

## DOES COGNITIVE DEPLETION SHAPE BIAS DETECTION FOR MINORITY GROUP MEMBERS?

Evelyn R. Carter  
*Indiana University*

Destiny Peery  
*Northwestern University School of Law*

Jennifer A. Richeson  
*Northwestern University*

Mary C. Murphy  
*Indiana University*

Previous research has explored how context, characteristics of the target, or a perceiver's cognitive state may affect person perception and impression formation. The present work extends theory on person perception and illuminates factors that determine when Blacks perceive a White target as prejudiced. Building from research suggesting that modern racism may require more cognitive resources to discern than old-fashioned racism, participants were first cognitively depleted (or not). Next, they were asked to watch a video in which a White target displayed cues consistent with modern or old-fashioned racism toward a Black partner during an interracial interaction. Consistent with hypotheses, non-depleted Black participants perceived both the modern and old-fashioned racist as equally prejudiced. However, depletion moderated Black participants' bias detection such that they perceived the modern racist as less prejudiced than did the non-depleted Black

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Correspondence concerning this article should be addressed to Evelyn R. Carter, Department of Psychological and Brain Sciences, Indiana University, 1101 East 10th Street, Bloomington, IN 47405; E-mail: [evcarte@indiana.edu](mailto:evcarte@indiana.edu).

participants. Depleted and non-depleted Black participants perceived the less ambiguous old-fashioned racist as prejudiced.

When do minorities consider a majority individual to be prejudiced, and what factors moderate those perceptions? Previous research has explored how context, characteristics of the target, and a perceiver's cognitive state may affect person perception and impression formation (Gilbert, 1998). Indeed, a person's level of cognitive resources can shape the impressions they make of others (Brewer, 1988; Fiske & Neuberg, 1990). However, almost all of this work has been done with White perceivers. The present research extends theory on person perception by examining how reduced cognitive resources affect when Blacks perceive a White individual as prejudiced.

### PERCEIVING OLD-FASHIONED AND MODERN RACISM

In recent years, the behavioral expression of prejudice in American society has changed (Dovidio & Gaertner, 1986, 1991; McConahay, Hardee, & Batts, 1981). Shifts in social norms condemning racial prejudice have meant that the explicit, old-fashioned racism of the past has been largely replaced by a more covert form of modern racism. Whereas "old-fashioned racists" are verbally *and* nonverbally negative toward minorities, "modern racists" are verbally positive, but nonverbally negative toward minorities (Dovidio, 2001; Dovidio, Gaertner, Kawakami, & Hodson, 2002; McConnell & Leibold, 2001).

Previous work has demonstrated that Blacks' beliefs about what constitutes racism include both modern and old-fashioned cues. In one study, White and racial minority participants were asked to indicate the extent to which 40 traits matched the category "White racist" (Sommers & Norton, 2006). Some traits were consistent with the blatant nature of old-fashioned racism (e.g., White racists are *violent, hateful*), and others were consistent with the subtler nature of modern racism (e.g., White racists are *unfriendly, fearful of change*). Both White and minority participants rated the old-fashioned racism traits as prejudiced, but minority participants were more likely than Whites to rate the modern racism traits as prejudiced. A second study replicated this pattern with a list of behaviors. Again, whereas minorities and Whites rated the overtly negative behaviors characteristic of old-fashioned racism (e.g., discouraging children from playing with Blacks) as prejudiced, only minorities believed that subtler negative behaviors characteristic of modern racism (e.g., feeling uncomfortable or anxious around Blacks) were prejudiced. Thus, although minority individuals considered both blatant and subtle traits and behaviors prejudiced, Whites considered only blatant traits and behaviors prejudiced.

## COGNITIVE COSTS OF PERCEIVING AMBIGUOUS CUES

Regardless of whether they are perceiving prejudice or forming more general impressions, people strive to make accurate judgments of others (Neuberg, 1989). However, perceivers' levels of cognitive resources moderate the impressions they form. For example, in a study of person perception (Gilbert, Pelham, & Krull, 1988), participants viewed a woman who was behaving anxiously. Participants learned that she was either responding to questions about anxiety-provoking or relaxation-provoking topics. The perceivers who were under cognitive load while watching the video identified the woman's behavior as anxious, but failed to correctly attribute it to the assigned topic. Instead, they inferred that the woman was dispositionally anxious. This study demonstrates that making subjective inferences about a person from his or her behavior relies on cognitive resources.

Furthermore, the consistency of cues is important for whether cognitive resources are required to make judgments about others. Fewer cognitive resources are necessary to form an impression from cues that provide consistent information (Fiske, Lin, & Neuberg, 1999; Fiske & Neuberg, 1990). Because the cues point to the same conclusion, no further cognitive work is required to make an impression. However, when cues conflict, a person must employ cognitive resources to disambiguate the cues and form an impression. Taken together, this research shows that cognitive resources are an integral component of person perception, particularly under ambiguous circumstances.

The present research makes a novel contribution by testing whether cognitive resources moderate Blacks' prejudice perceptions. The behaviors associated with old-fashioned racism are consistently negative; those associated with modern racism are inconsistent, as they involve positive verbal, but negative nonverbal behavior. As with other ambiguous cues, perceiving modern racism likely depends on perceivers' cognitive resources. Here, we explore whether cognitive depletion affects Blacks' detection of modern—but not old-fashioned—racism.

## DOES PERCEIVING OLD-FASHIONED AND MODERN RACISM REQUIRE COGNITIVE RESOURCES?

Previous research shows that more difficult impression formation tasks, such as making complex inferences from ambiguous cues, require greater cognitive resources (Fiske & Taylor, 2013; Trope & Alfieri, 1997). Perceiving old-fashioned racism is a simpler, less ambiguous perceptual task because the person's negative explicit statements are consistent with their negative nonverbal behavior. Together, these cues point to the same conclusion—that the person is prejudiced. However, perceiving modern racism is more

complex, as the positive verbal and negative nonverbal behavior point to different conclusions. Although the modern racist's positive explicit statements suggest that the person is not prejudiced, the negative nonverbal behaviors signal discomfort and, potentially, prejudice. Thus, perceiving the conflicting behavior of modern racists is a more complex task than perceiving the consistently negative cues of old-fashioned racists (Murphy, Richeson, Shelton, Rheinschmidt, & Bergsieker, 2013; Salvatore & Shelton, 2007).

When Black perceivers have abundant cognitive resources, they have the capacity to engage in the elaborative processing required to reconcile the ambiguous behavior of modern racists. Consistent with their lay beliefs that consider subtler, more ambiguous behaviors as racist, nondepleted Black perceivers would likely determine that a modern racist is prejudiced. But what happens to the detection of modern racism when cognitive resources are depleted? Depleted Blacks may not have the cognitive resources necessary to reconcile the ambiguous cues communicated by modern racists; in this case, the target may not be perceived as prejudiced. In contrast, perceiving an old-fashioned racist target is a less complex task because both sources of information (i.e., explicit statements and nonverbal behavior) are negative. Thus, cognitive depletion is less likely to influence whether an old-fashioned racist is perceived as prejudiced.

## THE PRESENT RESEARCH

This research bridges the impression formation literature to research on bias detection by examining whether cognitive resources shape Blacks' impressions of old-fashioned or modern racists. Specifically, we explore whether cognitive depletion moderates Blacks' perceptions of a White target who displayed old-fashioned or modern racism during a filmed interracial interaction. Participants were cognitively depleted according to condition and learned that the White partner expressed a positive or negative attitude about racial diversity to her Black interaction partner. Then, participants watched the interaction video in which she displayed relatively negative nonverbal behavior toward her Black partner. Thus, participants were exposed to either an old-fashioned racist (negative statement and nonverbal behavior) or a modern racist (positive statement, negative nonverbal behavior). Afterward, participants made an impression of the White partner, including whether she was racially prejudiced, and reported their expectations about personally interacting with her.

Consistent with past work (e.g., Operario & Fiske, 2001), we hypothesized an effect of racism condition such that, overall, participants would perceive the old-fashioned racist as more prejudiced than the modern racist. We also hypothesized that participants' prejudice perceptions would be moderated by cognitive depletion. Because perceivers use their existing be-

liefs and expectations to make judgments about others' behavior (Darley & Gross, 1983), we hypothesized that Blacks—whose lay beliefs include old-fashioned *and* modern racism (Sommers & Norton, 2006)—would perceive Whites who displayed behavior consistent with old-fashioned and modern racism as prejudiced when not depleted. However, when depleted, the difficulty of the impression formation task should influence perception (Fiske & Taylor, 2013; Trope & Alfieri, 1997). Whereas perceiving the consistent cues of an old-fashioned racist is a relatively easy perceptual task (because both sources of information are negative), perceiving the inconsistent behavior of a modern racist is more difficult. Thus, we hypothesized that depleted and non-depleted participants would perceive an old-fashioned racist as equally prejudiced, but that depletion would cause participants to perceive a modern racist as less prejudiced.

We also examined the downstream consequences of detecting (or not) racism for intergroup interactions. Past research shows that Blacks who expect to be targeted by racism anticipate less positive interracial interactions than Blacks who do not expect to be targeted by racism (Shelton, Richeson, Salvatore, & Trawalter, 2005). However, if Blacks fail to detect modern racism, particularly when depleted (as we hypothesize here), they may continue to interact with these individuals and thus may be more susceptible to experiencing modern racism than their non-depleted counterparts. We hypothesized that *non-depleted* Black participants would anticipate less positive interactions with both the old-fashioned and modern racists (whom they perceive as prejudiced), but that *depleted* Black participants would only anticipate more negative interactions with the old-fashioned racist target and *not* the modern racist target (whom they perceive as less prejudiced, due to their depleted state).

## METHOD

### PARTICIPANTS

One hundred fifteen self-identified Black undergraduate students (92 female, 23 male;  $M_{\text{age}} = 20.18$ ,  $SD_{\text{age}} = 3.42$ ) from a large Midwestern university participated in exchange for course credit or \$10.

### PROCEDURE

Participants were greeted by a White experimenter who explained that the study consisted of a cognitive task followed by a perceptual task that involved watching a videotaped interpersonal interaction and making an impression of one of the interactants.

*Cognitive Depletion Manipulation.* Participants completed the Attention Network Task (ANT; Fan, McCandliss, Sommer, Raz, & Posner, 2002). They viewed strings of five arrows and were asked to focus on the middle arrow and quickly and accurately indicate whether the arrow pointed to the right (by pressing “j” on the keyboard) or left (by pressing “f”). The middle arrow pointed in the same (easy; non-depleting) or opposite (difficult; depleting) direction as the flanking arrows. Trials began with the presentation of a fixation cross for 1000 ms, followed by the stimulus for a maximum of 2000 ms. Following Apfelbaum and Sommers (2009), all participants completed 10 blocks of 16 trials. Participants randomly assigned to the control condition completed 160 easy trials; those in the depletion condition completed 80 easy and 80 difficult randomly presented trials. There were no time restrictions on participants’ responses; on average, the task lasted approximately 10 minutes.

*Bias Manipulation.* Participants were then introduced to the perceptual task. They were asked to watch a videotaped interaction from a previous study (Murphy et al., 2013) in which the female partners first exchanged profiles and then played a few interactive games. Participants were asked to focus on the White partner, as they would be asked to make an impression of her later in the study. Then, participants received the profile that the White partner ostensibly sent to her Black partner before the interaction. The profile contained identical demographic information across conditions and a statement that reflected an explicit racial attitude. Participants assigned to the modern racist condition read that the White partner enjoyed the amount of racial and ethnic diversity on campus (a relatively positive explicit statement); those assigned to the old-fashioned racist condition read that she was uncomfortable with the campus’s diversity and preferred racially homogenous environments (a relatively negative explicit statement).

All participants then watched the same 4-minute interracial interaction video showing the two women playing tic-tac-toe as part of their experimental session. Participants were told that the Black woman in the dyad was a confederate and the White woman was the naive participant. In actuality, the White partner was a trained actor who displayed the relatively negative nonverbal behaviors associated with modern racism (Fazio, Jackson, Dunton, & Williams, 1995; McConnell & Leibold, 2001). In the video, the White partner walks into the room and, without acknowledging her Black partner, sits at a distance, and avoids contact by immersing herself in a book pulled from her backpack. The experimenter then enters the room and provides materials for the tic-tac-toe task. After the White partner is randomly selected to make the first play, she makes her move and pushes the paper and pen across the table to her Black partner (rather than directly handing her the materials), minimizing physical contact and eye contact throughout the task. Three rounds of tic-tac-toe proceed in this way and then the video ends.

Together, the videotaped behavior and the college life statement constituted the bias manipulation. Consistent with previous behavioral opera-

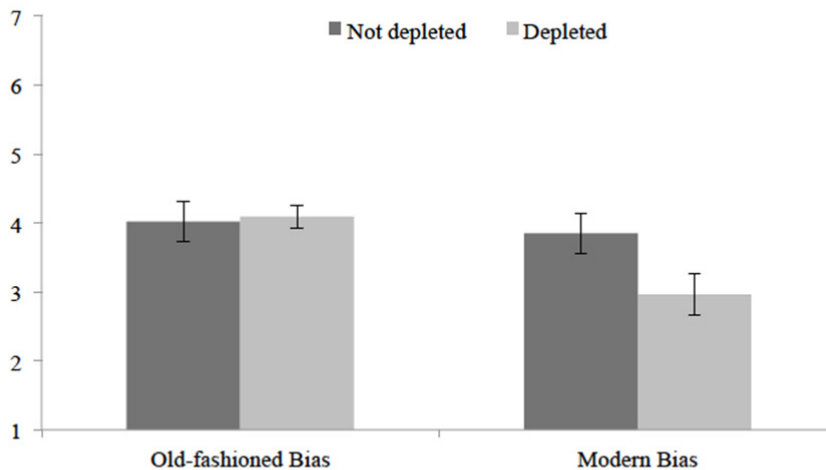


FIGURE 1. Participants' perceptions of prejudice.  
 Note. Error bars represent standard errors.

tionalizations of old-fashioned and modern racism (Murphy et al., 2013; Operario & Fiske, 2001) and with real-world manifestations (e.g., McConnell & Leibold, 2001), participants exposed to modern racism learned that the White target communicated an explicitly positive racial attitude to her Black partner and then watched her display negative nonverbal behavior during the interaction. Participants exposed to old-fashioned racism learned that the White target communicated an explicitly negative racial attitude to her Black partner and then watched her display negative nonverbal behavior during the interaction.

## DEPENDENT MEASURES

*Perceptions of Prejudice.* Participants answered two questions about their perceptions of the White partner's level of prejudice on a 1 (not at all) to 7 (very much) scale. These questions were, "How prejudiced do you think the participant is?" and "How accepting of diversity is the participant?" (reverse-coded). A composite score was created by averaging the responses on these two items ( $r = .45, p < .01$ ); higher scores indicate greater perceived prejudice.

*Interaction Expectations.* Participants answered four questions related to their expectations about how an interaction with the White partner would go on a 1 (not at all) to 7 (very much) scale. Two of these questions asked about the participants' own expectations of comfort: "I would feel comfortable working with this person" and "I would be happy to work with this person." The other two questions asked participants to report on their perceptions of the White target's comfort level: "This person would be comfortable working with me" and "This person would be happy to work with me." A composite score was created by averaging the responses on these four items ( $\alpha = .93$ ); higher scores indicate more positive interaction expectations.

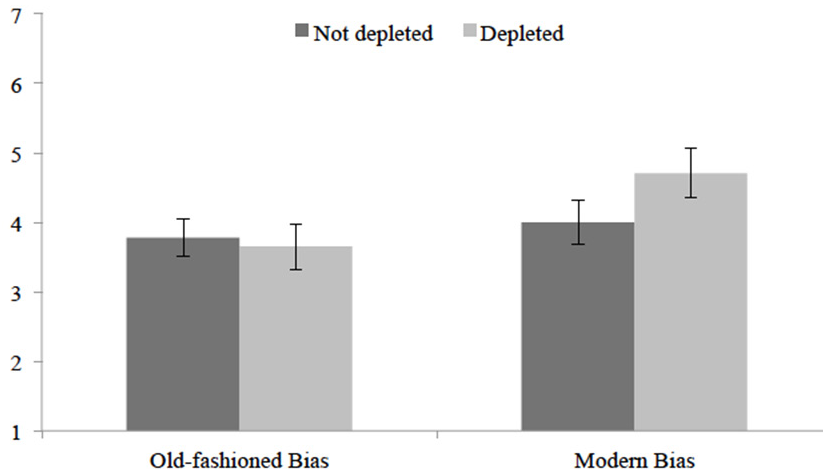


FIGURE 2. Participants' interaction expectations.  
 Note. Error bars represent standard errors.

## RESULTS

### PERCEPTIONS OF PREJUDICE

A 2 (cognitive depletion: non-depleted v. depleted)  $\times$  2 (bias condition: modern v. old-fashioned) ANOVA was conducted on participants' perceptions of prejudice. Consistent with previous research (e.g., Murphy et al., 2013; Operario & Fiske, 2001), results revealed a main effect of bias condition: overall, participants perceived the old-fashioned racist as more prejudiced than the modern racist,  $F(1, 111) = 5.53, p = .02, \eta_p^2 = .05$ . The main effect of depletion was not significant,  $F(1, 111) = 2.21, p = .14$ .

The significant main effect was qualified by a marginally significant two-way interaction,  $F(1, 111) = 3.13, p = .08, \eta_p^2 = .03$ . Simple effects tests revealed that participants perceived the old-fashioned racist as equally prejudiced whether depleted or not,  $F(1, 111) = .04, ns$ . However, depleted participants perceived the modern racist as significantly less prejudiced than non-depleted participants,  $F(1, 111) = 5.06, p = .03, \eta_p^2 = .04$ . Thus, cognitive depletion impeded Blacks' perception of the modern racist as prejudiced, but did not interfere with their perception of the old-fashioned racist as prejudiced (see Figure 1).

### INTERACTION EXPECTATIONS

A 2  $\times$  2 ANOVA was also conducted on participants' interaction expectations. Again, the results revealed a significant main effect of bias condition,



TABLE 1. Interaction Expectations

Type of Racism	Not depleted <i>M</i> ( <i>SD</i> )	Depleted <i>M</i> ( <i>SD</i> )
Old-fashioned Racist	4.36 (1.61) <sub>a</sub>	4.45 (1.70) <sub>a</sub>
Modern Racist	4.50 (1.68) <sub>a</sub>	5.15 (1.61) <sub>b</sub>

Note. Unique subscripts denote significant differences at  $p < .05$  level.

such that overall, participants expected that an interaction with the old-fashioned racist target would be less positive than an interaction with the modern racist target,  $F(1, 111) = 4.04, p = .047, \eta_p^2 = .04$ . The main effect of depletion was not significant,  $F(1, 111) = .82, p = .37$ .

Although the interaction did not reach significance, the pattern is consistent with hypotheses, as well as participants' perceptions of prejudice,  $F(1, 111) = 1.74, p = .19$  (see Figure 2). Non-depleted Black participants expected an interaction with the old-fashioned and modern racist target to be equally negative,  $F(1, 111) = .27, p = .61$ . However, when depleted, participants anticipated a less negative interaction with the modern racist target than with the old-fashioned racist target,  $F(1, 111) = 4.97, p = .03, \eta_p^2 = .04$ . Indeed, depletion led participants to expect a more positive interaction with the modern racist target compared to all other conditions (see Table 1 for all pair-wise comparisons).

#### MEDIATION ANALYSES

If people draw on their prejudice perceptions to determine future interaction expectations (Shelton et al., 2005), we would expect prejudice perceptions to mediate interaction expectations. However, this may be particularly true for depleted participants, compared to non-depleted participants, because depleted participants may need to rely more heavily on their prejudice perceptions to determine how an interaction with the perceptual target may unfold. We tested this moderated mediation model directly. In the model, we expected that depleted participants would perceive the modern racist as less prejudiced than the old-fashioned racist (and less prejudiced than the non-depleted participants would), and thus depleted participants would have more positive expectations about interacting with the modern racist.

We examined whether the type of racism (dummy-coded; 0 = modern racist, 1 = old-fashioned racist) affected participants' interaction expectations through their perceptions of prejudice. Using the SPSS PROCESS macro (Hayes, 2013; Model 7 with 5000 bootstrapped resamples), we tested whether the "a" path between type of racism and prejudice perceptions was moderated by cognitive depletion (dummy-coded; 0 = not depleted, 1 = depleted; see Figure 3). Results revealed that the racism by depletion interaction moderated participants' perceptions of prejudice as previously reported. Overall, and consistent with Shelton et al. (2005), participants'

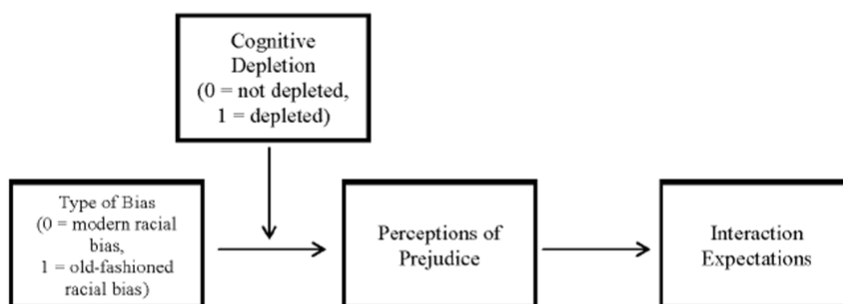


FIGURE 3. Moderated mediation model.

*Note.* The conditional indirect effect of the type of racism condition on participants' interaction expectations through their perceptions of prejudice, moderated by cognitive depletion.

prejudice perceptions significantly influenced their interaction expectations. However, as hypothesized, the overall mediation model was significant for depleted (CI: 0.37, 1.56), but not non-depleted (CI: -0.58, 0.80), participants. In other words, cognitively depleted participants perceived the modern racist as less prejudiced, and thus reported more positive interaction expectations. This same pattern did not emerge for non-depleted participants, who perceived both the modern and old-fashioned racist as prejudiced and expected more negative interactions with both.

## DISCUSSION

The present research illuminates an important boundary condition for understanding when Blacks perceive different forms of racism. Blacks typically consider both modern and old-fashioned racism as indicative of prejudice—and this research shows that, under non-depleted conditions, Blacks perceive White targets who enact such behaviors as prejudiced. Consistent with previous research showing that Blacks consider old-fashioned and modern racism cues to be equally indicative of prejudice (Sommers & Norton, 2006), the cues presented in this study appeared to have similarly surpassed Black participants' thresholds for prejudice. Thus, non-depleted perceivers viewed both types of racism as prejudiced. However, this study extends previous research by showing that when cognitive resources are compromised, Blacks are less likely to perceive modern racism as prejudiced. Attributional ambiguity theory suggests that detecting modern (vs. old-fashioned) racism requires more cognitive resources because one must disambiguate the mixed verbal and nonverbal messages that comprise modern racism (Crocker & Major, 1989). Indeed, these results suggest that for Black participants, depletion changes the meaning drawn from the modern racist's behavior. Though non-depleted participants relied on their lay theories of racism to attribute the behavior of both the old-fashioned and modern racists to prejudice, depleted participants seemed to be less certain

that the modern racist's behavior could be clearly attributed to prejudice. Furthermore, this research shows that depleted Black participants' interaction expectations were predicted by their prejudice perceptions such that they expected a more positive interaction with the modern racist, whom they perceived to be less prejudiced than the old-fashioned racist.

An important question for future research is whether cognitive depletion affects Whites' bias detection in a similar way. That is, does cognitive depletion similarly reduce Whites' perceptions of modern racism? Because Whites' lay beliefs do not include modern racism (Sommers & Norton, 2006), Whites are unlikely to perceive a modern racist as prejudiced—even when not depleted. Thus, we would not expect depletion to moderate Whites' detection of modern racism. Indeed, evidence from a methodologically identical study, with White participants, conducted in a different university context ( $N = 89$ ), revealed only a main effect of type of racism,  $F(1, 85) = 9.45, p = .003, \eta_p^2 = .10$ . White participants perceived the old-fashioned racist ( $M = 3.57, SD = 1.39$ ) as more prejudiced than the modern racist ( $M = 2.70, SD = 1.24$ ), regardless of depletion. This work raises interesting questions about differences in how Whites and Blacks detect racism. Cognitive depletion seems to be uniquely disruptive to Blacks', but not Whites', prejudice attributions when regarding modern racism cues—perhaps in part because Whites' lay theories of racism do not include these more ambiguous behaviors as prejudiced. More research is needed to investigate the distinct underlying processes of bias detection for majority and minority groups, as well as the conditions under which majority groups *may* attribute modern racism to prejudice.

An open question for future research is, what happens to bias detection when the cues involve explicitly negative racial attitudes paired with *positive* verbal behavior? First, previous literature suggests that this combination of behavior is quite uncommon during interracial interaction (e.g., Dovidio, 2001). Furthermore, explicit, negative, statements are particularly diagnostic of racism (Sommers & Norton, 2006); thus, in the context of interracial interaction, we would speculate that an explicitly negative statement of racial attitudes paired with positive nonverbal behavior might not be attributionally ambiguous at all. Although this is an empirical question ripe for future study, we would expect Black participants to readily categorize cues consisting of explicitly negative verbal behavior and positive nonverbal behavior as prejudiced and insincere because explicitly negative statements are considered diagnostic of old-fashioned racism.

One case in which this combination of cues may more frequently occur is if the explicitly negative racial attitude were expressed to a different audience than the positive verbal behavior (e.g., gossip). The primary goal of the present study was to explore how Black participants, acting as third-party observers, made meaning of old-fashioned and modern racist behavior. Thus, participants were exposed to the relevant pieces of information

about the White target's attitudes and behavior and were asked to make a judgment about her. However, perceivers are not always privy to all pieces of information in this way. One remaining question is whether a White target is still perceived as prejudiced if she shares her explicitly negative racial attitude with another person (say, an ingroup member), and then engages in an interaction with a Black partner (who has no knowledge of her racial attitude)? This is an interesting case where a person may say something negative to one person, but behave in what they believe is a positive way toward another. Past work suggests that those willing to explicitly express negative racial attitudes also show evidence of these attitudes on implicit measures. Moreover, the link between racial attitudes and behavior indicates that implicitly measured attitudes predict Whites' less controllable nonverbal behaviors during interracial interaction (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Further, Whites who exert cognitive energy trying to suppress their biases during interracial interaction are perceived as more prejudiced than those who do not (Apfelbaum & Sommers, 2009). Taken together, this suggests that a White target who expressed a negative racial attitude—even if not directly to her interaction partner—may still be perceived as prejudiced, because the attempts to suppress the prejudicial beliefs may emerge in stilted, awkward behavior that is likely to be perceived as prejudiced by Black perceivers.

## IMPLICATIONS AND CONCLUSION

One potential interpretation of the present findings is that depletion may play a positive role in bias detection because it makes racial minorities "less sensitive" to instances of modern racism. We disagree. Research has shown that making attributions to prejudice in the face of negative outcomes has protective effects for self-esteem (e.g., Crocker, Voelkl, Testa, & Major, 1991; Major, Quinton, & McCoy, 2002). If modern racism is becoming more prevalent (Bobo, Charles, Krysan, & Simmons, 2012), and deciphering ambiguous cues are cognitively depleting (Crocker & Major, 1989; Murphy et al., 2013), our study suggests that people who are likely to be targeted by modern racism may not recognize it as such, and thus, may unwittingly remain in discriminatory environments. If targets of discrimination fail to make prejudice attributions for their treatment—as depleted participants in the present study did—they may suffer negative self-esteem and other mental and physical health consequences (Branscombe, Schmitt, & Harvey, 1999; Clark, Anderson, Clark, & Williams, 1999; McCoy & Major, 2003). Going forward, it will be important to explore the implications of these findings for people's health and well being—particularly for racial minorities who are frequently targeted by modern racism in today's society but may not always perceive it.

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