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The Faces of Prejudice: On the Malleability of the Attitude-Behavior Link

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Abstract

The Person X Situation framework for investigating social behavior was applied to the behavioral expression of race-bias. The relation between race-bias and observable nonverbal and social behavior was found to be malleable. White participants interacted with Black and White confederates in one of two behavioral contexts: an ordinary movie discussion or a racially imbued movie discussion. Contextual variations changed the behavioral manifestation of implicitly (IAT) and explicitly (ATB) measured anti-Black race-bias. During the ordinary movie discussion, behavioral manifestation of bias was consistent with previous research (higher IAT was related to more eye blinks, more negativity, less expressivity, and more rigidity; higher ATB was related to more pauses during speech). However, during the racially imbued movie discussion, participants appeared to control all behavior and IAT bias only leaked out through behavioral rigidity. An index of bias-behavior consistency showed that the bias-behavior link shifted considerably for both measures of race-bias, but slightly less so for implicitly measured race-bias. Different behavioral correlates were found for implicitly and explicitly measured race-bias.

KEYWORDS: Attitudes, Emotion, Nonverbal Behavior, Social Behavior, Race-Bias, IAT, ATB, Expression, Prejudice

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When you are tired, do your eyelids droop? What about when you are in the midst of an extremely important meeting with a powerful colleague? What about when you are watching a boring movie with a friend? Research on the behavioral expression of traits and states has long since demonstrated that the manner in which we express who we are and how we feel through social behavior is profoundly influenced by the situation in which our social behavior unfolds (for a review see Mischel & Shoda, 1995). However, no research has applied the Person X Situation framework to the behavioral expression of race-bias. Thus, the current research investigated whether shifts in situational context had an impact on the manner in which race-bias is expressed in inter-racial dyads.

Recent research suggests that Whites' implicitly and explicitly measured race-bias toward Blacks is manifest in more negative nonverbal and social behavior toward Blacks relative to Whites (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001). Attitudes, both implicitly and explicitly measured, are thought to be a person's fairly stable evaluation of an attitude object (Bargh, 1997; Devine, 1989; Dovidio & Fazio, 1992). However, current attitude researchers suggest that attitudes, like personality traits, fluctuate with short- and long-term shifts in environment (e.g., Blair, 2002). Thus, fluctuations in the environment could exert an influence on the attitude-behavior link by: (1) changing the attitude which could then change the profile of associated behavior, (2) shift only the regulation of behavior, or (3) both.

One environmental shift that may be particularly relevant to the expression of race-bias is one in which minority and majority group members are made aware of their group membership during a social interaction. Such an environmental shift has been hypothesized by intergroup

emotions theory to increase a majority group member's negative feelings toward the minority group member (e.g., Smith, 1993; 1999). Pushing the theory one step further, it is reasonable to expect that: (1) the increase in negativity is stronger for those who have more negative out-group attitudes, and (2) that such a "race-saliency" manipulation would enhance the relation between Whites' race-bias and their behavioral negativity toward Blacks (e.g., McConnell & Leibold, 2001).

An alternative hypothesis is that making Whites explicitly aware of their majority group status while interacting with a Black person would lead them to engage in more impression management in an attempt to conceal any biases that do exist. Such impression management may attenuate relations between race-bias and behavior, except for those nonverbal behaviors that are less controllable (see e.g., Babad, Bernieri, & Rosenthal, 1989; Ekman & Rosenberg, 1997; DePaulo, 1992; Rosenthal & Jacobson, 1968) and still able to "leak" out when trying to conceal the truth (Ekman, Friesen, & O'Sullivan, 1988).

To determine the role of contextual variations on the attitude-behavior link, the current study manipulated the saliency of race in Black-White interactions. White participants' reported feelings of positivity and their bodily and facially expressed social behaviors were coded.

Method

Design and Participants

Sixty-two White (34 females and 28 males), English-speaking Northeastern University undergraduates participated in a 1-hour experiment for partial course credit. Participants interacted with one of five Black (2 male, 3 female) and one of four White (2 female, 2 male) confederates. A 2 (race of confederate: within-participants) x 2 (situational context: between-participants) factorial design was used. The order in which participants interacted with the Black

and White confederate was randomized as was whether or not race was made salient (race was either made salient, or not, by both confederates).

Procedure

Participants were told that they would be participating in two different experiments, and that the focus of the first study was to understand college students' opinions and perceptions of current or popular movies, and that they would be interviewed by two different student interviewers for 3-minutes each about a movie (student interviewers were confederates of the experimenter) while being videotaped.

Participants indicated which of 10 movies (5 of which were the target movies) they had seen, and the to-be-discussed movie was randomly selected from the target movies participants had seen. Each of the 5 target movies (e.g., "The Matrix" in which Laurence Fishburne, a prominent Black actor, plays "Morpheus") was pre-tested ($N = 20$) and chosen on the basis that at least 1 of the 5 had close to a 100% chance of having been seen by Northeastern students

Participants sat alongside the interviewer (i.e., confederate) facing the camera, were told that they would be asked some questions about the movie, and the interviewer was handed a sheet of questions to ask the participant. Situational context was manipulated through the questions asked. The first question asked either (a) made race the topic of discussion (i.e., the race-salient condition), or (b) did not make race the topic of discussion (the race-not salient condition). Each participant was interviewed by a Black and a White confederate interviewer, both of whom made race-salient or not. In the race-salient condition, one of two sheets was given: each sheet contained different questions. In the race salient condition, the two race-salient questions (one asked by each "interviewer") were: "Do you think this movie accurately depicts relations between Blacks and Whites? Why?" and "Do you think Blacks or Whites would be

offended by the way race is depicted in the movie? Why?” The two race not salient questions were: “Do you think this movie is an accurate depiction of life? Why?” and “Do you think there was anything offensive about this movie? Why?”

After each 3-min interaction participants completed a mood measure, and confederates completed a partner liking questionnaire taken from Dovidio et al. (1997; 2002) on which ratings of the interaction partner were made on a 1 (*not at all*) to 7 (*extremely*) scale of the following adjectives: pleasant, cruel, unfriendly, unlikable, and cold (the term hostile was also added). Positive affect (PA) was comprised of the following self reported 0 (*do not feel*) to 4 (*definitely feel*) affect terms: happy, peppy, content, loving, caring, amused, cheerful, excited, glad, joyful, pleasant, and relaxed ($\alpha = .81$ and $.83$ for each the 1st and 2nd interaction). At the end of the second 3-min interaction, participants completed a demographic questionnaire and were introduced to a second experimenter who brought them to ostensibly unrelated experiment.

In the “second experiment” participants engaged in a randomly assigned order of the following tasks.

The Implicit Association Test (IAT). The IAT measures how quickly a person can respond with a key-press to classify items into one of two semantically similar category pairs, as compared to the speed of classifying the same items into one of two semantically dissimilar category pairs. This reaction time task was used to measure participants’ automatic, or implicitly measured, attitude toward Black Americans. A relatively more negative attitude toward Blacks was defined as the extent to which Black faces would have a stronger association with evaluatively negative words, and White faces with evaluatively positive words, relative to the reverse (referred to as the IAT D-score). Following Greenwald, Nosek, and Banaji (2003), a computer-administered IAT was developed to measure attitudes towards Blacks. Two versions of

the IAT, one in which semantically similar category pairs were presented first and another in which dissimilar category pairs were presented first, were used in a counterbalanced fashion. The Cronbach's alpha on the participants' practice and critical trials was $\alpha = .42$.

Attitudes toward Blacks (ATB). Brigham's (1993) ATB measured explicit, self-reported, negative attitudes towards Blacks on 20 items anchored on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Cronbach's alpha for the current study was $\alpha = .85$.

Behavior assessments. Eight coders rated the presence of nonverbal and social behaviors. All 3 min of each videotaped interaction were coded. Inter-rater reliability was determined by having a comparison coder code a small portion (2% - 8%) of the participants on the primary coder's designated behavior and then correlating the two coders' data together. Inter-rater reliability was adequate for all behaviors ranging from $r = .68$ to $r = .98$ (Mean inter-rater $r = .81$).

Ten seconds surrounding the race-salient and control question were coded with the Facial Action Coding System (FACS; Ekman & Friesen, 1978; Ekman, Friesen, & Hager, 2002). FACS is a coding system that is used to identify the movement of 64 muscle groups (Action Units, or AUs) in the face and neck. For the purposes of this study, only those muscle groups that have been shown to relate to emotional experience were coded (Ekman et al., 2002). For each race-salient and associated control question, the coded 10 seconds began in the middle of the question. Reliability for FACS was determined across all behaviors for a pair of FACS coders on 11% of the stimuli, and the associated average inter-rater agreement was a respectable 71.16% (following Ekman & Friesen, 1978; Ekman et al., 2002).

Because the primary FACS coder (D.R.C.) was fully aware of the hypotheses and nature of the experimental manipulation, four precautions were taken to insure blindness to

experimental condition: (1) participants' ID numbers in the database did not correspond to the numbers assigned to the participants' digital video clips, (2) ten 10-second "foil" clips were selected from the 62 participants' interactions, and assembled on the to-be-coded tape and came from unknown segments of race-salient, race-not salient, Black, and White interactions, (3) FACS coding was done with the sound off so that the content of the discussion was unknown, and (4) coding was completed with the Black and White confederates occluded.

The 10-second clips were coded sequentially. A display was defined as participants' expressed facial configurations. Any one participant may have expressed a very simple display during the 10 seconds which consisted of only a single AU (e.g., elongation of the zygomaticus major; a smile), or a participant could have expressed a collection of AUs (e.g., zygomaticus major, and orbicularis oculi; a smile, and crinkling of the eye corners). Display data were organized in two ways: (1) the frequency of each AU's occurrence for each target, and (2) correlations between expressed displays and pre-determined "basic emotion prototypes" defined by Ekman et al. (2002). A basic emotion prototype is a facial configuration that is consistent with feeling a particular emotion, such as anger. For each of the six basic emotions (listed below), there were a number of possible AU configurations within each of the 6 basic emotion prototypes. For anger there were 30, for disgust there were 6, for fear there were 23, for happy there were 3, for sad there were 100, and for surprise there were 7.

To determine the degree to which each target displayed one or more of these 6 basic emotion prototypes, each target's display(s) were correlated one at a time with each possible emotion prototype configuration. Profile correlations were at the level of the 27 relevant action units (not all of the 64 AUs are emotion-relevant). Each AU in a prototypical display configuration received a profile of 0s (AU absent) and 1s (AU present) across the 27 AUs, as did

each participant's display(s). The emotional meaning of participants' displays was determined by averaging the profile correlations within a given basic emotion prototype (profile correlations were Fisher's-z transformed prior to averaging). The end result was an index of how much each participants' displays resembled that of prototypical displays of anger, disgust, fear, happiness, sadness, and surprise.

Results

The overall correlation between the IAT and the ATB was not statistically significant in the race-not salient, $r(27) = .18, p > .36$ (Mean IAT D-score = .27; Mean ATB score = 2.25) or the race-salient condition, $r(31) = .16, p > .38$ (Mean IAT D-score = .24; Mean ATB score = 2.13).¹ This finding is consistent with the overall finding that implicitly and explicitly measured race-bias are modestly, but positively related when measurement error is not controlled for (Poehlman, Uhlmann, Greenwald, & Banaji, 2004).

The Malleability of the Bias – Behavior Link

To address the question of whether the relation between race-bias and behavior shifts with changes in situational context, two approaches were taken. The first approach was to list the bias-behavior correlations (e.g., the relation between eye blinks and the IAT) within each situational context (race-not salient vs. race-salient) side-by-side in Table 1, and use a Z-test to determine whether there was a difference in each behavioral manifestation of race-bias across the two situational contexts. This approach allows a fine-grained analysis of which behaviors are stably related to bias, and which ones shift with changes in situational context. The second approach was to make a general comparison between the bias-behavior relations in the race-not salient situation with the bias-behavior relations in the race-salient situation. To do this, the two vectors of bias-behavior relations (separately for IAT and ATB) were correlated. The yield was

an index of nomothetic behavioral consistency of the manner in which race-bias is expressed across situations.² Table 1 shows the relation between the two measures of race-bias, and each of the 16 coded social behaviors.

The malleability of implicit race-bias. Shown in Table 1, when race was not the topic of conversation, the IAT bias–behavior relations resembled those found in previous research on this topic (e.g., Dovidio et al., 2002; McConnell & Leibold, 2001). Higher IAT race-bias was related to more blinking, acting colder, more hostility, less expressively, more rigidly, and more quickly when responding to the first question posed by the Black relative to the White confederate. Three of these relations were also statistically significant when race was made salient: interactional rigidity, postural rigidity, and response time latency, and four behaviors were significantly impacted by the varying situational context from race-not salient to race-salient: eye blinks, coldness, hostility, and a lack of expressiveness were related to IAT bias when race was not salient, and were unrelated when race was salient. A nomothetic analysis correlating the vectors of IAT bias-behavior relations across situational context (i.e., column 1 correlated with 2 in Table 1) suggests some consistency in the behavioral manifestation of IAT bias across race-not salient and race-salient situational contexts, $r(15) = .43, p < .09$.

Taken together, the two analytical approaches investigating the consistency in expressing implicit race-bias suggest both stability and malleability—depending on the behavior under examination. Some variables, such as more interactional and postural rigidity, were robustly related to higher race-bias whereas variables like eye blinks were much more susceptible to shifts in situational context. Across all behaviors, there was some evidence that the manner in which implicit bias is expressed has some limited cross-situational stability.

The malleability of explicit race-bias. Also shown in Table 1, when race was not the topic of conversation, higher race-bias on the ATB was related to less unfriendliness and more pauses while speaking. None of the relations were statistically significant when race was made salient; however, other variables became related to higher ATB bias: less head nodding, less expressiveness, and less postural rigidity. Four behaviors were significantly impacted by the varying situational context from race-not salient to race-salient. Participants sat turned away from Blacks when race was not salient but turned toward when race was salient, went from nodding more to nodding less, from expressivity having no relation to being negatively related to ATB bias, and from pausing more to no relation. A nomothetic analysis correlating the vectors of ATB bias-behavior relations across situational context (i.e., column 4 and 5 in Table 1) suggested no consistency in the behavioral manifestation of ATB bias across race-not salient and race-salient situational contexts, $r(15) = -.15, p > .56$.

Taken together, the two analytical approaches used to investigate the behavioral consistency of explicit race-bias provide no evidence of cross-situational stability.

Implicit bias and prototypical facial expressions. Table 2 shows the relations between race-bias and FACS-coded facial displays of prototypical emotions during the 10 s surrounding the race-not salient and race-salient manipulations. IAT bias was significantly related to more fear expressed toward the Black relative to the White confederate when race was not made salient. Although this relation dropped to a non-significant value when race was salient, a z-test revealed no difference. Sadness was unrelated to IAT bias when race was not salient but when race was made salient, the IAT predicted more sadness toward the White relative to the Black confederates—a z-test revealed that this difference was not statistically significant. The vectors

of IAT bias-behavior relations revealed a non-significant relation comparable in magnitude to that of the IAT bias consistency index reported above, $r(4) = .37, p > .47$.

Explicit bias and prototypical facial expressions. The ATB did not significantly predict any facial displays of emotion, and the consistency with which ATB bias was expressed across situational contexts was not statistically significant or notable in magnitude across the 6 prototypical emotion displays, $r(4) = .18, p > .73$ (Table 2).

Race-bias and specific micro facial movements. Analyses that focused on the manner in which race-bias might be revealed through specific facial actions also showed fluctuations in the bias-behavior link across the two situational contexts. When race was not salient, IAT bias was related to a higher likelihood of nasolabial furrow deepening, $r(21) = .46, p < .05$. Nasolabial furrow deepening is a behavior that deepens the etches of the “smile lines” around the mouth and is a behavior associated with facial displays of sadness. ATB bias was related to opening the eyes widely, $r(21) = .50, p < .02$, which is associated with displays of anger, fear, and surprise. ATB bias was also related to stretching the mouth laterally, $r(21) = .42, p < .05$, which is associated with fear. ATB bias was also associated with opening the mouth slightly, $r(21) = .46, p < .05$, which is associated with anger, fear, and sadness. In contrast, when race was salient, IAT bias was related to opening the mouth slightly, $r(25) = .40, p < .05$, and blinking less, $r(25) = -.54, p < .01$. Blinking less is associated with a freeze response. ATB bias was related to blinking less, $r(25) = -.54, p < .01$.

Although this fine-grained approach may maximize the likelihood of a type-I error, past research exploring the role of specific action units has often stumbled onto remarkably parsimonious and replicable indicators of human emotion and intention. For example, one single muscle contracted on one side of the face (found through a similar exploratory strategy) is a

reliable predictor of marital satisfaction and whether a couple will get a divorce (see, e.g., Gottman & Levenson, 1992).

The cross-situational behavioral consistency of micro facial movements. Nomothetic behavioral consistency analyses were used to determine the cross-situational consistency in expression of race-bias through micro facial movements. Across all FACS coded behavior, the expression of IAT bias was systematically inconsistent, $r(19) = -.38, p < .08$ indicating that behaviors indicative of IAT bias when race was not salient were not indicative of IAT bias when race was made salient, and vice-versa. There was no significant indication of the consistency of the manner in which ATB bias was expressed in facial behavior, although the correlation was not negligible, $r(25) = .30, p > .14$.

Race-Bias is Expressed Differently Depending on Measurement

Table 3 shows the correlations between the expression of IAT and ATB bias within each situational context. When race was not made salient, the vectors of IAT-behavior relations were generally negatively related to the vectors of ATB-behavior relations. When race was salient, the bias-behavior vectors were generally unrelated. These findings suggest that each measure of race-bias is predicting different behaviors in each situational context, and that each measure is related to opposite behaviors (or behaviors in opposite directions) when race was not made salient.

Making Race Salient Influences the Bias - Emotional Experience Link

The rows 3rd from the bottom in Table 1 show that only the IAT was slightly diagnostic of participants' experience of positive emotion following an interaction with Blacks relative to Whites such that more implicitly measured bias was related to feeling slightly less positive. However, this was only true when race was not made salient. When race was made salient,

participants' reported experience of positive emotion was not related to implicitly or explicitly measured race-bias. This finding is inconsistent with what would be predicted by intergroup emotions theory (Smith, 1993; 1999). However, it is possible that making race salient by discussing a race-related aspect of a movie is a manipulation different from simply reminding one of one's group membership.

Black Confederates' Ratings of Participants' Negativity Were Diagnostic of Participants' Race Bias

The row 2nd from the bottom in Table 1 shows that the difference between the Black and White confederates' ratings was positively related to the IAT, but not the ATB. That is, the more the Black relative to the White confederates thought the participant behaved negatively during the interaction, the higher participants' IAT score. This relation was found in both race-saliency conditions—although it was marginally significant only when race was not made salient (a z -test comparing correlation coefficients indicated that there was no difference between the two correlations, $z = .45, p > .65$). Subsequent analyses revealed that Black confederates' negativity ratings predicted increases in participants' IAT scores when both conditions were combined: overall $r(60) = .25, p < .06$. However, White confederates' negativity ratings were unrelated (although slightly negatively) to participants' IAT scores: $r(60) = -.17, p > .18$. Overall, this finding was consistent with previous research by Fazio, Jackson, Dunton, and Williams, (1995).

Discussion

The expression of race-bias has many faces. The manner in which White Americans reveal bias in everyday interaction with Black Americans stands in stark contrast to the manner in which bias is revealed when the topic of discussion is racially imbued. Not only is the manner

in which we express our biases malleable, but many of the behavioral indicators of bias can be controlled as the situation demands.

The Malleability of the Bias-Behavior Link

Research shows that the manner in which personality is expressed fluctuates considerably with subtle shifts in situational context (for a review see Mischel & Shoda, 1995). Thus, it makes remarkable sense that the expression of race-bias, too, shifts with situational changes. The current research is the first to empirically demonstrate the effect of contextual changes on shifts in the bias-behavior link. One finding that may be of great interest to some is that of the relative imperviousness of implicit race-bias to changes in situational context. In contrast, explicit race-bias was quite malleable in its cross-situational relations to behavior. If it can be assumed that changes in the situational context led to different impression management strategies, then it is not surprising that the implicit bias-behavior relations were less malleable than the explicit bias-behavior relations. Because one's implicit race-bias is widely thought to indicate some degree of bias not privy to conscious awareness, one cannot impression manage relevant outward indicators of bias if one does not know one is biased. An explanation for the rigidity behavior that was particularly robust to changes in situation could be that such behavior is: (1) difficult to control, (2) people do not realize that it is a relevant behavior that ought to be controlled, or (3) people realized that it was a relevant behavior but didn't control it because they didn't know they were biased. However, the question of why some behaviors were controlled and some were not will remain unanswered until research determines which behaviors are more or less difficult to control, and the nature of people's lay theories about the behavioral expression of race-bias.

In contrast, changes in situational context had a more visible effect on explicit bias-behavior relations. However, explicit race-bias was not related to a lot of behavior in either

situational context—thus, the observed shifts in bias-behavior relations may suggest that the more explicitly biased one is, the more one is likely to engage in impression management. Evidence for this can be seen in Table 1 in which many explicit bias-behavior relations completely shifted, in all directions, across the two situations. One caveat here is that previous research has suggested that much of the behavior sampled in the current research—nonverbal behavior—is optimally relevant to the expression of implicit and not explicit race-bias. Thus, one could argue that the conclusion about the lack of cross-situational consistent for explicit race-bias may be untenable. However, as was previously mentioned, there is no current taxonomy for which nonverbal behaviors are more or less controllable. In addition, the current research included many globally rated variables such as “acted cold,” that are arguably quite controllable. And finally, the explicit measure of race-bias was, indeed, related to some nonverbal behaviors such as fewer head nods and more pauses while speaking.

Taken together, these results suggest that the manner in which race-bias unfolds in the social context is a picture a little more replete with complexity than previously thought. Not only does the behavioral expression of race-bias fluctuate with changes in the situation, but this research did not find support for a prediction that would likely have been made by intergroup emotions theory (Smith, 1993; 1999) which predicts an increase in negative feelings when race is made salient in the intergroup context. A natural extension to this is that the more biased one is, the more one should express negativity when race is made salient in the intergroup context. The current research did not find evidence of an increase in negative emotional experience or expression as a function of race-bias in the race-salient context. However, making race salient by discussing a race-related issue may be qualitatively and quantitatively different from the

intergroup emotions perspective on race saliency in which one is simply, and subtly, reminded of one's group membership.

Researchers have, indeed, called for investigations of how the bias-behavior relation changes according to situational shifts. For example, Dovidio et al. (2002) noted that the potential moderating role of public versus private contexts on attitude-behavior relations is a much needed avenue of research. The current research did not manipulate public versus private; however, making race salient was likely to put the White targets "on the spot" which, to a great extent, likely acted as a public-type manipulation. However, it is an open question as to whether more subtle shifts such as a "workplace scenario" versus a "teaching scenario" versus a "cooperative scenario" could also illustrate the malleability of the bias-behavior link. Such investigations are certainly vital to understanding how bias is expressed in interactions optimally relevant to real life.

Different Measures of Race-Bias Have Different Behavioral Profiles

Each measure of race-bias used in the current research appeared to have different profiles of associated behaviors. Generally, the IAT and ATB both predicted more negative behavior toward Blacks relative to Whites; however, the IAT predicted almost twice as many emotions, impressions, and behaviors than the ATB. In addition, the profile of IAT-behavior relations was generally negatively related to or unrelated to the profile of ATB-behavior relations. These findings are interesting for two reasons. First, although each measure of race-bias appears to predict different behaviors, the behaviors that are predicted are conceptually similar. Second, to fully capture the bias-behavior link, it seems that both measures ought to be used to maximize prediction. It is unclear, however, when and why each measure will predict which behaviors. It is to this issue that I now turn.

The (Lack of) Parallelism Between Automatic-Controlled Bias and Automatic-Controlled Behavior

A handful of researchers has explored the possibility that implicitly measured bias should predict less consciously controlled behavior—such as nonverbal behavior—while explicitly measured bias should predict more consciously controlled behavior (e.g., Dovidio et al., 1997). Two points about this proposed parallelism are in order. First, no taxonomy exists listing each nonverbal and social behavior, and its associated controllability index. Such a taxonomy would be an excellent contribution to the literature and may allow for truly rigorous examination of the proposed parallelism. Second, to the extent that research has some indication of controllability—for example, certain facial muscles are certainly less controllable than some gross body movements—the data reported herein do not support such a parallelism. In the current research, the explicit measure of race-bias predicted some behaviors that might be deemed “less controllable.” Thus, it may be premature to make claims about the clean parallelism between implicit or automatic measures of race bias, and less controllable nonverbal behavior. However, it was the case in the current research that the IAT predicted more nonverbal behaviors, overall, than did the ATB which does generally support the notion that implicit bias should predict nonverbal behavior.

Concluding Comments

An open question is why Whites behave differently toward Blacks when race was made salient versus not. Although the impression management explanation seems reasonable, it is quite possible that other forces such as changes in concept accessibility, arousal, threat/challenge orientation, or free-floating affective state could have effected changes in the bias-behavior relations. Investigating the nature and process by which this Person X Situation effect is manifest

on the bias-behavior link is urgently needed since no research other than the current report has focused on this issue—an issue of great theoretical and practical importance.

References

- Babad, E., Bernieri, F., & Rosenthal, R. (1989). Nonverbal communication and leakage in the behavior of biased and unbiased teachers. *Journal of Personality and Social Psychology*, 56, 89-94.
- Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer Jr. (Ed), *The automaticity of everyday life: Advances in social cognition*, 10 (pp. 1-61). Mahwah, NJ: Erlbaum.
- Blair, I. V. (2002). The malleability of automatic stereotypes and prejudice. *Personality and Social Psychology Review*, 6, 242-261.
- DePaulo, B. M. (1992). Nonverbal behavior and self-presentation. *Psychological Bulletin*, 87, 546-563.
- Devine, P. G. (1989). Stereotypes and prejudice: The automatic and controlled components. *Journal of Personality and Social Psychology*, 56, 5-18.
- Dovidio, J. F., & Fazio, R. H. (1992). New technologies for the direct and indirect assessment of attitudes. In J. Tanur (Ed.), *Questions about survey questions: Meaning, memory, attitudes, and social interaction* (pp. 204-237). New York: Russell Sage Foundation.
- Dovidio, J. F., Kawakami, K., & Gaertner, S. L. (2002). Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology*, 82, 62-68.
- Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, 33, 510-540.
- Ekman, P., & Friesen, W. V. (1978). *Facial action coding system: A technique for the measurement of facial movement*. Palo Alto, CA: Consulting Psychologists Press.

- Ekman, P., Friesen, W. V., & Hager, J. C. (2002). *Facial Action Coding System*. Salt Lake City: A Human Face.
- Ekman, P., Friesen, W. V., & O'Sullivan, M. (1988). Smiles when lying. *Journal of Personality and Social Psychology*, 54, 414-420.
- Ekman, P., & Rosenberg, E. L. (1997). *What the face reveals: Basic and applied studies of spontaneous expression using the Facial Action Coding System (FACS)*. New York: Oxford University Press.
- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013-1027.
- Gottman, J. M., & Levenson, R. W. (1992). Marital processes predictive of later dissolution: Behavior, physiology, and health. *Journal of Personality and Social Psychology*, 63, 221-233.
- Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, 85, 197-216.
- McConnell, A. R., & Leibold, J. M. (2001). Relations among the Implicit Association Test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, 37, 435-442.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, 102, 246-268.

Poehlman, T. A., Uhlmann, E., Greenwald A. G., & Banaji, M. R. *Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity*. Unpublished manuscript.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the Classroom*. New York: Holt, Rinehart, and Winston.

Smith, E. R. (1993). Social identity and social emotions: Toward new conceptualizations of prejudice. In D. M. Mackie & D. L. Hamilton (Eds.), *Affect, cognition, and stereotyping: Interactive processes in group perception* (pp. 297-315). San Diego, CA: Academic Press.

Smith, E. R. (1999). Affective and cognitive implications of a group becoming part of the self: New models of prejudice and of the self-concept. In D. Abrams & M. A. Hogg (Eds.), *Social identity and social cognition* (pp. 183-196). Oxford, England: Basil Blackwell.

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Footnotes

¹ The order in which IAT blocks were given (compatible first versus incompatible first) did not affect IAT scores ($p > .25$). Participants' race-bias scores were not affected by specific movie discussed ($ps > .29$), race saliency manipulation ($ps > .43$), confederate gender ($ps > .44$), or Black ($ps > .10$) or White ($ps > .55$) confederates' identity.

² Because the question about behavioral consistency is not about individuals, but about whether bias is differently expressed across situations, a nomothetic analytical approach was conducted—at the level of behaviors, aggregated across individuals.

³ All bias-behavior relations statistically controlled for individual differences in Black and White confederates' friendliness and body orientation because there were some differences between Black and White confederates on friendliness, and there were individual confederate differences on both friendliness and body orientation.

Table 1

Across Situational Context – Correlations Between Race-bias (IAT and ATB) and Behavior Toward Blacks Minus Behavior Toward Whites

	IAT			ATB		
	Race not salient	Race salient	<i>z</i>	Race not salient	Race salient	<i>z</i>
Participants' coded behavior						
Nervous – calm						
Blinks (#)	.36+	-.17	2.05*	.18	-.19	1.40
Nervous	-.21	-.10	-.42	.23	.08	.57
Self-touches (#)	.10	-.21	1.17	.20	.25	-.20
Positive – negative						
Body and head toward	.01	-.12	.49	-.28	.27	-2.11*
Smiles (#)	-.09	-.13	.15	.10	-.19	1.09
Head nods (#)	.03	-.01	.15	.17	-.38*	2.13*
Pleasant	-.10	-.18	.30	-.12	-.00	-.45

Cold	.61***	-.10	3.02**	-.21	-.08	.50
Hostile	.41*	-.11	2.04*	-.17	.03	-.75
Unfriendly	.23	-.00	.87	-.43*	-.05	-1.53
Rigid – expressive						
Expressive	-.48*	.02	-2.03*	-.05	-.33+	1.09
Interactionally rigid	.45*	.44*	.05	.10	-.11	.79
Posturally rigid	.36+	.39*	-.13	.12	-.31+	1.65+
Verbal fluency – dysfluency						
Pauses (#)	-.05	-.03	-.07	.63***	.04	2.62**
Response time latency to Q1 (ms)	-.38+	-.37*	-.04	.21	-.31	1.99*
Speaking time (ms)	.10	-.01	.41	.25	-.21	1.75+
Speech errors (#)	-.27	-.17	-.39	.13	-.23	1.36
Confederates' and participants' ratings						
Participants' positive feelings	-.35+	-.00	-1.36	.08	.23	-.57
Confederates' negativity ratings	.36+	.25	.45	.01	-.10	.41

Note: IAT = Implicit Association Test; ATB = Attitudes Toward Blacks. All values are two-tailed partial correlations controlling for Black and White confederates' coded body orientation and friendliness. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 2

Correlations Between Race-bias FACS Coded Nonverbal Expressions of Emotion Toward Black Confederates Minus Behavior Toward White Confederates for Each Race Saliency Condition (Not Salient vs. Salient)

Prototypical emotional display	IAT			ATB		
	Race not	Race	<i>z</i>	Race not	Race	<i>z</i>
	salient	salient		salient	salient	
Anger	.09	-.05	.52	.03	.04	-.04
Disgust	-.29	-.01	-1.08	.08	.16	-.30
Fearful	.43*	.06	1.49	-.20	-.15	-.19
Happy	.23	-.08	1.17	-.07	.25	-1.21
Sad	-.09	-.38+	1.16	.18	-.07	.94
Surprise	.07	.02	.19	-.16	-.00	-.60

Note: IAT = Implicit Association Test; ATB = Attitudes Toward Blacks. All values are two-tailed partial correlations controlling for Black and White confederates' coded body orientation and friendliness. + $p < .10$; * $p < .05$.

Table 3

Profile Correlations Showing the Degree of Consistency Between the Manner in Which IAT and ATB Bias is Expressed

Type of behavioral expression of race-bias	Consistency of behavioral expression as a function of race-bias measurement (<i>r</i>)
Race-not salient situation	
Body/face/vocal behaviors (<i>N</i> = 17 behaviors)	-.27
FACS-coded prototypical emotion displays (<i>N</i> = 6 displays)	-.77+
FACS-coded individual behaviors (<i>N</i> = 25 behaviors)	-.57**
Race-salient situation	
Body/face/vocal behaviors (<i>N</i> = 17 behaviors)	-.21
FACS-coded prototypical emotion displays (<i>N</i> = 6 displays)	.10
FACS-coded individual behaviors (<i>N</i> = 25 behaviors)	.30

Note: + $p < .08$; ** $p < .01$