



FlashReport

Competence ratings in US predict presidential election outcomes in Bulgaria

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HIGHLIGHTS

- ▶ We examine whether judgments of faces could predict Presidential election results.
- ▶ US participants' hypothetical choices paralleled actual Bulgarian election outcomes.
- ▶ We found strong correlations between facial competence and election outcomes.
- ▶ Results persisted across the full range of 18 candidates.

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ABSTRACT

Although democracies should ideally elect leaders based on their abilities, voters are often biased by seemingly unrelated factors, such as a candidate's appearance. Prior work examining the relations between election outcomes and appearance has primarily focused on a restricted range of the top candidates, examined in pairwise comparisons. In the present study, we tested whether the predictive ability of ratings based on facial appearance would extend to a wider range of candidates. Specifically, we examined whether individuals in the US could predict outcomes in the 2011 Bulgarian presidential elections by evaluating the facial appearance of 18 candidates. The large number of candidates naturally running for the high level office allowed us to accurately test the strength of the relationship between judgments of facial appearance and election outcomes across a broad range of faces. We found that a strong correlation between ratings of facial competence and election outcomes persisted across the full range of candidates, and that US participants' hypothetical choices paralleled actual Bulgarian election outcomes. We demonstrated that competence ratings were more effective at predicting election outcomes than judgments on a variety of other characteristics deemed important by Bulgarian voters as well as ratings of attractiveness. Furthermore, judgments of competence largely drove the correlation between hypothetical and actual votes.

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Introduction

In democratic states, where broad swaths of a country's population are responsible for selecting leaders, voters should be able to incorporate relevant cues about politicians into their voting decisions while disregarding irrelevant factors. The assumption that voters are able to do so helps enable society to entrust average individuals with consequential decisions. Ideally, voters would make decisions based on leaders' ability alone. However, a growing body of research demonstrates that voters often rely on heuristics when evaluating candidates, leading a range of other factors to predict strongly voter choices and election outcomes (e.g., Ballew & Todorov, 2007; Lau & Redlawsk, 2001; Lawson, Lenz, Baker, & Myers, 2010; Todorov, Mandisodza, Goren, & Hall, 2005). While reliance on certain cues

such as political party affiliation may help voters compensate for insufficient knowledge (e.g., Campbell, Converse, Miller, & Stokes, 1960), other heuristics may be less informative.

For example, people often and spontaneously base inferences about underlying traits on physical appearance (e.g., Hall, Goren, Chaiken, & Todorov, 2009; Hassin & Trope, 2000; Montepare & Zebrowitz, 1998; Todorov, Said, Engell, & Oosterhof, 2008; Todorov, Said, & Verosky, 2011; Zebrowitz & Montepare, 2008). In the context of political choices, trait evaluations based exclusively on appearances have been shown to correlate strongly with election outcomes (see Hall et al., 2009; Olivola & Todorov, 2010 for reviews).

Competence is considered to be one of the most important traits for political candidates to possess (Miller, Wattenberg, & Malanchuk, 1986; Trent, Mongeau, Trent, Kendall, & Cushing, 1993). Consistent with this evaluation, competence ratings (and those of related traits such as intelligence and leadership) are determined solely by headshots of candidates have consistently been found to predict election outcomes, and to be the best predictor among a wide variety of traits examined in a similar fashion, including attractiveness (e.g., Olivola &

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Todorov, 2010; Todorov et al., 2005). Given the true value that voters place on competence in their leaders, voters may genuinely be searching for legitimate markers of this trait. However, rather than relying on substantive information such as candidate records, voters may unintentionally be turning to heuristic cues such as appearance to learn about a candidate's competence (Lenz & Lawson, 2011). For example, although attractiveness should not influence a politician's ability, ratings of attractiveness have frequently been tied to election outcomes (e.g., Berggren, Jordahl, & Poutvaara, 2010; King & Leigh, 2009; Langlois et al., 2000). Since impressions are formed rapidly upon seeing a candidate's face (e.g., Bar, Neta, & Linz, 2006; Locher, Unger, Sociadade, & Wahl, 1993; Todorov, Pakrashi, & Oosterhof, 2009; Willis & Todorov, 2006), these impressions may have lasting influence on decisions, even without voters' awareness.

Existing literature on the role of evaluations of facial competence in predicting election outcomes has focused primarily on comparing top contenders in historical elections. However, this approach limits the set of relevant candidates to those already determined to be frontrunners. In most cases, the candidates being compared have been prescreened by major political parties before qualifying as candidates in the race (and consequently as stimuli in the study). Focusing on this narrow set of faces may limit the generalizability of results to an artificial set of choices predetermined by the major political parties. There is evidence that parties will put their best looking candidates in close elections. This would argue that part of the competence effects are driven by strategic party decisions rather than by voters' choices on the ground (see Atkinson, Enos, & Hill, 2009). This is quite unlikely in the present case since the threshold for inclusion in the election is so low, which allows us to understand voters' decisions more directly. Determining whether the same pattern persists further down the spectrum has practical importance as well. For example, this could be relevant when considering a vice presidential candidate's influence on a ballot, or a political system with more complex voting rules.

In this paper, we examine how US participants' competence ratings correlate with actual votes in the 2011 Bulgarian presidential elections. This research contributes to existing literature in a variety of ways. In particular, the Bulgarian presidential elections are worthy of study because candidates face minimal obstacles to appearing on the ballot, even though they are competing for a very high level office. Consequently, a large number of individuals run for president in any given election year; 18 candidates in the year under investigation. This large number allows for variability in facial features that provides new insight into how strongly ratings of competence predict election outcomes across a wide range of candidates. Additionally, we surveyed Bulgarian citizens on their opinions about the characteristics they considered most important in their leaders to determine which characteristics to examine. This allowed for a direct test of the predictive ability of competence ratings relative to a deliberately chosen set of the most relevant characteristics. The current research also circumvents the problem of participants' recognizing candidates running for the high-level political office by relying on a culturally and geographically distinct population, and by examining judgments of facial characteristics before the actual elections.

Methods

Participants

We recruited 223 US residents (average age 32.3, 50% male) through Amazon.com's Mechanical Turk website (www.mturk.com), who participated for payment.

Selection of relevant characteristics

To understand which characteristics Bulgarian voters valued in their president, we first asked 140 respondents from 7 regions in Bulgaria

(differing in age, gender and education) to list which attributes they considered to be most important in their president. We considered an attribute to warrant further investigation if more than 25 participants spontaneously listed it. Second, in a face-to-face survey, we asked a representative sample of 1020 Bulgarian respondents to indicate how important each attribute was for the Bulgarian president to have on a 5-point scale. Four attributes that were consistently rated as important by Bulgarian respondents and could be easily translated for American respondents were selected for the study: competence, dominance, honesty/incorruptibility, and likability. We also included attractiveness, since the relationship between this attribute and voting behavior has been commonly studied in the past.

Stimuli and procedure

We obtained neutral headshots for each of the 18 candidates in the 2011 Bulgarian presidential elections. These images were standardized in size, converted to black-and-white, and placed on gray backgrounds (see Todorov et al., 2005 for details).

Participants were randomly assigned to make one of six evaluations.¹ In five cases, participants were told:

You will be presented with a series of pictures of people. We are interested in your first impression of these people. For each person, please indicate your impression of how [competent/ dominant/ likeable/ honest and incorruptible/ attractive] he or she is on a scale from 1 (not at all) to 7 (extremely). There are no right or wrong answers. We are interested in your first impressions.

Each participant saw only one of the characteristics in brackets above. For the sixth type of evaluation, participants were told to imagine that the pictures were of candidates for political office, and to indicate how likely they would be to vote for each one on a scale from 1 (not at all likely) to 7 (extremely likely). Participants in all conditions rated unlabeled images of each of the 18 candidates' faces presented one at a time in a random order, see Fig. 1.

Before completing the study, participants stated whether they recognized anyone in the images they had rated, and responded to demographic questions.

Results

Prior to analysis, we discarded data from seven participants who reported recognizing at least one person, two for being repeat survey-takers, and six for failing to complete the study. Results remain consistent, with significant values maintained, when these participants are included. We computed average ratings across the remaining participants for each of the presidential candidates on each characteristic evaluated, see Table 1. A minimum of 32 participants' judgments was averaged to determine each candidate characteristic rating, with Cronbach's α ranging from 0.77 to 0.95 across characteristics.

To analyze the data, we examined correlations between candidate ratings on each characteristic as judged by US participants and actual election outcomes. Facial competence ratings were significantly correlated with election outcomes, measured by continuous ratings of competence and percent of votes received ($r=0.53$, $p=0.024$). None of the other evaluated characteristics (attractiveness, dominance, honesty, likeability) were significantly correlated with votes received, see Table 2. In addition to competence ratings, US participants' likelihood of voting for "hypothetical" candidates based on their images was also significantly correlated with real election outcomes ($r=0.55$, $p=0.017$).

¹ Attractiveness ratings were collected separately, after the other attributes, out of concern that this relationship could account for the relationship between competence and votes.

How competent does this person look?

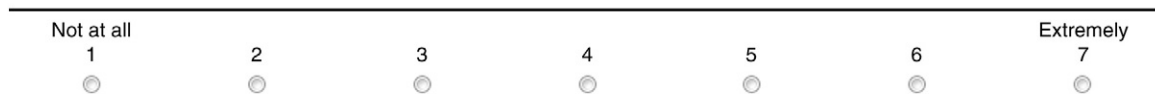


Fig. 1. Example screen shot from an experimental trial measuring candidates' perceived competence.

However, because the votes were heavily skewed (the top three candidates received 83% of the vote), these analyses may misstate the relationship between perceived competence and votes. An alternative analysis is to correlate ratings with candidate rank, based on the number of votes they received in the actual election. Findings remained consistent, with the ranked measure of competence ($r = -0.77, p < 0.001$) and hypothetical vote ($r = -0.70, p = 0.001$) showing an even stronger correlation with actual election outcomes than their continuous counterparts did, see Fig. 2.^{2,3} Computing these correlations using the rank of the participant ratings of facial characteristics produces essentially the same results. Again, among the measures we collected, facial competence and hypothetical votes were the only ones that correlated significantly with election outcomes.

Another alternative is to conduct the same analyses excluding the top three candidates. Because these candidates have in some ways been pre-screened by their parties, we wanted to understand whether the observed patterns would persist across the full spectrum, and in particular among the less successful candidates. Therefore, we conducted the initial (continuous) analysis excluding the top three candidates entirely. Again, the results replicated, with ratings of competence ($r = 0.64, p = 0.011$) and hypothetical vote ($r = 0.51, p = 0.054$) being the only significant, or marginally significant, predictors. Not surprisingly, the results were nearly identical for the correlations on continuous and ranked measures, because the votes were not skewed.

Consistent with prior research (see Olivola & Todorov, 2010), while attractiveness, honesty, and likeability did not predict actual vote share, these traits were significant predictors of hypothetical vote share within the experiment ($r = 0.82, p < 0.001$; $r = 0.57, p = 0.014$; and $r = 0.62, p = 0.006$ respectively), although competence was even more closely tied to hypothetical vote ($r = 0.87, p < 0.001$).

² Note that the correlation coefficient reported is negative, since a lower rank indicates a higher number of votes (i.e., the winning candidate received a rank of 1).

³ Individual participants' competence ratings have been correct in predicting election outcomes about 55% of the time in prior, binary choice studies (e.g., Ballew & Todorov, 2007). Examining a larger range of candidates, we find participant-level correlations of $r = .44$, corresponding to a much higher, 72% accuracy rate (see Rosenthal & Rubin, 1982).

Wald tests, used to test the difference between nested models, confirmed that competence and hypothetical votes are each significantly stronger predictors of actual vote rank across all candidates than are the other evaluated characteristics ($\chi^2(4) = 25.04, p < 0.001$; $\chi^2(4) = 81.44, p < 0.001$, respectively). Importantly, structural equation modeling provided strong evidence that competence causally drives the correlation between hypothetical and actual votes. We entered each of the measured characteristics as predictors in models with hypothetical and actual election outcomes as dependent variables and estimated this system of equations using a robust estimate of the variance,⁴ see Table 3. This analysis determined that competence was a significant predictor of both hypothetical vote ($\beta = 0.68, z = 7.06, p < 0.001$) and actual rank ($\beta = -6.80, z = 5.51, p < 0.001$). Importantly, the covariance of the disturbances was non-significant ($\beta = -0.28, z = 1.28, p = 0.200$), indicating that there is no omitted common cause predicting both of these dependent variables (see Antonakis, Bendahan, Jacquart, & Lalive, 2010).

Conclusions

In this paper, we found that ratings of facial appearance generated by a sample of US participants were highly correlated with actual votes received by each of the 18 candidates in the 2011 Bulgarian presidential elections. Consistent with prior research, people across cultures had a shared understanding of what they would like their leaders to look like, as demonstrated by the strong relationship between hypothetical and actual vote share. Among specific characteristics examined, perceived competence was the most strongly correlated with election outcomes. Not only was perceived competence the only trait significantly correlated with actual election outcomes, but it was also underlying the relationship between hypothetical and actual election outcomes. This finding held despite the fact that the alternative trait judgments were specifically selected to target both characteristics that Bulgarian voters valued most in their president and attractiveness,

⁴ Using Stata's "sem" command.

Table 1
Bulgarian presidential candidates' actual vote share in the 2011 elections and average ratings computed across US participants for each trait evaluated.

Candidate initials	Actual vote % of total	Hypothetical Vote 1–7 likelihood	Attractiveness 1–7 rating	Competence 1–7 rating	Dominance 1–7 rating	Honesty 1–7 rating	Likeability 1–7 rating
RP	40.13	5.09	3.88	5.56	3.78	4.63	4.74
IK	28.84	4.51	3.23	5.75	3.86	3.94	4.00
MKu	14.06	4.80	4.05	5.88	4.14	5.03	4.24
VS	3.66	4.40	3.88	5.50	5.59	3.69	3.29
SSo	2.57	2.94	1.98	4.28	3.89	4.00	3.59
RH	1.92	4.09	3.13	5.09	4.73	3.41	4.18
AS	1.88	3.97	2.45	5.34	3.05	4.28	3.68
SV	1.52	4.60	3.95	4.88	3.81	4.66	5.24
SSa	1.28	4.17	3.23	5.56	5.41	3.91	3.59
KKa	0.99	3.66	2.55	4.75	4.16	3.47	3.38
AP	0.98	2.91	2.63	5.03	5.76	2.69	2.59
Mka	0.94	4.77	4.73	5.34	4.65	4.38	4.06
NN	0.30	2.71	2.28	3.66	3.70	3.47	2.71
VY	0.22	2.20	2.25	3.63	4.81	2.84	2.56
PC	0.22	3.49	1.85	4.09	2.65	4.81	5.09
DK	0.21	3.66	2.95	4.44	4.46	3.88	3.15
AC	0.19	2.97	3.63	4.16	4.73	2.69	3.26
NV	0.17	2.34	2.05	3.91	3.08	4.44	3.82
N		35	39	34	37	32	32
Cronbach's α		0.81	0.95	0.81	0.81	0.79	0.77

Table 2
Correlation coefficients describing relationships between continuous measures of traits judged by US participants and continuous and ranked share of votes received in the 2011 Bulgarian presidential elections for each of the 18 candidates. Note. The correlation coefficients for the candidates' ranks reverse, because vote share and ranks are negatively correlated (i.e., the winning candidate received a rank of 1).

	All candidates		Excluding top 3 candidates	
	Continuous	Ranked	Continuous	Ranked
Attractiveness	0.34	−0.38	0.27	−0.21
Competence	0.53*	−0.77**	0.64*	−0.65**
Dominance	−0.15	−0.09	0.29	−0.26
Honesty/ incorruptability	0.33	−0.31	0.11	−0.08
Likeability	0.37	−0.33	0.11	−0.14
Hypothetical votes	0.55*	−0.70**	0.51*	−0.54*

* $p \leq .05$; ** $p \leq .01$.

which has received much prior attention (e.g., Berggren et al., 2010; King & Leigh, 2009; Langlois et al., 2000).

The results reported here add to existing literature showing the predictive value of competence judgments in cross-cultural evaluations. In one demonstration, Swiss childrens' choices of which French parliamentary candidate to captain their boat in a game correlated strongly with actual election outcomes (Antonakis & Dalgas, 2009). Research

has also examined more diverse samples, including calling upon American and Indian participants to evaluate images of Mexican and Brazilian politicians (Lawson et al., 2010), Americans, French, and others predicting Finnish outcomes (Berggren et al., 2010), and Americans predicting Australian outcomes (King & Leigh, 2009).

This paper contributes to existing literature in several important ways. It is the first in our knowledge to examine all individuals running in a single race with many candidates. This methodology allows us to report a more representative relationship between competence judgments and election outcomes than in previous examinations, and it minimizes possible bias in understanding individual-level decision making that results from political party pre-screening of candidates (and subsequent experimental stimuli). Additionally, we demonstrate both that judgment of facial competence is a better predictor of election outcomes than other relevant characteristics and that this judgment drives correlations between hypothetical and actual votes. Importantly, we show that heuristic reasoning as manifested in ratings of facial competence (as a proxy for actual competence) serves as a very powerful cue; it not only serves as a substitute for actual competence, but also overpowers evaluations of other characteristics deemed important for leaders. Overall, this study provides important evidence highlighting the role of facial competence and corroborating the robust ability to predict election outcomes from facial appearance alone.

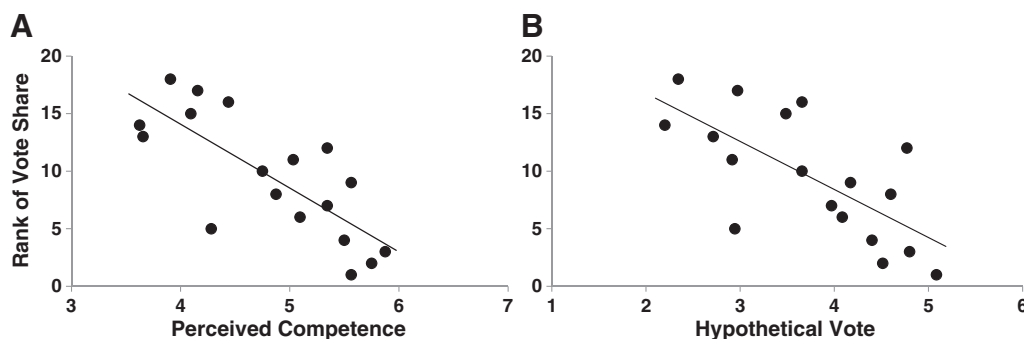


Fig. 2. Scatter plots of the rank of each candidate's actual vote share in the 2011 Bulgarian presidential election against (A) perceived candidate competence and (B) hypothetical vote share. Rank of actual vote share is measured among all 18 candidates, where 1 is the best. Perceived competence and hypothetical vote share are measured on 1 to 7 scales where 7 is the most competent and most likely to receive the participants' votes respectively.

Table 3

Results of regression models with attractiveness, competence, dominance, honesty and likeability as predictors of actual vote rank and hypothetical votes. These models demonstrate the role of competence as a driver of both hypothetical votes and actual election outcomes.

	β	Std. error	Z	p
<i>Actual rank</i>				
Attractiveness	1.31	1.69	0.77	0.439
Competence	−6.80	1.24	−5.51	0.000
Dominance	0.67	1.69	0.40	0.692
Honesty	1.02	1.96	0.52	0.602
Likeability	−0.84	1.49	−0.57	0.572
Constant	34.69	10.38	3.34	0.001
<i>Hypothetical vote</i>				
Attractiveness	0.37	0.09	4.09	0.000
Competence	0.68	0.10	7.06	0.000
Dominance	−0.09	0.09	−1.01	0.312
Honesty	0.07	0.18	0.39	0.699
Likeability	0.26	0.11	2.30	0.021
Constant	−1.54	0.74	−2.08	0.038

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References

- Antonakis, J., Bendahan, S., Jacquart, P., & Lalive, R. (2010). On making causal claims: A review and recommendations. *The Leadership Quarterly*, 21(6), 1086–1120.
- Antonakis, J., & Dalgas, O. (2009). Predicting elections: Child's play! *Science*, 323, 1183.
- Atkinson, M. D., Enos, R. D., & Hill, S. J. (2009). Candidate faces and election outcomes: Is the face-vote correlation caused by candidate selection? *Quarterly Journal of Political Science*, 4, 229–249.
- Ballew, C. C., & Todorov, A. (2007). Predicting political elections from rapid and unreflective face judgments. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 17948–17953.
- Bar, M., Neta, M., & Linz, H. (2006). Very first impressions. *Emotion*, 6, 269–278.
- Berggren, N., Jordahl, H., & Poutvaara, P. (2010). The looks of a winner: Beauty and electoral success. *Journal of Public Economics*, 94, 8–15.
- Campbell, A., Converse, P., Miller, W., & Stokes, D. (1960). *The American voter*. New York: John Wiley and Sons, Inc.
- Hall, C. C., Goren, A., Chaiken, S., & Todorov, A. (2009). Shallow cues with deep effects: Trait judgments from faces and voting decisions. In E. Borgida, J. L. Sullivan, & C. M. Federico (Eds.), *The political psychology of democratic citizenship* (pp. 73–99). New York: Oxford University Press.
- Hassin, R., & Trope, Y. (2000). Facing faces: Studies on the cognitive aspects of physiognomy. *Journal of Personality and Social Psychology*, 78, 837–852.
- King, A., & Leigh, A. (2009). Beautiful politicians. *Kyklos*, 62, 579–593.
- Langlois, J. H., Kalakanis, L., Rubenstein, A. J., Larson, A., Hallamm, M., & Smoot, M. (2000). Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin*, 126(3), 390–423.
- Lau, R. R., & Redlawsk, D. P. (2001). Advantages and disadvantages of cognitive heuristics in political decision making. *American Journal of Political Science*, 45, 951–971.
- Lawson, C., Lenz, G. S., Baker, A., & Myers, M. (2010). Looking like a winner: Candidate appearance and electoral success in new democracies. *World Politics*, 62, 561–593.
- Lenz, G. S., & Lawson, C. (2011). Looking the part: Television leads less informed citizens to vote based on candidates' appearance. *American Journal of Political Science*, 55, 574–589.
- Locher, P., Unger, R., Sociedade, P., & Wahl, J. (1993). At first glance: Accessibility of the physical attractiveness stereotype. *Sex Roles*, 28, 729–743.
- Miller, A., Wattenberg, M., & Malanchuk, O. (1986). Schematic assessments of presidential candidates. *American Political Science Review*, 80, 521–540.
- Montepare, J. M., & Zebrowitz, L. A. (1998). Person perception comes of age: The salience and significance of age in social judgments. *Advances in Experimental Social Psychology*, 30, 93–161.
- Olivola, C. Y., & Todorov, A. (2010). Elected in 100 milliseconds: Appearance-based trait inferences and voting. *Journal of Nonverbal Behavior*, 34, 83–110.
- Rosenthal, R., & Rubin, D. B. (1982). A simple, general purpose display of magnitude of experimental effect. *Journal of Educational Psychology*, 74(2), 166.
- Todorov, A., Mandisodza, A. N., Goren, A., & Hall, C. (2005). Inferences of competence from faces predict election outcomes. *Science*, 308, 1623–1626.
- Todorov, A., Pakrashi, M., & Oosterhof, N. N. (2009). Evaluating faces on trustworthiness after minimal time exposure. *Social Cognition*, 27, 813–833.
- Todorov, A., Said, C. P., Engell, A. D., & Oosterhof, N. N. (2008). Understanding evaluation of faces on social dimensions. *Trends in Cognitive Sciences*, 12, 455–460.
- Todorov, A., Said, C. P., & Verosky, S. C. (2011). Personality impressions from facial appearance. In A. Calder, J. V. Haxby, M. Johnson, & G. Rhodes (Eds.), *Handbook of face perception* (pp. 631–652). Oxford University Press.
- Trent, J., Mongeau, P., Trent, J., Kendall, K., & Cushing, R. (1993). The ideal candidate: A study of the desired attributes of the public and the media across two presidential campaigns. *American Behavioral Scientist*, 37, 225–239.
- Willis, J., & Todorov, A. (2006). First impressions: Making up your mind after 100 ms exposure to a face. *Psychological Science*, 17, 592–598.
- Zebrowitz, L. A., & Montepare, J. M. (2008). Social psychological face perception: Why appearance matters. *Social and Personality Psychology Compass*, 2, 1497–1517.