Cognitive costs of contemporary prejudice

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Abstract

Two studies examined the cognitive costs of blatant and subtle racial bias during interracial interactions. In Study 1, Black participants engaged in a 10-minute, face-to-face interaction with a White confederate who expressed attitudes and behaviors consistent with blatant, subtle, or no racial bias. Consistent with contemporary theories of modern racism, interacting with a subtly biased, compared with a blatantly biased, White partner impaired the cognitive functioning of Blacks. Study 2 revealed that Latino participants suffered similar cognitive impairments when exposed to a White partner who displayed subtle, compared with blatant, racial bias. The theoretical and practical implications for understanding the dynamics of interracial interactions in the context of contemporary bias are discussed.

Keywords

prejudice, interracial interactions, racial and ethnic relations, cognitive depletion, executive function, attributional ambiguity

Over the past 50 years, there has been a dramatic transformation in the racial attitudes of the American citizenry (Schuman, Steeh, Bobo, & Krysan, 1997). In contrast to the past, today most Americans espouse egalitarian values regarding race and consider themselves nonprejudiced. Research, however, suggests that racial bias has not disappeared altogether; instead, it has become more nuanced, ambiguous, and subtle (Duckitt, 1992). These subtle forms of bias likely contribute to health, wealth, and well-being disparities between racial majority and minority members (Pager & Shepherd, 2008; Smedley, Stith, & Nelson, 2003), yet little experimental work has examined how contemporary racial bias affects its targets in the context of interracial interactions. The present experiments examine the cognitive consequences of contending with subtle or blatant racial bias during interracial interactions.

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Subtle and Blatant Racial Bias

Whereas "old-fashioned" prejudice involves belief in the biological inferiority of racial minorities and the overt expression of racial animus, contemporary forms of racial bias are considerably more complex (Dovidio, 2001). Most contemporary theories of racial bias (e.g., Dovidio & Gaertner, 2004; Pettigrew & Meertens, 1995) posit that while many Whites explicitly endorse egalitarian beliefs and values, socialization in a culture with a history of racial oppression leads people to harbor underlying negative attitudes toward minorities. Thus, contemporary racial bias reflects a conflict between Whites' explicit egalitarian values and their negative implicit attitudes toward racial minorities.

Importantly, this attitudinal conflict has implications for Whites' interactions with Blacks as explicit and implicit attitudes differentially influence behavior (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Explicit attitudes influence deliberative, controllable behaviors while implicit attitudes influence reflexive behaviors that are more difficult to monitor and control. For example, explicit racial attitudes predict overt expressions, including what Whites say to Blacks during interracial interactions (Dovidio, Kawakami, & Gaertner, 2002), whereas implicit racial attitudes predict biases in Whites' nonverbal behavior, including cues of disinterest (e.g., little eye contact) and discomfort (e.g., greater social and physical distance; Dovidio et al., 1997; Fazio, Jackson, Dunton, & Williams, 1995; Trawalter, Richeson, & Shelton, 2009). Together, this research suggests that in the context of interracial interactions, racial minorities experience contemporary racial bias as a mixed message: namely, positive verbal, but negative nonverbal, behavior.

How Might Contemporary Racial Bias Affect Racial and Ethnic Minorities?

Due to the conflicting expression of contemporary bias, interracial interactions are characterized by attributional ambiguity—a psychological state of uncertainty (Crocker & Major, 1989). Like other forms of uncertainty (van Den Bos & Lind, 2002), attempts to disambiguate the positive verbal and negative nonverbal messages of a subtly biased interaction partner may consume cognitive resources and leave targets uncertain about whether a partner is prejudiced. Indeed, when confronted with contemporary bias, racial minorities must decide whether a White partner's treatment indicates something about oneself, their partner, or their partner's bias toward them (Crocker & Major, 1989). Members of devalued social groups are motivated to disambiguate such information, becoming vigilant for cues of bias (Murphy, Steele, & Gross, 2007) and monitoring interaction partners to discern their actual intentions and beliefs (Dovidio, 2001; Vorauer & Kumhyr, 2001). The vigilance and uncertainty associated with contemporary bias is likely to consume considerably more cognitive resources compared with the consistently negative verbal–nonverbal messages that characterize blatant bias or the consistently positive messages that characterize no bias. In other words, relative to less ambiguous forms of bias, expressions of subtle racial bias should require more attention and cognitive resources on the part of targets to discern the meaning and intention behind their partners' behaviors. The present research tests the hypothesis that contending with subtle bias is more depleting of individuals' cognitive resources compared to blatant bias or no bias.

Research has begun to investigate how subtle and blatant forms of bias affect the cognitive functioning of targets. For instance, Black participants were more cognitively depleted after reading an employment scenario in which a White manager behaved in a subtly biased, rather than a blatantly biased or nonbiased manner (Salvatore & Shelton, 2007). Similarly, college women who anticipated being evaluated by a male graduate student whose office contained physical cues (e.g., posters and magazines) suggesting that he was ambiguously biased, rather than chauvinistic or egalitarian, performed worse on a math task (Mendoza-Denton, Shaw-Taylor, Chen, & Chang,

2009). Finally, subtle forms of sexism reduced women's performance by eliciting more cognitive intrusions than either hostile sexism or no sexism (Dardenne, Dumont, & Bollier, 2007).

Although these findings are compelling, whether they will generalize to a live interracial interaction context is unclear. For example, research provides limited support for the alternative hypothesis that blatant bias is especially distressing and difficult to manage in social interactions. In a study examining Blacks' cognitive functioning after exposure to a White or Black partner's blatantly racist or race-neutral attitudes, Blacks high in racial centrality (i.e., those whose racial identity was central to their self-concept) showed greater cognitive impairment when a White partner expressed biased, compared to neutral, attitudes (Bair & Steele, 2010). The absence of a subtle bias condition in this study, however, precludes a comparison of how blatant versus subtle bias affects the cognitive functioning of Blacks.

The present studies extend previous research by investigating the cognitive effects of subtle, blatant, and no bias in the context of interracial interactions. Thus, this research provides the most comprehensive and externally valid test to date of how different forms of bias influence targets' cognitive functioning during interracial interactions.[1]

Study 1

Black participants engaged in a 10-minute interaction with a White confederate partner whose explicit racial attitudes and nonverbal behaviors suggested blatant bias, subtle bias, or no bias. We predicted that subtle bias would disrupt cognition more than blatant bias or no bias.

Method

Participants and Design. Forty-three Black undergraduates (12 men and 31 women) at a mid-sized Midwestern university participated for $15.00. Participants were randomly assigned to one of three bias conditions: subtle, blatant, or no bias.

Materials

Confederates. Two White male and two White female student actors served as confederates.

Manipulation of Bias. Prior research has established that during interracial interactions, subtle bias manifests as a discrepancy between Whites' self-reported (positive) racial attitudes and (negative) nonverbal behaviors (e.g., Dovidio et al., 2002; Dovidio et al., 1997; Richeson & Shelton, 2003). Thus, we adapted Operario and Fiske's (2001) operationalizations of subtle and blatant bias wherein the match between the explicitly expressed racial attitude and nonverbal behavior of a White "interaction partner" (a confederate) was manipulated. Specifically, in the blatant bias condition, the interaction partner communicated relatively negative racial attitudes and then displayed relatively negative nonverbal behaviors (i.e., avoidant, disengaged) during the interaction. In the subtle bias condition, the interaction partner expressed positive racial attitudes, but then displayed the same relatively negative nonverbal behaviors as in the blatant condition. In the no bias condition, the interaction partner expressed positive racial attitudes and behaved in a relatively positive manner (i.e., warm, engaged) during the interaction. Because these three forms of bias are the types most often experienced by targets during interracial interaction (Dovidio, 2001), we chose to investigate how these particular manifestations of bias influenced targets.

"Profile sheets" ostensibly completed by the participant's interaction partner were used to communicate the partner's explicit racial attitudes, as well as his/her race and gender. For all participants, the interaction partner was a same-sex White student. When asked to provide some first impressions of college life, the interaction partner in the blatant bias condition ostensibly wrote that he/she was surprised and uncomfortable with the racial diversity on campus and preferred more racially homogenous environments. By contrast, the profile in both the subtle and no bias conditions indicated that he/she was surprised but excited about the racial diversity on campus because he/she preferred racially diverse

environments. This information was embedded among other information (held constant across conditions).

The confederates were actors extensively trained to portray either the positive (open, warm, engaged) or negative (avoidant, anxious, disengaged) behaviors required for the study. Drawing from research illuminating the nonverbal behaviors displayed during interracial interactions by individuals with higher levels of implicit racial bias (e.g., Fazio et al., 1995; McConnell & Leibold, 2001; Richeson & Shelton, 2003), negative behaviors included increased physical distance (i.e., the confederate sat farther away from participants), anxious and avoidant gestures (e.g., fidgeting, minimal eye contact), and hesitance to have physical contact (e.g., refraining from touching the participant's hand). By contrast, confederates in the positive behavior condition displayed a relaxed and friendly demeanor, engaged in direct eye contact, etc.[2] Notably, confederates were not informed that they were depicting different types of racial bias and they were kept blind to the study's purpose and the manipulated information on the profile sheets. They believed they were portraying slightly socially awkward or skilled "characters" in interpersonal situations.

Manipulation Checks. Two items assessed whether participants perceived the confederates' nonverbal behaviors and explicit racial attitudes as intended: "I felt like my partner was socially skilled and friendly" and "On their profile, your partner said he/she enjoyed being around people from different backgrounds." Ratings ranged from 1 (*strongly disagree*) to 7 (*strongly agree*).

Cognitive Functioning. The Stroop color-naming task (Stroop, 1935) assessed cognitive functioning. This task requires participants to inhibit their prepotent, dominant response to read the color word displayed on the computer screen and instead, identify the font color as quickly as possible using four color-coded computer keys (red, blue, green, and yellow). Compatible (e.g., the word "BLUE" in blue print), incompatible (e.g., the word "BLUE" in red print), and control trials (e.g., letter strings such as "xxxx") were presented for a maximum of 2,000 ms and a fixation cross appeared for 1,500 ms between trials. Following Richeson and Trawalter (2005), participants completed several practice trials and then continued to three blocks of 12 trials for a total of 36 experimental trials. Cognitive depletion is indicated by Stroop interference, or the difference in response latencies observed for incompatible trials and control trials.

Procedure. Participants came to the lab individually where a female experimenter informed them that they would have a 10-minute interaction with another student. After consenting, participants were told that, before the interaction, they would exchange some information with their partner. They were asked to complete a "profile" sheet (identifying their race, gender, major, hobbies, and first impressions of the university) while the experimenter left the room to ostensibly check whether their partner had arrived. After several minutes, the experimenter returned and exchanged the participant's profile with one allegedly completed by his/her partner. This profile communicated the partner's race, gender, and ostensible explicit racial attitudes. Participants had a few minutes alone to read their partner's profile.

Afterward, the experimenter showed the confederate to the room where the participant was seated and told them she would return momentarily to begin the study. While waiting for the experimenter to arrive, the confederate proceeded to behave in either the relatively positive or negative manner described above. That is, the confederate either chose to sit at the same table as the participant (positive behavior), or at a desk instead of at the table (negative behavior). As they waited for the experimenter to return, confederates displaying negative behavior minimized greetings or conversation, engaged in minimal eye contact (e.g., taking out a book and reading instead of interacting with the participant), angled their body away from the participant, and briefly responded in a short and aloof manner if participants spoke to them. Confederates displaying positive behaviors nodded acknowledgement of

the participant and greeted them with a smile. They sat at the same table as the participant and continued to make eye contact when appropriate. If participants spoke to them, they responded in a warm and engaged manner. Approximately 3 minutes later, the experimenter returned, asked the confederate seated at a distance to join the participant at the table (if applicable), and initiated the interaction task. The dyad was then asked to complete a ranking task, used in previous interactions research (Dovidio, 2001), that required them to discuss and agree on a ranking for items (e.g., alarm clock, bedding, cell phone) based on their usefulness to bring to college. The experimenter left the room during the task and asked the dyad to let her know when they had completed the task. The task lasted approximately 10 minutes and the behavior manipulations continued throughout this time. Specifically, confederates displaying positive behaviors pulled their chair closer to the participant and made eye contact while discussing the task in a curious and open tone, smiling when appropriate. Confederates displaying negative behaviors sat further away from the participant, made little eye contact while discussing the task in a slightly frustrated tone and did not smile while interacting. After the interaction, the confederate was led out of the room, ostensibly to complete additional tasks alone, while the participant remained to complete the Stroop task and the manipulation checks. Lastly, all participants were debriefed about the study purpose and use of confederates, then compensated.

Results

Manipulation Checks

Confederate Behavior. All analyses exclude one participant who skipped the manipulation check items. An analysis of variance (ANOVA) on participants' perceptions of the confederate's behavior revealed that the behavioral manipulation was successful, $F(2, 41) = 21.38$, $p < .0001$, $\eta^2 = .51$.[3] As expected, participants perceived confederates in the blatant bias ($M = 1.67$, $SD = .82$) and subtle bias ($M = 2.93$, $SD = 1.34$) conditions as less socially skilled and friendly than those in the no bias ($M = 5.00$, $SD = 1.84$) condition, respective ts(27) = 6.38 and 3.48, ps < .01. In addition, participants perceived confederates as more socially skilled and friendly in the subtle bias than in the blatant bias condition, $t(28) = 3.14$, $p < .01$.

Confederate's Expressed Attitude. Participants' memory for their partners' explicit racial attitudes revealed that the manipulation was successful, $F(2, 41) = 84.77$, $p < .0001$, $\eta^2 = .81$. Participants correctly reported that their partner mentioned enjoying racial diversity less in the blatant bias condition ($M = 1.93$, $SD = 0.86$) than either the subtle bias ($M = 5.77$, $SD = 1.02$), $t(28) = 11.14$, $p < .001$, or no bias conditions ($M = 6.18$, $SD = 1.05$), $t(27) = 11.94$, $p < .001$, which did not differ from each other, $t(27) = 1.07$, $p = .29$.

Cognitive Depletion. Following Richeson and Trawalter (2005), data were winsorized at 1,500 (+3 *SD*s) and 200 ms and log transformed prior to calculating the interference scores. To calculate Stroop interference, mean RTs for control trials were subtracted from mean RTs for incompatible trials. For ease of presentation, however, the untransformed values are presented in the figure and main text. Greater values reflect poorer task performance, and thus, greater cognitive depletion.

An ANOVA on participants' Stroop interference revealed that the omnibus effect of bias condition approached statistical significance, $F(2, 40) = 2.42$, $p = .10$, $\eta^2 = .11$. As predicted, participants in the subtle bias condition were significantly more depleted than those in the blatant bias condition ($M = 134.31$, $SD = 91.08$ and $M = 62.76$, $SD = 74.17$, respectively), $t(27) = 4.94$, $p = .03$. Contrary to predictions, however, participants in the subtle bias condition were not significantly more depleted than those in the no bias condition ($M = 94.32$, $SD = 85.35$), $t(26) = 1.57$, $p = .22$. Stroop scores of participants in the no bias and blatant bias conditions did not differ, $t(27) = 0.75$ $p = .39$. A contrast examining our a priori hypothesis that participants in the subtle bias condition would experience more cognitive

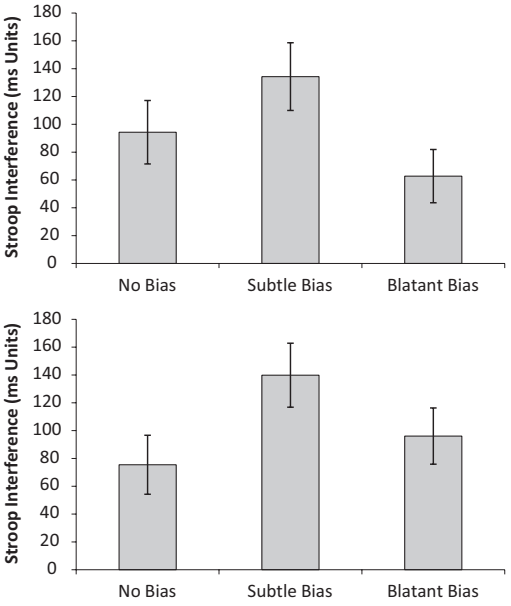

Figure 1. Stroop interference after experiencing no bias, subtle bias, or blatant bias during an interracial interaction; Study 1 (top) and Study 2 (bottom).

depletion than those in the less ambiguous blatant and no bias conditions was reliable, $F(1, 40) = 4.48$, $p = .04$, $\eta^2 = .11$ (see Figure 1).

Discussion

Study 1 provides the first evidence that contemporary bias experienced during live face-to-face interracial interaction disrupts the cognitive functioning of Blacks relative to blatant racial bias. While this finding is novel and important—particularly due to the live interaction context—the use of confederates limited experimental control. Although the confederates were trained actors, kept blind to the alleged racial attitudes (i.e., the profile information) and experimental conditions of the study, they conceivably could have displayed different patterns of behavior despite instructions to behave identically in the subtle and blatant bias conditions. To address this concern, a second experiment examined how exposure to a White partner's bias affected individuals' cognitive functioning when the partner's behavior was displayed via videotape—and thus precisely controlled.

Perhaps more importantly, the second experiment extended Study 1 by examining the generalizability of the depletion findings. Study 2 investigated whether exposure to an interracial interaction characterized by subtle bias would be similarly depleting for another stigmatized group—in this case, Latino individuals. Here, we tested whether Latinos who took the perspective of a Black interactant would show similar cognitive effects as those who actually interacted with a subtly, blatantly, or nonbiased White partner in Study 1. That is, we examined whether Latinos exposed to a White partner's subtle bias would suffer more cognitive depletion than those exposed to blatant bias and no bias.

Study 2

Study 1 revealed that interacting with a subtly biased White partner depleted the cognitive resources of Black participants more than interacting with a blatantly biased partner. In a conceptual replication and extension of Study 1, Latino participants viewed one of two videotapes in which a White individual interacted with another person who was just off camera. These videotapes were created for the express purpose of manipulating the confederate's behavior for this particular study; that is, the tapes did not feature interactions from Study 1. Participants were instructed to imagine being the off-camera conversation partner who interacted with the White partner. The White person in the video behaved in either the approachable and friendly manner or the relatively avoidant manner described in Study 1. Before watching the video, participants read profile sheets that contained either the positive or negative explicit attitude about racial diversity ostensibly completed by the White partner in the video. Hence, participants experienced the White partner's verbal and nonverbal displays of subtle, blatant, or no bias. If the ambiguity inherent to contemporary bias is cognitively disrupting, Latino participants who experienced the subtly biased partner should suffer more cognitive

depletion than those who experienced the blatantly biased or egalitarian partner.

Method

Participants and Design. Fifty-nine Latino undergraduates (25 men and 34 women) at a mid-sized Midwestern university participated for $8.00. Participants were randomly assigned to one bias condition: subtle, blatant, or no bias.

Materials

Manipulation of Bias. Participants viewed one of two videotapes (with sound) in which a White female actor behaved in either the approachable and friendly manner or the avoidant manner described in Study 1. Although a Black confederate engaged in the interaction with the White actor, only her hands were visible on the tape. Thus, participants were aware that the interaction was an interracial one. The videos were shot from the perspective of the Black partner so viewers would have the experience of interacting with the White partner. We hoped that by shooting the video from the perspective of the minority partner, the dynamic behaviors and sound would simulate a live interaction and engage the participant as much as possible. Participants were asked to take the perspective of the off-camera interaction partner and imagine how they would think and feel during the interaction with the on-camera (White) partner. The White partner's explicit attitudes and nonverbal behaviors were manipulated as in Study 1. In the blatant bias condition, the White partner communicated negative racial attitudes through a profile sheet that participants read before watching the White partner display negative nonverbal behaviors during the interracial interaction. In the subtle bias condition, the White partner expressed positive racial attitudes, but then displayed precisely the same negative nonverbal behaviors. In the no bias condition, the White partner expressed positive racial attitudes and behaved positively. Notably, in the blatant bias and subtle bias conditions, participants watched the identical videotape.

Measures. Participant's cognitive functioning and the manipulation check regarding the partner's explicit racial attitudes were assessed by the same measures used in Study 1.

Procedure. Participants came to the lab individually for a study of interpersonal interactions. A female experimenter informed them that they would watch a 10-minute videotaped interaction between two people. The video featured one partner (i.e., the White partner) and was shot from the perspective of the other partner as the two interacted. The participant's task was to imagine that they were interacting with the (White) person on camera. Specifically, participants were asked to imagine "how you would react and feel" in the interaction "if you were the person just out of the camera's range" (i.e., the White individual's interaction partner). Before watching the video, participants were shown the White person's profile sheet "in order to give them a bit more information about the person that they would be interacting with." The profile sheets were identical to those in Study 1 describing the White person's explicit attitudes about racial diversity on campus. Following, participants completed the dependent measures and were then debriefed and compensated.

Results and Discussion

Because participants were not matched with same-sex confederates in this study, preliminary analyses examined whether participant gender played a role in the findings reported below. The results did not differ by participant gender; therefore it is not included as a factor in the following analyses.

Manipulation Check. Participants' memory for their partners' explicit attitudes (indicated on the profile sheet) differed by bias condition, $F(2, 56) = 19.58$, $p < .001$, $\eta^2 = 41$. Participants in the blatant bias condition correctly reported that their partner mentioned enjoying campus diversity less ($M = 2.32$, $SD = 1.21$) than those in either the subtle bias ($M = 3.47$, $SD = 1.51$, $t(37)$

= 2.65, $p = .01$) or no bias conditions ($M = 4.15$, $SD = 1.40$, $t(40) = 6.5$, $p < .001$). They also indicated that the White partner enjoyed campus diversity less in the subtle bias condition than the no bias condition, $t(35) = 3.10$, $p = .004$. Although this latter difference was unanticipated and perhaps colored by the behavioral differences of the subtle and no bias conditions, the manipulation check demonstrated that participants accurately distinguished between the subtle and blatant bias manipulations. That is, although participants in the subtle and blatant bias conditions witnessed the White partner behaving in exactly the same negative manner, those in the subtle bias condition correctly reported that the White partner endorsed more positive racial attitudes than those in the blatant bias condition.

Cognitive Depletion. All data were Winsorized at 1,700 (+3 *SD*s) and 200 ms and log-transformed prior to calculating the Stroop scores. To calculate Stroop interference, mean RTs for control trials were subtracted from mean RTs for incompatible trials. An ANOVA revealed that the omnibus effect of condition was significant, $F(2, 56) = 3.23$, $p = .05$, $\eta^2 = .10$ (see Figure 1). Participants in the subtle bias condition ($M = 139.85$, $SD = 63.34$) were more depleted than those in the blatant bias and no bias conditions ($M = 96.09$, $SD = 109.07$ and $M = 75.47$, $SD = 9.93$ respectively), $t(37) = 2.06$, $p = .05$ and $t(35) = -2.69$, $p = .01$. The Stroop performance of participants in the blatant and no bias conditions did not differ, $t(40) = -0.72$, $p = .48$. Replicating Study 1 further, a contrast examining our a priori hypothesis revealed that participants exposed to subtle bias during the interaction were more cognitively depleted than participants exposed to the less ambiguous blatant and no bias, $F(1, 57) = 5.88$, $p = .02$, $\eta^2 = .09$.

These results bolster our confidence that the differences in cognitive depletion found in Study 1 after individuals engaged in face-to-face interactions were not primarily attributable to differences in confederate behavior between the subtle and blatant bias conditions. Furthermore, the present study reveals the generalizability of Study 1 both to a less interactive manner of exposure and, more importantly, to a different ethnic minority group (i.e., Latinos). In both studies, the mixed messages of subtle bias were more cognitively depleting for stigmatized individuals than were the less ambiguous forms of bias—blatant racial bias and no bias.

General Discussion

There is widespread consensus that, in contemporary U.S. society, racial prejudice often manifests in subtle, ambiguous, and covert forms (Fiske, 2002). However, no experimental research has considered how contemporary bias affects the cognitive functioning of racial and ethnic minorities during live interracial interactions. Study 1 revealed that Blacks who interacted with a subtly biased, compared with a blatantly biased or nonbiased, White partner experienced more cognitive disruption. Study 2 revealed that Latinos who imagined themselves in interaction with a similarly biased White partner showed similar cognitive effects as did Blacks in Study 1. Taken together, these results suggest that exposure to the mixed messages of contemporary racial prejudice disrupts racial minorities' cognition during live interactions more than interacting with blatantly biased White partners.

In the present research, the manipulations of bias were operationalized as consistent or inconsistent verbal and nonverbal behavior on the part of the White confederate partner (see also Operario & Fiske, 2001). While these ecologically valid manipulations accurately reflect the dynamics of contemporary interracial interaction, particularly from the perspective of racial and ethnic minorities, it is possible that the verbal and nonverbal manipulations were not fully independent. The explicit attitudes shared with participants prior to the interaction likely provided a context for the behaviors that followed. For example, although confederates expressed the same positive explicit racial attitude in the subtle and no bias conditions, Study 2 participants perceived that their partner harbored more negative attitudes in the subtle bias condition—where the positive

explicit attitude was accompanied by negative nonverbal behavior—than in the no bias condition where the same positive attitudes were accompanied by the confederate's positive behavior. Thus, participants seemed to consider the behavior and attitudes of their partner together, as a unified whole, when contemplating the meaning of their partner's behavior—a process that is likely to occur outside laboratory settings as well.

Theoretical Contributions and Practical Implications

In their seminal 1989 paper, Crocker and Major advanced the possibility that blatant racial bias may be less psychologically harmful than subtle bias. This hypothesis was bolstered by subsequent research demonstrating that when members of socially stigmatized groups make attributions to discrimination following negative outcomes, their self-esteem is buffered (Major, Quinton, & McCoy, 2002). The ambiguity inherent to subtle bias makes it difficult for individuals to attribute their treatment to discrimination and therefore to benefit from the ego protection that such attributions may provide (see Major, Quinton, & Schmader, 2003). Indeed, the mechanism suggested by this theory is that contemporary racial bias is more attributionally ambiguous than blatant or no bias—and that the energy used to decipher the meaning of the conflicting cues depleted participants' cognitive resources. More research is needed to determine whether explicit reports of attributional ambiguity or confusion about the partner's attitudes or intentions might mediate the cognitive effects shown here. Of course, such research presumes people have insight into their experiences of uncertainty and ambiguity and are willing to report them.

While previous research considered the cognitive effects of blatant racial bias compared to a control condition (Bair & Steele, 2010), the present studies are the first to systematically examine the consequences of the three most commonly expressed forms of racial bias (blatant, subtle, and no bias; Dovidio, 2001) in the context of interracial interactions. It is interesting that the present research did not replicate the findings of Bair and Steele (2010). We believe this could be due to the different manipulations of bias and, therefore, the amount of attributional ambiguity the studies likely engendered. In the blatant bias condition of Bair and Steele, Black participants were tasked with deciphering why White confederates were expressing support for racist policies (e.g., racial profiling) to them. What was their goal in stating their racist belief? Was it because they were racist? Or were they comfortable saying so because they were trying to signal that they didn't consider the participant part of the "Black criminal" group that they believed should be profiled? Participants in this relatively ambiguous blatant bias condition, therefore, likely engaged in cognitive and emotional regulation with regard to their partner's comments, which could have been itself depleting. By contrast, in the blatant bias condition of the present research, the White confederate's behavior is in line with participants' expectations. Here, it is in the subtle bias condition where participants must exercise cognitive resources to decipher their partner's intentions and attitudes. Thus, both papers suggest that when tasked with determining the goals, intentions, and attitudes of their White partner, minority participants become cognitively depleted.

Although not the focus of Study 2, its findings have implications for the growing literature on perspective taking in interracial interactions (e.g., Todd, Bodenhausen, Richeson, & Galinsky, 2011; Vorauer, Martens, & Sasaki, 2009). Study 2 demonstrated that Latinos who placed themselves in the shoes of a target of subtle bias showed similar cognitive impairments as Black participants who actually engaged in live face-to-face interaction with a subtly biased partner. Thus, it seems that subtle bias is disrupting for minorities who experience it either personally or vicariously. These studies suggest, therefore, that racial and ethnic minorities may be particularly sensitive to cues of subtle racial bias among White interaction partners. What remains unknown, however, is whether similar effects occur when racial minority interaction partners express subtle, blatant, or no racial bias. Many

people of color also hold negative implicit (and/or explicit) attitudes towards members of other minority groups and even their own group. An interesting question for future research is whether subtle and blatant bias displayed by one racial minority (e.g., a Black individual) would be just as consequential for an interaction partner from another racial minority group (e.g., a Latino individual), even though expectations of encountering bias might be different from the more typical racial minority–White context (Wout, Shih, Jackson, & Sellers, 2009).

Future research should also examine moderators of the cognitive effects found in the present studies. For example, individuals who highly identify with their racial group are more likely to attribute ambiguous events to discrimination (Operario & Fiske, 2001; Sellers & Shelton, 2003) and, therefore, may be less susceptible to the effects of subtle bias but more susceptible to the effects of blatant bias during interracial interactions. Similarly, research suggests that racial minorities' ideologies regarding the legitimacy of extant group and status differences moderate their physiological responses to both prejudiced and nonprejudiced individuals (Townsend, Major, Sawyer, & Mendes, 2010). Hence, worldview beliefs may shape the cognitive consequences of contending with subtly biased, blatantly biased, and nonbiased interaction partners.

Finally, it is unclear from the present research whether inconsistent messages displayed in *any* interpersonal context are as depleting as the mixed messages of subtle bias in an interracial interaction context. It is possible that many inconsistent messages or ambiguous interpersonal situations may be depleting. That is, the effect reported here may represent one instance of a more basic effect of mixed messages. Nevertheless, the mixed messages of subtle bias are an important component of contemporary interracial interactions that has only recently garnered empirical attention. Indeed, interracial interactions are a crucial context in which to study the effects of mixed messages and ambiguity given the prevalence of subtle forms of racial bias in contemporary society.

Final Comment

Although the present work provides compelling evidence that subtle bias may at times be more harmful to racial minorities than its more overt counterpart, it is important to note that extreme forms of blatant bias (e.g., hate crimes) are undoubtedly more harmful to racial minorities than subtle bias. In other words, the prescription of the present work is not to increase blatant relative to subtle bias, but rather to work to eradicate both forms of bias and promote interracial understanding.

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Notes

1. We considered including a fourth condition in which White confederates expressed negative explicit racial attitudes, but then displayed positive nonverbal behaviors toward minority participants. Following other researchers, however, we omitted this unusual combination of implicit and explicit attitudes to preserve ecological validity since this type of expression is extremely rare (Dovidio, 2001).
2. Additional information about the behavior training is available from the authors.
3. Degrees of freedom vary slightly across measures due to missing data.

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