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# Ailing Voters Advance Attractive Congressional Candidates

**Leslie A. Zebrowitz**,

Department of Psychology, Brandeis University, Waltham, MA, USA.

**Robert G. Franklin Jr**, and

Department of Behavioral Sciences, Anderson University, Anderson, SC, USA.

**Rocco Palumbo**

Department of Psychology, Brandeis University, Waltham, MA, USA.

Leslie A. Zebrowitz: zebrowitz@brandeis.edu

## Abstract

Among many benefits of facial attractiveness, there is evidence that more attractive politicians are more likely to be elected. Recent research found this effect to be most pronounced in congressional districts with high disease threat—a result attributed to an adaptive disease avoidance mechanism, whereby the association of low attractiveness with poor health is particularly worrisome to voters who feel vulnerable to disease. We provided a more direct test of this explanation by examining the effects of individuals' own health and age. Supporting a disease avoidance mechanism, less healthy participants showed a stronger preference for more attractive contenders in U.S. Senate races than their healthier peers, and this effect was stronger for older participants, who were generally less healthy than younger participants. Stronger effects of health for older participants partly reflected the absence of positive bias toward attractive candidates among the healthiest, suggesting that healthy older adults may be unconcerned about disease threat or sufficiently wise to ignore attractiveness.

### Keywords

voter health; age; attractiveness bias

## Introduction

Evidence that facial appearance influences electoral outcomes poses a significant threat to our democracy (Rule et al., 2010; Todorov, Mandisodza, Goren, and Hall, 2005). Most pertinent to the present study, research has shown that the more attractive of two political candidates in a congressional race is more likely to be elected (Verhulst, Lodge, and Lavine, 2010; White, Kenrick, and Neuberg, 2013). This benefit of good looks, a gift of birth earned through no merit, would not be of great concern if attractiveness were correlated with other attributes that are desirable in a leader. Indeed, more attractive people are judged as more competent, healthy, and trustworthy—important attributes in elected officials (Eagly,

Correspondence to: Leslie A. Zebrowitz, zebrowitz@brandeis.edu.

Ashmore, Makhijani, and Longo, 1991; Langlois et al., 2000; Zebrowitz and Franklin, 2014). However, attractiveness is only weakly, albeit significantly, related to competence and health, and there is no evidence for a relationship to trustworthiness (Feingold, 1992; Langlois et al., 2000; Zebrowitz, Hall, Murphy, and Rhodes, 2002; Zebrowitz et al., 2014; Zebrowitz and Rhodes, 2004). The unreliability of attractiveness as a cue to these positive qualities raises the questions of why perceivers use it and which perceivers are most likely to do so. The present study addressed these questions by examining the moderating effects of voter age and health on preferences for more attractive congressional candidates.

The fact that people from diverse cultures as well as infants and young children—and even individuals with congenital prosopagnosia—show similar reactions to facial attractiveness suggests some universal mechanism that does not require face expertise (Carbon Grüter, Grüter, Weber, and Lueschow, 2010; Dion, 2002; Hoss and Langlois, 2003; Langlois et al., 2000; Zebrowitz et al., 2012). The anomalous face overgeneralization hypothesis provides such a mechanism (Zebrowitz and Collins, 1997; Zebrowitz and Rhodes, 2004). This hypothesis holds that the adaptive value of recognizing individuals with diseases or bad genes has prepared us to respond to facial qualities that can mark low fitness. Our responses are then overgeneralized to normal individuals whose faces resemble those who are unfit. Thus, on this account, we perceive unattractive people more negatively and eschew them as leaders because unattractive faces show more similarity to the faces of unfit or unhealthy individuals that are adaptive for us to recognize. Consistent with this explanation, the facial metrics of congenitally anomalous faces are more similar to those of normal unattractive than attractive faces (Zebrowitz, Fellous, Mignault, and Andreoletti, 2003), attractiveness is a more accurate predictor of actual health and competence for faces below rather than above average in attractiveness (Zebrowitz et al., 2014; Zebrowitz and Rhodes, 2004), and reactions to people who vary in attractiveness are driven more by the perception that “ugly is bad” than by the perception that “beautiful is good” (Griffin and Langlois, 2006).

Related to the anomalous face overgeneralization explanation for an influence of facial attractiveness on social judgments is the hypothesis that disease avoidance mechanisms can affect social behavior (Neuberg, Kenrick, and Schaller, 2011; Schaller and Park, 2011). These authors argue that a behavioral immune system has evolved to detect the presence of pathogens and to facilitate the avoidance of people who may carry them, with stronger avoidance in those who feel more vulnerable to infection. They also propose overgeneralization of these disease avoidance responses, noting that a too tightly calibrated behavioral immune system could miss significant pathogen risks (Neuberg et al., 2011). Consistent with such overgeneralization, research has linked activation of the behavioral immune system to avoidance of people with physical disabilities (Park, Faulker, and Schaller, 2003).

Applying the disease avoidance mechanism to the selection of political leaders, White et al. (2013) reasoned that disease threat should increase avoidance of unhealthy-looking leaders, because healthy leaders are important for societal functioning and, consequently, an individual’s well-being. Supporting this hypothesis, they found that physical attractiveness predicted election outcomes for candidates from congressional districts with high disease threat (higher infant mortality and lower life expectancy) but not those with low disease

threat. Other research has shown that adaptive implications of other environmental variations also can influence voter preferences for a more attractive candidate. Specifically, whereas people preferred a more attractive, likeable-looking candidate when asked for whom they would vote in a time of peace, they preferred a candidate with a more masculine, dominant-looking appearance during a time of war (Little, Burriss, Jones, and Roberts, 2007). These results were attributed to the fact that dominant leaders may be perceived as better able to advance societal functioning and individuals' well-being in wartime, whereas leaders with pro-social qualities may be perceived as more able to do so during peacetime.

One notable limitation of the White et al. (2013) study investigating effects of disease threat on candidate preferences is that it did not directly investigate how an individual person's level of health affects preferences for attractiveness in politicians. Rather, it examined the relationship between macro-level health indices and electoral results. In contrast, we directly examined the relationship between participants' own health and the degree to which attractiveness affected their voting intentions. We also investigated the influence of health and candidate attractiveness on the voting intentions of both younger adults as well as older adults, who have not been previously studied. Since older adults generally have more health concerns, their preferences provide an additional test of the hypothesis that health affects the influence of attractiveness on voters' choices. Moreover, documenting effects in older adults has significant social implications, as they are more likely to vote than the younger adults who are typically studied in psychological experiments. For example, the turnout rate in the 2012 presidential election was 71.9% of people aged 65 and older as compared with only 41.2% of individuals aged 18 to 24 (Taylor and Lopez, 2013). Finally, our study controlled education, a variable that may have co-varied with the macro-level indicators of disease threat in the White et al. (2013) study (Lleras-Muney, 2005), and that could itself contribute to variations in the preference for attractive politicians. We predicted that political candidates' attractiveness would have more influence on voting intentions of people who reported more health problems. We also predicted that the voting intentions of older adults would show a stronger response to attractiveness than those of younger adults.

## Materials and Methods

### Participants

Twenty younger adult participants (8 men), aged 18–24 ($M$ = 19.9, $SD$ = 1.3), were recruited from a Boston area university and completed the study for course credit. Eighteen older adult participants (5 men), aged 68–90 ($M$ = 78.7, $SD$ = 6.7), were recruited from the Boston area and were paid $25 in U.S. currency for completing the study. One additional older adult (male) was dropped because he recognized politicians from more than half of the elections, whereas all the other participants recognized at most three politicians. The number of participants was based on previous studies in our lab demonstrating that this sample size provided sufficient power to detect significant participant age differences in impressions of faces, with Cohen's $d$ effect sizes averaging .53 across ratings of healthy, untrustworthy, and hostile. We stopped running participants before we ran any data analyses. The research was conducted in accordance with the ethical principles for research involving human subjects expressed in the Declaration of Helsinki. The research protocol was approved by the

Institutional Review Board at Brandeis University. Written informed consent was obtained from all participants.

## Stimuli

We selected stimuli from the 2010 and 2012 U.S. Senate races. To minimize the degree to which participants recognized any candidates, we removed races for Massachusetts and New Hampshire (since southern New Hampshire is part of the Boston media market) as well as elections containing candidates who were previously part of national-level elections or were nationally recognizable (e.g., John McCain and Rick Perry). In addition, we removed elections where candidates were not opposed by a major party candidate. This yielded 54 elections, representing 41 states.

Faces were selected from internet sources, and we used official campaign portraits where available. If unavailable, we used images as close to campaign portraits as possible. Images were cropped to 300 × 300 pixel size (6.7 cm), and backgrounds were removed and replaced with a standard taupe color. Pairs of candidates were shown side by side, with the position of the two candidates counterbalanced across participants and conditions.

## Dependent measures

**Attractiveness ratings—**Participants rated each pair of candidates on attractiveness by first selecting which candidate was more attractive. They then indicated how much more attractive they thought that candidate was on a 7-point scale, with 1 indicating a little more attractive, 4 indicating somewhat more attractive, and 7 indicating much more attractive.

**Vote choices—**After making attractiveness ratings for all candidate pairs, participants were again presented with pairs of candidates and asked to choose the one for whom they would vote.

**Health measure—**A measure of functional limitations (Ware and Sherbourne, 1992) was taken from a self-report survey completed after all other measures. We summed participants' responses to a 10-part question that presented several activities and asked "Does your health now limit you in these activities?" The tasks were: (1) vigorous activities, such as running, lifting heavy objects; (2) moderate activities, such as moving a table, pushing a vacuum cleaner; (3) lifting or carrying groceries; (4) climbing several flights of stairs; (5) climbing one flight of stairs; (6) bending, kneeling or stooping; (7) walking more than a mile; (8) walking several blocks; (9) walking one block; (10) bathing or dressing yourself. Responses were coded as 1 (Not at all), 2 (A little), and 3 (A lot) so that higher scores signified greater functional limitations. This measure has been validated in previous research that demonstrated a relationship to objective indicators of disability (Syddall, Martin, Harwood, Cooper, and Aihie Sayer, 2009), as well as a sensitivity to various health protective factors (Lachman and Agrigoroaei, 2010).

**Other measures—**Older adults were screened using the Mini-Mental State Examination (Folstein, Folstein, and McHugh, 1975), all scoring between 26 and 30 ($M$ = 28.7, $SD$ = 1.53). Level of education was coded for highest level attained, from 1 (no high school

diploma) to 7 (Doctorate degree). Additional measures included tests of visual acuity, contrast sensitivity, facial recognition, a pattern comparison task to assess processing speed, and the Wisconsin card sorting task to assess executive function (see Table 1).

### Procedure

After obtaining informed consent, participants were shown photographs of pairs of politicians and were asked to rate them on various attributes. Participants were told that these were real politicians running for office and that if at any point in the study they recognized anyone, they were to write down who that politician was. Since none of the participants retained in the study recognized more than two politicians, we included all the races in the analysis.

Participants rated the attractiveness of the candidates as well as three other traits (trustworthy, competent, and babyfaced) that are not reported because they are not relevant to our hypotheses. Ratings were made in one of the following two orders: trustworthy, competent, attractive, and babyfaced or competent, trustworthy, babyfaced, and attractive. The attractiveness rating used the following format: Participants were shown faces of two politicians on the computer screen, labeled Politician X and Politician Y, with the placement of each face on the right or left side of the screen counterbalanced across participants. Participants were asked to choose which politician was more attractive, with no time constraints, and they indicated their choice by pressing a button labeled “Candidate X” or “Candidate Y.” Next, participants were presented with a rating scale and instructions stating that “you chose Candidate (X or Y) as more attractive. Please indicate the degree to which you feel Candidate (X or Y) is more attractive than the other candidate.” Participants made this rating on a 7-point scale, with anchors of 1 (only a little more) and 7 (much more). Participants rated all of the pairs of politicians using this format on one rating scale before moving to the next. After all the trait ratings were completed, participants indicated their voting preference. Using the same format as the attractiveness ratings, they first made a dichotomous choice, and then rated how much more they preferred to vote for the candidate they chose. We analyzed only the dichotomous voting choice, since this has more ecological validity as a proxy for actual voting behavior.

## Results

### Overview of analysis

We used a logistic multilevel model to predict voting choices from participants’ age (scored as 1 for younger adults and 2 for older adults), self-reported health, education level, and their ratings of candidates’ attractiveness in each senate race. Logistic multilevel models were performed within R using the “lme4” package for generalized multilevel modeling. Participant and Senate race were both random factors in the model, with race nested within participant. We included all interactions between variables except for education level, which was included only as a control variable. Variables were not centered because the model had no collinearity issues and all variables of interest had a meaningful zero value. For each race, one candidate was arbitrarily assigned to be the “positive” candidate and the other was assigned to be the “negative” candidate. The dependent variable was the candidate for whom

participants chose to vote, with responses coded as 0 if it was the negative candidate and 1 if it was the positive one. Since the attractiveness of each candidate was rated relative to the opponent, we calculated the attractiveness predictor as follows: If the participant rated the positive candidate as the more attractive one, then ratings ranged from 1 to 7, with a 7 indicating that this candidate was much more attractive than the opponent and 1 indicating that this candidate was only a little bit more attractive than the opponent. If the participant rated the negative candidate as the more attractive one, then ratings ranged from −1 to −7, with a −7 indicating that this candidate was much less attractive than the opponent and −1 indicating that this candidate was only a little bit less attractive than the opponent. Scoring attractiveness in this manner yielded a value for each candidate that reflected his or her attractiveness relative to the opponent.

## Health and control variables

As shown in Table 1, older adults reported having significantly more functional limitations than younger adults, as predicted. Older adults also reported significantly higher levels of education, which is consistent with previous research comparing community-dwelling older adult research volunteers with college undergraduates (e.g., Boshyan, Zebrowitz, Franklin, McCormick, and Carré, 2014; Zebrowitz, Franklin, Hillman, and Boc, 2013). Age differences for the measures of vision and cognitive function are also consistent with previous studies comparing college students with community-dwelling older adults, demonstrating the representativeness of our sample. Specifically, older raters performed worse than younger raters on visual acuity and contrast sensitivity as well as on a speeded pattern comparison task, consistent with decreases in processing speed in older adulthood (Salthouse, 1996), and on the Wisconsin card sorting task, consistent with age-related decreases in executive function (Daniels, Toth, and Jacoby, 2006). In contrast to poorer performance by older adults on the preceding measures, they performed better than younger adults on a vocabulary task, consistent with their higher education level and the maintenance of crystallized intelligence in older adulthood (Horn and Cattell, 1967). We also found that, for older adults, more functional limitations (poorer health) were associated with slower processing speed on the pattern comparison test, $r(16) = -.69$, $p < .01$, and with lower scores on the Shipley vocabulary test, $r(16) = -.66$, $p < .01$, but not with any of the other control measures, $p$s > .14. None of the correlations between health and cognitive measures were significant for younger adults, $p$s > .18.

## Vote choices

The multi-level model coefficients are reported in Table 2. The results revealed a significant effect of attractiveness, with candidates who were judged more attractive than their opponents more likely to receive votes. However, this effect was moderated by interactions between attractiveness and participant age and between attractiveness and functional limitations.

As predicted, the voting choices of less healthy participants, with more functional limitations, showed a marginally stronger response to candidates' attractiveness. However, contrary to prediction, the voting choices of older adults showed a significantly weaker response to candidates' attractiveness than did the choices of younger adults. These two-way

interactions were qualified by a significant three-way interaction between attractiveness, participant age, and functional limitations. As shown in Figure 1, the weaker overall response to attractiveness shown by older than younger adults was largely due to the healthier older adults who had few functional limitations. The voting choices of both younger and older adults with many functional limitations showed a strong preference for candidates who were more attractive than their opponents. Compared with relatively healthy older adults, those with many functional limitations were more likely to choose candidates who were more attractive than their opponents. The results for younger adults showed the same pattern, but the differences between those who were relatively unhealthy and healthy were much smaller.

## Discussion

Consistent with previous research, participants preferred voting for the more attractive of two candidates in senatorial races (Verhulst et al., 2010; White et al., 2013). This preference for attractive candidates was significant not only for younger "voters," but also older ones, not previously studied. It also was stronger for participants who reported more health problems, as predicted. Contrary to the prediction that older adults would respond more to attractiveness, older adults showed a weaker response overall. However, a significant three-way interaction did support the predicted age difference. The tendency for attractiveness to have more influence on candidate preferences among participants with poorer health was stronger for older than younger adults. Thus the preference for more attractive candidates was moderated both by participant age and health, consistent with the suggestion that these two variables influence the engagement of a disease avoidance mechanism that can influence preferences for more fit leaders. This operation of a disease avoidance mechanism complements evidence that increasing mortality salience can strengthen particular political preferences (Landau et al., 2004), with individual differences moderating whether conservative or liberal preferences are augmented (Weise et al., 2008).

Our results provide stronger support than previous research for a disease avoidance explanation for the preference for more attractive leaders. First, our finding that attractiveness had a greater influence on voting preferences of individuals who are themselves less healthy rules out many alternative explanations for the effect demonstrated at a macro level among people who live in areas with higher vs. lower disease threat (White et al., 2013), and we have specifically ruled out education level as a confounding variable (Lleras-Muney, 2005). Second, our finding that poorer health magnified responses to attractiveness more for older than younger adults supports a disease avoidance mechanism, inasmuch older adults had poorer health than did younger adults. Finally, the tendency for disease avoidance processes to be activated by health-related functional limitations is consistent with previous evidence that disease avoidance processes are activated by physical disabilities in others (Park et al., 2003).

Although one might suggest that the effect of poor health to magnify the preference for attractive candidates could reflect associated cognitive limitations that increase heuristic processing rather than a disease avoidance mechanism, there are three arguments against this interpretation. First, correlations between health and cognitive function were significant for

older, but not for younger adults, which means one would have to argue that heuristic processing might explain the results for older adults, whereas disease avoidance explains the results for younger adults. Second, as discussed below, the greater impact of health on older than younger adult preferences for more attractive candidates was attributable at least as much to the fact that older people with relatively few health problems showed no positive bias toward more attractive political candidates as to the fact that those with many health problems showed a stronger attractiveness bias. Finally, variations in the use of heuristic processing cannot account for the results reported by White et al. (2013) unless one argues that heuristic processing is greater in areas with higher disease threat. As that seems unlikely, a disease avoidance mechanism has the advantage of parsimony in its ability to explain the results of both studies as well as the results for both older and younger adults in the present study. Finally, it also should be noted that our finding that preferences for attractive leaders are modulated by individual differences in health status is consistent with evidence that individual differences also modulate preferences for attractiveness in other contexts, such as mate choices (Little, Burt, Penton-Voak, and Perrett, 2001; Little, Jones, Penton-Voak, Burt, and Perrett, 2002; Little, Penton-Voark, Burt, and Perrett, 2002).

As noted above, the greater impact of health on older than younger adult preferences for more attractive candidates was partly due to the fact that older people with relatively few health problems showed no positive bias toward more attractive political candidates. This contrasts with abundant evidence for an attractiveness halo effect in all walks of life and suggests that the healthiest older adults may be unconcerned about disease threat or are sufficiently wise to ignore attractiveness when choosing among political candidates. The finding that individuals with more health problems, especially older people, are particularly vulnerable to an attractiveness halo effect in their vote choices suggests the value of “inoculating” these individuals against unwise decisions, as attractiveness is only weakly related to many qualities that are desirable in a politician.

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## References

Baron-Cohen S, Wheelwright S, Hill J, Raste Y, Plumb I. The “reading the mind in the eyes” test revised version: A study with normal adults, and adults with Asperger syndrome or high-functioning autism. Journal of Child Psychology and Psychiatry. 2001; 42:241–251. [PubMed: 11280420]

Benton, A.; Van Allen, M.; Hamsher, K.; Levin, H. Test of facial recognition manual. Iowa City: Benton Laboratory of Neuropsychology; 1983.

Boshyan J, Zebrowitz LA, Franklin RG Jr. McCormick CM, Carré JM. Age similarities in recognizing threat from faces and diagnostic cues. Journals of Gerontology, Series B: Psychological Sciences and Social Sciences. 2014; 69B:710–718.

Carbon CC, Grüter T, Grüter M, Weber JE, Lueschow A. Dissociation of facial attractiveness and distinctiveness processing in congenital prosopagnosia. Visual Cognition. 2010; 18:641–654.

Daniels, KA.; Toth, JP.; Jacoby, LL. The aging of executive functions. In: Bialystok, E.; Craik, FIM., editors. Lifespan cognition: Mechanisms of change. New York: Oxford University Press; 2006. p. 96-111.

Dion, KK. Cultural perspectives on facial attractiveness. In: Rhodes, G.; Zebrowitz, LA., editors. Facial attractiveness: Evolutionary, cognitive, and social perspectives. Westport, CT: Ablex; 2002. p. 239-260.

Eagly AH, Ashmore RD, Makhijani MG, Longo LC. What is beautiful is good, but…: A meta–analytic review of research on the physical attractiveness stereotype. Psychological Bulletin. 1991; 110:109–128.

Feingold A. Good-looking people are not what we think. Psychological Bulletin. 1992; 111:304–341.

Folstein MF, Folstein SE, McHugh PR. Mini–Mental State: A practical method for grading the cognitive state of patients for the clinician. Journal of Psychiatric Research. 1975; 12:189–198. [PubMed: 1202204]

Griffin AM, Langlois JH. Stereotype directionality and attractiveness stereotyping: Is beauty good or is ugly bad? Social Cognition. 2006; 24:187–206. [PubMed: 17016544]

Horn JL, Cattell RB. Age differences in fluid and crystallized intelligence. Acta Psychologica. 1967; 26:107–129. [PubMed: 6037305]

Hoss, RA.; Langlois, JH. Infants prefer attractive faces. In: Pascalis, O.; Slater, A., editors. The development of face processing in infancy and early childhood: Current perspectives. Hauppauge, NY: Nova Science Publishers; 2003. p. 27-38.

Ishihara, S. Test for colour-blindness. Kanehara Trading Company; 2010.

Lachman ME, Agrigoroaei S. Promoting functional health in midlife and old age: Long–term protective effects of control beliefs, social support, and physical exercise. PLOS ONE. 2010; 5:e13297. [PubMed: 20949016]

Landau MJ, Solomon S, Greenberg J, Cohen F, Pyszczynski T, Arndt J, Cook A. Deliver us from evil: The effects of mortality salience and reminders of 9/11 on support for President George W. Bush. Personality and Social Psychology Bulletin. 2004; 30:1136–1150. [PubMed: 15359017]

Langlois JH, Kalakanis L, Rubenstein AJ, Larson A, Hallam M, Smoot M. Maxims or myths of beauty? A meta-analytic and theoretical review. Psychological Bulletin. 2000; 126:390–423. [PubMed: 10825783]

Little AC, Burriss RP, Jones BC, Roberts SC. Facial appearance affects voting decisions. Evolution and Human Behavior. 2007; 28:18–27.

Little AC, Burt DM, Penton-Voak IS, Perrett DI. Self-perceived attractiveness influences human female preferences for sexual dimorphism and symmetry in male faces. Proceedings of the Royal Society of London Series B. 2001; 268:39–44. [PubMed: 12123296]

Little AC, Jones BC, Penton-Voak IS, Burt DM, Perrett DI. Partnership status and the temporal context of relationships influence human female preferences for sexual dimorphism in male face shape. Proceedings of the Royal Society of London Series B. 2002; 269:1095–1100. [PubMed: 12061950]

Little, AC.; Penton-Voak, IS.; Burt, DM.; Perrett, DI. Individual differences in the perception of attractiveness: How cyclic hormonal changes and self-perceived attractiveness influence female preferences for male faces. In: Rhodes, G.; Zebrowitz, L., editors. Advances in social cognition: Facial attractiveness. Vol. 1. Westport, CT: Ablex; 2002. p. 59-90.

Lleras-Muney A. The relationship between education and adult mortality in the United States. The Review of Economic Studies. 2005; 72:189–221.

Neuberg SL, Kenrick DT, Schaller M. Human threat management systems: Self–protection and disease avoidance. Neuroscience and Biobehavioral Reviews. 2011; 35:1042–1051. [PubMed: 20833199]

Park JH, Faulkner J, Schaller M. Evolved disease–avoidance processes and contemporary anti-social behavior: Prejudicial attitudes and avoidance of people with physical disabilities. Journal of Nonverbal Behavior. 2003; 27:65–87.

Piper BJ, Li V, Eiwaz MA, Kobel YV, Benice TS, Chu AM, Mueller ST. Executive function on the psychology experiment building language tests. Behavior Research Methods. 2012; 44:110–123. [PubMed: 21534005]

Rule NO, Ambady N, Adams RB Jr. Ozono H, Nakashima S, Yoshikawa S, Watabe M. Polling the face: Prediction and consensus across cultures. Journal of Personality and Social Psychology. 2010; 98:1–15. [PubMed: 20053027]

Salthouse TA. Speed and knowledge as determinants of adult age differences in verbal tasks. Journal of Gerontology. 1993; 48:29–36.

Salthouse TA. The processing-speed theory of adult age differences in cognition. Psychological Review. 1996; 103:403–428. [PubMed: 8759042]

Schaller M, Park JH. The behavioral immune system (and why it matters). Current Directions in Psychological Science. 2011; 20:99–103.

Shipley, WC. Institute of living scale. Los Angeles: Western Psychological Services; 1946.

Snijders, T.; Bosker, R. Multilevel analysis: An introduction to basic and advanced multilevel modeling. London: Sage; 1999.

Syddall HE, Martin HJ, Harwood RH, Cooper C, Aihie Sayer A. The SF-36: A simple, effective measure of mobility-disability for epidemiological studies. Journal of Nutrition, Health and Aging. 2009; 13:57–62.

Taylor, P.; Lopez, MH. Six Take-aways from the Census Bureau's voting report. Pew Research Center; 2013. http://www.pewresearch.org/fact-tank/2013/05/08/six-take-aways-from-the-census-bureaus-voting-report/

Todorov A, Mandisodza AN, Goren A, Hall CC. Inferences of Competence from Faces Predict Election Outcomes. Science. 2005; 308:1623–1626. [PubMed: 15947187]

Verhulst B, Lodge M, Lavine H. The attractiveness halo: Why some candidates are perceived more favorably than others. Journal of Nonverbal Behavior. 2010; 34:111–117.

Ware JE, Sherbourne CD. The MOS 36-Item Short-Form Health Survey (SF-36®): I. Conceptual framework and item selection. Medical Care. 1992; 30:473–483. [PubMed: 1593914]

Weise DR, Pyszczynski T, Cox CR, Arndt J, Greenberg J, Solomon S, Kosloff S. Interpersonal Politics: The Role of Terror Management and Attachment Processes in Shaping Political Preferences. Psychological Science. 2008; 19:448–455. [PubMed: 18466405]

White AE, Kenrick DT, Neuberg SL. Beauty at the ballot box: Disease threats predict preferences for physically attractive leaders. Psychological Science. 2013; 24:2429–2436. [PubMed: 24121414]

Zebrowitz LA, Collins MA. Accurate social perception at zero acquaintance: The affordances of a Gibsonian approach. Personality and Social Psychology Review. 1997; 1:203–222.

Zebrowitz LA, Fellous JM, Mignault A, Andreoletti C. Trait impressions as overgeneralized responses to adaptively significant facial qualities: Evidence from connectionist modeling. Personality and Social Psychology Review. 2003; 7:194–215. [PubMed: 12788687]

Zebrowitz LA, Franklin RG Jr. The attractiveness halo effect and the babyface stereotype in older and younger adults: Similarities, own-age accentuation, and the older adult positivity effect. Experimental Aging Research. 2014; 40:1–19. [PubMed: 24467697]

Zebrowitz LA, Franklin RG Jr. Boshyan J, Luevano V, Agrigoroaei S, Milosavljevic B, Lachman M. Older and younger adults' accuracy in discerning health and competence in older and younger Faces. Psychology and Aging. 2014; 29:454–468. [PubMed: 25244467]

Zebrowitz LA, Franklin RG Jr. Hillman S, Boc H. Older and younger adults' first impressions from faces: Similar in agreement but different in positivity. Psychology and Aging. 2013; 28:202–212. [PubMed: 23276216]

Zebrowitz LA, Hall JA, Murphy NA, Rhodes G. Looking smart and looking good: Facial cues to intelligence and their origins. Personality and Social Psychology Bulletin. 2002; 28:238–249.

Zebrowitz LA, Rhodes G. Sensitivity to 'bad genes' and the anomalous face overgeneralization effect: Accuracy, cue validity, and cue utilization in judging intelligence and health. Journal of Nonverbal Behavior. 2004; 28:167–185.

Zebrowitz LA, Wang R, Bronstad PM, Eisenberg D, Undurraga E, Reyes-García V, Godoy R. First impressions from faces among U.S. and culturally isolated Tsimane' people in the Bolivian rainforest. Journal of Cross-Cultural Psychology. 2012; 43:119–134.

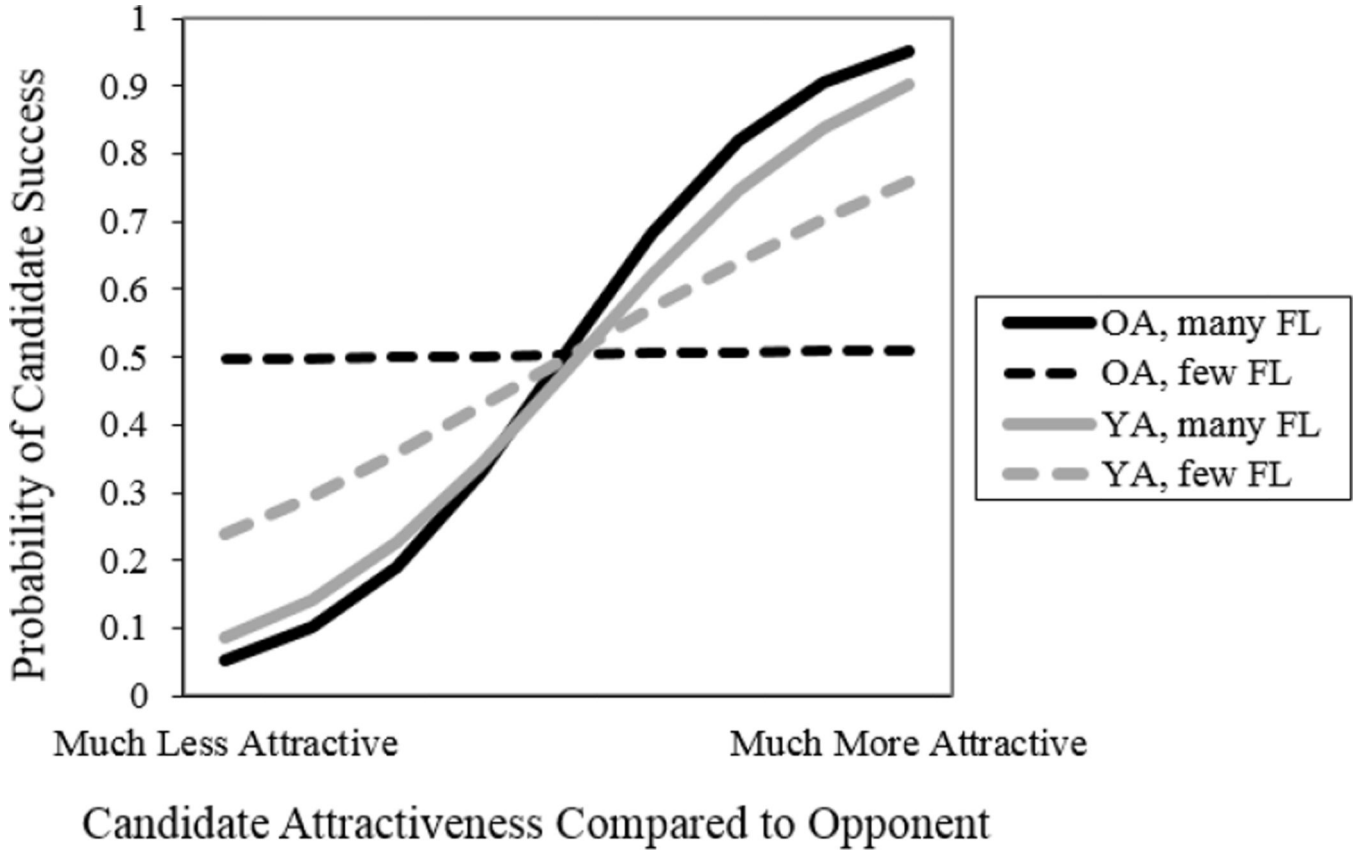


**Figure 1.**

Probability of candidate success as a function of candidate attractiveness, participant age (older adults, OA, and younger adults, YA), and participant functional limitations (FL), controlling participant education

*Note*. The y-axis reflects likelihood to vote for a particular candidate. The plot was derived using the regression equation in Table 2. Values for many and few FL are plotted by using values at +1 and −1 standard deviation from the mean, respectively. Values used in the plot for “Much less attractive” and “Much more attractive” ranged from −7 to +7 because these were the numbers which reflected the entire range of the rating scale used.

**Table 1**

Older and younger adults' scores on health and control measures

| | Older Adults | | Younger Adults | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Measure** | ***M*** | ***SD*** | ***M*** | ***SD*** | **CI Lower** | **CI Upper** | ***t*** | ***p*** | **Cohen's *d*** |
| Functional Limitations | 14.22 | 3.61 | 11.56 | 3.57 | .24 | 5.10 | 2.23 | < .05 | 0.74 |
| Education* | 4.61 | 1.68 | 2.39 | .50 | 1.38 | 3.06 | 5.36 | < .001 | 1.79 |
| Mars Letter Contrast Sensitivity (Mars Perceptrix, Chappaqua, NY) | 1.54 | .16 | 1.72 | .06 | .09 | .26 | 4.41 | < .001 | 1.49 |
| Ishihara's Test for Color Deficiency (Ishihara, 2010) | 12.89 | 2.97 | 13.67 | .48 | .66 | 2.22 | 1.10 | .280 | 0.37 |
| Benton Facial Recognition Test (Benton, Van Allen, Hamsher, and Levin, 1983) | 44.44 | 4.42 | 46.83 | 4.66 | .69 | 5.47 | 1.58 | .124 | 0.53 |
| Timed Pattern Comparison Test (Salthouse, 1993) | 27.44 | 5.33 | 40.67 | 6.87 | 9.05 | 17.39 | 6.45 | < .001 | 2.10 |
| Shipley Vocabulary Test (Shipley, 1946) | 35.17 | 4.25 | 32.67 | 2.87 | .04 | 4.95 | 2.07 | < .05 | 0.69 |
| Mind in the Eye Test (Baron-Cohen et al., 2001) | 25.52 | 3.97 | 26.94 | 2.94 | .98 | 3.81 | 1.20 | .238 | 0.41 |
| Wisconsin Card Sorting Test the Berg Card Sort Task (BCST validated by Piper et al., 2012) | 28.41 | 10.02 | 36.89 | 4.70 | 3.14 | 13.81 | 3.23 | < .001 | 1.08 |

*Note*. *df* = 36 for each *t* test comparison;

*Level of Education was coded for highest level attained: 1 – no high school diploma, 2 – high school diploma, 3 – some college, 4 – Bachelor's degree, 5 – some graduate work, 6 – Master's degree, 7 – Doctorate

**Table 2**

Regression coefficients for multi-level logistic model predicting candidate preference from candidate attractiveness and participant age, functional limitations, and education

| Variable | Beta | SE | CI Lower | CI Upper | *z* | *p* | Effect size* | SD |
|---|---|---|---|---|---|---|---|---|
| Intercept | −0.114 | 0.281 | −0.665 | 0.437 | 0.41 | 0.685 | | |
| Main Effect of Attractiveness | 0.448 | 0.079 | 0.293 | 0.603 | 5.64 | < .001 | 3.79 | 4.14 |
| Main Effect of Subject Age | 0.195 | 0.503 | −0.791 | 1.181 | 0.39 | 0.699 | 0.20 | 0.50 |
| Main effect of Functional Limitations | −0.003 | 0.019 | −0.040 | 0.034 | 0.16 | 0.876 | −0.02 | 3.75 |
| Education | 0.082 | 0.055 | −0.026 | 0.190 | 1.48 | 0.139 | 0.27 | 1.59 |
| Attractiveness × Subject Age | −0.484 | 0.116 | −0.712 | −0.256 | 4.17 | < .001 | −6.61 | 6.69 |
| Attractiveness × Functional Limitations | −0.012 | 0.007 | −0.026 | 0.002 | 1.94 | 0.052 | −1.35 | 55.19 |
| Subject Age × Functional Limitations | −0.005 | 0.033 | −0.070 | 0.060 | 0.17 | 0.868 | −0.10 | 10.24 |
| Three-way Interaction | 0.035 | 0.009 | 0.017 | 0.052 | 3.84 | < .001 | 6.75 | 95.88 |

*Note.* Total *df* = 1855; election *df* = 53; subject *df* = 35;

*Effect sizes are calculated as standardized regression coefficients using the method described in Snijders and Bosker (1999), applying standardized regression coefficients to multilevel models.