

SEPARATED BY A COMMON LANGUAGE

Nonverbal Accents and Cultural Stereotypes About Americans and Australians

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The expression of nonverbal cues may differ systematically across cultures. Common cues used in distinct ways cross-culturally may be termed *nonverbal accents*. The data in this study indicate that nonverbal accents can help perceivers to distinguish the nationality of expressers. In Study 1, American participants could determine the nationality of Australian and American adults with above-chance accuracy when viewing their emotional expressions but not neutral expressions. In Study 2, American participants could also determine the nationality of Australians and Americans seen walking or waving in greeting. The accuracy of nationality judgments was also correlated with the extent to which Australian targets were perceived to conform to stereotypes about Australians. It is argued that nonverbal accents may be a mechanism that perceivers can use to apply group stereotypes.

Keywords: nonverbal behavior; facial expressions; culture; stereotyping; emotion

Anyone who has traveled abroad can attest that it can be very difficult to accomplish anything—from obtaining a meal to getting transportation that is headed in the right direction—without being able to communicate with others. Fortunately, many essential concepts can be communicated without spoken language. Expressive behaviors such as facial expressions have the ability to constitute a universal nonverbal language to allow limited nonverbal communication among individuals who cannot communicate verbally. Recent research suggests, though, that systematic differences in facial expressions may also exist across cultures (Elfenbein & Ambady, 2002; Marsh, Elfenbein, & Ambady, 2003). One such type of difference has been termed *nonverbal accents*. This study aims to replicate the findings of Marsh et al. (2003) regarding accents in a different context and

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with a different modality. Beyond replication, this research was designed to test for links between the cues that help identify cultural background and stereotypes about cultural groups.

Nonverbal behaviors such as facial expressions can serve as a “universal” language (Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979; Russell, 1994). Classic research established that expressions such as happiness, sadness, and anger can be recognized at above-chance accuracy across widely varying cultural groups (Ekman, 1972, 1997; Ekman et al., 1987; Ekman, Sorensen, & Friesen, 1969; Izard, 1971), and this degree of universality has led theorists to hypothesize that these basic expressions are innate and biologically driven. Contradicting a pure innateness hypothesis, however, is evidence that recognition accuracy decreases with increasing cultural and physical distance between the expresser’s and perceiver’s cultures (e.g., Camras, Oster, Campos, Miyake, & Bradshaw, 1997; Ekman, 1972, 1997; Elfenbein & Ambady, 2002; Mesquita, Frijda, & Scherer, 1997; Russell, 1994). Recently, Marsh et al. (2003) argued that the universal language of facial expression may be modified by different “accents” across different cultural groups.

In linguistics, the word *accent* denotes characteristic differences in pronunciation used by subsets of speakers of a language. Speakers’ accents come to resemble the accent of speakers around them (Baron-Cohen & Staunton, 1994; Munro, Derwing, & Flege, 1999). Two consequences result from the development of verbal accents. The first is that understanding speakers using unfamiliar accents may be more difficult (Munro & Derwing, 1995). The second is that the spoken accents can be used to deduce the nationality of the speaker (Ladegaard, 1998). This article focuses on the second of these consequences.

Corresponding to the linguistic theory of verbal accents, Marsh et al. (2003) found that nonverbal accents could also be used to deduce the nationality of an expresser. American participants made judgments regarding the nationality of Japanese and Japanese American individuals showing neutral and emotional expressions. All photographs used were drawn from Matsumoto and Ekman’s (1988) Japanese and Caucasian Facial Expressions of Emotion (JACFEE) and Japanese and Caucasian Neutral Faces (JACNeuF) sets. Precise facial coding systems had found these photographs to be identical in all explicitly measurable respects. Nevertheless, participants’ accuracy was significantly greater when rating the nationality of individuals showing emotional expressions as compared to neutral expressions. This suggested that the emotional expressions of individuals from different cultures varied in subtle but systematic and detectable ways in the form of nonverbal accents. This study extends these previous findings.

DISTINGUISHING NONVERBAL ACCENTS FROM RELATED CONSTRUCTS

Nonverbal accents are distinct from both emblems and cultural display rules. Emblems are nonverbal signals with explicit, culture-specific meanings that can be verbalized. An example is the thumbs-up hand gesture. Such gestures are functionally similar to words in that they are arbitrary symbols without meaning to those who lack exposure to the culture in which they are used (Johnson, Ekman, & Friesen, 1975; Poortinga, Schoots, & Van de Koppel, 1993).

Nonverbal accents are also distinct from the construct of emotional display rules. Display rules (Ekman, 1972) are “management techniques” (p. 225) that allow individuals to “decouple their expressions from their feelings” (p. 127). They are defined as procedures learned early in life for the management of affect displays and include deintensifying, intensifying, neutralizing, and masking an affect display. These rules prescribe the

appropriateness of expressive behaviors given social circumstances and are thus contingent on the interaction between individual, situation, and nonverbal display (Malatesta & Haviland, 1982; Matsumoto, Yoo, Hirayama, & Petrova, 2005). Cultural display rules are typically measured by explicitly asking participants the appropriateness of various emotional displays in different contexts in their culture (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986; Edelman et al., 1987). They can also be measured by observing differences in the nonverbal behaviors displayed across social settings (e.g., Ekman, 1972).

To return to a language metaphor, emblems are comparable to words and phrases with culture-specific meanings. Display rules are analogous to rules regarding the appropriateness of using certain language in certain contexts. Nonverbal accents, by contrast, are not gestures conveying meaning or dictates that can be verbalized regarding the appropriateness of expressions. Rather, they are cultural tendencies to display particular nonverbal behaviors in certain styles, independent of context. These styles are likely nuances in the extent to which various muscle movements contribute to the nonverbal display. Consider the dozens of different styles in which a person can facially express happiness, given all the possible combinations of all the gradations of all the muscle movements that can contribute to the expression. One can think of nonverbal accents as statistical tendencies for the members of one culture to show happiness expressions that are on average more similar to one another in terms of these variants than they are to the happiness expressions of another culture. This is analogous to the way a given word may be pronounced more similarly among members of a given culture than between members of two different cultures.

LaFrance and Mayo (1978) theorized that cultural differences in nonverbal behavior would be most likely to emerge in behavior that is interpersonal rather than more individually based and less communicative. Because basic facial expressions are interpersonal and communicative and because there is a body of evidence for their basic universality, they provide ideal and stringent candidates for testing the concept of nonverbal accents. However, in theory any discrete behavior that is performed across cultures could carry accents (see Bond, Omar, Mahmoud, & Bonser, 1990).

Communicative behaviors, such as the raising of an open hand, might be especially likely to carry accents. This gesture is a widespread form of greeting, observed among multiple diverse and geographically isolated cultures (Eibl-Eibesfeldt, 1971). Other behaviors with social meaning that are shared across cultures and that could thus be accented might also include laughing or shrugging the shoulders in perplexity (Darwin, 1872/1965). Behaviors with primarily instrumental purposes might also carry nonverbal accents. For example, gait, or style of walking, provides a variety of social cues—including gender, personality identity, physical strength, and emotional state (Cutting & Kozlowski, 1977; Kozlowski & Cutting, 1977; Montepare & Zebrowitz-McArthur, 1988). Montepare and Zebrowitz (1993) argue that “the way people ultimately do walk can be strongly influenced by social forces” (p. 66).

THE PRESENT RESEARCH

The current studies sample Caucasian Americans and Australians. These groups are particularly useful for our purposes due to the similar ethnic composition of their ancestries, which prevents obvious physiognomic differences such as hair color or texture or facial structure from distinguishing members of the two groups. However, the United States and Australia

are countries that are geographically distant from one another, such that one might expect that differences in nonverbal style distinguishing the two cultures to have developed.

The first goal of this article is to assess whether nonverbal accents exist outside of the particular cultural groups, and the particular stimulus set, used by Marsh et al. (2003). In Study 1, we tested whether participants would be able to distinguish members of two cultural groups using a new stimulus set, new national groups, and a new facial expression. Due to the lack of Japanese nationality posers expressing happiness in the JACFEE stimulus set, Marsh et al. (2003) had been limited to testing negative emotional states.

Our second goal was to determine whether nonverbal accents exist in forms of nonverbal behavior other than facial expressions of emotion, such as behaviors with a primarily instrumental purpose (walking) and with a primarily social purpose and audience (waving in greeting). In Study 2, perceivers assessed national identity on the basis of differences in gait and waving in greeting.

Our third goal was to assess the relationship between nonverbal accents and cultural stereotypes. Systematic differences in nonverbal behavior across cultures might lead perceivers to evaluate members of different cultures differently. Diverging evaluations of individuals on the basis of nonverbal cues would indicate not only that nonverbal accents exist but that they matter—that they may have important implications for cross-cultural interactions. In Study 2, participants were also asked to rate American and Australian targets on two cultural stereotype-relevant traits: dominance and liking. It was hypothesized that Americans' and Australians' nonverbal behavior would be judged to conform to stereotypes about these groups. We also hypothesized that the extent to which targets' nonverbal behavior conformed to their national stereotype would predict the accuracy with which their nationality was identified.

STUDY 1

The purpose of this study was to test whether the style of facial expressions of emotion differs across American and Australian cultures. The strongest evidence comes from demonstrating that nonverbal accents arise in the expression of emotion itself rather than only in features of the static face. Thus for this study, the sets of neutral and emotional expressions included the same targets, permitting us to control for differences in facial features across individuals. If participants could derive the nationality of posers from emotional expressions more accurately than from the neutral expressions, it would indicate that cross-cultural differences emerge in the act of expressing emotion.

METHOD

Stimuli

Stimuli were 76 grayscale photographs of the faces of 19 Caucasian Australian (11 female; M age = 41 years, SD = 10.8) and 19 Caucasian American (11 female; M age = 42 years, SD = 13.2) men and women. All were staff or students on university campuses in the metropolitan areas of major cities (Sydney, NSW, and Boston, MA). A single digital camera, mounted on a tripod, was used to collect all stimulus photographs. The first author conducted all filming, which took place in rooms with bare, white walls lit only by fluorescent bulbs. Stimulus individuals were given a series of instructions for simple behaviors, one of which was simply to smile naturally at the camera. To

minimize experimenter effects, for each stimulus individual the experimenter removed herself from behind the camera, which was mounted on a tripod, and did not make eye contact with the individual as the image was taken. All stimulus individuals were instructed to focus on the camera, not the experimenter. Participants were not informed that this was a cross-cultural study.

The stimulus photos used for this study included one photograph in which the stimulus person was smiling and one in which the person showed a neutral expression. Using Adobe Photoshop computer software, these photographs were converted to grayscale and then digitally cropped to eliminate stimulus individuals' hair and hairline, leaving only the interior features of the faces.

Participants

Sixty-one participants in the United States, mostly college-age students, rated the photographs of Australians and Americans. Of these, six identified themselves to be citizens of nations other than the United States, and their data were removed from the study. Of the remaining 55 participants, 30 were women and 25 were men. Thirty-seven participants (67%) identified themselves as White or Caucasian, 13 (24%) as Asian American, and 3 (5%) as of mixed race or ethnicity. Two participants (4%) declined to identify their race.

Materials

The study was conducted in a private, sound-attenuated room using a desktop personal computer and MediaLab laboratory software.

Design and Procedure

All participants saw 38 photographs—one photo of each of the 19 Americans and 19 Australians. However, each stimulus individual provided two facial expressions—one happy and one neutral. It is important that the judgment of one expression does not contaminate the judgment of the other expression from that same poser. Thus, participants were divided into two groups. Participants in Group 1 saw half of the stimulus individuals showing happy expressions and the other half neutral expressions. The Group 2 participants also saw half of the stimulus individuals showing happy expressions; however, the individuals whose happy expressions they saw were the individuals whose neutral expressions participants in Group 1 saw. In this way, all participants saw both Australian and American men and women showing both neutral and happy expressions, but no participant saw any given stimulus person showing both a happy and a neutral expression.

During initial trials, participants were asked to identify whether each expression they saw appeared happy or neutral (dichotomous measure). In addition, to increase familiarity with the stimulus materials (see Marsh et al., 2003), participants were first asked to rate the target faces on two additional trait scales, for example, on how positive each person looked. The order in which these ratings were made was randomized across participants. After the ratings were made, participants were told that half of the stimulus individuals they had been rating were Americans and the others were Australians. Participants were then asked to guess the nationality of each individual (dichotomous measure).

At the end of the study, participants were asked to provide basic demographic information, including their sex, race, and country of citizenship, and they were asked to include

any comments they might have about the study. Finally, all participants were debriefed, thanked for their participation, and paid \$5 or given course credit.

RESULTS

Stimulus Validation

Participant responses for each stimulus photo regarding whether the expression of the person pictured appears happy or neutral allowed for the validation that the expressions were sufficiently clear and legible for further use in the study. To this end, only the data for those photos that at least 80% of participants identified correctly as happy or neutral were included in subsequent analyses. Eighteen (24%) of the stimulus photos were thus excluded from subsequent analysis. Of these, 6 showed Americans with neutral expressions, 5 showed Americans with happy expressions, 4 showed Australians with neutral expressions, and 3 showed Australians with happy expressions. The composition of this set of photographs did not contain disproportionate ratios of particular nationalities or expressions, $\chi^2(1) = .01$, *ns*.

Nationality Ratings

Analyses of the accuracy of nationality judgments used Wagner's (1993) unbiased hit rate, which is the conventional percentage accuracy hit rate multiplied by one minus the rate of false alarms, then normalized using an arcsine transformation. Although participants were informed that half of the photos depicted Australians and half Americans, in order to minimize response biases, the unbiased hit rate also corrects for the response biases across participants that may have emerged in spite of these instructions. Wagner also provides a procedure to calculate the level expected due to chance guessing, which is analogous to calculating expected values for a chi-square analysis. Thus, all scores refer to accuracy above that expected due to chance. Using this metric, participants unable to distinguish Australians from Americans would receive scores of zero. Along with unbiased hit rate scores, we also provide conventional percentage accuracy data, with 50% representing chance accuracy for this dichotomous task.

To compare differences in accuracy across stimulus type, a 2 (expression) \times 2 (participant sex) \times 2 (participant race: Caucasian vs. non-Caucasian) \times 2 (experiment version) with repeated measures on the first variable was conducted. The results indicated that participants judged the nationality of targets showing happy expressions more accurately than that of targets showing neutral expressions, $F(1, 47) = 13.54$, $p = .001$, $\eta^2 = .22$. The results of a single-sample *t* test revealed that when participants rated the nationality of targets showing neutral expressions, their judgments were not significantly more accurate than chance ($M = .02$, $SD = .11$, 50.5% accuracy), $t(54) = 1.21$, $p = .23$, $r = .16$. By comparison, participants were significantly more accurate than would be expected by chance when guessing the nationality of targets showing happy expressions ($M = .11$, $SD = .14$, 58.5% accuracy), $t(54) = 5.83$, $p < .001$, $r = .62$. There were no significant main effects or interactions involving participant sex, race, or experimental condition, all $ps > .05$. There was a marginally significant interaction among expression, participant race, and experiment version, $F(1, 47) = 2.98$, $p = .09$, $\eta^2 = .06$. Examination of the means indicated that individuals who were Caucasian were less accurate at identifying nationality from emotional expressions than were individuals of other races in one experiment version but not the

other. In both conditions, individuals of both racial categories were more accurate at identifying nationality from emotional expressions than from neutral expressions. Independent-samples *t* test confirmed that race category was not a significant predictor of accuracy for either neutral or emotional expressions, all *ps* > .10.

DISCUSSION

The findings of this study replicated and extended those of Marsh et al. (2003). Marsh et al. found that the nationality of Japanese and Japanese American individuals was more accurately detected from photographs showing emotional rather than neutral facial expressions. This led them to hypothesize that markers of national identity may be present in even the most basic facial expressions considered to be consistent across cultures. In the present study, perceivers more accurately identified the nationality of Australians and Americans when seen showing an expressions of happiness versus neutral expressions. These findings suggest that the phenomenon of nonverbal accents may generalize across nationalities and emotional expressions.

One shortcoming of Study 1 is that it did little to explain how participants arrived at their nationality judgments. Marsh et al. (2003) found that facial expressions that were stringently coded using the Facial Action Coding System and deemed to be identical across cultural groups still revealed cues about the cultural identity of Japanese and Japanese American individuals. Thus, it would be reasonable to suspect that the subtle physical differences that create nonverbal accents are not explicitly detectable even by trained coders. Accordingly, the informal comments of participants in that study suggested that they did not seek out particular physical disparities in facial expressions when judging nationality. Rather, they may have been more attuned to gestalt differences, simply looking for those people who “looked American” or “looked Japanese.” This suggests that the accuracy of nationality judgments based on nonverbal cues may depend at least in part on general impressions or stereotypes that judges hold about the members of these groups.

Thus, Study 2 had two goals. The first was to increase the generality of the phenomenon of nonverbal accents by assessing whether these accents are carried in nonverbal behaviors other than facial expressions. The second goal was to assess relationships among nonverbal accents, identification of nationality, and cultural stereotypes. First, a questionnaire examined stereotypes of Australians and Americans in terms of two traits (dominance and likeableness). Second, new participants rated how dominant and likable American and Australian targets appeared when performing two nonverbal behaviors, one with a primarily instrumental purpose and one with a primarily social purpose. Finally, these participants rated the perceived nationality of the targets. This allowed us to assess the impact of nonverbal accents in influencing perceptions of conformity to stereotypes.

STUDY 2

In this study, we again hypothesized that nonverbal accents would allow judges to determine the targets' nationality with above-chance accuracy. We also predicted that Australian and American targets' nonverbal behaviors would be judged to conform to the respective stereotypes of those two groups. Finally, we predicted that nationality would be judged more accurately for those targets whose nonverbal behavior conformed to the stereotype of their group.

METHOD

Stimuli

Stimuli were photographs of the same 19 Australian and 19 American men and women used in Study 1. Again, a single digital camera, mounted on a tripod, was used to collect all stimulus photographs, and a single experimenter conducted all filming. All stimulus collection took place in rooms with bare, white walls lit only by fluorescent bulbs. The distance between the camera and the wall in front of which participants walked was identical for all participants.

Prior to filming, all stimulus individuals placed over their clothing a set of surgical scrubs provided for them by the experimenter. All stimulus individuals were also asked to wear a nearly transparent net over their hair and to remove any jewelry. These steps were taken to minimize differences in apparel or hairstyle across stimulus individuals from the two countries.

Stimulus individuals were given a series of instructions for simple behaviors, one of which was to face the camera and wave hello as though greeting a person, and the other of which was to walk across the room in front of the camera. They were not told that cross-cultural differences were a variable of interest but only that the images would be used in a study on natural movement. The photographs for waving targets showed the target's hand at the apex of the wave. The photograph for walking targets showed the target in mid-stride. All photographs were converted to grayscale prior to use in the study, and luminosity in the photographs was digitally standardized across groups.

Participants

Sixty-four participants, university students in the United States, rated the photographs of Australians and Americans. Of these, 7 identified themselves to be citizens of nations other than the United States, and their data were removed from the study. Of the remaining 57 participants, 38 were women and 19 were men. Thirty participants (53%) identified themselves as White or Caucasian, 12 (21%) as Asian American, 3 (5%) as African American, 2 (4%) as Latino, and 1 (2%) as Pacific Islander. Five participants (9%) identified themselves as of mixed race or ethnicity. Four participants (8%) declined to identify their race.

Materials

The study was conducted in a private, sound-attenuated room using a laptop computer and MediaLab laboratory software.

Stereotypical Ratings of Americans and Australians

Group stereotypes tend to cluster around two primary dimensions—competence/status and warmth (Fiske, Cuddy, Glick, & Xu, 2002). We used a questionnaire to determine whether Americans and Australians are stereotyped as differing in terms of status and warmth. The terms *dominant* and *likable* were used because these are familiar terms that map closely onto the dimensions described by Fiske et al. (2002). Participants were asked to indicate on separate scales how dominant and how likable they perceived the national groups

Americans and Australians. Data from 22 (10 men, 12 women) American participants—who were not the same participants who would view the stimulus photographs—indicated that Americans are perceived to be more dominant ($M = 5.64$, $SD = 0.85$) than Australians ($M = 3.73$, $SD = 0.98$), $t(21) = 6.56$, $p < .001$, $r = .82$, and that Australians are perceived as more likable ($M = 5.27$, $SD = 1.12$) than Americans ($M = 4.32$, $SD = 0.99$), $t(21) = 4.02$, $p < .001$, $r = .66$. These ratings are consistent with assessments of raters from multiple cultures who perceive Australians to be friendlier and Americans to be more dominant (Ladegaard, 1998; McAndrew et al., 2000; McCrae & Terracciano, 2005; Terracciano et al., 2005).

Design and Procedure

Each participant saw 38 photographs—one photo of each of the 19 Americans and of each of the 19 Australians. To prevent carryover across the judgments of the two different behaviors, waving and walking, participants were divided into two conditions. Participants in one condition saw the stimulus individuals waving, and participants in the second condition saw the stimulus individuals walking.

Participants were first asked to rate the target faces on two 7-point scales: How likable the person appeared to be ($7 = \textit{extremely likable}$) and how dominant the person appeared to be ($7 = \textit{extremely dominant}$). The order of these two ratings was randomized across participants. After these ratings were made, participants were told that half of the stimulus individuals they had been rating were Americans and the others were Australians. Participants were then asked to judge the nationality of each individual (dichotomous measure).

At the end of the study, participants provided basic demographic information, including their gender and country of citizenship, and they were asked to include any comments they might have about the study. Finally, all participants were debriefed, thanked for their participation, and paid \$5 or given course credit.

RESULTS

Nationality Judgments

The accuracy of nationality judgments was again calculated using Wagner's (1993) unbiased hit rate. A 2 (behavior) \times 2 (participant sex) \times 2 (participant race: Caucasian vs. non-Caucasian) ANOVA compared differences in accuracy across stimuli. The results revealed there to be no significant main effects or interaction terms involving participant sex, race, or the behavior judged, all $ps > .20$. Although participants were slightly more accurate in the condition in which they saw targets waving ($M = .037$, $SD = .09$, 53.2% accuracy) than in the condition in which they saw them walking ($M = .027$, $SD = .09$, 52.1% accuracy) this difference was not significant, $t(55) = 0.64$, ns , $r = .09$.

We thus collapsed across these behaviors and subjected participants' accuracy scores to an independent-samples t test to examine the accuracy of nationality judgments of targets. The results revealed that participants' judgments of nationality were more accurate than would be expected by chance, $t(56) = 2.71$, $p < .01$, $r = .34$. When examined separately, it was found that participants identified the nationality of Australians and Americans more accurately than chance when they were seen waving, $t(26) = 2.21$, $p < .05$, $r = .40$, and marginally more accurately than chance when seen walking, $t(29) = 1.62$, $p = .12$, $r = .29$.

Trait Ratings

To determine how Americans and Australians were rated in terms of dominance and liking, a series of analyses were conducted using the targets as the units of analysis. For all target individuals, the percentage with which their nationality was correctly guessed was calculated for conditions in which they were seen waving and in which they were seen walking. Next, mean ratings for dominance and liking in the two conditions were computed. The reliability of the judges' trait ratings was high both for individuals seen waving (dominance $\alpha = .95$; liking $\alpha = .94$) and for individuals seen walking (dominance $\alpha = .90$; liking $\alpha = .86$).

To determine whether participants distinguished targets' nationality in terms of dominance ratings, a 2 (waving, walking) \times 2 (Australian, American) ANOVA with repeated measures on the first variable was conducted. The results revealed a main effect for behavior, $F(1, 36) = 22.43, p < .001$, such that targets were perceived as more dominant when walking than when waving. There was no main effect of nationality, $F(1, 36) = 0.67, ns$. However, an interaction was also found between behavior and nationality, $F(1, 36) = 7.26, p = .01$. Paired t tests revealed that ratings of dominance did not distinguish Americans and Australians seen waving, $t(36) = 0.64, ns, r = .11$, but did distinguish the two groups when they were seen walking, $t(36) = 2.34, p < .05, r = .36$. When seen walking, Americans were perceived as more dominant ($M = 4.13, SD = 0.71$) than Australians ($M = 3.60, SD = 0.67$).

To determine whether participants distinguished targets in terms of liking ratings, another 2 (waving, walking) \times 2 (Australian, American) ANOVA with repeated measures on the first variable was conducted. The results revealed a main effect for behavior, $F(1, 36) = 17.31, p < .001$, such that all targets were perceived as more likable when waving than when walking. There was no main effect of nationality, $F(1, 36) = 0.58, ns$. However, an interaction was again found between behavior and nationality, $F(1, 36) = 5.38, p < .05$. Paired t tests revealed that ratings of liking did not distinguish Americans and Australians seen walking, $t(36) = 0.93, ns, r = .15$, but marginally distinguished the two groups when they were seen waving, $t(36) = 1.78, p = .08, r = .28$. When seen waving, Australians were perceived as more likable ($M = 4.46, SD = 0.87$) than Americans ($M = 4.01, SD = 0.69$).

Taken together, these results suggest that the trait most applicable to the particular behavior—dominance for walking and liking for greeting—was also diagnostic in determining the cultural group memberships of the targets when they engaged in that behavior.

Trait Ratings and Nationality Ratings

The analyses of nationality judgments showed that participants were able to distinguish Americans and Australians when waving and walking. The analyses of trait ratings indicated that the Americans' and Australians' nonverbal behavior was perceived as conforming to stereotypes, respectively, about Americans and Australians. Given these findings, a series of correlations calculated the degree to which stereotype-relevant behavior was associated with the accuracy of nationality judgments.

Across conditions, nationality judgments were marginally more accurate for Australian targets the less dominant they were rated to appear, $r(17) = -.40, p = .09$. Nationality judgments were more accurate for Australian targets the more likable they were rated to appear, although not significantly so, $r(17) = .33, ns$. The ratio between liking and dominance judgments was calculated by dividing targets' liking ratings by their dominance ratings. The positive correlation between this ratio and the accuracy of nationality judgments,

$r(17) = .45, p = .05$, indicates that Australian targets' nationality was judged more accurately the more likable and less dominant they looked.

Next, the same correlations were calculated for the American targets. Across behaviors, nationality judgments were not significantly more accurate for targets who looked more dominant, $r(17) = -.09, ns$, or less likable, $r(17) = -.06, ns$. The ratio of liking to dominance ratings was also not significantly correlated with accuracy, $r(17) = -.01, ns$. This latter correlation was significantly different from the equivalent correlation for Australians, $r = .46, p < .05$ (Ferguson, 1966), suggesting that judgments of Australians' nationality was more closely linked to stereotypical traits than were judgments of Americans' nationality.

DISCUSSION

Extending the finding that cultural group membership can be detected from minimal nonverbal cues, this study documented that these cues are also related to the stereotypes applied to individuals from various cultural groups. First, we found that nonverbal accents may be carried by nonverbal behaviors other than facial expressions. Participants were able to determine the nationalities of the people they saw waving or walking with accuracy greater than that expected due to chance guessing. Nonverbal accents may be carried somewhat more strongly by behaviors with a primarily social purpose than by behaviors with a more instrumental purpose, although differences in accuracy between these two behaviors were not significant in this study. Thus, we speculate that any behavior that is common between cultures and that carries social information can carry accents.

Not only were participants in the study able to distinguish between Americans and Australians in terms of their explicit judgments of national group membership, but participants also distinguished between Americans and Australians in terms of how they exhibited certain personality traits that correspond to cultural group stereotypes. Specifically, Americans were judged to look more dominant than Australians, and Australians were judged to look somewhat more likable than Americans. These differences map onto the stereotypes that Americans possess of Americans and Australians.

These stereotype-consistent judgments were made at a point when participants had not been informed that they were rating Americans and Australians. It seems likely that participants would have assumed all targets to be American during these initial ratings and unlikely that participants would have explicitly identified the nationality of any of the stimulus individuals as Australian. This suggests that stereotyping can result from bottom-up processes based on only perceptual cues rather than explicit category labels.

Interestingly, the trait ratings only predicted the accuracy of Australian nationality judgments (see Figure 1). The more likable and less dominant a particular Australian looked, the more likely that person was to be identified as an Australian, but the reverse was not the case for American targets. This suggests that perceivers may resort to stereotype confirmation to judge the nationality of out-group members. They may use a different metric, perhaps a diffuse sense of familiarity, to judge in-group members' nationality. This possibility is illustrated by some participants' comments at the end of the study:

"I suppose it's a stereotype that Australians are so friendly, but I probably said the most friendliest [*sic*] photographed were Australian."

"I looked mostly for who was 'American.' If they didn't look 'American' I categorized them as Australian."

"I picked people who looked 'familiar' to me as being American since I know many more Americans than I know Australians."

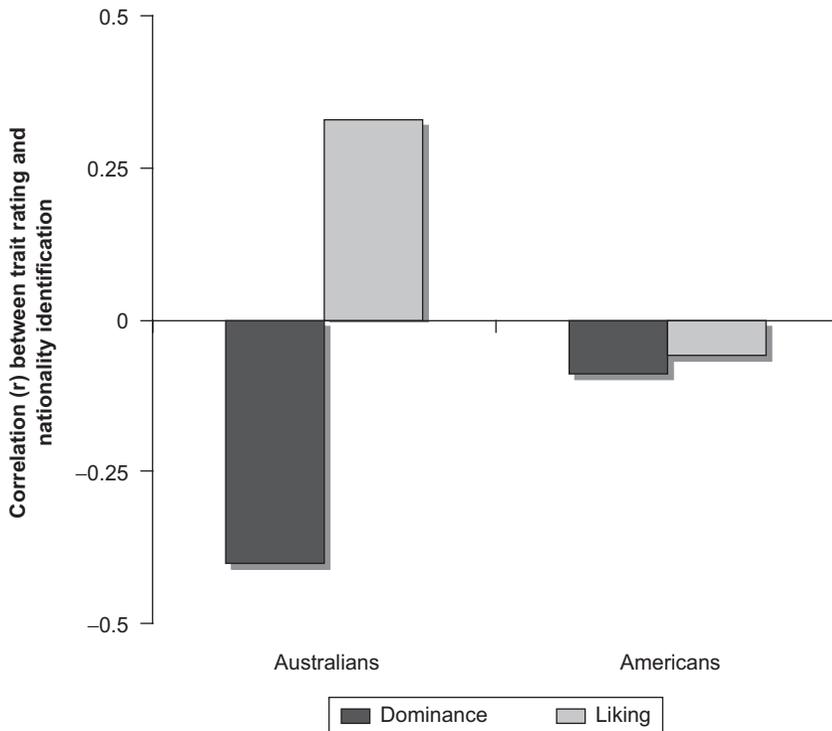


Figure 1: Correlations Between Ratings of Dominance or Liking and Accuracy of Nationality Judgments as a Function of the Nationality of the Targets

The out-group homogeneity effect indicates that out-group members are perceived to conform more uniformly to stereotypes than are in-group members, who are perceived as more heterogeneous (e.g., Park & Judd, 1990). It is thought that expectations regarding the diversity of a group influence the likelihood of classifying a new instance as a group member (Park & Hastie, 1987). The out-group homogeneity theory would predict that, on learning the targets to be Australians and Americans, participants would assume that friendly and nondominant individuals were Australians who were conforming to stereotypes about Australians. However, the theory would predict that assumptions about the relative heterogeneity of in-group members (Americans) would prevent similarly stereotype-consistent judgments of Americans. These predictions closely match the present findings, in which targets who conformed to out-group stereotypes were more likely to be correctly identified as Australian, but those who conformed to in-group stereotypes were no more likely to be identified as American. Assuming that targets are judged on the basis of how well they conform to the perceiver's gestalt impression of an American or an Australian, or to stereotypes about individuals from those cultures, it is not possible to discern from the present data whether one of these categorization processes follows the other or whether they occur simultaneously.

Interestingly, in neither Study 1 nor Study 2 did the racial category of the participant appear to affect the accuracy of nationality judgments. This suggests that when making

nationality judgments, whether participants share a national in-group may be of greater consequence to the patterns of their judgments than whether they share a racial in-group. This corroborates work by Kurzban, Tooby, and Cosmides (2001) indicating that when social categories or coalitions other than race are made salient, the impact of race on social judgments is reduced.

GENERAL DISCUSSION

The studies presented here provide strong support for the recently documented phenomenon of nonverbal accents. Although a case has been made that basic facial expressions are universal and identical across cultures, Study 1 replicated the findings of Marsh et al. (2003) in finding that a basic facial expression can differ across cultures enough that perceivers can identify the expresser's nationality. In this study, participants could determine the nationality of Australian and American targets on the basis of the subtle cues associated with nonverbal displays. When the targets were seen showing emotional facial expressions, participants were able to judge their nationality with significantly greater accuracy than when those targets were seen showing neutral expressions. Supporting the ability to generalize this phenomenon, the findings were replicated using a new facial expression, a new stimulus set, a different racial group (Caucasians as compared to Asians), and a new nationality group.

Study 2 further extended the nonverbal accents findings to forms of nonverbal behavior other than emotional expressions. Participants were able to determine the targets' nationality when they were pictured either walking or waving in greeting. In addition, this study provided a link between nonverbal accents and cultural stereotypes. Participants in this study evaluated Americans and Australians differently on the basis of their nonverbal behavior. They were able to distinguish Americans and Australians in terms of two traits—dominance and liking—that are perceived to be stereotypically characteristic of Americans and Australians, respectively.

Ratings on these traits were associated with participants' judgments of Australians' nationality but not with their judgments of Americans' nationality. Participants may perceive that cultural out-group members will behave in more stereotype-consistent ways than in-group members do. Also the accuracy of nationality judgments for Australians was more closely correlated to the ratio between targets' ratings of dominance and liking than to either rating taken individually. This accords with the notion that stereotypes are beliefs about whole sets of behaviors and attributes of particular groups (Hilton & von Hippel, 1996).

The data from these studies thus posits a direct connection—though not necessarily a causal one—between nonverbal behavior differences and national stereotypes. Participants in Study 2 rated all the stimuli on dominance and liking without learning that they were Americans and Australians. Participants were not explicitly informed of the cultural composition of the stimulus set before they provided personality trait ratings. We thus surmise that the stereotype-relevant ratings were made on a bottom-up basis whereby the perception of simple behaviors across cultures can elicit stereotype-consistent judgments even in the absence of explicit category labels.

NONVERBAL ACCENTS AND CULTURAL IDENTIFICATION

This research provided evidence for the existence of cultural differences in nonverbal behavior. It also indicated that a relationship exists among cultural differences in nonverbal

behavior, cultural identification, and cultural stereotypes. Although the causal relationships among these constructs cannot be determined from the present data, we speculate briefly on the potential interrelationships among these variables.

At least two factors may contribute to the development of the aggregate behavioral differences across cultures that we term *nonverbal accents*. The first is essentially random variation. In this way, nonverbal accents may originate and develop similarly to spoken accents, beginning with the split of a population group and the divergence in groups' accents as their languages (verbal or nonverbal) change over time. The coherence of the accent within each group is maintained as a function of social cohesion that leads members to behave in similar ways to enhance a sense of belonging with peers (Gupta, 1995, 2005).

Second, nonverbal accents might result from aggregate personality differences across cultures. Cross-cultural personality testing has shown that Australians rate themselves as more agreeable and extraverted (both of which are relevant to friendliness) and less conscientious (a scale that includes dominance-relevant ratings such as achievement-striving and competent) than Americans rate themselves (McCrae & Terracciano, 2005; Terracciano et al, 2005). Given that personality variables contribute to the nuances of nonverbal expression (La France, Heisel, & Beatty, 2004; Paunonen, 2003; Riggio & Riggio, 2002), one could posit that slight aggregate differences in personality across nations could lead to corresponding differences in nonverbal behavior as well.

Differences in nonverbal behavior originating from these two sources could then lead directly to correct identifications of nationality. A perceiver could be familiar with the behaviors typical of the target's cultural group and deduce nationality directly from behavior. Alternately, a perceiver could make cultural stereotype-relevant attributions about the target based on the target's behaviors and deduce the target's cultural identity based on the stereotypes. This latter mechanism may be more plausible for behavioral differences that arise out of aggregate trends in personality in a culture, in which case the behaviors would be more likely to reflect cultural traits.

The data from Study 2 suggest that these mechanisms may operate differently for in-group and out-group members. It can be assumed that only the nonverbal behaviors of an in-group or very well known out-group would be familiar to perceivers. Thus, recognition of nonverbal behaviors would provide more help in identifying in-group members—in this case, Americans. However, individuals may possess strong stereotypes about both in-groups and out-groups. Perceivers may also assume that out-group members conform more closely to cultural stereotypes than in-group members do. Australian—but not American—targets may have been identified in part based on their conformity to cultural stereotypes. This may be both because Americans' nonverbal behaviors are more familiar and recognizable to American perceivers and because judges assumed that out-group members would conform to relevant cultural stereotypes more than in-group members would.

NONVERBAL ACCENTS AND CULTURAL STEREOTYPES

The data from Study 2 also demonstrated that nonverbal behaviors contribute not only to nationality attributions but also to stereotype-relevant personality judgments of targets. Again, more than one mechanism exists by which this might occur. One is a primarily top-down mechanism associated with the assimilation effect. This effect occurs when the judge is aware of the target's group membership and the traits stereotypically associated with that group and then rates individual members of the group in ways consistent with the group stereotype, regardless of the target's behavior (Biernat, 2003). This can occur on nonconscious levels,

triggered by the simple presence of a target. It can even occur if the judge is not consciously aware of the target's group membership (Hilton & von Hippel, 1996).

Assimilation may occur during judgments of spoken accents. In findings that strongly echo those presented here, Ladegaard (1998) found that a spoken Australian accent was judged to sound friendlier than an American accent, whereas an American accent was judged to sound higher in leadership and social status. This was despite the researchers' sampling participants from a Danish student population with little direct exposure to American or Australian culture. Ladegaard posited that the accents triggered latent cultural stereotypes about Americans and Australians, and the speakers were then evaluated accordingly. If the nonverbal behaviors seen by participants in the present study allowed them to identify the targets' cultural identity, a similar assimilation effect could have occurred. However, it is likely much more difficult to identify nationality from a photograph than from a vocal recording. Given that we did not measure whether participants detected targets' nationalities in the initial phase when rating them on stereotype-relevant traits, however, an assimilation effect cannot be entirely ruled out.

A second possible mechanism by which nonverbal accents lead to stereotyping is that nonverbal accents may actually convey stereotype-relevant perceptual attributes, as discussed above. If aggregate personality differences across cultural groups can lead to aggregate behavioral differences, then these variations in behavior might then elicit stereotype-relevant attributions. Such attributions would represent a kind of kernel of truth that could reinforce national stereotypes (Eysenck, Humphery & Eysenck, 1980; Lynn & Martin, 1995; McCrae & Terracciano, 2005), as one among many mechanisms by which cultural stereotypes may arise (for other possible mechanisms, see Linssen & Hagendoorn, 1994; Alexander, Brewer, & Livingston, 2005).

FUTURE RESEARCH

Although Study 1 and Study 2 shed light on the phenomenon of nonverbal accents, they leave unanswered questions that future research should address. Further work should seek to identify the boundary conditions for the phenomenon of nonverbal accents by assessing targets of varying ethnicities and nationalities. Testing individuals from multiple nationalities and/or ethnicities simultaneously might also better enable an understanding of what processes (e.g., familiarity vs. stereotype conformity) are used to make nationality judgments based on nonverbal behaviors. It would be hypothesized that participants viewing members of several unfamiliar out-groups would be most reliant on stereotypes to distinguish targets' nationalities.

The initial research on nonverbal accents (Marsh et al., 2003) used Matsumoto and Ekman's (1988) JACFEE and JACNeuF photograph sets that were designed specifically to eliminate display rules, which provides evidence for the distinction between nonverbal accents and display rules. The convergence of the our findings with this earlier study suggests that our findings are similarly not explained by the distinct phenomenon of display rules. Still, this distinction is important enough to warrant further efforts to ensure that nonverbal accents and display rules do not each serve as a confound in the study of the other. Further work might use alternate ways of inducing emotional facial expressions—such as requiring targets to produce discrete muscle movements—that further serve to distinguish the effects of nonverbal accents and display rules from one another.

Future research might also assess the influence of nonverbal accents on intercultural interactions. In a classic study on the halo effect, participants saw an instructor described

as either warm or cold and who had a strong European accent and mannerisms (Nisbett & Wilson, 1977). Participants prepared to dislike the instructor (those who were told he was cold) later blamed his accent and mannerisms as partially responsible for their dislike. One might predict that nonverbal accents could similarly be used as a scapegoat in interactions between individuals from antagonistic groups.

CONCLUSION

Lorenz (1963) wrote that “little peculiarities of speech and manner . . . cause the smallest possible subcultural groups to stick together” (p. 82), suggesting that what we call nonverbal accents can serve as a means of identification and solidarity with the members of one’s own cultural group. This notion has also been suggested by linguists (Gupta, 1995). For example, it is thought that perhaps linguistic variation continues to exist, despite the existence of homogenizing mass-media sources, because humans are driven to identify with members of their own groups and to distinguish themselves from members of other groups (Gewertz, 2002). Our research presented here suggests that these strivings may play out via even subtle cues embedded within nonverbal behavior.

REFERENCES

- Alexander, M. G., Brewer, M. B., & Livingston, R. W. (2005). Putting stereotype content in context: Image theory and interethnic stereotypes. *Personality and Social Psychology Bulletin, 31*, 781-794.
- Argyle, M., Henderson, M., Bond, M., Iizuka, Y., & Contarello, A. (1986). Cross-cultural variations in relationship rules. *International Journal of Psychology, 21*, 287-315.
- Baron-Cohen, S., & Staunton, R. (1994). Do children with autism acquire the phonology of their peers? An examination of group identification through the window of bilingualism. *First Language, 14*, 241-248.
- Biernat, M. (2003). Toward a broader view of social stereotyping. *American Psychologist, 58*, 1019-1027.
- Bond, C. F., Omar, A., Mahmoud, A., & Bonser, R. N. (1990). Lie detection across cultures. *Journal of Nonverbal Behavior, 14*, 189-204.
- Camras, L. A., Oster, H., Campos, J. J., Miyake, K., & Bradshaw, D. (1997). Japanese and American infants’ responses to arm restraint. In P. Ekman & E. L. Rosenberg (Eds.), *What the face reveals: Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)* (pp. 289-301). New York: Oxford University Press.
- Cutting, J. E., & Kozlowski, L. T. (1977). Recognizing friends by their walk: Gait perception without familiarity cues. *Bulletin of the Psychonomic Society, 9*, 353-356.
- Darwin, C. (1965). *The expression of the emotions in man and animals*. Chicago: University of Chicago Press. (Original work published 1872)
- Edelmann, R. J., Asendorpf, J., Contarello, A., Georgas, J., Villanueva, C., & Zammuner, V. (1987). Self-reported verbal and non-verbal strategies for coping with embarrassment in five European cultures. *Social Science Information, 26*, 869-883.
- Eibl-Eibesfeldt, I. (1971). *Love and hate: The natural history of behavior patterns*. New York: Aldine de Gruyter.
- Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska symposium on motivation, 1971* (Vol. 19, pp. 207-282). Lincoln: University of Nebraska Press.
- Ekman, P. (1997). What we have learned by measuring facial behavior. In P. Ekman, & E. L. Rosenberg (Eds.), *What the face reveals: Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)* (pp. 469-485). New York: Oxford University Press.
- Ekman, P., Friesen, W. V., O’Sullivan, M., Chan, A., Diacoyanni-Tarlatzis, I., Heider, K., Krause, R., LeCompte, W. A., Pitcairn, T., Ricci-Bitti, P. E., Scherer, K., Tomita, M., & Tzavaras, A. (1987). Universals and cultural differences in the judgments of facial expressions of emotion. *Journal of Personality and Social Psychology, 53*, 712-717.

- Ekman, P., Sorensen, E. R., & Friesen, W. V. (1969). Pancultural elements in facial displays of emotions. *Science*, *164*, 86-88.
- Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion recognition: A meta-analysis. *Psychological Bulletin*, *128*, 203-235.
- Eysenck, S. B., Humphrey, N., & Eysenck, H. J. (1980). The structure of personality in Australian as compared with English subjects. *Journal of Social Psychology*, *112*, 167-173.
- Ferguson, G. A. (1966). *Statistical analysis in psychology and education*. New York: McGraw-Hill.
- Fiske, S. T., Cuddy, A.J.C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*, 878-902.
- Gewertz, K. (2002, December 12). Standing on line at the bubbler with a hoagie in my hand: Bert Vaux maps America's dialects. *Harvard University Gazette*. Retrieved April 27, 2004, from <http://www.news.harvard.edu/gazette/2002/12.12/08-vaux.html>
- Gupta, A. F. (1995). What do our students want to sound like? *STETS Language & Communication Review*, *1*, 25-31.
- Gupta, A. F. (2005). Accents. *The Linguist List*. Retrieved October 27, 2005, from <http://www.sfs.nphil.uni-tuebingen.de/linguist/ask-ling/accent.html>
- Hilton, J. L., & von Hippel, W. (1996). Stereotypes. *Annual Review of Psychology*, *47*, 237-271.
- Izard, C. E. (1971). *The face of emotion*. New York: Appleton-Century-Crofts.
- Johnson, H. G., Ekman, P. & Friesen, W. V. (1975). Communicative body movements: American emblems. *Semiotica*, *15*, 335-353.
- Kozlowski, L. T., & Cutting, J. E. (1977). Recognizing the sex of a walker from a dynamic point-light display. *Perception & Psychophysics*, *21*, 575-580.
- Kurzban, R., Tooby, J., & Cosmides, L. (2001). Coalitional computation and social categorization. *Proceedings of the National Academy of Sciences, U.S.A.*, *98*, 15387-15392.
- Ladegaard, H. J. (1998). National stereotypes and language attitudes: The perception of British, American and Australian language and culture in Denmark. *Language & Communication*, *18*, 251-274.
- La France, B. H., Heisel, A. D., & Beatty, M. J. (2004). Is there empirical evidence for a nonverbal profile of extraversion?: A meta-analysis and critique of the literature. *Communication Monographs*, *71*, 28-48.
- LaFrance, M. & Mayo, C. (1978). Cultural aspects of nonverbal communication. *International Journal of Intercultural Relations*, *2*, 71-89.
- Linssen, H., & Hagendoorn, L. (1994). Social and geographical factors in the explanation of the content of European nationality stereotypes. *British Journal of Social Psychology*, *33*, 165-182.
- Lorenz, K. (1963). *On aggression*. New York: Harcourt, Brace, & World.
- Lynn, R., & Martin, T. (1995). National differences for thirty-seven nations in extraversion, neuroticism, psychotism and economic, demographic and other correlates. *Personality and Individual Differences*, *19*, 403-406.
- Malatesta, C. Z., & Haviland, J. M. (1982). Learning display rules: The socialization of emotion expression in infancy. *Child Development*, *53*, 991-1003.
- Marsh, A. A., Elfenbein, H. A., & Ambady, N. (2003). Nonverbal "accents": Cultural differences in facial expressions of emotion. *Psychological Science*, *14*, 373-376.
- Matsumoto, D., & Ekman, P. (1988). Japanese and Caucasian facial expressions of emotion (JACFEE). [Slides]. San Francisco: Intercultural and Emotion Research Laboratory, Department of Psychology, San Francisco State University.
- Matsumoto, D., Yoo, S. H., Hirayama, S., & Petrova, G. (2005). Development and validation of a measure of display rule knowledge: The display rule assessment inventory. *Emotion*, *5*, 23-40.
- McAndrew, F. T., Akande, A., Bridgstock, R., Mealey, L., Gordon, S. C., Scheib, J. E., Akande-Adetoun, B. E., Odewale, F., Morakinyo, A., Nyahete, P. & Mubvakure, G. (2000). A multicultural study of stereotyping in English-speaking countries. *Journal of Social Psychology*, *140*, 487-502.
- McCrae, R. R., & Terracciano A. (2005). Personality profiles of cultures: Aggregate personality traits. *Journal of Personality and Social Psychology*, *89*, 407-425.
- Mesquita, B., Frijda, N. H., & Scherer, K. R. (1997). Culture and emotion. In J. W. Berry, P. R. Dasen, T. S. Saraswathi, Y. H. Poortinga, & J. Pandey (Eds.), *Handbook of cross-cultural psychology: Vol. 2. Basic processes and human development* (2nd ed., pp. 255-297.). Boston: Allyn & Bacon.
- Montepare, J. M., & Zebrowitz, L. A. (1993). A cross-cultural comparison of impressions created by age-related variations in gait. *Journal of Nonverbal Behavior*, *17*, 55-68.
- Montepare, J. M., & Zebrowitz-McArthur, L. (1988). Impressions of people created by age-related qualities of their gaits. *Journal of Personality and Social Psychology*, *55*, 547-556.

- Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning, 45*, 73-97.
- Munro, M. J., Derwing, T. M., & Flege, J. E. (1999). Canadians in Alabama: A perceptual study of dialect acquisition in adults. *Journal of Phonetics, 27*, 385-403.
- Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology, 35*, 250-256.
- Park, B., & Hastie, R. (1987). The perception of variability in category development: Instance- versus abstraction-based stereotypes. *Journal of Personality and Social Psychology, 53*, 621-635.
- Park, B., & Judd, C. M. (1990). Measures and models of perceived group variability. *Journal of Personality and Social Psychology, 59*, 173-191.
- Paunonen, S. V. (2003). Big Five factors of personality and replicated predictions of behavior. *Journal of Personality and Social Psychology, 84*, 411-422.
- Poortinga, Y. H., Schoots, N. H., & Van de Koppel, J. M. (1993). The understanding of Chinese and Kurdish emblematic gestures by Dutch subjects. *International Journal of Psychology, 28*, 31-44.
- Riggio, H. R., & Riggio, R. E. (2002). Emotional expressiveness, extraversion, and neuroticism: A meta-analysis. *Journal of Nonverbal Behavior, 26*, 195-218.
- Rosenthal, R., Hall, J. A., DiMatteo, M. R., Rogers, P. L., & Archer, D. (1979). *Sensitivity to nonverbal communication: The PONS Test*. Baltimore: Johns Hopkins University Press.
- Russell, J. A. (1994). Is there universal recognition of emotion from facial expression? A review of the cross-cultural studies. *Psychological Bulletin, 115*, 102-141.
- Terracciano, A., Abdel-Khalek, A. M., Adam, N., Adamovova, L., Ahn, C. K., Alansari, B. M., et al. (2005). National character does not reflect mean personality trait levels in 49 cultures. *Science, 310*, 96-100.
- Wagner, H. L. (1993). On measuring performance in category judgment studies of nonverbal behavior. *Journal of Nonverbal Behavior, 17*, 3-28.

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