
Following in the Wake of Anger: When Not Discriminating Is Discriminating

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Does seeing a scowling face change your impression of the next person you see? Does this depend on the race of the two people? Across four studies, White participants evaluated neutrally expressive White males as less threatening when they followed angry (relative to neutral) White faces; Black males were not judged as less threatening following angry Black faces. This lack of threat-anchored contrast for Black male faces is not attributable to a general tendency for White targets to homogenize Black males—neutral Black targets following smiling Black faces were contrasted away from them and seen as less friendly—and emerged only for perceivers low in motivation to respond without prejudice (i.e., for those relatively comfortable responding prejudicially). This research provides novel evidence for the overperception of threat in Black males.

Keywords: *prejudice; stereotypes; threat; race; internal motivation to respond without prejudice*

Imagine being invited to a social gathering consisting primarily of people you do not know. One of the guests becomes irate and begins acting in a threatening manner, so you move away and join a different group of people—a group that seems comparatively safe. Might you be less inclined to see this new circle of people as a source of safety if they were members of the same

stereotypically threatening racial/ethnic outgroup as the irate guest? Is it possible you would instead generalize the threat perceived in the irate person to other, even neutral, members of that racial/ethnic outgroup?

We explore whether seeing a person who signals possibly threatening intentions (e.g., via angry facial expression) influences perceptions of the next person one sees and whether this effect depends on group stereotypes relevant to these individuals (cf. Ackerman et al., 2006; Butz & Plant, 2006; Donders, Correll, & Wittenbrink, 2008; Maner et al., 2005; Plant, Peruche, & Butz, 2005; Trawalter & Richeson, 2008). In particular, we test hypotheses pertaining to physical safety threats that tend to be stereotypically associated with Black males

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(cf. Correll, Park, Judd, & Wittenbrink, 2002; Donders et al., 2008; Hebl et al., in press; Hugenberg & Sacco, 2008; Plant, 2004; Plant et al., 2005; Richeson & Trawalter, 2008; Trawalter & Richeson, 2008).

Threat-Related Stereotypes of Black Males

Perceptions of others are profoundly guided by stereotypes held about the groups to which they belong (e.g., Devine, 1989; Devine & Elliot, 1995; Dovidio, Brigham, Johnson, & Gaertner, 1996; Fiske, 1998). Cultural stereotypes in North America tend to cast particular racial/ethnic groups, such as African Americans, as hostile and physically dangerous (e.g., Allport & Postman, 1947; Correll et al., 2002; Cottrell & Neuberg, 2005; Devine, 1989; Madon et al., 2001). Indeed, violence and criminality have typified the stereotype of Black Americans for well over half a century (Allport & Postman, 1947; Correll et al., 2002; Devine, 1989; Duncan, 1976), and North American White perceivers are generally prone to self-protective biases directed toward African Americans (e.g., Schaller, Park, & Faulkner, 2003). Notably, the stereotypes of criminality and aggressiveness associated with Black Americans tend to be directed disproportionately toward Black males (e.g., Quillian & Pager, 2001; see also Shapiro & Neuberg, 2008; Sidanius & Veniegas, 2000). This is consistent with a large literature suggesting that, throughout human history, men have been the primary perpetrators of physical aggression (Daly & Wilson, 1994) and perceptions of aggressiveness and threat are more strongly linked with men than with women (Becker, Kenrick, Neuberg, Blackwell, & Smith, 2007; Navarrete et al., 2009).

What are the implications of this heuristic association between Black males and physical danger for social cognitive processes? Being primed with images of Black men enhances White participants' ability to detect and encode dangerous items (e.g., guns; Eberhardt, Goff, Purdie, & Davies, 2004; Payne, 2001). Whites playing a video game simulation are particularly quick to "shoot" Black targets—not only those armed with guns but also those "armed" with harmless items such as cell phones or wallets (Correll et al., 2002; Plant & Peruche, 2006). Activating the concept of criminality causes Whites to attend preferentially to Black faces (e.g., Eberhardt et al., 2004), and when Black male targets display heuristic cues to danger (e.g., an angry facial expression), they tend to be efficiently encoded by White perceivers (Ackerman et al., 2006; Trawalter, Todd, Baird, & Richeson, 2008). Furthermore, cues to physical safety threats enhance such biases. For example, placing non-Black participants in a dark room (a heuristic threat cue reflecting greater vulnerability to harm) increases

danger-related stereotypes of Blacks (Schaller, Park, & Mueller, 2003), and priming participants with a fearful emotional state leads White participants to "see" threat in the faces of neutrally expressive Black men (Maner et al., 2005). Thus, the perception of Black targets (especially Black men) tends to heighten both vigilance and speed of reactions to potential (and erroneously perceived) threats, and the activation of threat-based schemata among Whites produces negatively biased perceptions of Black men and exacerbates threat-related stereotypes associated with physical danger.

Following in the Wake of Hostility: Are White and Black Targets Evaluated Differently?

What implications do negative threat-related stereotypes have for the type of context effects we described earlier? The inclusion/exclusion model of assimilation and contrast effects offers some useful insights (e.g., Bless & Wanke, 2000; Schwarz & Bless, 1992, 2007). According to this model, the emergence of contrastive versus assimilative judgments depends on characteristics of the first stimulus (the anchor), the relationship between the anchor and the second stimulus (the target), and the ease of incorporating the anchor into one's impression of the target. Assimilative judgments occur when the anchor is included in one's impression of the target; thus, factors that increase the likelihood that the anchor and the target will be seen as belonging to a similar category—for instance, when the anchor is a typical exemplar of the target's category (a canary or sparrow for the category bird)—should also increase the likelihood of assimilation. Contrastive judgments occur when the anchor is excluded from one's impressions of the target; thus, factors that *decrease* the likelihood that the anchor and target will be seen as belonging to the same category—for instance, when the anchor is an atypical or extreme exemplar of the target's category (such as a penguin or an ostrich)—should increase the likelihood of contrastive judgments.

Applying these insights, we expect, first, that because an angry expression displayed by a White male face is likely to appear atypical and extreme, neutrally expressive White male targets may be contrasted away from angry, threatening White male anchors. That is, we anticipated that neutrally expressive White targets following angry White anchors would be evaluated as less threatening than neutrally expressive White targets following neutrally expressive White faces.

We expected a different pattern for Black targets. Because an angry Black male may be seen as consistent with the danger-related stereotypes associated with Black men, an angry Black male anchor is likely to be viewed as typical. Consequently, we anticipated that a

subsequent Black male target would be less likely to be contrasted away from an angry Black male anchor. As a result, we did not expect reduced perceptions of threat for neutrally expressive Black males following angry Black males (i.e., no contrast). Indeed, these neutrally expressive Black males may seem even more threatening than usual (i.e., assimilation).

We did not expect Black males to be exempt from contrast effects for other facial expressions. Consider friendliness. To the extent that friendliness is, in some sense, the opposite of interpersonal hostility, the expectations for perceived friendliness reflect the converse of those for perceived threat. Whereas evaluations of threat of neutrally expressive Black males following an angry exemplar should yield no contrast and perhaps assimilation, evaluations of friendliness in Black males following a smiling exemplar should in fact yield contrast for those same neutrally expressive targets. That is, after viewing a smiling Black male—the opposite of the violent/dangerous stereotype and therefore atypical—a subsequent Black male may be perceived as less friendly than he would otherwise be perceived (i.e., compared to a Black male viewed after a neutral anchor).

Motivation to Respond Without Prejudice

If the previously described predicted patterns are produced by stereotypes associating Black males with danger and violence (stereotypes about physical threat tend to be the strongest stereotypes associated with Black males; e.g., Cottrell & Neuberg, 2005; Donders et al., 2008), those patterns should emerge more strongly among people who harbor negative stereotypes about Blacks than among people who lack such stereotypes (e.g., Hugenberg & Bodenhausen, 2003, 2004). Whites who are high in prejudice, compared to those who are low in prejudice, are more likely to activate negative stereotypes about Blacks (Lepore & Brown, 1997; Wittenbrink, Judd, & Park, 1997). Specifically, individuals who are high in internal motivation to respond without prejudice (IMS) fail to endorse stereotypes of Black targets in both public and private contexts (Plant & Devine, 1998) and reveal fewer implicit prejudices on implicit associations tasks (Devine, Plant, Amodio, Harmon-Jones, & Vance, 2002). Conversely, people who lack IMS demonstrate less positive attitudes toward Blacks, higher scores on the Modern Racism scale, and less pro-Black and more anti-Black attitudes (Plant & Devine, 1998). Thus, individuals low in IMS tend to see Blacks as more stereotypic. With regard to our research questions, White perceivers low in IMS might be expected to maintain (or even increase) their evaluations of threat posed by a neutrally expressive Black male who follows an angry Black male. In contrast, White

perceivers high in IMS might be expected to respond to Black targets as they would to White targets.

The Current Research

The current studies examined the processes pertaining to White participants' perceptions of White and Black individuals following the presentation of expressive same-race faces. In one preliminary study and three experiments, we presented participants with several pairs of faces. In Study 1, the first face in each pair (the anchor) was either neutrally expressive or communicated interpersonal threat via an angry expression. The second face (the target) was always neutrally expressive. Our main dependent variable reflected the degree of threat perceived in the second face. We expected that whereas White participants would display contrastive judgments for White faces following angry anchors, they would fail to show this pattern for Black faces. In Study 2, we also presented participants with smiling anchors to rule out the possibility that the pattern for Black faces reflects simple outgroup homogeneity (e.g., Anthony, Copper, & Mullen, 1992; Ostrom & Sedikides, 1992)—that is, the inability or unwillingness to differentiate Black faces from one another on any dimension—as opposed to biases based on perceived threat. And in the final study (Study 3), we measured participants' IMS, which was expected to moderate the effects of anchor expression on evaluations of threat within Black targets.

PRELIMINARY STUDY

Although designed to test a different set of hypotheses, an unpublished study from our research program allowed for preliminary exploration of the effects of angry facial expressions on evaluations of subsequent members of the same racial/ethnic group. The study included 168 White participants. Participants viewed male faces one at a time in groups of two. These groups varied in ethnicity (Black/White) and each group was separated by filler images. The first face (the anchor) in each pair was either angry or neutral in expression and the second face (the target) was always neutral in expression. Participants were asked to report the level of threat posed by the neutrally expressive target faces. As anticipated, we observed a significant interaction between the race of the anchor–target pair and the anchor expression on evaluations of perceived threat posed by the target, $F(1, 164) = 7.86, p = .01, \eta_p^2 = .05$. Consistent with expectations, this interaction was driven by contrastive judgments within evaluations of White targets: Neutrally expressive White male faces following

angry White male faces were evaluated as less threatening than those following neutrally expressive White male faces: $F(1, 164) = 7.28, p = .01$. This pattern of contrastive judgments did not emerge within Black faces ($F < 1$). These results provided initial evidence that angry expressions on the anchor face may reduce perceptions of threat for White targets but not for Black targets. In the next three studies, we used more carefully controlled procedures to directly examine patterns of judgment for Black and White faces.

STUDY 1

In this study, we examined judgments of neutrally expressive White and Black targets following same-race faces that displayed either an angry expression or a neutral expression. Participants evaluated the perceived level of threat elicited by the second (neutral) face. We predicted that whereas a White face following an angry (relative to neutral) face would be rated as less threatening, Black faces would fail to show this pattern.

Method

Participants, procedure, and design. Thirty-six White students (21 female) completed the study online in exchange for class credit. Each participant viewed a slide show. Faces appeared on the screen one at a time in sets of two. The two faces in these sets were always the same race, either Black or White. The first face served as the anchor face and was always angry or neutral in expression. The second face was the target face and was always neutrally expressive. To separate each face pair (and to help disguise the purpose of the study), pairs of animal photos (e.g., nonthreatening birds, horses) were presented between the pairs of faces. Faces (or animals) were presented on the computer screen with the response scale below. The computer advanced to the next photo/evaluation as soon as participants made their evaluation. All faces were randomly drawn without replacement. Thus, the overall experimental design was 2 (race of anchor–target pair: Black vs. White) \times 2 (anchor emotion: angry vs. neutral), within participants.

Materials. The 32 photos used as stimuli were of front-oriented Black and White male faces, approximately 18–35 years old, displaying either neutral or angry facial expressions. The 5 \times 3.5 in. grayscale images were taken from the Montreal Set of Facial Displays of Emotion (Beaupré, Cheung, & Hess, 2000) and the NimStim Face Stimulus set (Tottenham et al., in press). In addition, we supplemented this with a set of photographs that we took of undergraduate students

(students were asked to pose according to Ekman's Facial Action Coding System) and of photographs of people on the Internet (selection of these photographs was based on Ekman's Facial Action Coding System). Each photograph in this set was rated by an independent group of 11 undergraduate students in exchange for course credit. As anticipated, regardless of race, angry faces were evaluated as more angry (Black targets: $M = 7.18, SD = 1.06$; White targets: $M = 7.31, SD = 1.20$) than neutral faces (Black targets: $M = 2.95, SD = 1.24$; White targets: $M = 3.19, SD = 1.36$); a repeated measures ANOVA yielded only a main effect of expression, $F(1, 10) = 77.52, p < .001$, indicating there was no difference in the degree of emotional expression between the Black and White faces.

Measures. After viewing each face (or animal), participants rated how threatening the person (or animal) appeared using a Likert-type scale ranging from 1 (*not at all*) to 9 (*extremely*). To further disguise the purpose of the study, participants also judged the blurriness and quality of the first photo in each pair (using the same Likert-type scale).

Results and Discussion

We conducted a Race \times Emotion repeated measures ANOVA with evaluations of threat of the second (neutrally expressive) face as the dependent variable.¹ This analysis revealed a main effect of anchor/target race, $F(1, 35) = 7.97, p = .008, \eta_p^2 = .19$, which was qualified by the predicted interaction between race and emotional expression, $F(1, 35) = 7.35, p = .01, \eta_p^2 = .17$ (see Figure 1). As anticipated, within pairs of White faces, a significant contrastive judgment emerged, $F(1, 35) = 6.13, p = .02, \eta_p^2 = .15$: Neutrally expressive White faces were evaluated as less threatening when they followed angry, compared to neutrally expressive, White faces. However, within Black faces, this pattern did not emerge. Instead, there was no difference in the evaluation of threat attributed to Black faces following angry or neutrally expressive Black faces ($p = .20$); indeed, the trend for this pattern was in the opposite direction. Supporting our pretest results that revealed no initial evaluative difference between Black and White faces, Black and White faces were found to be equally threatening when they followed neutrally expressive faces ($p = .15$). When people first saw an angry face, however, neutrally expressive Black faces were seen as considerably more threatening than neutrally expressive White faces, $F(1, 35) = 8.22, p = .001, \eta_p^2 = .27$ (see Figure 1).

In sum, consistent with hypotheses, White participants evaluated neutrally expressive White male targets as less threatening when those targets followed angry,

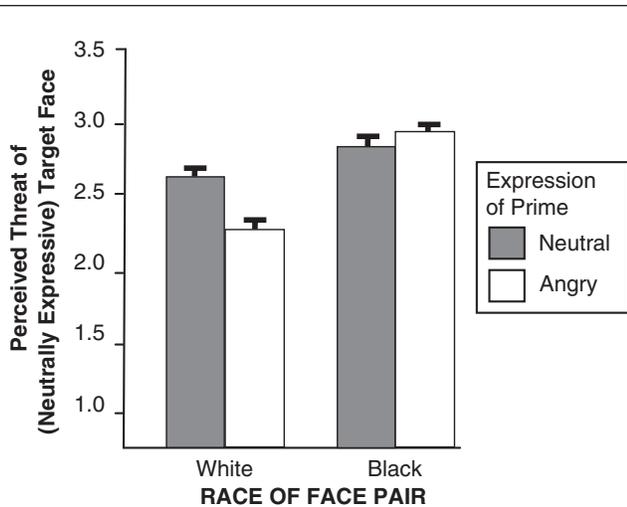


Figure 1 Perceived threat of the neutrally expressive target face as a function of the race (Black/White) and emotional expression (angry/neutral) of the preceding (anchor) face in Study 1.

NOTE: Error bars show standard errors.

compared to neutrally expressive, White male faces. However, this tendency did not emerge for Black targets. Instead, White participants failed to reduce their judgments of threat when a Black male face followed an angry Black male face. Indeed, after viewing an initial same-race angry face, Black males were seen as more threatening than White males, even though the faces were pretested to be equivalently neutral.

An alternative explanation for the Study 1 findings is that the pattern of perceived threat for Black faces reflects a more general form of cognitive shortcut—a tendency to perceptually assimilate across outgroups (i.e., outgroup homogeneity; e.g., Anthony et al., 1992; Ostrom & Sedikides, 1992) regardless of the specific dimension being evaluated. Thus, the purpose of Study 2 was to replicate the findings of Study 1 and rule out this alternative explanation.

STUDY 2

In this study we attempted to replicate the findings of Study 1 and to extend those findings to a different domain of judgment: evaluations of friendliness. If the findings from Study 1 can be accounted for by a general tendency to merely carry over traits from one member of an outgroup to another—that is, a tendency to homogenize the outgroup—we would expect a similar pattern on any evaluation regardless of the trait. If this is the case, neutrally expressive Black males following *smiling* Black males should fail to produce contrastive

judgments of friendliness. However, if the pattern of effects is rooted specifically in the heuristic association between Black men and physical safety threats, we would expect a very different set of findings. That is, we anticipated that Black males would be the target of contrastive judgments on the trait of friendliness, and as a result, would be evaluated as less friendly when following a smiling (relative to neutral) Black male face.

What might one expect for White targets? On one hand, one might simply expect to see a contrast effect among White faces: Neutral White faces following a smiling White face would be seen as less friendly (similar to the prediction for Black faces). Certainly, a smiling expression is more extreme than a neutral one and so it might yield a contrastive judgment. On the other hand, smiling White faces could activate an affiliative mind-set. In addition to expressing happiness and other positive emotions, a smile typically communicates a high degree of social interest and benevolent interpersonal intentions (Schneider & Josephs, 1991). Thus, a smile on an ingroup member could yield the perception of an affiliative opportunity (Haselton & Nettle, 2006; Maner, DeWall, Baumeister, & Schaller, 2007), thus inclining White participants to see a subsequent White face as more friendly rather than less friendly.

Method

Participants, procedure, and design. Ninety-five White students (73 female) completed the study online in exchange for class credit. Each participant was randomly assigned to view stimuli that included either angry and neutral faces (as in Study 1) or smiling and neutral faces (new to this study). Similar to Study 1, each participant viewed a series of same-race (Black or White) pairs of faces. For each pair, the first face was expressive (smiling or angry) or neutrally expressive, and the second face was always neutrally expressive. As in Study 1, each pair of stimuli was separated by a pair of animal photos and was presented on the screen with the focal dependent variable. Thus, the study was a 2 (expression context: angry and neutral vs. smiling and neutral; between subjects) \times 2 (race of anchor–target pair: Black vs. White; within subjects) \times 2 (anchor emotion: expressive [angry or smiling] vs. neutral; within subjects) mixed design.

Materials. The 48 photos used as stimuli were 5 \times 3.5 in. grayscale, front-oriented Black and White male faces, approximately 18–35 years old, with angry, neutral, or smiling facial expressions. The stimuli were taken from the same sources as Study 1. These photos were rated by an independent set of 11 undergraduate

students (see Study 1 for ratings of angry faces). As intended, regardless of race, smiling faces were evaluated as happier (White: $M = 7.57$, $SD = 1.18$; Black: $M = 7.74$, $SD = 1.09$) than neutral faces (White: $M = 3.05$, $SD = 1.18$; Black: $M = 3.17$, $SD = 1.32$); a repeated measures analysis yielded only a main effect of expression, $F(1, 10) = 135.91$, $p < .001$, again indicating no differences in perceived level of expressed happiness as a function of target race.

Measures. After viewing each face, participants made one rating. The focal evaluation pertained to perceptions of the second target face in each pair. In the condition in which the anchor expression was angry or neutral, target faces were always evaluated on threat; in the condition in which the anchor expression was smiling or neutral, target faces were always evaluated on friendliness. These evaluations were made using a Likert-type scale ranging from 1 (*not at all*) to 9 (*extremely*). As in Study 1, we attempted to disguise the purpose of the experiment by asking participants to report how blurry or high quality the first photograph (animal and face) appeared using the same Likert-type scale.

Results and Discussion

We conducted a 2 (expression context: angry and neutral vs. smiling and neutral; between subjects) \times 2 (race of anchor–target pair: Black vs. White; within subjects) \times 2 (anchor emotion: expressive [angry or smiling] vs. neutral; within subjects) mixed ANOVA with target evaluation as the dependent variable.² We observed main effects of the emotional expression of the anchor, $F(1, 93) = 13.95$, $p < .001$, $\eta_p^2 = .13$, and the expression context, $F(1, 93) = 32.48$, $p < .001$, $\eta_p^2 = .26$. In addition, we observed two-way interactions between the race of the anchor–target pair and expression content, $F(1, 93) = 23.94$, $p < .001$, $\eta_p^2 = .21$, and between the race of the anchor–target pair and anchor emotion, $F(1, 93) = 6.38$, $p = .01$, $\eta_p^2 = .06$. All lower-order effects were qualified by the predicted three-way interaction among expression context, race of anchor–target pair, and anchor emotion, $F(1, 93) = 38.71$, $p < .001$, $\eta_p^2 = .29$.

As anticipated, in the condition in which the anchor displayed an angry or neutral expression, we replicated the findings of Study 1: A significant interaction emerged between race and emotion, $F(1, 94) = 4.00$, $p = .05$, $\eta_p^2 = .04$. Consistent with Study 1, evaluations of White targets yielded significant contrastive judgments, $F(1, 94) = 6.96$, $p = .01$, $\eta_p^2 = .07$, such that neutrally expressive targets were evaluated as less threatening when they followed angry, as opposed to neutrally expressive, anchors. This effect did not emerge within Black targets ($p = .60$): White participants did not

reduce their judgments of threat when Black targets followed angry (relative to neutral) anchor faces (again, the trend for this comparison pointed in the opposite direction). As in Study 1, there was no significant difference in perceptions of threat posed by Black and White faces when those faces followed a neutrally expressive face ($p = .14$). When people first saw an angry face, however, neutrally expressive Black faces were seen as considerably more threatening than neutrally expressive White faces, $F(1, 94) = 37.93$, $p < .001$, $\eta_p^2 = .29$ (see Figure 2).

New to this experiment is the condition in which the anchor face was smiling. Within this condition, a significant interaction emerged between race and emotion on evaluations of the friendliness of the target faces, $F(1, 94) = 43.19$, $p < .001$, $\eta_p^2 = .32$. Notably, the pattern was reversed from that seen when the anchor was angry. Within Black targets, there was a significant contrast effect, $F(1, 94) = 66.68$, $p < .001$, $\eta_p^2 = .42$: Neutrally expressive Black targets following smiling Black anchor faces were evaluated as less friendly than those following neutrally expressive Black anchor faces. This result indicates that outgroup members were not simply treated homogeneously irrespective of the trait dimension being evaluated. A very different pattern was observed for White targets. No longer were neutrally expressive White faces contrasted away from expressive White faces. Instead, there was an assimilation effect such that neutrally expressive White targets were evaluated as friendlier when they followed smiling faces compared to when they followed neutrally expressive faces, $F(1, 94) = 3.98$, $p = .05$, $\eta_p^2 = .04$. Supporting our pretest results that revealed no initial evaluative difference between Black and White faces, Black and White faces were found to be equally friendly when following a neutrally expressive face ($p = .15$). When people first saw a smiling face, however, neutrally expressive Black faces were seen as much less friendly than neutrally expressive White faces, $F(1, 94) = 37.60$, $p < .001$, $\eta_p^2 = .29$ (see Figure 2).

The findings of Study 2 provide important information about the underlying processes driving biases in evaluations of neutrally expressive Black and White men as a function of whether they follow expressive or neutral same-race males. Replicating the findings of Study 1, we observed clear contrast effects for evaluations of threat posed by neutrally expressive White targets: White perceivers viewed White targets as less threatening when following an angry (relative to neutral) face. No such effect was observed for Black targets. This pattern flipped, however, when the anchors were smiling and the judgments pertained to the friendliness of the target. Black targets were seen as less friendly when following a smiling (relative to neutral) face. In

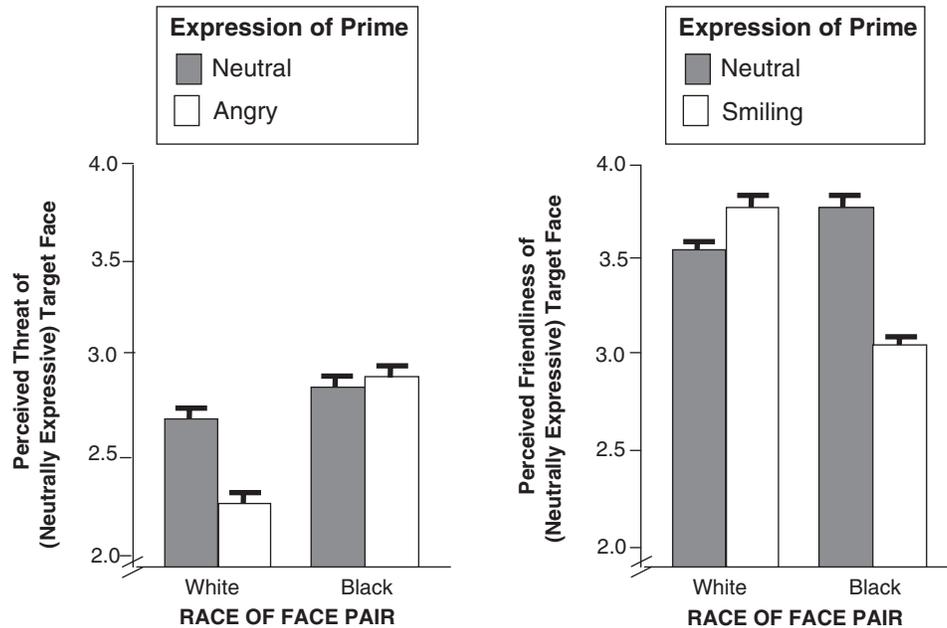


Figure 2 Perceived threat or friendliness of the neutrally expressive target face as a function of the race (Black/White) and emotional expression (angry/neutral/smiling) of the preceding (anchor) face in Study 2.

NOTE: Error bars show standard errors.

contrast to this pattern for Black targets, White targets were seen as more friendly (not less friendly) when following a smiling same-race face.

The different findings for angry versus smiling faces rule out a simple outgroup homogeneity explanation for evaluations of neutrally expressive Black faces—perceivers were not merely generalizing all emotional signals to members of racial/ethnic outgroups. Instead, anger/threat was generalized to Black males, but smiling/friendliness was not. This is consistent with our hypothesis that the failure to contrast neutrally expressive Black males away from an angry Black male anchor is likely driven by negative stereotypes that cast Black males as physically dangerous.

STUDY 3

In Study 3 we aimed to replicate the findings from Studies 1 and 2 and examine a possible moderator of racially contingent context effects. As noted earlier, people high on internal motivation to respond without prejudice (IMS) have less prejudice against Blacks and are less likely to associate Blacks with negative stereotypes (e.g., Devine et al., 2002; Plant & Devine, 1998). Those scoring low on this dimension might be expected to respond to Black and White male targets as we have seen in Studies 1 and 2, contrasting evaluations of threat

away from the angry male anchor only when targets are White but not when they are Black. However, those high in IMS were expected to show a different pattern—to evaluate White and Black targets in an equivalent manner (i.e., to display contrastive judgments for both White and Black targets). Thus, in Study 3 we measured participants' IMS.

Method

Participants, procedure, and design. Sixty White students (37 female) were recruited to participate in exchange for course credit. The procedure was the same as Study 1: Each participant viewed a series of same-race (Black or White) pairs of faces separated by a pair of animal photos. The overall experimental design of the study was 2 (race of anchor–target pair: Black vs. White; within subjects) \times 2 (anchor emotion: angry vs. neutral; within subjects). Participants viewed a slideshow of 24 faces and 24 filler animals. In previous studies, faces were left onscreen until the participant made a judgment, but in this study we controlled the exposure time to each face. Each photograph remained on the screen for 4 s before being replaced with a question (participants made the same ratings as Study 1). After the slideshow ended, participants watched a clip from a nature movie as a filler task and then completed a measure of IMS (Plant & Devine, 1998).

Materials. The 48 stimulus photos were 5×3.5 in. grayscale, front-oriented Black and White male faces, approximately 18-35 years old, with angry or neutral facial expressions. The stimuli were taken from the same sources as Study 1. Two stimulus sets of 24 faces each were created. Participants were randomly assigned to view one of the two stimuli sets. No effects of stimuli set emerged ($F_s < 1$).

Results and Discussion

To replicate the analyses from Studies 1 and 2, we first conducted a 2 (race of anchor–target pair: Black vs. White; within subjects) \times 2 (anchor emotion: angry vs. neutral; within subjects) repeated measures ANOVA with target evaluation as the dependent variable. The main effects of race and anchor emotion did not reach significance ($p_s > .14$). However, replicating the previous studies, the interaction between the race of the anchor–target pair and anchor emotion was significant, $F(1, 59) = 4.10, p = .05, \eta_p^2 = .07$. Consistent with Studies 1 and 2, evaluations of White targets yielded significant contrastive judgments, $F(1, 59) = 6.68, p = .01, \eta_p^2 = .10$, such that neutrally expressive White male targets were evaluated as less threatening when they followed angry ($M = 3.06, SD = .18$) as opposed to neutrally expressive ($M = 3.43, SD = .17$) White male anchors. This effect did not emerge within Black targets ($p = .58$). That is, White participants did not reduce their judgments of threat when Black targets followed angry ($M = 3.51, SD = .20$) as opposed to neutrally expressive ($M = 3.41, SD = .20$) Black male anchors. As in Studies 1 and 2, there was no significant difference in perceptions of threat posed by Black and White faces when those faces followed a neutrally expressive face ($p = .90$). However, when participants first saw an angry face, neutrally expressive Black faces were seen as considerably more threatening than neutrally expressive White faces, $F(1, 59) = 5.29, p = .03, \eta_p^2 = .08$.

In addition to replicating our previous findings, we were interested in the role of IMS. We anticipated that judgments of Black targets would vary as a function of participants' IMS.³ To test this prediction we conducted a mixed-design general linear model with anchor emotion and anchor/target race as factors and IMS as a continuous between-subjects independent variable. Consistent with predictions, within Black targets IMS moderated the relationship between the expression of the anchor and perceptions of threat posed by the neutrally expressive target, $F(1, 54) = 8.16, p = .01$; no such effect was seen within White targets ($F = .35$). As expected, evaluations of Black targets by participants low in IMS (1 *SD* below the mean) replicated the findings from Studies 1 and 2: No contrastive evaluation

emerged for Black targets. Indeed, a marginally significant assimilation effect emerged, $F(1, 54) = 2.92, p = .10$. However, for participants high in IMS (1 *SD* above the mean), a contrast effect emerged for evaluations of Black targets, $F(1, 54) = 5.52, p = .02$ (see Figure 3). That is, neutrally expressive Black males were evaluated as less threatening when following an angry Black male face than when following a neutrally expressive Black face, but only by participants high in IMS.

Thus, replicating Studies 1 and 2, Study 3 revealed that although White targets benefited from following an angry White target—participants evaluated neutrally expressive White males as less threatening than they otherwise would when they followed angry White males—Black targets did not. Study 3 also extends these findings by identifying a factor that moderates the relationship between the expression of the anchor and evaluations of threat: IMS. That is, consistent with the findings in Studies 1 and 2, individuals low in IMS did not differentially evaluate Black targets as a function of the emotional expression of the preceding face. However, those high in IMS—individuals who tend not to hold strong stereotypic beliefs about Blacks—displayed a contrastive pattern for judgments of Black targets, evaluating neutrally expressive Black targets as less threatening than they otherwise would, the pattern also seen for evaluations of White targets. The differential responses of participants high and low in IMS provides additional evidence that the mechanism underlying differences in perceived threat posed by neutrally expressive Whites and Blacks who follow angry same-race anchors is the heuristic association between Black males and danger-relevant stereotypes that cast Black males as threatening and dangerous.

GENERAL DISCUSSION

Perceptions of other people are dramatically shaped by the social context in which they are perceived. An important aspect of that social context can involve the presence of others who signal possible social threat or opportunity. Thus, these signals can affect the manner in which we judge and evaluate our social environment and others in our social environment. The current studies provide a demonstration of such context effects. Across four studies, North American White participants evaluated neutrally expressive White targets as less threatening when they were viewed after angry White individuals as compared to when they were viewed after neutrally expressive White individuals. Importantly, however, these straightforward contrastive judgments were not observed when White perceivers judged members of a stereotypically threatening racial/ethnic group: White participants

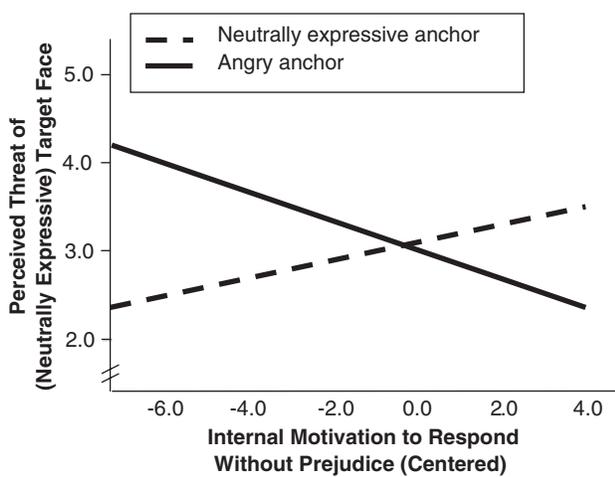


Figure 3 Perceived threat of neutrally expressive Black male faces as a function of the emotional expression (angry/neutral) of the preceding (anchor) face and participants' internal motivations to respond without prejudice in Study 3.

evaluated Black targets as equally threatening *regardless* of whether they followed neutral or angry faces. Furthermore, the lack of contrastive judgments for Black targets was not due to a general tendency for White perceivers to homogenize Black targets. When participants judged target *friendliness* after a *smiling* face, we found a reversal: Strong (and, in this case, unfavorable) contrastive judgments emerged for Black male targets but *not* for White male targets. In fact, White targets received the benefit of being evaluated as *more* friendly when seen in the context of smiling White faces.

The differential effects of smiling and angry facial expressions on evaluations of neutrally expressive White and Black faces provide evidence that the mechanism underlying differences between perceptions of Whites and Blacks in these studies involves the negative stereotypes that cast Black males as threatening and dangerous. The results of Study 3 also support this supposition. Study 3 revealed that the tendency to evaluate neutrally expressive Black males similarly regardless of the expression on the preceding face only held true for individuals low in IMS—individuals who are especially inclined to hold negative stereotypic beliefs about Blacks (e.g., Devine et al., 2002; Plant & Devine, 1998). Individuals high in IMS—who are unlikely to endorse negative stereotypes about Black males—responded to Black targets as they did White targets, judging neutrally expressive Black targets as less threatening after they followed an angry, compared to a neutrally expressive, Black anchor (i.e., a contrast effect).

Our findings cannot be easily explained by theories of affective priming. Affective priming research suggests

that the emotion displayed by a face can carry over and color perceptions of the next face, such as a sad face leading a perceiver to evaluate the next face more negatively. However, we found that a face's valence did not simply carry over to the next face. Instead, angry White faces led to *more positive* evaluations of subsequent neutrally expressive White faces and happy Black faces led to *more negative* evaluations of subsequent neutrally expressive Black faces. Furthermore, across all of our studies, the influence of emotional expression on evaluations of threat or friendliness was moderated by the race of the target. In sum, the direction of effects and their interaction with target race suggest a mechanism other than affective priming.

We believe, instead, that the mechanism underlying the modulation of contrast effects is the association of Black males with physical safety threats. We note, however, that limitations in our design preclude us from fully disentangling whether these findings are driven by specific beliefs about Black male dangerousness versus a more general bias to favor the ingroup over the outgroup.

Implications for Theories of Person Perception

The present research complements and extends a growing literature on biases in person perception. The current findings fit with previous evidence suggesting that negative, threat-based stereotypes of Black Americans can have important implications for cross-race social cognition (e.g., Correll, Urland, & Ito, 2006; Eberhardt et al., 2004; Richeson & Trawalter, 2008; Trawalter & Richeson, 2008). Indeed, people more efficiently process and attend to groups perceived to pose physical safety threats (e.g., Ackerman et al., 2006; Maner et al., 2005), just as they do other types of social and physical threats (e.g., Ackerman et al., 2009; Ackerman & Kenrick, 2008; Kenrick, Becker, Butner, Li, & Maner, 2003; Maner, Miller, Gaillot, & Rouby, in press; Ohman & Mineka, 2001). What these processes gain in efficiency they sometimes lack in accuracy, and the presence of biases in these processes can be informative with regard to underlying function (Haselton & Buss, 2000). That is, to the extent that White Americans stereotype Black men as dangerous and physically threatening, processes that overestimate the degree of threat posed by Black targets, this may be motivated by the avoidance of (erroneously perceived) potential harm. Understanding these mechanisms will be central to developing effective interventions that target and reduce these associations between Black males and danger.

These findings also have implications for a broader understanding of intergroup relations. The current findings fit with a view of intergroup psychology in which the global construct of "prejudice" is distilled into a number

of meaningfully different facets (Cottrell & Neuberg, 2005; Schaller, Park, & Faulkner, 2003). Different groups are seen to pose different threats—threats to economic well-being, threats to a group's ability to acquire and maintain resources, threats associated with contagious disease, threats to personal safety, and so on. The specific types of cognitive biases and attunements directed toward a particular outgroup may parallel the types of threats the outgroup is seen to pose. In the current research, we examined an outgroup heuristically associated with physical safety threats and observed cognitive biases associated with a sensitivity to cues that imply dangerousness (i.e., angry facial expression). Cognitive biases and attunements directed at other outgroups are likely to vary as a function of the specific stereotypes applied to those groups. One might predict, for example, that racial/ethnic groups heuristically associated with contagious disease would evoke processes that overestimate the likelihood of infection and that they would be perceptually homogenized with respect to dimensions associated with the presence of physical contagion.

Moreover, the type of evaluative biases we observed in the current studies should not be limited to perceptions of racial/ethnic outgroups. Many different types of groups (e.g., politicians, homeless people, the mentally ill) can be perceived as posing particular types of threats as well as particular types of opportunities (e.g., Ackerman et al., 2009; Kenrick & Gutierrez, 1980; Kenrick, Neuberg, Zierk, & Krones, 1994). Investigating the capacity for members of such groups to elicit and be targeted by context effects (of the sort we examine here) provides a useful approach for examining perceptions of a wide range of social groups. Such investigations could provide novel and important insight into fundamental processes associated with intergroup psychology.

Practical Implications for Intergroup Relations

People are constantly faced with complex, ambiguous social environments. The biases people bring to bear in such contexts can have profound implications for the way they perceive and act toward the individuals they encounter. Our findings suggest that White individuals may respond to emotionally laden social contexts in a way that leads them to “see” threats posed by Black individuals, even in the absence of any real threat (see also Maner et al., 2005). Such biases may perpetuate negative views or stereotypes of Black Americans and discourage intergroup contact (e.g., Schaller, Park, & Mueller, 2003), exaggerate latent anxieties in intergroup interactions (e.g., Hyers & Swim, 1998; Plant & Devine, 2003; Trawalter, Adam, Chase-Lansdale, & Richeson, 2008; Trawalter & Richeson, 2008), or lead individuals to avoid such interactions entirely (e.g., Plant, 2004; Plant & Devine, 2003; Richeson & Shelton,

2007). Future research should investigate the implications of the current findings for social interaction in an intergroup context.

Our conceptual framework implies that biased perceptions of Black males are rooted in stereotypic perceptions of threat. To the extent that such stereotypes are malleable, one could hope to attenuate negatively biased perceptions of individual Black males and of members of other negatively stereotyped groups. Evidence indicates, for example, that prejudices can be reduced through manipulations designed to undercut the negative stereotypes that underlie them (e.g., Dasgupta & Greenwald, 2001). Thus, by understanding these cognitive biases, we should be in a better position to ameliorate them. Future work will benefit from examining contextual biases in perceptions of Black males under conditions designed to reduce negative threat-based stereotypes.

Conclusion

The presence of emotionally charged social stimuli can strongly influence perceptions of the social world. The current studies demonstrate that presentation of emotionally expressive faces guides the judgments people make of subsequent social stimuli. Furthermore, the specific nature of these context effects varied as a function of whether (a) the people being judged were members of a racial/ethnic ingroup (White) or a racial/ethnic outgroup (Black), (b) the trait being evaluated reflected interpersonal threat or approachability, and (c) perceivers were internally motivated to respond without prejudice. Whereas White targets were viewed as less threatening and more friendly when they followed expressive faces, Black targets were viewed as less friendly and somewhat more threatening. Ironically, the fact that Whites fail to discriminate (perceptually) between angry and non-angry Black males could enhance the likelihood that Whites discriminate (behaviorally) against nonangry Black males.

NOTES

1. No effects associated with participant gender were found (all p s > .75).
2. There was no main effect of participant gender ($p = .37$) and gender did not moderate these findings ($p = .21$).
3. Four people did not complete the internal motivation to respond without prejudice scale, and their data are not included in these analyses.

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