

# Nonverbal Expressions of Status and System Legitimacy: An Interactive Influence on Race Bias

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## Abstract

A voluminous literature has examined how primates respond to nonverbal expressions of status, such as taking the high ground, expanding one's posture, and tilting one's head. We extend this research to human intergroup processes in general and interracial processes in particular. Perceivers may be sensitive to whether racial group status is reflected in group members' nonverbal expressions of status. We hypothesized that people who support the current status hierarchy would prefer racial groups whose members exhibit status-appropriate nonverbal behavior over racial groups whose members do not exhibit such behavior. People who reject the status quo should exhibit the opposite pattern. These hypotheses were supported in three studies using self-report (Study 1) and reaction time (Studies 2 and 3) measures of racial bias and two different status cues (vertical position and head tilt). For perceivers who supported the status quo, high-status cues (in comparison with low-status cues) increased preferences for White people over Black people. For perceivers who rejected the status quo, the opposite pattern was observed.

## Keywords

racial attitudes, social dominance, nonverbal cues, status, intergroup bias, face perception

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Navigating social hierarchies is critical for social animals—they must be able to communicate their own and identify others' status. Nonverbal expressions (e.g., postural expansion) support hierarchy navigation among primates who cannot speak (de Waal, 1982). Even among humans, perceivers attribute high status to and behave submissively toward individuals who exhibit high-status nonverbal cues (Hall, Coats, & Smith LeBeau, 2005; Tiedens & Fragale, 2003; Tracy, Shariff, Zhao, & Henrich, in press). Such effects illustrate the importance of nonverbal expressions of status in interpersonal relations. However, there is little research regarding the role of these expressions in intergroup relations. The research reported here addressed this lacuna by examining the role of nonverbal status cues in racial bias (preferences for one race over another). We hypothesized that racial bias would vary according to whether the nonverbal status expressions of White and Black persons were consistent with perceivers' beliefs about ethnic-group stratification.

## Stratification in Human and Nonhuman Primates

Most primates navigate hierarchical relationships via nonverbal communication, signaling and identifying status through a variety of nonverbal cues. The vast majority of these cues involve alterations of size: High-status cues typically involve an increase in apparent size (e.g., via movement to higher ground or postural expansion), and low-status cues typically involve a reduction in apparent size (de Waal, 1982; Preuschoft & van Shaik, 2000; Schubert, 2005; Tiedens & Fragale, 2003; cf. Ambady & Weisbuch, 2010). Human social perception is sensitive to the relationship between apparent size and social status. For example, perceivers attribute higher status to people

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who merely appear higher in the visual field (Fiske, 1992; Giessner & Schubert, 2007; Schubert, 2005). Similarly, an upward tilt of the head combined with eye contact implies that the head tilter must look down to see the perceiver, and perceivers attribute high status to people who tilt their head upward (Mignault & Chaudhuri, 2003).

Humans and nonhumans are both receptive to nonverbal status cues, but status hierarchies are arguably more complex among humans. People must navigate status rankings not only of individuals but also of social groups (see Sidanius & Pratto, 1999). Such navigation is facilitated by belief systems that explain why society is structured as it is. *Legitimizing ideologies* sanction the status quo and explain why groups should be stratified as they are. Support for these ideologies leads people to prefer individuals and groups whose behavior preserves the current system of group stratification. For example, in reviewing applicants for a high-status position, people who support legitimizing ideologies (hereafter, *system supporters*) prefer to “hire” people who belong to a higher-status racial group (e.g., White) over people who belong to a lower-status group (e.g., Black), thereby supporting the current system of group stratification (e.g., Michinov, Dambrun, Guimond, & Méot, 2005). Conversely, people who reject legitimizing ideologies (*system rejecters*) prefer to hire Black people over White people for a high-status position, thereby undermining the current system of group stratification.

## Racial Bias

Legitimizing ideologies are likely to have important implications for the role of nonverbal status cues in racial bias. Racial bias in America is a complex and hotly debated topic (cf. Parks & Hughey, 2011). Even though social desirability concerns often lead Americans to *claim* that they prefer Black people over White people (e.g., Vanman, Paul, Ito, & Miller, 1997), unobtrusive measures reveal Americans’ pro-White bias (i.e., preference for White people over Black people; Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002; Greenwald, McGhee, & Schwartz, 1998).

We propose that preferences for one race over another stem, in part, from how legitimizing ideologies shape responses to nonverbal status cues. System supporters prefer people who preserve the status quo in their behavior and should thus be biased in favor of racial groups that exhibit behavior consistent with their groups’ status over racial groups that do not. For these individuals, pro-White bias should be especially strong when Black and White targets exhibit high-status cues, much as pro-White bias is especially strong in the context of high-status jobs. In contrast, system rejecters prefer people who undermine the status quo in their behavior and should thus be biased in favor of racial groups that exhibit nonverbal behavior inconsistent with their racial groups’ status. For

system rejecters, we expected pro-White bias to be especially weak when Black and White targets exhibited high-status cues.

## The Present Research

We examined these hypotheses in Study 1 by isolating the perceptual experience of seeing certain status cues. Specifically, participants looked up or down at White and Black people. This perceptual experience can signal the status of a person (de Waal, 1982; Schubert, 2005). In this study, we measured racial bias in response to identical faces presented at either a high or a low position on a computer screen. The use of identical images enabled us to eliminate confounds (e.g., expressed emotion; Shariff & Tracy, 2009) that can otherwise be associated with the presentation of nonverbal status expressions. In Studies 2 and 3, we sought converging evidence for the influence of status cues on race bias by examining race-based responses to nonverbal behavior (head tilt). In Study 1, we measured racial bias with self-reports, and in Studies 2 and 3, we measured racial bias with Implicit Association Tests (IATs; Greenwald et al., 1998).

## Study 1

### Method

**Participants.** Eighty-one undergraduates (68% White, 22% Asian, 9% Hispanic, 1% mixed race; 53 males, 28 females) at a private American college participated.

**Procedure.** Twenty-four attractiveness-matched White and Black faces (culled from our own collection, Beaupré & Hess, 2005, and Tottenham et al., 2009) were randomly presented on a computer monitor, half centered 30% above the middle of the screen (high-status cue) and half centered 30% below the middle of the screen (low-status cue). Assignment of faces to these two cue conditions was counterbalanced; across participants, each face appeared in the high- and low-status conditions equally often. Participants rated how much they liked each face (from 1, *dislike*, to 6, *like*). Pro-White bias was computed separately for each condition by subtracting the average rating of Black faces from the average rating of White faces (for analyses of raw scores, see the Supplemental Material available online). After rating the faces, participants completed several unrelated studies and then an established four-item system-legitimacy questionnaire ( $\alpha = .68$ ; sample item: “differences in status between ethnic groups are fair”; Levin, Sidanius, Rabinowitz, & Federico, 1998).

## Results and discussion

The use of a continuous predictor variable (system-legitimacy score) and repeated measures led us to analyze the data with generalized estimating equations (GEEs;

Zeger & Liang, 1986). Status-cue condition (high or low), centered system-legitimacy scores, and their interaction were entered as predictors of pro-White bias scores. Subsequent one-tailed planned comparisons (Rosenthal & Rosnow, 1985) were conducted separately for system supporters and system rejecters, respectively, by recentering system-legitimacy scores at 1 standard deviation above and below the mean.

Consistent with prior research on self-reported racial bias (e.g., Vanman et al., 1997), the analyses revealed that pro-White bias was negative, presumably a reflection of social desirability concerns (an issue we addressed in Study 2). Nonetheless, patterns of bias were consistent with the hypotheses. There was no main effect of status-cue condition ( $p = .93$ ) or system-legitimacy score ( $p = .63$ ), but the expected Status Cue  $\times$  System Legitimacy interaction was significant,  $b = 0.220$ ,  $SE = 0.086$ , Wald  $\chi^2 = 6.55$ ,  $p = .01$ ,  $r_{pb} = .28$  (Fig. 1a). For system supporters, pro-White bias was significantly stronger for faces in high-status positions than for faces in low-status positions,  $b = 0.236$ ,  $SE = 0.126$ , Wald  $\chi^2 = 3.50$ ,  $p = .03$ ,  $r_{pb} = .21$ . For system rejecters, pro-White bias was marginally weaker for faces in high-status positions than for faces in low-status positions,  $b = -0.208$ ,  $SE = 0.134$ , Wald  $\chi^2 = 2.40$ ,  $p = .06$ ,  $r_{pb} = .17$ . These effects were not qualified by participants' race (see the Supplemental Material).

## Study 2

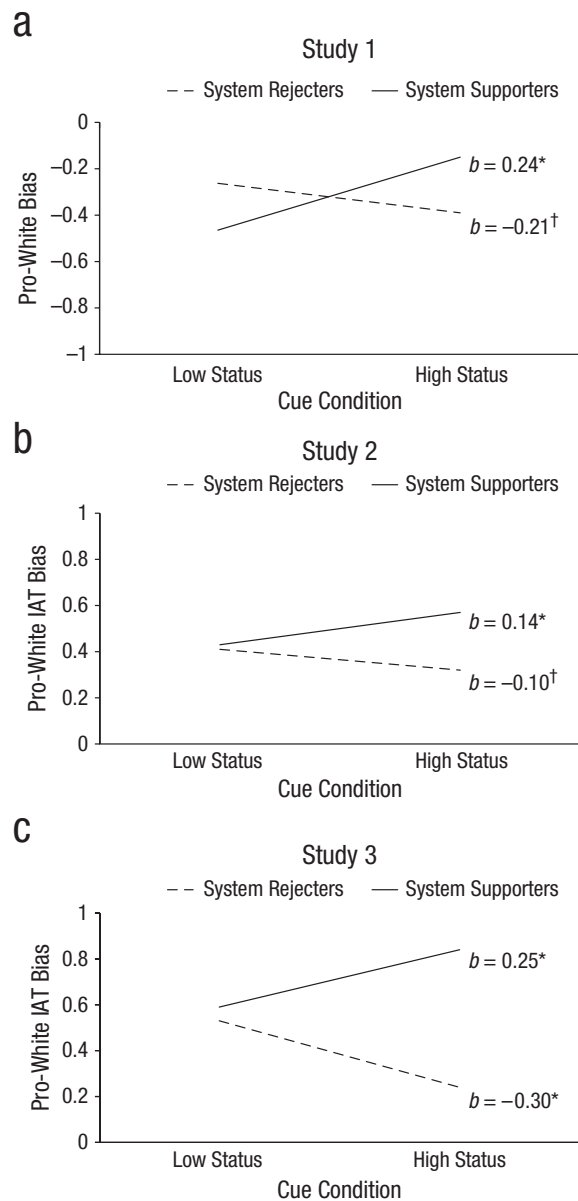
In Study 2, we investigated whether we would obtain converging evidence using another status cue: head tilt (Mignault & Chaudhuri, 2003). We also used a dependent measure less susceptible to social desirability: the race-IAT.

## Method

**Participants.** Sixty male undergraduates (88% White, 5% multiracial, 3% Hispanic, 3% Asian) at a private American university participated.

**Race-IATs.** In the race-IAT, participants identify faces as White or Black and words as positive or negative. In one test block of 40 trials, the same response key is used for White faces and positive words, whereas the other key is used for Black faces and negative words. In another test block of 40 trials, the positive/negative mappings are reversed.

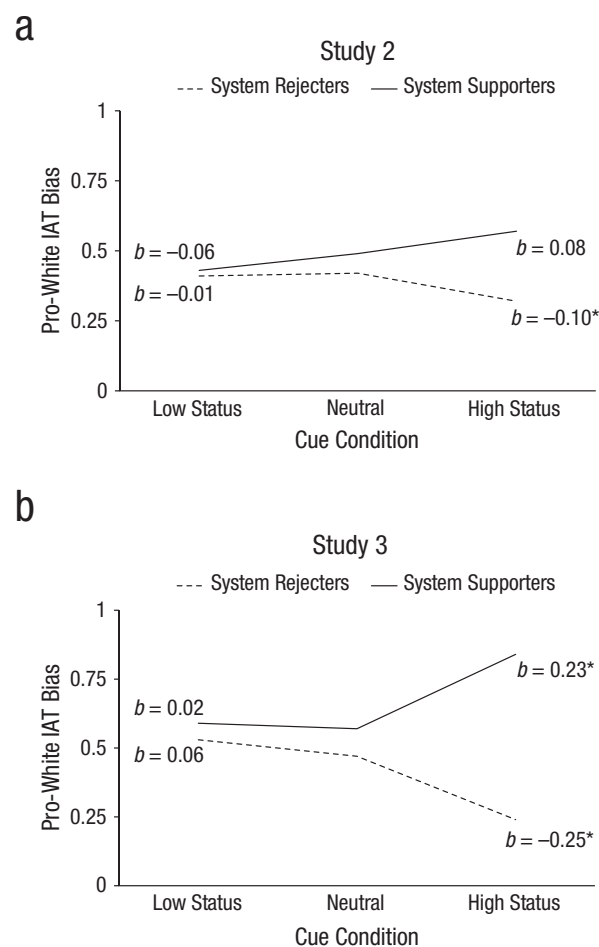
For the face stimuli in our race-IATs, four White students (two male, two female) and four Black students (two male, two female) at a separate university were photographed displaying upward head tilt with direct gaze, downward head tilt with downward gaze, and no head tilt with direct gaze (with neutral expressions). Perceivers regard these nonverbal cues as signifying high status, low



**Fig. 1.** Pro-White bias as a function of status-cue condition (high or low) and support for system legitimacy (system supporter or system rejecter) in (a) Study 1, (b) Study 2, and (c) Study 3. Regression coefficients are shown ( $†p \leq .10$ ,  $*p \leq .05$ ). For results including the neutral-status conditions in Studies 2 and 3, see Figure 3.

status, and neutral status, respectively (Mignault & Chaudhuri, 2003). We used these stimuli to create three race-IATs, each presenting a different level of head tilt.

**Procedure.** Each participant completed the three IATs in counterbalanced order. Test-block order within each IAT was counterbalanced, and each test block was



**Fig. 2.** Pro-White bias as a function of status-cue condition (high, neutral, or low) and support for system legitimacy (system supporter or system rejector) in (a) Study 2 and (b) Study 3. Regression coefficients are from analyses in which low-status faces (left) and high-status faces (right) were compared with neutral-status faces ( $*p \leq .05$ ).

preceded by practice blocks requiring only one dimension of categorization (e.g., words only). Pro-White bias was calculated as the standardized difference in response time between blocks such that positive scores indicate faster responses in the White-positive/Black-negative block than in the White-negative/Black-positive block (i.e., scores above 0 indicate pro-White bias; Greenwald, Nosek, & Banaji, 2003). After finishing the IATs, participants completed several unrelated studies and then the same system-legitimacy questionnaire as in Study 1 ( $\alpha = .66$ ).

### Results and discussion

We conducted an initial GEE analysis, parallel to the one for Study 1, to examine whether Study 2 replicated the

previous results for high- and low-status cues. A marginal main effect of system-legitimacy score,  $b = 0.059$ ,  $SE = 0.034$ , Wald  $\chi^2 = 3.10$ ,  $p = .08$ ,  $r_{pb} = .23$ , was qualified by the predicted significant Status Cue  $\times$  System Legitimacy interaction,  $b = 0.125$ ,  $SE = 0.059$ , Wald  $\chi^2 = 4.41$ ,  $p = .04$ ,  $r_{pb} = .27$  (Fig. 1b). For system supporters, pro-White bias was stronger for high-status than for low-status faces,  $b = 0.14$ ,  $SE = 0.086$ , Wald  $\chi^2 = 2.69$ ,  $p = .05$ ,  $r_{pb} = .22$ . For system rejectors, pro-White bias was marginally weaker for high-status than for low-status faces,  $b = -0.097$ ,  $SE = 0.062$ , Wald  $\chi^2 = 2.52$ ,  $p = .06$ ,  $r_{pb} = .20$ .

To evaluate the relative influences of high- and low-status cues on pro-White bias, we conducted analyses with neutral-status faces as the dummy-coded comparison condition. The interaction of status-cue condition and system-legitimacy score approached significance in the analysis comparing the high- and neutral-status conditions,  $b = 0.096$ ,  $SE = 0.055$ , Wald  $\chi^2 = 3.03$ ,  $p = .08$ ,  $r_{pb} = .22$ , but not in the analysis comparing the low- and neutral-status condition,  $b = -0.03$ ,  $SE = 0.066$ , Wald  $\chi^2 = 0.19$ ,  $p = .66$ ,  $r_{pb} = .05$ . For system supporters, pro-White bias was nonsignificantly stronger for faces with high-status cues than for faces with neutral-status cues,  $b = 0.08$ ,  $SE = 0.090$ , Wald  $\chi^2 = 0.79$ ,  $p = .19$ ,  $r_{pb} = .11$ . For system rejectors, pro-White bias was significantly weaker for faces with high-status cues than for faces with neutral-status cues,  $b = -0.103$ ,  $SE = 0.062$ , Wald  $\chi^2 = 2.76$ ,  $p = .05$ ,  $r_{pb} = .21$  (Fig. 2a).

In summary, as in Study 1, system supporters showed higher pro-White racial bias when targets exhibited high-status cues than when they exhibited low-status cues. The opposite pattern held for system rejectors. Comparisons with a neutral-cue condition suggest that these effects were driven by responses to high-status cues. Finally, these effects were not qualified by participants' race (see the Supplemental Material).

### Study 3

Study 3 involved a community sample with a diverse range of ages and education and utilized a between-subjects design to eliminate any effects of taking multiple IATs. Additionally, computer-generated face models were used to eliminate any status-irrelevant differences between conditions.

### Method

**Participants.** Sixty-one paid participants (80% White, 7% Asian, 8% Hispanic, 5% mixed race; 27 male, 34 female) were recruited from Craigslist.org ( $n = 41$ ) and the Web site of a private university ( $n = 20$ ). Participants were between 18 and 59 years of age (25th percentile: 20 years; 75th percentile: 42 years) and employed in a variety of professions.

**Procedure.** Each participant completed one of three race-IATs, which differed in which status cue the faces displayed: upward head tilt, no head tilt, or downward head tilt. The face stimuli were 12 realistic computer-generated male faces (6 White, 6 Black). After finishing the IAT and then several unrelated studies, participants completed the same system-legitimacy questionnaire as in Studies 1 and 2 ( $\alpha = .67$ ) and a status-differences questionnaire (see the Supplemental Material).

### Results and discussion

Results were not moderated by how participants were recruited. Because of the between-subjects design, we analyzed the data using multiple regression instead of GEEs. This analysis revealed a main effect of system-legitimacy score,  $b = 0.112$ ,  $SE = 0.037$ ,  $t(56) = 3.00$ ,  $p = .004$ ,  $r_{pb} = .37$ , qualified by the predicted interaction between system-legitimacy score and status-cue condition,  $b = 0.231$ ,  $SE = 0.094$ ,  $t(54) = 2.47$ ,  $p = .02$ ,  $r_{pb} = .32$  (Fig. 1c). As in Study 2, for system supporters, pro-White bias was stronger for faces exhibiting high-status cues than for faces exhibiting low-status cues,  $b = 0.25$ ,  $SE = 0.153$ ,  $t(54) = 1.66$ ,  $p = .05$ ,  $r_{pb} = .22$ . For system rejecters, pro-White bias was weaker for faces exhibiting high-status cues than for faces exhibiting low-status cues,  $b = -0.30$ ,  $SE = 0.148$ ,  $t(54) = 2.03$ ,  $p = .02$ ,  $r_{pb} = .27$ .

As in Study 2, we conducted analyses with the neutral-status faces as the comparison condition. The interaction of cue condition and system-legitimacy score reached significance for the analysis comparing the high- and neutral-status conditions,  $b = 0.216$ ,  $SE = 0.081$ ,  $t(54) = 2.66$ ,  $p = .01$ ,  $r_{pb} = .34$ , but not for the analysis comparing the low- and neutral-status conditions,  $b = -0.01$ ,  $SE = 0.090$ ,  $t(54) = 0.17$ ,  $p = .86$ ,  $r_{pb} = .02$ . For system supporters, pro-White bias was stronger for faces exhibiting high-status cues than for those exhibiting neutral-status cues,  $b = 0.23$ ,  $SE = 0.147$ ,  $t(54) = 1.60$ ,  $p = .05$ ,  $r_{pb} = .21$ . For system rejecters, pro-White bias was weaker for faces exhibiting high-status cues than for those exhibiting neutral-status cues,  $b = -0.25$ ,  $SE = 0.133$ ,  $t(54) = 1.88$ ,  $p = .03$ ,  $r_{pb} = .25$  (Fig. 2b). Finally, these results were not qualified by participants' race (see the Supplemental Material).

These results replicate those of Study 2 despite the use of different facial stimuli, a much broader sample, and a between-subjects design. High-status cues evoked increased pro-White bias among system supporters and decreased pro-White bias among system rejecters. Additionally, controlling for beliefs about actual status differences did not affect the results (see the Supplemental Material).

### Meta-analyses

Most of the observed effects were statistically significant by conventional standards, but several predicted effects were only marginally significant. To examine the reliability of all observed effects, we conducted meta-analyses. Following standard guidelines (Rosenthal, 1991), we transformed  $t$  statistics (Study 3) and Wald  $\chi^2$ s (Studies 1 and 2) to  $r$  and then Fisher's  $z_r$ . Mean effect sizes calculated via  $z_r$  were transformed back to unweighted  $r$ s. Significance level was computed by taking the standard normal deviates of  $p$  values, summing these  $z$ s, and dividing by  $\sqrt{k}$ .

The interaction of system-legitimacy belief with high-versus-low-status cues was highly reliable,  $r = .29$ ,  $z = 4.33$ ,  $p = .00001$ . In comparisons with neutral-cue conditions (Studies 2 and 3), the interaction of system-legitimacy belief and status-cue condition was reliable for the high-status condition,  $r = .29$ ,  $z = 3.05$ ,  $p = .001$ , but the interaction remained unreliable for the low-status condition,  $r = .03$ ,  $z = 0.42$ ,  $p = .67$ .

The simple effect of high-versus-low-status cues was reliable among system supporters,  $r = .220$ ,  $z = 2.985$ ,  $p < .001$ . The simple effect of high-versus-low-status cues was nearly identical in size (but opposite in direction) among system rejecters,  $r = .216$ ,  $z = -2.981$ ,  $p < .001$ . The simple effect of high-versus-neutral-status cues was reliable among both system supporters,  $r = .16$ ,  $z = 1.75$ ,  $p = .08$ , and system rejecters,  $r = .23$ ,  $z = 2.49$ ,  $p = .01$ .

### General Discussion

Three experiments and a meta-analysis suggest that sensitivity to nonverbal expressions of status informs racial bias. Racial bias varied according to whether or not targets exhibited nonverbal behavior consistent with the current social status of their race. Thus, pro-White bias was higher among system supporters when White and Black people exhibited high-status cues than when they exhibited low-status cues. System rejecters exhibited the opposite pattern.

The current research demonstrates that the influence of nonverbal status cues on racial bias is moderated by beliefs about system legitimacy. There are several candidate mediators for this moderated effect. System supporters may be more threatened by status-inconsistent than by status-consistent nonverbal behavior, and consequently dislike groups whose members exhibit the former. Our results are consistent with this explanation in that low-status cues—which are less likely than high-status cues to be associated with threat—did not evoke responses that differed by system-legitimacy beliefs in Studies 2 and 3. Alternatively, system supporters and



system rejecters may have an easier time processing nonverbal behavior that is consistent with their beliefs, a cognitive-fluency mechanism. The pleasant feelings associated with this fluent processing may then be associated with the people who evoked it (Winkielman & Cacioppo, 2001).

The current work experimentally isolated the causal influence of nonverbal status cues on interracial evaluation. Yet even beyond a highly controlled experimental setting, the influence of nonverbal status cues on racial bias is likely to be widespread: Interracial encounters always include nonverbal status cues because people always exhibit some level of postural expansion, head tilt, and vertical position. The influence of status cues on racial bias could thus be observed in in-person interracial contexts as well, even though these encounters are also influenced by many nonvisual factors. Indeed, subtle status cues, such as postural expansion, *do* influence how much people like each other during interpersonal interaction (Tiedens & Fragale, 2003). We would expect similar effects in interracial interactions. For example, a system supporter might prefer a Black interaction partner who exhibits low-status cues over a White partner who exhibits low status-cues. Similarly, there may be important consequences for system rejecters' affective experiences when they interact with Black and White people who display high-status nonverbal cues. The current research may thus inform the burgeoning literature on interracial interactions (cf. Trawalter, Richeson, & Shelton, 2009), and highlights the new insights that can be gleaned from integrating literatures on nonverbal behavior and intergroup relations.

### Author Contributions

M. Weisbuch developed the study concept. All authors contributed to the study design. Testing and data collection were performed by M. Weisbuch and M. L. Slepian. M. Weisbuch performed the data analysis and interpretation. M. Weisbuch drafted the manuscript, and M. L. Slepian, C. P. Eccleston, and N. Ambady provided substantive comments, revisions, and additions to the draft. All authors agreed on and approved the contents of this manuscript.

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### 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.

### Supplemental Material

Additional supporting information may be found at <http://pss.sagepub.com/content/by/supplemental-data>

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