

# Competence Judgments Based on Facial Appearance Are Better Predictors of American Elections Than of Korean Elections



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## Abstract

Competence judgments based on facial appearance predict election results in Western countries, which indicates that these inferences contribute to decisions with social and political consequence. Because trait inferences are less pronounced in Asian cultures, such competence judgments should predict Asian election results less accurately than they do Western elections. In the study reported here, we compared Koreans' and Americans' competence judgments from face-to-trait inferences for candidates in U.S. Senate and state gubernatorial elections and Korean Assembly elections. Perceived competence was a far better predictor of the outcomes of real elections held in the United States than of elections held in Korea. When deciding which of two candidates to vote for in hypothetical elections, however, Koreans and Americans both voted on the basis of perceived competence inferred from facial appearance. Combining actual and hypothetical election results, we conclude that for Koreans, competence judgments from face-to-trait inferences are critical in voting only when other information is unavailable. However, in the United States, such competence judgments are substantially important, even in the presence of other information.

## Keywords

face perception, cross-cultural differences, open data

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Political elections are the cornerstone of modern democracy, yet voter decisions can be predicted by cues in candidate's faces that signal traits (Todorov, Mandisodza, Goren, & Hall, 2005). The tendency to infer traits from the look of a face is well documented (Oosterhof & Todorov, 2008; Todorov, Baron, & Oosterhof, 2008). People make face-to-trait inferences with remarkable speed (Todorov, Pakrashi, & Oosterhof, 2009) and consensus (Oosterhof & Todorov, 2008). Despite the complexity of the face as a visual stimulus, children as young as 3 years old assign traits to faces in agreement with adult judgments (Cogsdill, Todorov, Spelke, & Banaji, 2014). Adding to the generality of these findings, recent studies show high cross-cultural consensus in face-to-trait inferences (Rule et al., 2010; Sussman, Petkova, & Todorov, 2013).

In contrast to this cross-cultural agreement, the importance of traits in social perceptions varies substantially across cultures (Choi & Nisbett, 1998; Choi, Nisbett, & Norenzayan, 1999). In independent cultures (e.g., the United States), people are believed to be defined by their internal attributes, such as traits (Markus & Kitayama, 1991). Moreover, traits are expected to motivate corresponding behaviors (Na & Kitayama, 2012). Therefore, once traits are inferred from someone's face, the inferred traits should be considered relevant when making

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important judgments about the person (e.g., whether to vote for the person). Consistent with this reasoning, perceived competence inferred from faces of political candidates predicts election outcomes in Western countries, including the United States (Todorov et al., 2005), France (Antonakis & Dalgas, 2009), and Switzerland (Antonakis & Dalgas, 2009).

However, in interdependent cultures (e.g., East Asia), people are believed to be embedded in social relations (Markus & Kitayama, 1991). Therefore, social contexts, rather than traits, are expected to motivate behaviors (Choi & Nisbett, 1998; Na & Kitayama, 2011). Moreover, traits are conceived of as being malleable and thus subject to constant change (Choi & Choi, 2002; Suh, 2002). Consequently, even when traits are inferred from someone's face, the inferred traits need not be a critical factor when making judgments about the person. Thus, face-to-trait inferences about competence should predict real election outcomes in interdependent cultures less accurately than in independent cultures.

We tested these assertions by asking Koreans and Americans to make relative competence judgments about pairs of political candidates from real Korean and U.S. elections. Next, participants decided which of the two candidates they would vote for if the pictures showed candidates in *hypothetical* political elections. Voters in real elections have access to the political positions and social affiliations of candidates, in addition to their appearance. Thus, a cross-cultural comparison of the predictability of real and hypothetical elections from competence judgments based on facial appearance can reveal differences in the relative importance of trait inferences in social decision making for the two cultures.

We made three predictions. First, we predicted cross-cultural consensus in competence judgments on the basis of previous work indicating high cross-cultural consensus in the perception of traits from faces (Rule et al., 2010; Sussman et al., 2013). Unlike previous cross-cultural work (e.g., Rule et al., 2010), in the current study, participants rated politicians from two cultures to allow for a cross-cultural comparison on the strength of association between perceived competence and election outcomes. Second, despite this consensus, we expected that the extent to which perceived competence predicted actual election outcomes would vary with the location of the election. Specifically, because the importance of traits in social perception is greater in independent cultures than in interdependent cultures (Choi et al., 1999), we predicted that perceived competence should be a better predictor of American election results than of Korean election results. Third, we expected participants from either culture to vote on the basis of perceived competence in hypothetical elections when the faces of the

candidates were the only information made available to the participants.

## Method

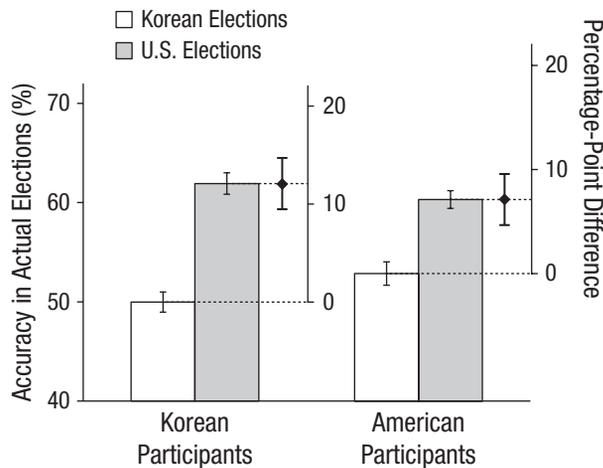
### *Participants*

American participants were 64 undergraduates of European heritage (44 women, 20 men) at The University of Texas at Dallas. Korean participants were 67 undergraduates (34 women, 33 men) at Seoul National University. These two schools are comparable in that both are public universities located in large cities. American participants received course credits, whereas Korean participants were paid approximately \$10. The exact number of participants was not predetermined, but we tried to recruit at least 50 participants in each culture. Post hoc power analyses showed that power for detecting differences in predictability of the results of American and Korean elections on the basis of competence judgments was acceptable for participants from both cultures, power  $(1 - \beta) > .99$ .

### *Procedure*

Pairs of images of political candidates' faces were prepared for each election site. In each pair, the winner of a political election was coupled with the runner-up in the same election. For Korean politicians, we used faces of candidates in an Assembly election. We selected 45 pairs of candidates (43 male pairs, 2 female pairs) using publicly available images. We excluded famous politicians recognized by pretest participants and pairs of different genders. For Americans politicians, we used faces of candidates in gubernatorial and senatorial elections (Ballew & Todorov, 2007; Olivola & Todorov, 2010; Todorov et al., 2005) from a previously established database (<http://tlab.princeton.edu/databases/politicians/>). We selected 45 pairs of candidates (43 male pairs, 2 female pairs) at random. We included only pairs of European American candidates of the same gender. All photographs were black-and-white images of equal size.

Each of 90 pairs of images of political candidates was presented on a computer screen, and participants indicated which of each pair they perceived to be more competent. Next, the same pairs of political candidates were shown again and participants indicated which of each pair they would vote for if the pictures showed candidates in a hypothetical election. For both judgments, Korean participants evaluated American candidates first and then rated Korean candidates, whereas the order was counterbalanced among American participants. The order of judgments did not show any significant effect among American participants. We also note that the order within each election site was completely randomized.



**Fig. 1.** Accuracy of perceived competence in predicting the actual results of elections in Korea and the United States, separately for competence judgments of Korean and American participants. Error bars represent  $\pm 1$  SE. The difference in accuracy for the two election sites (with 95% confidence interval) is shown on a floating difference axis at the right of the bars for each participant group.

## Results

### *Consensus in perceived competence*

First, we examined whether there was consensus among participants in making competence judgments for in-group faces (i.e., American candidates for American participants and Korean candidates for Korean participants) and for out-group faces. Toward this end, intraclass correlation coefficients (ICCs) were calculated for American and Korean candidates. Regardless of participant's culture and election location, correlations were high—American participants: ICC = .84, 95% confidence interval (CI) = [.77, .90], for American candidates and ICC = .91, 95% CI = [.87, .95], for Korean candidates; Korean participants: ICC = .92, 95% CI = [.89, .95], for American candidates and ICC = .94, 95% CI = [.91, .96], for Korean candidates, all  $ps < .001$ . Moreover, correlations were also substantial even when the data for American and Korean participants were collapsed—American candidates: ICC = .93, 95% CI = [.90, .96]; Korean candidates: ICC = .96, 95% CI = [.93, .97], all  $ps < .001$ . Thus, high consensus was observed for in-group as well as out-group faces, indicating stability of the facial features used to assess competence across the two cultures.

### *Prediction of outcomes in actual elections in Korea and the United States*

Next, we investigated whether perceived competence, for which there was consensus within and between cultures, could predict election results in the United States

and Korea. The percentage of successfully elected candidates rated as more competent was calculated separately for each participant for each election location. These scores were submitted to a 2 (participant's culture: Koreans vs. Americans)  $\times$  2 (election location: Korea vs. United States) mixed analysis of variance (ANOVA) with election location as a within-subjects factor. There was a strong main effect of election location such that perceived competence was a better predictor of the outcome of American elections than of Korean elections,  $F(1, 129) = 115.98, p < .001, \eta_p^2 = .47$ . Note that the significance of this election-location effect was driven by actual voters in real elections, not by participants in the present research. More specifically, this finding suggests that American voters in real elections voted for the competent-looking candidates, whereas this tendency was significantly weaker among Korean voters in real elections. The strength of this effect is illustrated by the means (Korean elections: 51.38%; American elections: 61.13%) and confidence intervals associated with the effect, difference = 9.75 percentage points, 95% CI = [7.94, 11.57]. There was no effect of participants' culture,  $F < 1$ . There was, however, a Participant's Culture  $\times$  Election Location interaction,  $F(1, 129) = 6.17, p = .014, \eta_p^2 = .05$ . Although the interaction was statistically significant, the 95% CIs did not clearly separate the interaction means. We discuss this interaction in the next section.

**Korean participants.** Next, we examined the consistency of the main effect within each culture. First, among Koreans, candidates who were perceived as more competent won in 61.92% of American elections but in only 49.98% of Korean elections,  $t(66) = 9.08, p < .001$  (Fig. 1). The effect size for the difference (11.94 percentage points) was large,  $d = 1.11$ , and even the lower limit of the 95% CI was larger than zero, 95% CI = [9.32, 14.57]. Moreover, Koreans' competence judgments predicted the U.S. election results at a level better than chance (i.e., 50%), difference = 11.92 percentage points,  $d = 2.73, 95\% \text{ CI} = [9.77, 14.07]$ . However, Koreans' competence judgments predicted Korean election results at chance levels, difference =  $-0.02$  percentage points, 95% CI =  $[-2.05, 2.01]$ . We also note that the difference from chance for Koreans predicting American election results was significant,  $t(66) = 11.08, p < .001$ . This was not the case for Koreans predicting Korean election results,  $t(66) = 0.02, n.s.$

**American participants.** Conceptually, the same pattern was observed for Americans (Fig. 1). For Americans, more winning candidates were perceived as more competent than their competitors in American elections (60.31%) than in Korean elections (52.85%). Again, the effect size for the difference (7.46 percentage points) was large,  $d = 0.70$ , and the lower limit of the 95% CI was above zero,

**Table 1.** Distribution of Participants According to the Accuracy of Their Competence Judgments in Predicting Election Results

Participants' culture	Relative accuracy for U.S. and Korean elections			Accuracy greater than chance (50%)	
	U.S. > Korea	U.S. = Korea	U.S. < Korea	Korean elections	U.S. elections
Koreans ( $n = 67$ )	83.6% ( $n = 56$ )	3% ( $n = 2$ )	13.4% ( $n = 9$ )	43.3% ( $n = 29$ )	89.6% ( $n = 60$ )
Americans ( $n = 64$ )	71.9% ( $n = 46$ )	7.8% ( $n = 5$ )	20.3% ( $n = 13$ )	64.1% ( $n = 41$ )	93.7% ( $n = 61$ )

95% CI = [5.01, 9.92]. The difference was statistically significant,  $t(63) = 6.09$ ,  $p < .001$ . In addition, Americans' competence judgments predicted American election results at a level better than chance, difference = 10.31 percentage points,  $t(63) = 11.53$ , 95% CI = [8.52, 12.10],  $p < .001$ ,  $d = 2.90$ . However, for Korean elections, the difference from chance was relatively small (2.85 percentage points), and the lower limit of the 95% CI was close to zero, 95% CI = [0.49, 5.21], although the difference was significant,  $t(63) = 2.41$ ,  $p = .019$ ,  $d = 0.61$ .

In sum, supporting our hypothesis, perceived competence was a better predictor of American election outcomes than of Korean election outcomes for both American and Korean participants. Converging evidence for this conclusion was also found by examining the data from individuals. Specifically, for most Koreans (83.6%) and most Americans (71.9%), the perceived competence of the candidates was a better predictor of American election outcomes than of Korean election outcomes (Table 1). In addition, the accuracy of perceived competence in predicting results of American elections was better than chance for 89.6% of Koreans, but only 43.3% of Koreans predicted Korean elections at levels above chance. Likewise, the accuracy of perceived competence in predicting results of American elections was better than chance for 93.7% of Americans, but only 64.1% of Americans predicted Korean elections at levels above chance.

### ***Interaction between participant's culture and election location***

As noted, the main effect of election location was qualified by a weak but statistically significant interaction between participant's culture and election location. This interaction occurred because Americans' competence judgments were better predictors of Korean election results (52.85%) than were Koreans' judgments (49.98%). Moreover, the opposite pattern was observed for American elections: Koreans' competence judgments were a slightly better predictor of American election results (61.92%) than were Americans' judgments (60.31%). This is an intriguing finding, although we note that both effects were weak, as indicated by the confidence intervals. For Korean elections, 95% CIs of Korean

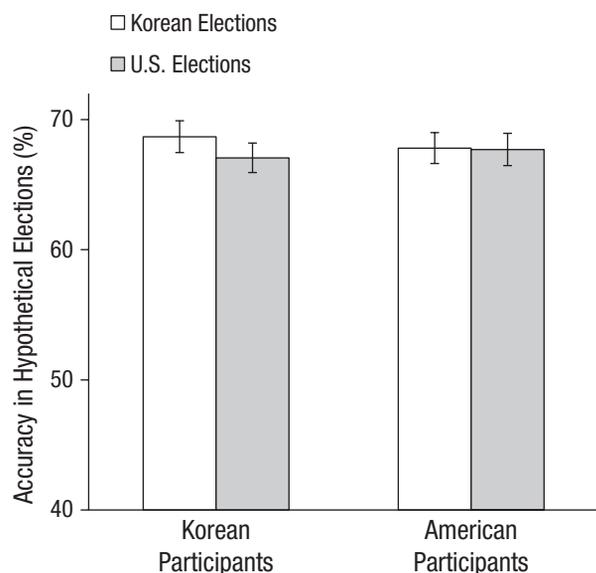
and American participants overlapped, and the 95% CI of the difference, [-0.21, 5.94], included zero. In addition, the difference was only marginally significant,  $t(129) = 1.83$ ,  $p = .07$ ,  $d = 0.32$ . Likewise, for American elections, 95% CIs of Korean and American participants overlapped, and the 95% CI of the difference, [-1.17, 4.39], included zero. This difference was not significant,  $t(129) = 1.15$ ,  $p = .25$ ,  $d = 0.20$ .

In summary, the results indicated a tendency, albeit weak and unexpected, for the competence judgments of individuals from one culture to be a better predictor of election results in another culture than of results in their own culture. We speculate that factors other than (universal) facial features of competence, such as perceived similarity (to one's own face) or adherence to a local stereotype, might be less applicable to faces of other ethnicities.

### ***Group versus individual judgments***

Based on individual ratings of perceived competence, results in the previous sections confirmed our hypothesis that perceived competence would be a better predictor of American election results than of Korean election results. In this section, we tested our hypothesis using perceived competence by each culture group as a unit of analysis. The statistical aggregation of judgments can improve the prediction of election results compared with averaged individual accuracy (Boon, 2012) and can provide a look at the limits of prediction with increased sample size (cf., Todorov et al., 2005). Toward this end, we first identified the candidate in each election who was perceived as more competent by a majority of each group. Next, we calculated the percentage of those candidates who won their elections. Calculated in this way, Korean participants correctly predicted the outcomes for 66.67% and 44.44% of American and Korean elections, respectively, and American participants correctly predicted the outcomes for 68.89% and 48.89% of American and Korean elections, respectively.

Compared with the predictiveness of individual judgments in the previous section, the predictiveness of group judgments about American election outcomes was greater for Koreans, difference = 4.75 percentage points, 95% CI of the difference = [2.60, 6.90],  $t(66) = 4.41$ ,  $p < .001$ ,  $d = 1.09$ , and for Americans, difference = 8.58



**Fig. 2.** Accuracy of perceived competence in predicting the results of hypothetical elections in the United States and Korea. Accuracy is shown separately for American and Korean participants. Error bars represent  $\pm 1$  SE.

percentage points, 95% CI of the difference = [6.79, 10.37],  $t(63) = 9.89$ ,  $p < .001$ ,  $d = 2.42$ . In contrast, the predictiveness of group judgments about Korean election outcomes was decreased for Koreans, difference =  $-5.54$  percentage points, 95% CI of the difference =  $[-7.57, -3.51]$ ,  $t(66) = 5.46$ ,  $p < .001$ ,  $d = 1.34$ , and for Americans, difference =  $-3.96$  percentage points, 95% CI of the difference =  $[-6.32, -1.60]$ ,  $t(63) = 3.35$ ,  $p = .001$ ,  $d = 0.84$ . The group data reinforce the findings that individual judgments were mostly better than chance for American elections but not for Korean elections, because group judgments are better than individual judgments only when each individual is reasonably accurate.

### **Prediction of votes in hypothetical elections**

Finally, we investigated how perceived competence would predict participants' votes in hypothetical elections. In this case, participants were asked which of the two people they would vote for if the pictures showed candidates in a political election. Unlike the results for predicting the outcomes of actual elections, the results of a 2 (participant's culture)  $\times$  2 (election location) mixed ANOVA showed no significant effects of participant's culture or election location in predicting hypothetical elections, all  $F$ s  $< 1$  (Fig. 2). The 95% CIs for the difference between Korean and American elections included zero for Koreans  $[-0.21, 5.94]$  and for Americans  $[-1.17, 4.39]$ . That is, in line with our prediction, participants voted for the candidate that they perceived as more competent

most of the time ( $> 67\%$ ), regardless of their cultural background or the election location.

In summary, even Korean participants cast hypothetical votes based on perceived competence. Using combined results from actual and hypothetical elections, we concluded that for Koreans, internal attributes, such as competence, are a critical factor in voting only when no other relevant information (e.g., social attributes, political skill, or party affiliation) is available. In contrast, the effects of internal attributes are substantial in the United States, regardless of the presence of other information.

### **Discussion**

We showed cultural universals and differences in face-to-trait inferences. First, Koreans and Americans showed remarkable consensus in competence judgments, eliminating the possibility that Koreans are less capable of trait inferences than Americans. The finding is also consistent with those from previous studies showing substantial consensus between children and adults (Cogsdill et al., 2014), between Americans and Bulgarians (Sussman et al., 2013), and between Americans and Japanese (Rule et al., 2010). Taken together, the literature supports the idea of universal facial-trait perception. Furthermore, perceived competence was a better predictor of American election outcomes than of Korean election outcomes—a result that qualifies the cross-cultural generality of the electoral predictiveness of competence judgments based on facial appearance (Todorov et al., 2005). This finding supports the proposition that traits are less important in social judgments in interdependent cultures than in independent cultures (Markus & Kitayama, 1991). In addition, cultures may differ in terms of the preferred appearance of politicians. Indeed, Rule et al. (2010) demonstrated that in Japanese elections, a warm look garners more votes than a powerful look, whereas the opposite holds true for American elections.<sup>1</sup>

Thus, future research should carefully investigate cultural differences in the meaning of "competence" and the critical information necessary for facial inferences of competence (e.g., Oosterhof & Todorov, 2008). In addition, previous findings suggest that there may be cultural differences in relative versus absolute judgment of faces, which might alter the accuracy of election predictions (cf. Kitayama, Duffy, Kawamura, & Larsen, 2003).

The current findings imply that competence judgments based on facial appearance are less important to Korean voters in real elections. Given the importance of social contexts in interdependent cultures (Markus & Kitayama, 2003), it is likely that Koreans voters are sensitive to information reflecting social relations. It is possible also that Korean voters are more informed politically than Americans. Previous research shows that politically

knowledgeable voters are less influenced by superficial information, such as perceived competence (Lenz & Lawson, 2011). However, regional nepotism has been identified as a critical determinant in Korean elections (Lee, 1997). Moreover, Korean voters are heavily influenced by trivial indicators of social relations (e.g., hometown; Lee, 1997). Thus, Koreans may not be more careful voters than Americans. Although the present data do not address this issue directly, the weight of evidence suggests a role for superficial information in both Korean and U.S. elections, but the type of information depends on whether the cultural values influencing person perception favor internal dispositions or social relationships.

It is noteworthy that the cultural differences observed were not in the participants' tendency to make face-to-trait inferences but rather in their tendency to act on these inferences. In other words, Americans and Koreans showed consensus on perceived competence, yet these judgments were far better predictors of actual election outcomes in the United States than in Korea. Moreover, the same inferences predicted voting patterns equally well for both cultures when only the face was available to the voter. This suggests that people in independent cultures and in interdependent cultures are both willing to use trait information in social judgments in the absence of other relevant information. Notwithstanding, in contrast to independent cultures, the informational value of perceived traits drops considerably in the presence of other information for interdependent cultures.

### Author Contributions

J. Na and A. O'Toole developed the study concept and contributed to the study design. Testing and data collection were performed by J. Na in the United States and by S. Kim and H. Oh in Korea. J. Na and A. O'Toole performed the data analysis and interpretation. J. Na and A. O'Toole drafted the manuscript and the other authors provided comments. All authors approved the final version of the manuscript for submission.

### Declaration of Conflicting Interests

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

### Open Practices



All data and some of the materials have been made publicly available via Open Science Framework and can be accessed at <https://osf.io/jfxtr>. The remainder of the materials (i.e., images of the politicians) can be accessed at <http://tlab.princeton.edu/databases/politicians>. The complete Open Practices Disclosure for this article can be found at <http://pss.sagepub.com/content/by/supplemental-data>. This article has received a badge for Open Data. More information about the Open Practices badges

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### Note

1. The association between facial traits and election outcomes appeared to be weaker for Japanese elections than for American elections, but the design did not allow for statistical comparison.

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