect the influence of television on appearance-based voting.
[11] Several small states have only a handful of respondents for each knowledge quartile and television group we analyze, but since the statistical analysis below is conducted at the individual level, these states receive very little weight.

In 2006, 36 states held gubernatorial elections and 33 held Senate elections. We have ratings of candidates' faces for all but the California gubernatorial race, and all but the Connecticut, New York, Hawaii, and Indiana Senate races; these states are excluded from the analysis. According to the raters, Democratic candidates were at a slight disadvantage in these races. About 46 percent rated the Democrat as more competent-looking in gubernatorial races and about 43 percent did so in Senate races. The standard deviation for Appearance advantage is .20 for gubernatorial races and .22 for Senate races.

To explore the reliability of these ratings, we collected new ratings for 33 pairs of Senate candidates from the elections in the 1990s that were not included in Todorov's photo arrays, as well as 20 pairs of gubernatorial candidates from Ballew and Todorov (2007).[12] We gray-scaled the new photographs (obtained from candidate websites and media outlets); cropped them so that only the face, neck, and a portion of the shoulders were visible; and randomized the position of the winner and the order in which the pairs were presented. Pairs were projected onto a screen in front of a group of 30 student subjects for one second each; after each pairing, subjects recorded which candidate they found more competent, trustworthy, and empathetic ("cares more about the problems of people like you").[13]

Our own results closely match those of Todorov et al. (2005) and Todorov and Ballew (2007). In a bivariate regression on vote share, the coefficient for Appearance advantage for the Senate races in our sample was .12, implying that a 10-percentage point increase in a candidates' competency rating leads to a 1.2-percentage point increase in vote share. This figure is smaller than that collected by Todorov et al. (2005) for the 2000 Senate races (.35) or 2002 Senate races (.55), but similar to Todorov et al. (2005)'s findings for the 2004 Senate races (.11). The coefficient for Appearance advantage in a bivariate regression on vote share for the gubernatorial races in the Todorov data was .14 overall and .19 for the 20 races we included in our sample; in our data, it was .14. Moreover, averaging our ratings with those of Todorov and

[12] Pairs of Senate candidates were chosen from contests in which comparable photographs of the two major-party candidates could be obtained; the search for races that clearly met those criteria began with the 1998 elections and proceeded backwards by Senate class to 1990. (These Senate ratings are used in Figure 1.) Pairs of gubernatorial candidates were chosen haphazardly from Ballew and Todorov (2007)'s photo array.

[13] They also recorded whether they recognized either candidate; ratings of pairs in which students reported that one or both candidates looked familiar were excluded.

his collaborators strengthen this relationship (which rises to .22 for the gubernatorial races). These results provide further support for the Todorov et al. (2005) and Todorov and Ballew (2007) findings, as well as for the general notion that appearance predicts electoral success contests for high office in the U.S.

4 Faces, television, and the ill informed

We first test whether exposure to television enhances the effect of appearance. Specifically, we estimate linear probability models of Vote intention on Appearance advantage, High TV, and the interaction between these two variables for the CCES data.[14] For gubernatorial candidates, the effect of candidate image increases from almost nothing among low TV respondents to about .08 among high TV respondents (see Appendix Table 1, columns 1 and 2). Appearance advantage scores in this set range from .16 to .79 (that is, from pairings where only 16 percent of students felt the Democrat looked more competent than the Republican to those where 79 percent of students felt the Democrat looked more competent). Thus, among those respondents who watched a good deal of TV, a candidate with the highest appearance advantage would receive about five percentage points more than a candidate with the worst relative rating. For Senate candidates, the effect is about .08 among those who watch less TV and .18 for the rest of the sample (see Appendix Table 1, columns 6 and 7). Because Appearance advantage for the 2006 Senate contests ranges from .08 to .84, a candidate with the highest competence rating would receive about 14 percentage points more than a candidate with the lowest competency rating among high TV respondents. All told, then, greater TV exposure appears to slightly increase the overall effect of image.[15]

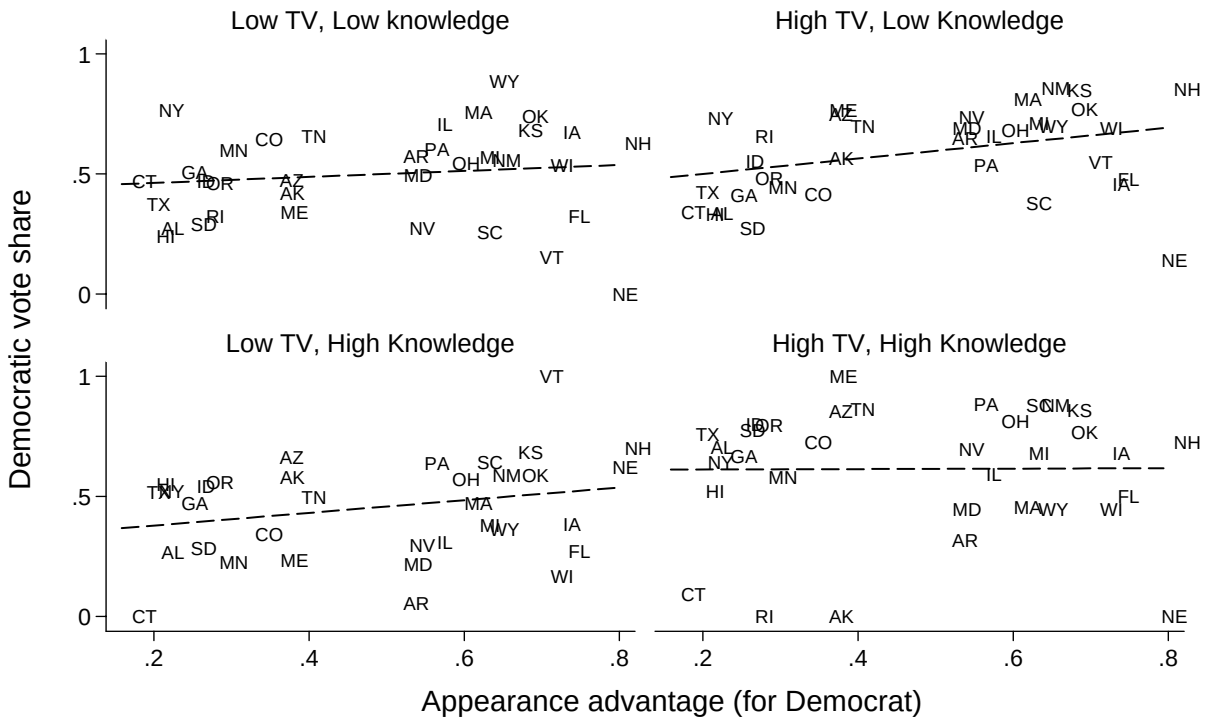
[14] We use linear probability models because they are consistent under weak assumptions and the estimates are simpler to interpret, especially with the interaction terms introduced later (Ai and Norton 2003), though the results hold in probit models. For these results, see the supporting materials (described in footnote 5).

[15] We found a similar interaction of appearance and TV exposure in a quasi-experiment. This analysis exploits the fact that people living in counties that receive television broadcasts from outside their own state receive about one-tenth as much coverage of their candidates as other people in the state (Ansolabehere, Snowberg, and Snyder 2006).Using county-level election returns as the dependent variable, we find that those citizens were indeed less responsive to changes in candidate appearance between elections (county-fixed effects). These findings provide converging lines of evidence that television exposure does indeed exacerbate the effect of candidate appearance. For the full results, see the supporting materials (footnote 5).

Next, we examine whether this effect is more pronounced among low-knowledge individuals. Figure 2 presents scatter plots of Democratic vote share by Appearance advantage in the gubernatorial races, showing these plots for *Low knowledge* (bottom quartile) and *High knowledge* (top quartile), and below and above the median TV exposure. Among Low knowledge/Low TV respondents, the regression slope is about .11, suggesting that an 10-percentage point increase in a candidate's appearance advantage leads to about 1.1-percentage point increase in vote share. In contrast, when these less informed respondents watch more TV (Low knowledge/High TV), the slope increases almost threefold to .32. This effect implies that a candidate with the highest competency rating (.79) would receive about 20 percentage points more vote share than a candidate with the lowest competency rating (.16). No similar increase occurs in the other knowledge quartiles (see Appendix Table 1).

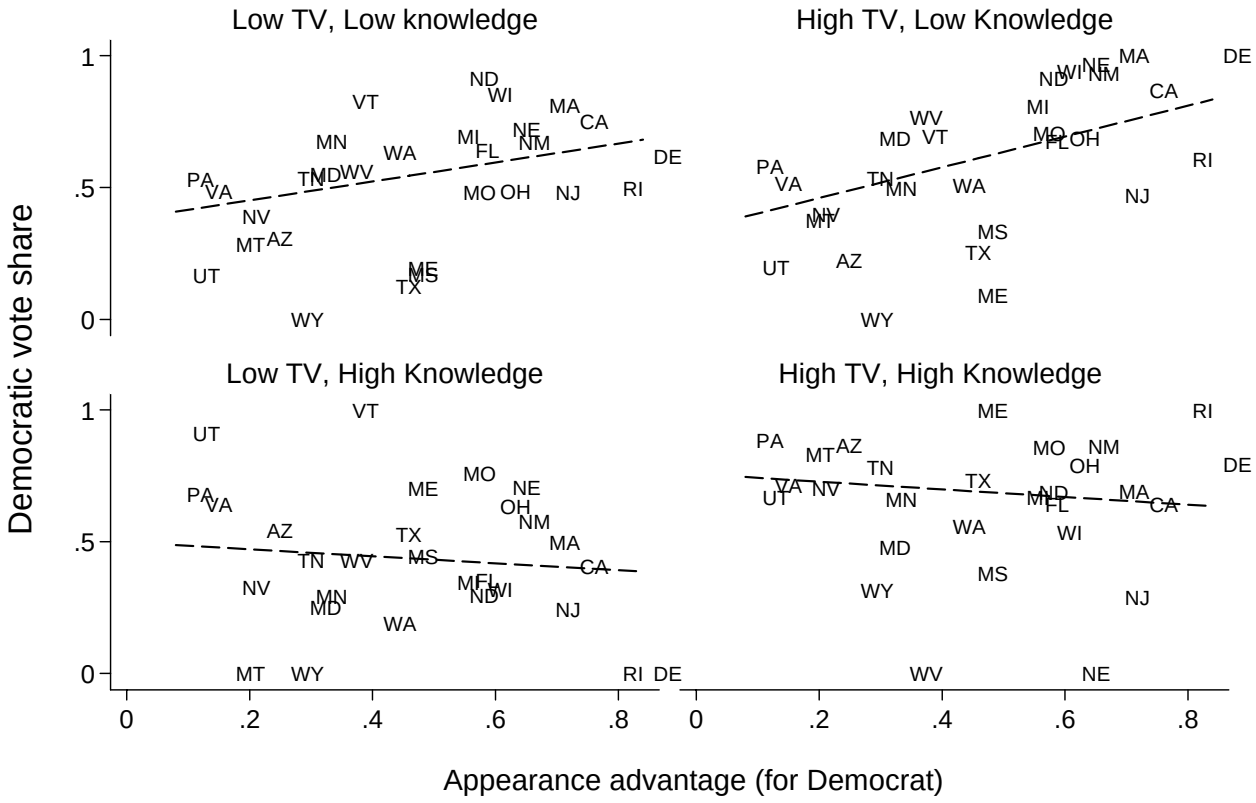
A similar pattern holds in the 2006 U.S. Senate races, the scatter plots for which are presented in Figure 3. In all cases, the general effect of candidate image is stronger than for gubernatorial elections. As with gubernatorial elections, however, TV tends to exacerbate this relationship among less informed individuals. Among Low knowledge/Low TV respondents, the regression slope is about .40, suggesting that a 10-percentage point increase in a candidate's appearance advantage leads to about a four percentage point increase in vote share. In contrast, when these less informed respondents watch more TV (Low knowledge/High TV), the slope increases to .55. This effect implies that a candidate with the highest appearance rating (.84) would receive about 56 percentage points more vote share than a candidate with the lowest competency rating (.08). As with the gubernatorial races, no similar increase occurs between Low and High TV exposure in the other knowledge quartiles.

Figure 2: Television encourages image-based voting among the ill informed (2006 governors' races)



Note: Candidate appearance better predicts vote intent in gubernatorial races among less informed citizens (bottom quartile of political knowledge) who self report an above-the-median TV exposure. The figure shows that this difference is absent among highly informed citizens (top quartile). The results for other quartiles are not shown, though estimates from them are presented in Appendix Table 1. The dependent variable is the share of respondents intending to vote for the Democratic candidate. Votes for minor parties are excluded. The explanatory variable is Appearance advantage. Political knowledge is measured with a 21-item index of responses to factual questions. TV is measured with a nine-item scale about frequency of watching in the previous week and is split at the median. Source for individual-level data: 2006 CCES.

Figure 3: Television encourages image-based voting among the ill informed (2006 Senate races)



Note: Candidate appearance better predicts vote intent in Senate races among less informed citizens (bottom quartile of political knowledge) who self report above-the-median TV exposure. The figure shows that this difference is absent among highly informed citizens (top quartile). The results for other quartiles are not shown, though estimates from them are presented in Appendix Table 1. The dependent variable is the share of respondents intending to vote for the Democratic candidate, excluding nonmajor party voters. The explanatory variable is Appearance advantage, an average of naïve students' ratings of unlabeled, black and white photographs of candidate pairs, with higher values indicating a Democratic advantage. Political knowledge is measured with a 21-item index of responses to factual questions. TV is measured with a nine-item scale about frequency of watching in the previous week and is split at the median. Source for individual-level data: 2006 CCES.

Two anomalies Figure 3 deserve mention. Among High knowledge individuals, those who watch a good deal of TV favored Democratic Senate candidates at high rates. This difference, however, vanishes when controlling for factors such as partisan identification. (See Appendix Table 1.) Appearance also has a slightly negative effect on electability among this group, though that effect is not consistently negative across specifications.

To test whether the findings in Figures 2 and 3 survive controls, we regress Vote for the Democrat on Appearance advantage, High TV (the indicator variable for above-the-median TV exposure), indicator variables for political knowledge quartiles, and the double and triple interaction of these variables. We are primarily interested in the three-way interaction between Low knowledge, High TV, and Appearance advantage. To facilitate the interpretation of the interactions, we use the High TV indicator variable instead of the continuous TV exposure scale. (The triple interaction, however, is actually larger and more statistically significant with the continuous TV measure, a result we present below.) We control for *Partisan identification* using the standard seven-point scale; presidential approval (*Bush approval*); a five-point, self-assessed *Ideology* scale; and whether the respondent saw the invasion of Iraq as a mistake ("*Iraq was a mistake*?)" (For question wordings, see Appendix).[16] We also control for *Incumbency*, coded 1 for Democratic incumbents, 0 for open seats, and -1 for Republican incumbents. Except for incumbency, we scale all variables to vary between 0 and 1. As noted above, we use linear probability models, clustering standard errors at the state level.[17]

The findings from these models also indicate that TV exacerbates the effect of image among less informed respondents. Reassuringly, they yield estimates similar to the effects visible in the scatter plots above, and they do so across a variety of specifications. The triple interactions between Appearance advantage, bottom knowledge quartile, and High TV are substantial and statistically significant for both gubernatorial (B=.20, SE= .07) and Senate races (B=.17, SE= .05). To show this effect, we present predictions from a model in Figure 4 (relegating the full models to the Appendix Table 1). For each

[16] Missing values on these control variables were imputed. The results do not change with listwise deletion (see footnote 5).
[17] The results hold in probit models. For the full results, see the supporting materials (footnote 5).

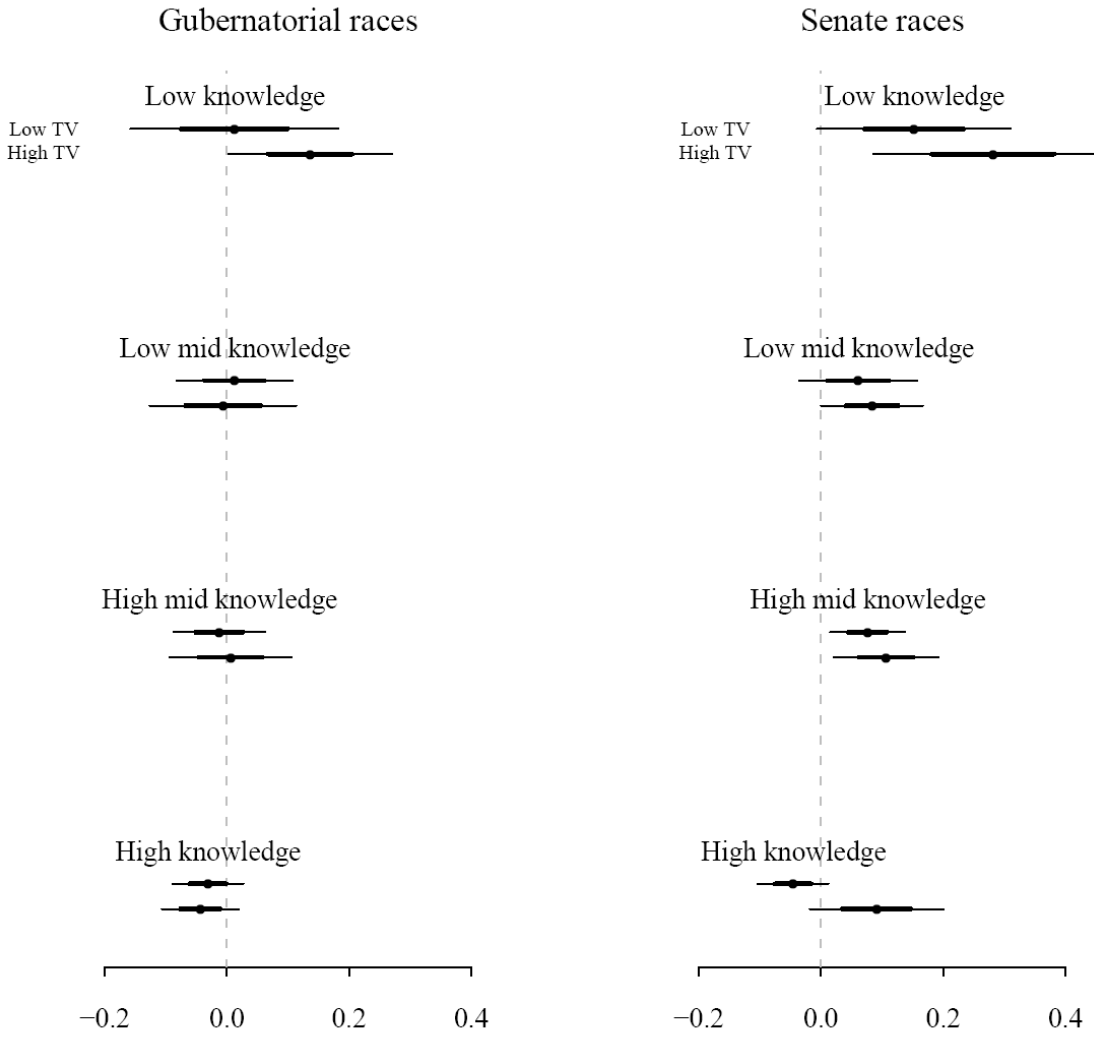
knowledge quartile, Figure 4 shows change in probability of a Democratic vote given a shift from the least competent looking Democrat to the most competent looking (.16 to .79 for gubernatorial candidates, .07 to .84 for Senate candidates). It presents this for those below and above the median on TV exposure, while controlling for Partisan identification, Iraq was a mistake, Ideology, and Bush approval. As the scatter plots indicate, the effect of appearance is most pronounced for low-knowledge individuals who watch a good deal of TV. For gubernatorial races, a shift from the least to the most competent looking Democrat leads to only a .01 increase in the probability of a Democratic vote for low TV respondents, but to a .14 increase in probability for high TV respondents, implying a net shift .13. For Senate races, the equivalent increases in the probability of a Democrat vote are .15 for low TV respondents and .28 for high TV respondents, also implying a net shift of .13.[18] Thus, the basic finding that TV exacerbates the effect of image among less informed individuals survives controls for the major issues of the 2006 election — presidential approval and attitudes about the Iraq war — as well as controls for partisanship, ideology, and incumbency.[19]

One anomaly is worth noting in Figure 4. For Senate candidates, there is a hint of our interaction for High knowledge individuals. However, it is not present in the bivariate regressions, nor is it robust to the controls used below, or to using the continuous TV variable (t-values average only .5 across specifications).

[18] For Senate candidates, there is also a hint of an interaction for High knowledge, but it is not present in the bivariate regressions nor is it robust to the controls used below (see also the supplemental materials described in footnote 5).

[19] When we add incumbency, the main effect of Appearance advantage becomes negative in gubernatorial races and negative for high-knowledge individuals in Senate races. However, the magnitude of the interaction between appearance, low knowledge, and television exposure remains similar in size. These findings also hold, in somewhat attenuated form, when we use vote choice instead of vote intention as the dependent variable. Because of panel attrition and nonvoting, using vote choice cuts the sample by over one third – a considerable amount when testing triple interactions with state-level variables. For results, see the online supporting materials (footnote 5).

Figure 4: Television's exacerbating effect on appearance by political knowledge quartile



Change in the probability of a Democrat vote given a shift from the least to the most competent looking Democrat

Note: This figure shows that TV continues to exacerbate the effect of candidate image among less informed respondents when controlling for Partisan identification, attitudes about the Iraq war, Ideology, and Bush approval. For each knowledge quartile, it shows the change in probability of voting for the Democrat given a shift from the least competent looking Democrat to the most competent looking. (Appearance advantage ranges from .16 to .79 for gubernatorial candidates, .07 to .84 for Senate candidates). It presents this for those below and above the median on TV exposure. The predictions are from models presented in Appendix, Table 1 (column 4 for Senate races and 9 for gubernatorial races). For both types of races, the effect of appearance only becomes significantly larger (*and* the overall effect significantly larger than zero) for High TV individuals among the bottom knowledge quartile. For Senate candidates, there is also a hint of an interaction for High knowledge, but it is not present in the bivariate regressions nor is it robust to the controls used below (see the supplemental materials). Error bars show 95 percent confidence intervals (thin) and 68 percent confidence intervals (thick), which are simulated from robust standard errors clustered at the state level.

So far, we have used a median split on the television scale (High TV). Although this approach has the advantage of making interaction interpretations more straightforward, it throws out a good deal of relevant information on the extent of television exposure. To test the interaction of appearance with the continuous TV measure, we reestimate the statistical models replacing the indicator variable High TV with the continuous variable TV, which ranges from 0 (watched none of the nine types of television shows in the past week) to 1 (watched all nine show types every day in the past week). Using the same model behind Figure 4, we again find large and statistically significant interactions only among low knowledge individuals in both gubernatorial (B=.54, SE= .14) and Senate races (B=.67, SE= .14). For gubernatorial candidates, a shift from the least to the most competent looking Democrat corresponds with a .33 net increase in the probability of Democratic vote for individuals at the top of the TV scale compared to those at the bottom. For Senate races, the implied effect is .51. These are large effects. Comparing the fifth and ninety-fifth percentiles on television viewing (.04 and .63), these net increases are twenty percentage points for gubernatorial races and thirty percentage points for Senate races.

As noted above, respondents who performed poorly on the political knowledge questions in the CCES may still be better informed than low knowledge individuals in traditional surveys. To better understand what happens at the lowest levels of knowledge, we examine the interaction between television exposure and candidate appearance among those who fall in the bottom fifth, sixth, seventh, and eighth of the political knowledge scale. For gubernatorial races, the interaction remains similar in size in all of these models.[20] For Senate races, the interaction becomes larger as we plumb the depths of the public's ignorance, rising by about 50 percent by the time we reach the bottom eighth and remaining precisely estimated. Thus, if anything, television's tendency to encourage appearance-based voting increases as political knowledge declines.

[20] The estimates become imprecise (marginally statistically significant) in the bottom seventh and eighth. For detailed results, see the online supporting materials (footnote 5).

5 Alternative explanations

As discussed earlier, there are several alternative explanations for recent findings on candidate appearance, such as a potential relationship between ratings of candidates' faces and campaign effort or true quality. These alternatives seem unlikely to explain our interaction, because they do not obviously suggest a larger image effect among low knowledge, high TV individuals. For instance, the very fact that the effect of appearance is largest among less informed individuals suggests that preferences for more appealing-looking candidates do not represent judgments about true candidate quality. Nevertheless, we address these potential concerns by adding five new control variables to our model; we also interact these controls with political knowledge quartiles and TV viewing.

First, we assemble an indicator of candidate experience in elected office (*Experience advantage*), that places greater weight on more prominent offices; higher values indicate a more experienced Democratic candidate. (See Appendix for details on this and other control variables.) Second, we create a measure of educational achievement (*Education advantage*), higher values indicate that the Democrat attended more academically selective institutions than his Republican rival. (Although these measures are imperfect indicators of candidates' true abilities, they presumably correlate with qualities like experience and intelligence that citizens value in their representatives.) Third, we control for *Incumbency*, which is coded 1 when the incumbent is a Democrat, 0 for open seats, and -1 when the incumbent is a Republican. Fourth, to capture campaign effort, we measure the Democratic candidate's share of campaign spending among major party candidates (*Spending advantage*). Finally, we include a measure of competitiveness from *The Cook Political Report*, which takes eight values, ranging from solidly Republican to solidly Democratic (*Cook ratings*). We use Cook ratings from August of 2005 to capture the strategic environment before candidates commit to the race (Atkinson, Enos, and Hill 2008). With the exception of incumbency, we code all these variables to range between 0 and 1.

As shown in Table 1, these variables generally correlate with vote, appearance advantage, and each other. In Senate races, for instance, Appearance advantage correlates at .59 with Spending advantage, .56

with Incumbency, and .61 with Cook ratings. The principal exception is education advantage — arguably the most clearly exogenous measure of candidate quality — which predicts spending, experience, and vote but does not correlate with appearance.

One problem with these variables is that all capture aspects of candidate quality and, as a result, strongly inter-correlate. Colinearity is even more problematic because, to fully control for each measure of candidate quality, we must include all the double and triple interactions with political knowledge. For this reason, we estimate separate models for each control (though the results largely hold when we include all controls and interactions). We also shift from the two-tier measure of TV exposure to the continuous indicator of television viewing.[21]

Another problem with these measures (with the possible exception of Education advantage) is that their causal relationship to appearance is unclear. Good-looking candidates may be experienced precisely because their looks influenced voters in previous elections. Likewise, good-looking candidates may raise more campaign funds because their looks directly or indirectly influence donors. If so, including variables like incumbency, experience, and spending along with appearance could lead us to underestimate the total effect of appearance on electability. In other words, the deck is probably stacked against finding a triple interaction of appearance, television, and political knowledge.

Even when we add these variables to the model, we continue to find that TV exacerbates the effect of appearance among low knowledge individuals. For gubernatorial candidates, the interaction between low knowledge and television remains similar in size and statistically different from zero at the 10 percent level or better in all models. For Senate elections, the interaction remains similar in size and highly statistically significant in all models (including models with all control variables and their interactions).[22] See Appendix Table 2 for the full results. Thus, even when controlling for these measures of candidate quality and

[21] The results are marginally significant and substantively similar when we confine ourselves to comparing high-TV viewers to low-TV viewers.

[22] The interaction for Senate races in models that include all controls (and all interactions) is 0.52 (SE = 0.20). The interaction for gubernatorial races that include all controls (and all interactions) is .0.35 (SE = 0.24).

campaign effort, which stretch our data to their limits, we still find that candidate appearance tends to disproportionately influence voters who watch more TV and know less about politics.

Including these other variables in our model allows us to address the degree to which TV privileges "image" (that is, candidate appearance) over "reality" (that is, candidates' true abilities). Our findings do not suggest a clear answer. For gubernatorial races, greater exposure to TV fails to increase the weight less informed voters attach to candidate quality.[23] For Senate races, however, TV appears to increase the importance of these candidate quality variables across all knowledge quartiles. Thus, TV appears to exacerbate the effect of appearance more consistently than it facilitates voting based on candidate quality, but it may have both effects.[24]

[23] For the full results, see the online supporting materials (footnote 5).

[24] Consistent with previous research, we find that Spending advantage interacts with political knowledge in both gubernatorial and Senate races, disproportionally influencing lower knowledge individuals. It also interacts with television, disproportionally influencing television individuals. It does not, however, disproportionately influence low knowledge individuals who watch more television.

Table 1: Correlations between Vote, Appearance advantage, and candidate quality/campaign effort controls, 2006 gubernatorial and Senate elections

	Vote	Appearance advantage	Spending advantage	Incumbent	Experience advantage	Education advantage	Cook ratings
Gubernatorial candidates							
Vote (Dem 1, Rep 0)	1.00						
Appearance advantage	0.25	1.00					
Spending advantage	0.68	0.08	1.00				
Incumbency	0.75	0.37	0.56	1.00			
Experience advantage	0.62	0.15	0.50	0.78	1.00		
Education advantage	0.15	-0.05	0.23	0.25	0.27	1.00	
Cook ratings (prior-year)	0.76	0.29	0.60	0.90	0.80	0.09	1.00
Senate candidates							
Vote (Dem 1, Rep 0)	1.00						
Appearance advantage	0.38	1.00					
Spending advantage	0.79	0.59	1.00				
Incumbency	0.69	0.56	0.81	1.00			
Experience advantage	0.68	0.50	0.77	0.83	1.00		
Education advantage	0.29	0.05	0.39	0.19	0.33	1.00	
Cook ratings (prior-year)	0.73	0.61	0.86	0.93	0.79	0.18	1.00

Note: 34 gubernatorial races and 26 Senate races. All variables coded so that higher values advantage the Democratic candidate.

6. Conclusion

This paper tests a key observable implication of recent research on candidate appearance and voting. We find that people who are poorly informed about politics but exposed to TV cast their ballots disproportionately based on the way politicians look. This pattern is almost identical in gubernatorial and in Senate races, and it holds when controlling for campaign spending, incumbency, candidate quality, electoral competitiveness, and numerous other variables. These results add credence to recent research on candidate appearance.

Our findings also have broader implications for political communication. Since the advent of television, political observers have fretted about its role in privileging image over substance (e.g., Mickelson 1976). The results we report appear to confirm some of these longstanding fears. Politicians who merely look the part profit from exposure to TV, especially among less informed voters.

Another implication of our findings concerns the study of media effects. Researchers have often failed to find evidence that mass media influence voting behavior (Finkel 1993; McGuire 1969; Patterson and McClure 1976; Semetko and Schoenbach 1996). Our findings suggest they should focus more on the "pictures" – particularly pictures of candidates' faces – rather than the words embedded in media messages (Graber 1996; Iyengar, Peters, and Kinder 1982; Lau and Redlawsk 2006; Mendelberg 2001; Valentino, Hutchings, and White 2002).

Finally, our findings pose in a new form the age-old question of whether participation by less informed citizens enhances or detracts from democratic government. Certainly, shallow, image-based judgments are hardly novel features of democratic politics. In the days before TV, critics of representative government regularly lamented how some leaders could exploit their personal charisma to manipulate mass opinion. As James Madison warned, people "misled by the artful misrepresentations of interested men, may call for measures which they themselves will afterwards be the most ready to lament and condemn" (Madison, Hamilton, and Jay 1987, 63). Is the modern analogue – looking good on TV – truly worse? In some ways, it is not. Nevertheless, the combination of widespread political disengagement in the citizenry

with saturation levels of exposure to visual images of candidates is a distinctly modern phenomenon, bringing with it distinctly modern problems. Understanding those problems and devising ways to address them remain important challenges for political science.

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Appendix

To construct the TV scale, we calculated an unweighted average of responses to all the TV viewing items in the CCES profile. These questions ask: in the past week, how frequently have you watched (1) national evening news, (2) early local news, (3) late local news, (4) newsmagazine show such as 60 Minutes or Dateline, (5) sports news on ESPN or Fox Sports Channel, (6) late-night TV shows such as David Letterman and Jay Leno, (7) entertainment shows such as Entertainment Tonight or Access Hollywood, (8) Univision or some other Spanish-language TV network, and (9) PBS. Respondents could choose from four responses: not at all, once or twice, a few times, or almost every day. The scale has a reliability of .70. Exploratory factor analysis finds three factors: the first includes news and PBS, the second captures entertainment and Spanish-language TV, and the third sports. The question about ideology reads: "One way that people talk about politics in the United States is in terms of left, right, and center, or liberal, conservative, and moderate. We would like to know how you view the parties and candidates using these terms. The scale below represents the ideological spectrum from very liberal (1) to very conservative (5). The most centrist American is exactly at the middle (3). Where would you place yourself on this line?" To address non-response on this question, we impute missing values with demographics. The question about Bush approval asks, "Do you approve or disapprove of the way George W. Bush is handling his job as president? Do you Approve/Disapprove strongly or Approve/Disapprove somewhat?" The question about the Iraq war asks, "Do you think it was a mistake to invade Iraq? Yes or No." The political knowledge scale gives respondents a point for each of the following items: placing the parties, Senate candidates, and gubernatorial candidates correctly relative to each other on an ideology scale; correctly reporting the party of both senators, the governor, and representative; placing the governor on the approval scale (as opposed to DK); placing the governor on the feeling thermometer (as opposed to DK); reporting that their senators voted consistent with their senators' parties on abortion, stem cells, minimum wage, free trade, immigration, and Iraq. The maximum score was 21 points. All analyses are weighted.

Candidate experience and education

Spending advantage is from http://www.opensecrets.org/ for Senate candidates and from states' Secretary of State websites for gubernatorial candidates. Cook ratings are from *The Cook Political Report* (generously shared by Seth Hill).

For Experience advantage, we code one year of service in the Senate as worth 10 times a year's service in the state legislature, four times a year's service in a state-wide elected post below the level of governor (usually Lieutenant Governor or Attorney General) or as mayor of a city with a population over 100,000 inhabitants), four times a year's service as federal Representative, and one-half a year's service as governor. (These proportions are based roughly on the relative number of such offices.) We assembled data on experience from a range of sources: candidate profiles and bios, news reports, and CVs compiled by employers of defeated or retired candidates; in all but two cases, we were able to account for every year in each candidate's life between completion of their education and the election we analyzed, in order to ensure that we did not inadvertently omit any experience in office. (In these two cases, we were able to account for almost all of the candidates' time since graduation.) Because gubernatorial and Senate candidates sometimes follow different career tracks (e.g., state attorney general for gubernatorial candidates), we explored alternative weighting schemes for gubernatorial candidates. We found, however, that these various weighting schemes produced similar results, with no improvement in predicting gubernatorial vote share. Of the various weighting schemes we explored, the one described above predicts vote share in both gubernatorial and Senate races.

For Education advantage, we classified educational institutions into the following tiers: Ivy League institutions or their equivalents outside the northeast (such as Stanford); "near-Ivies" (such as Duke), liberal arts colleges, and the top state universities (such as the University of North Carolina at Chapel Hill); second-tier state schools (such as North Carolina State); and community college or no college. If a candidate failed to graduate from one institution but later obtained a degree from another, we considered only the institution from which he received his degree. Where candidates went on to graduate school, we

rated the highest caliber institution they attended at any level of study. Thus, if one student went to Princeton as an undergraduate and another student went to the University of North Carolina as an undergraduate but later obtained an MBA from the University of Pennsylvania, we considered the two candidates to have attained similarly high levels of educational achievement. If both candidates attended institutions of similar caliber (e.g., if both graduated from the University of Arkansas), but one went on to obtain a graduate degree and the other did not, we treated the former as better educated. Finally, if two candidates attended institutions of the same quality, but one received an award for academic achievement and the other did not, we considered the former to have a stronger educational background.

Appendix Table 1: The effect of television on image-based voting by level of political knowledge

	DV: Gubernatorial vote					*DV: Senate vote*				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Dem. appearance advantage	0.04	-0.00				0.23	0.10			
	(0.13)	(0.08)				(0.08)	(0.02)			
*High TV	0.03	0.07				0.08	0.11			
	(0.06)	(0.03)				(0.04)	(0.03)			
High TV	0.14	-0.01	-0.01	-0.08	-0.07	0.13	-0.03	0.00	-0.08	-0.08
	(0.04)	(0.02)	(0.05)	(0.04)	(0.04)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
Low know.*Appearance			0.11	0.02	-0.13			0.40	0.20	0.09
			(0.20)	(0.13)	(0.11)			(0.15)	(0.10)	(0.10)
*High TV			0.21	0.20	0.17			0.15	0.17	0.17
			(0.10)	(0.07)	(0.08)			(0.07)	(0.05)	(0.05)
Low mid know.*Appearance			0.05	0.02	-0.11			0.30	0.08	-0.05
			(0.19)	(0.08)	(0.07)			(0.12)	(0.06)	(0.08)
*High TV			-0.02	-0.03	-0.05			-0.02	0.03	0.03
			(0.12)	(0.06)	(0.05)			(0.08)	(0.06)	(0.05)
High mid know.*Appearance			0.07	-0.02	-0.13			0.32	0.10	-0.04
			(0.14)	(0.06)	(0.06)			(0.13)	(0.04)	(0.08)
*High TV			-0.14	0.03	0.02			-0.08	0.04	0.03
			(0.11)	(0.05)	(0.05)			(0.10)	(0.04)	(0.04)
High know.*Appearance			-0.18	-0.05	-0.22			-0.17	-0.06	-0.20
			(0.15)	(0.05)	(0.08)			(0.15)	(0.04)	(0.10)
*High TV			-0.09	-0.02	-0.04			0.00	0.18	0.18
			(0.09)	(0.05)	(0.05)			(0.16)	(0.08)	(0.08)
Partisan identification		0.40		0.40	0.40		0.39		0.39	0.39
		(0.03)		(0.03)	(0.03)		(0.02)		(0.03)	(0.03)
Ideology		0.21		0.21	0.22		0.22		0.22	0.22
		(0.03)		(0.03)	(0.03)		(0.02)		(0.02)	(0.02)
Bush approval		0.38		0.38	0.37		0.38		0.38	0.38
		(0.03)		(0.03)	(0.03)		(0.02)		(0.02)	(0.02)
Iraq was a mistake?		0.14		0.14	0.14		0.18		0.18	0.17
		(0.02)		(0.02)	(0.02)		(0.02)		(0.02)	(0.02)
Incumbency					0.08					0.05
					(0.01)					(0.02)
Low mid knowledge		0.01	-0.02	0.03	0.01		0.01	-0.00	0.05	0.05
		(0.01)	(0.06)	(0.03)	(0.04)		(0.01)	(0.04)	(0.03)	(0.03)
High mid knowledge		0.03	-0.03	0.02	-0.00		0.01	-0.01	0.04	0.05
		(0.01)	(0.05)	(0.04)	(0.04)		(0.01)	(0.05)	(0.04)	(0.04)
High knowledge		0.03	0.08	0.04	0.05		-0.01	0.15	0.09	0.10
		(0.02)	(0.13)	(0.06)	(0.07)		(0.01)	(0.12)	(0.05)	(0.05)
Low mid know.*High TV			0.16	0.09	0.09			0.18	0.10	0.10
			(0.06)	(0.05)	(0.05)			(0.04)	(0.04)	(0.04)
High mid know.*High TV			0.33	0.13	0.13			0.25	0.10	0.10
			(0.06)	(0.05)	(0.05)			(0.06)	(0.03)	(0.03)
High know.*High TV			0.28	0.13	0.14			0.25	0.05	0.06
			(0.08)	(0.05)	(0.05)			(0.10)	(0.06)	(0.06)
n	10273	10273	10273	10273	10273	9980	9980	9980	9980	9980
R^2	0.02	0.59	0.04	0.59	0.60	0.04	0.65	0.05	0.65	0.66
SER	0.49	0.32	0.49	0.32	0.32	0.49	0.29	0.48	0.29	0.29

Note: OLS with robust standard errors clustered at the state level. Source for individual-level data: 2006 CCES.

Appendix Table 2: TV's effect on the influence of candidate appearance and candidate quality

	DV: Gubernatorial vote					DV: Senate vote				
	Spd (1)	Exp (2)	Edu (3)	Inc (4)	Cook (5)	Spd (6)	Exp (7)	Edu (8)	Inc (9)	Cook (10)
Low know.*Appearance	-0.04	-0.13	-0.07	-0.22	-0.16	-0.18	-0.05	0.01	-0.10	-0.10
	(0.08)	(0.11)	(0.12)	(0.11)	(0.10)	(0.09)	(0.11)	(0.10)	(0.10)	(0.10)
*TV	0.53	0.50	0.61	0.38	0.43	0.48	0.48	0.52	0.58	0.52
	(0.18)	(0.18)	(0.16)	(0.21)	(0.18)	(0.22)	(0.22)	(0.16)	(0.26)	(0.22)
Low know.*Spending	0.28					0.39				
	(0.08)					(0.10)				
*TV	0.15					0.17				
	(0.14)					(0.15)				
Low know.*Experience		0.34					0.35			
		(0.09)					(0.17)			
*TV		-0.10					0.35			
		(0.17)					(0.21)			
Low know.*Education			0.08					0.15		
			(0.06)					(0.10)		
*TV			-0.22					0.34		
			(0.13)					(0.12)		
Low know.*Incumbency				0.08					0.08	
				(0.02)					(0.03)	
*TV				0.06					0.01	
				(0.06)					(0.06)	
Low know.*Cook ratings (prior-year)					0.21					0.22
					(0.06)					(0.08)
*TV					0.18					0.07
					(0.14)					(0.10)
n	10273	10273	10273	10273	10273	9980	9980	9980	9980	9935
R^2	0.60	0.60	0.59	0.60	0.60	0.67	0.66	0.66	0.66	0.67
SER	0.31	0.32	0.32	0.31	0.32	0.29	0.29	0.29	0.29	0.29

Note: This table shows that television exacerbates the effect of Appearance among the bottom quartile in terms of political knowledge controlling for various measures of campaign effort and candidate quality. We include all main effects and double interactions that are components of the included triple interactions, but only show those for low knowledge (bottom quartile) individuals. For the full results, see the supporting materials (footnote 5). All models also include: Partisan identification, Ideology, Bush approval, and attitudes about Iraq. OLS with robust standard errors clustered at the state level. Source for individual-level data: 2006 CCES.