

# Understanding the Influence of Single Bias Reduction Strategies on Personal and Systemic Bias Outcomes

Group Processes & Intergroup Relations

1–22

© The Author(s) 2024

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/13684302241252406

journals.sagepub.com/home/gpi



Elisabeth S. Noland<sup>1</sup>  and Margo J. Monteith<sup>1</sup>

## Abstract

Social psychological research has used strategies to increase recognition of and motivation to combat personal *or* systemic bias, but with little attention to whether single strategies might influence both personal and systemic outcomes. We investigated whether single strategies are effective in both bias domains and potential underlying mechanisms. Across two experiments, non-Black participants were exposed to information concerning (a) their personal racial biases, (b) multiple Black individuals' discrimination experiences across institutional contexts, or (c) race-unrelated information (control condition). Discrimination experiences exposure (vs. control) increased recognition of systemic bias and motivation to combat both systemic and personal bias (Studies 1 and 2), and we found statistical support for empathy as a mediator (Study 2). In contrast, strategies for highlighting personal bias had weaker effects on personal bias outcomes and no effects on systemic bias outcomes. We discuss theoretical and practical implications of discrimination experiences exposure for combatting systemic and personal bias.

## Keywords

prejudice reduction, personal bias, systemic bias, empathy, discrimination experiences

Paper received 26 June 2023; revised version accepted 12 April 2024.

During summer 2020, the world saw first-hand a horrific example of how Black individuals' experiences with discrimination can turn deadly when 46-year-old George Floyd—a Black man—was unjustly killed by a White police officer. This catalyzed “the Summer of Racial Reckoning,” in which millions protested the unjust killings of Black people across the United States. Floyd's death is just one of many instances of an unarmed Black person being killed by police in the United States, highlighting the corrupt nature of the policing system and the enduring presence of systemic racism

embedded within it. Despite this characterization and the well-documented police brutality that Black Americans have faced for decades, there is a prevailing belief that police brutality is due to just a few “bad” cops (Rucker & Richeson, 2021a).

<sup>1</sup>Purdue University, USA

## Corresponding author:

Elisabeth S. Noland, Department of Psychological Sciences, Purdue University, 703 3rd Street, West Lafayette, IN 47907, USA.

Email: enoland@purdue.edu

Indeed, a recent survey revealed that most Americans believe that individual sources of racism are a bigger problem than systemic sources (Pew Research Center, 2016).

Reducing racism requires that it be acknowledged and combatted not only within individuals but also at the systemic level (Rucker & Richeson, 2021a, 2021b). Social psychology has a robust literature and a long tradition of investigating strategies to increase people's recognition of and motivation to combat their own personal bias (e.g., Devine, 1989; Lai et al., 2014; Miles & Crisp, 2014; Monteith, 1993; Pettigrew, 1998). Only more recently has some research investigated strategies to increase people's recognition of and motivation to combat systemic bias (e.g., Bonam et al., 2019; Nelson et al., 2013). In addition, prior research has investigated either personal or systemic bias in separate empirical pursuits, without examining whether a common strategy can be used to increase awareness of and motivation to combat both manifestations of bias. We investigated whether two bias reduction strategies could independently and effectively increase people's recognition of and motivation to combat both their own personal bias and systemic bias.

### **Defining Systemic and Personal Bias**

Systemic bias encompasses written and unwritten laws, practices, and procedures in society's structures and institutions that lead to group-based disparities (Feagin, 2014). For example, before the 1968 Fair Housing Act in the United States, many federal and local housing policies involved inequitable land use that resulted in racial and economic segregation in American cities today (Massey & Rugh, 2017). Individuals, as actors who may consciously or unconsciously engage in actions that reflect, reinforce and perpetuate bias, collectively contribute to systemic bias (Banaji et al., 2021; Henry, 2010; Payne & Hannay, 2021). We contrast systemic bias with personal bias, meaning one's *own* biased attitudes, beliefs, feelings, thoughts, and behaviors. Personal biases

may be explicit (e.g., involving deliberate activation and application) or implicit (e.g., involving less cognitive capacity and intention) (Gawronski & Bodenhausen, 2006; Greenwald & Banaji, 1995). The present research focuses on less intentional bias, which is both pervasive and insidious (e.g., Banaji & Greenwald, 2013). Can the same strategies be used to increase recognition of and motivation to combat both systemic and personal bias? Below, we consider what experiences may be useful for combatting each of these biases individually, and whether they may also have crossover effects (i.e., affecting both systemic and personal bias outcomes).

### **Increasing Recognition of and Motivation to Combat Systemic Bias**

Some research has examined strategies that may be useful for raising people's recognition of systemic bias and motivation to combat it. One strategy involves the use of educational interventions. For instance, White students who initially learned about systemic racism (e.g., as embedded in cultural representations and housing policies) subsequently reported greater recognition of structural and institutional racism and endorsement of anti-racist policies, compared to students with no learning lesson or one about personality and prejudice (Adams et al., 2008; Bonam et al., 2019, Study 2).

A second promising strategy involves exposure to multiple disadvantaged group members' experiences with discrimination. Carter and Murphy (2017) found that White participants were more likely to recognize the existence of racial inequality after learning about multiple Black individuals' experiences with discrimination, compared to participants who learned about a single Black person's experience of discrimination. In other research, White participants who watched two videos of actual incidents of racial discrimination subsequently reported greater awareness of their racial privilege, compared to control condition participants, which in turn predicted greater self-reported willingness to

participate in collective action behaviors (Uluğ & Tropp, 2021).

The current research merges knowledge acquisition and exposure to discrimination experiences as a possible way to increase recognition of and motivation to combat systemic bias. Specifically, non-Black American participants learned about multiple Black individuals' experiences with discrimination across various institutional contexts (e.g., healthcare, education, policing). Exposure to different Black individuals' experiences with discrimination provides consistency and consensus information, which reduces the possibility that discrimination can be attributed to idiosyncratic personal or situational factors (Carter & Murphy, 2017; Finlay & Stephan, 2000). Furthermore, learning about discrimination experiences across various institutional contexts highlights the ubiquity of bias across multiple structures and systems within society. Finally, compelling narratives of discrimination experiences of bias can "transport" readers into these experiences, creating empathy and bias recognition (Dix & Devine, 2024; Pietri et al., 2019). For instance, watching evocative videos of gender bias elicited anger and empathy, which were associated with participants' increased recognition that women are targets of bias and their intentions to participate in actions to increase gender parity (Moss-Racusin et al., 2018).

### *Crossover to Personal Bias?*

Will learning about multiple discrimination experiences across institutional contexts increase recognition of and motivation to combat personal bias? Perhaps not, because participants may not reflect inward to consider that they too may have racial biases and instead assume that forces outside themselves are responsible for racial bias (Adams et al., 2008). On the other hand, when people learn about disadvantaged group members' experiences with discrimination, they often engage in perspective-taking and experience empathy, and this prompts a reduction on measures that tap into personal bias (e.g., implicit and explicit racial evaluations; see Todd & Galinsky,

2014, for a review). Extrapolating, we reasoned that reading about multiple Black people's experiences with discrimination across institutional contexts may create empathy and prompt reflection on one's own biases, increasing people's recognition of their personal bias and motivation to combat it.

### **Increasing Recognition of and Motivation to Combat Personal Bias**

Personal prejudice in the form of automatically activated biases that can influence people's responses with little awareness and intention are commonplace (Eberhardt, 2020). Combatting these biases, which has been likened to a habit-breaking process, requires becoming aware of and concerned about one's biases and developing skills to identify, interrupt, and respond in non-biased ways (Burns et al., 2017; Devine et al., 2012; Forscher et al., 2017; Monteith, 1993; Monteith et al., 2002). Compared to explicit biases, people are held less accountable for biases of which they are unaware and that are unintentional (Daumeier et al., 2019; Simon et al., 2019), which highlights the need to increase people's recognition of and motivation to combat personal implicit bias.

Completing the Implicit Association Test (IAT) (Greenwald et al., 1998), a reaction time task that measures the ease with which various groups are associated with pleasant and unpleasant concepts in the mind, may increase people's recognition of and motivation to combat their personal biases. Research points to the palpability of racial bias during IAT completion (Monteith et al., 2001). Furthermore, receiving IAT feedback about one's performance can be useful under certain conditions. Specifically, Vitriol and Moskowitz (2021) found that providing White participants with IAT feedback indicating that they favor White over Black people increased participants' acknowledgment of their racial bias and commitment to egalitarianism – if the feedback was accompanied by a brief lesson on implicit bias. The IAT has also been used in the

“Prejudice Habit-Breaking Intervention” to help people learn about their biases (Cox & Devine, 2019; Devine et al., 2012; Forscher et al., 2017). Given this literature, in Experiment 1 we used IAT feedback accompanied by a lesson on implicit bias as a strategy for increasing recognition of and motivation to combat personal bias. Experiment 2 used an alternative procedure but with the same goal of highlighting personal racial bias.

### *Crossover to Systemic Bias?*

Will strategies for learning about personal racial bias have crossover effects, increasing recognition of and motivation to combat systemic bias? Perhaps not, given that various motivational, educational, and experiential factors encourage the denial of systemic bias (Rucker & Richeson, 2021a). For instance, White people may be motivated to deny systemic bias because acknowledging its existence threatens their perception that society is fair and just (Pratto et al., 2006). However, with increased insight into their own biases, people may become more open to considering that bias is problematic beyond themselves and rooted in culture, policies, institutions, and in other systemic ways. Thus, a strategy that highlights people’s personal bias may stimulate recognition of and motivation to combat systemic bias.

### **The Current Research**

Experiment 1 tested whether two different strategies increased recognition of and motivation to combat both personal and systemic bias. We aimed to highlight either the pervasive discrimination that Black people experience across multiple institutional contexts or to highlight participants’ own propensity for responding in biased ways and compare each of these conditions to a control condition. These strategies differ by focusing participants either on others’ bias experiences or on their own biases. Although the experimental conditions differed in a variety of other ways, making their direct comparison less

informative than their respective comparisons with the control condition, understanding the potential impact of these strategies on systemic and personal bias outcomes—relative to the control condition—is important.

We expected a strategy that involved learning about Black people’s experiences with discrimination across institutional contexts to heighten non-Black participants’ self-reported recognition of and motivation to combat systemic bias, compared to a no-strategy control condition. We expected a strategy that involved learning about one’s personal racial bias to elicit greater recognition of and motivation to combat personal bias, relative to the control condition. However, could a single strategy influence both systemic and personal bias outcomes? We tested crossover hypotheses that (a) exposure to Black people’s experiences with discrimination would cause greater agreement with personal bias measures, and (b) highlighting participants’ personal proneness to bias would cause greater agreement with systemic bias measures. Experiment 2 provided a replication.

In addition, Experiment 1 assessed negative self- and other-directed affect as exploratory measures. Typically, procedures designed to highlight personal bias activate negative self-directed affect, especially among individuals who are internally motivated to be egalitarian (e.g., Burns et al., 2017; Monteith & Voils, 1998). We assessed negative other-directed affect with the idea that reading about discrimination experience would activate this emotional response (Borders & Wiley, 2020; Moss-Racusin et al., 2018). Experiment 2 again assessed negative self-directed affect, and negative feelings toward others were captured within a broader measure of empathy. This allowed us to examine the potential mediating role of empathy in explaining the effects of reading about discrimination experiences on personal and systemic bias outcomes.

Of note, our samples were majority White with no Black participants, but we did not exclude other racially marginalized groups from participation or analyses. Our rationale was that

we did not have a strong theoretical basis for such exclusion. On the one hand, exposure to Black people's discrimination experiences might evoke solidarity among non-Black racial minority participants if, for instance, they perceive commonalities with their own discrimination experiences (Craig & Richeson, 2012). This could result in greater recognition and motivation to combat bias among non-Black racial minorities than White participants. On the other hand, solidarity is not a default reaction to other people's discrimination experiences (Craig & Richeson, 2016); it requires fostering by, for example, conditions that underscore commonalities across marginalized group members' experiences (Cortland et al., 2017) – conditions that our research did not establish. In addition, we had no theoretical reason to expect differences between White and non-Black racial minority participants when examining the effects of learning about personal biases toward Black people. Thus, we retained non-Black racial minority participants in analyses. However, in the supplemental online materials (SOM) we report separate analyses for White and non-Black racial minority participants and an integrative data analysis (Curran & Hussong, 2009) across experiments that include race as a factor, and we do not find evidence of systematic race effects.

We report how sample sizes were determined, and all data exclusions, manipulations, and measures. Preregistrations can be found at <https://osf.io/pgy69> (Study 1), <https://osf.io/62tsw> (Study 2). All data, analysis code, research materials, and supplemental online materials (SOM) are available at <https://osf.io/425gu/>. Instances in which analyses depart from preregistrations are noted in the Results sections.

## Experiment 1

### *Method*

*Design and participants.* Participants were randomly assigned to one of three conditions in a single-factor between-participants design.<sup>1</sup> Data

were collected during March 2021 from 528 non-Black undergraduate students at a large midwestern university in the United States. Participants received partial course credit. We removed three participants who were 17 years old. After preregistered exclusions (26 did not provide post-session consent; 23 failed attention or comprehension checks; four multivariate outliers; eight did not believe the cover story), 464 participants remained for analyses ( $M_{\text{age}} = 19.30$ ,  $SD_{\text{age}} = 1.17$ ; 251 men, 204 women, four nonbinary, five specified another identity; 321 White, 98 Asian or Asian American, 25 Hispanic or Latino/a, five Middle Eastern Arab or non-Arab, one Native American, 14 specified more than one of these races). A sensitivity analysis indicated that our sample size provided 80% power to detect an effect size of  $f = 0.14$  with  $\alpha = .05$ .

*Procedure.* Participants completed the study online, which was programmed in Qualtrics, and were informed that it concerned “attitudes and motivations” related to Black Americans. Participants were randomly assigned to one of three strategy conditions:

*IAT.* Participants completed the Black-White racial IAT (Greenwald et al., 1998) including five practice blocks with 20 trials each and two critical blocks with 40 trials each. The critical blocks involved (1) pairing faces of Black males with “bad” words (e.g., horrible, evil) and faces of White males with “good” words (e.g., wonderful, beautiful), and (2) completing the reverse pairings (i.e., Black—good; White—bad).

Afterward, participants received feedback indicating that they showed a preference for White people over Black people. Then, they read an explanation of implicit bias that included the following themes: (1) how the IAT can reveal an automatic preference for White people over Black people; (2) the distinction between explicit and implicit bias; (3) method factors (e.g., block order) do not play a significant role; (4) people who consciously harbor no bias can have implicit bias due to cultural stereotypes and socialization;

and (5) implicit bias can influence judgments and behaviors, so it is important to become aware of our implicit biases to reduce their influence.

*Discrimination experiences.* Participants read five vignettes describing different Black individuals' experiences with discrimination across five institutional contexts: policing, healthcare, education, retail, and housing. Each vignette was 113–197 words and vividly described a Black person's experience with discrimination, including how it made them feel. Participants were informed that the vignettes were written by Black Americans who had completed a previous study in our lab, although we had generated them. Participants answered two comprehension questions after reading each experience, and incorrect responses triggered a cautionary message to read more carefully.

*Control condition.* Participants in the control condition rated their preferences for various consumer goods (e.g., laundry detergent). They were presented with five products in turn, each accompanied by detailed descriptions of two different brands, and indicated which brand they preferred.

Next, participants completed the dependent measures. They completed an affect measure followed by a thought-listing task. Then, they completed measures relevant to personal bias and systemic bias in counterbalanced order. Finally, participants answered a suspicion probe item, were provided with debriefing information, and indicated whether they allowed the use of their data given the deception used during the study.

*Measures.* The measures and example items appear in Table 1. All measures were completed on a 1 (*strongly disagree*) to 9 (*strongly agree*) scale, except the affect measure, which used a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

## Results

Reliabilities, descriptive statistics and intercorrelations among measures are shown in Table 2. We tested the effect of strategy on the dependent

measures using one-way ANOVAs. Tukey's HSD tests were used to compare conditions.

### *Personal and Systemic Bias*

Means and standard deviations for personal and systemic bias measures as a function of strategy are presented in Table 3.

*Personal bias measures.* We found a significant main effect for strategy when predicting recognition of personal bias,  $F(2, 461) = 4.55, p = .011, \eta_p^2 = .02$ . As predicted, participants in the IAT condition recognized their personal bias more than participants in the control condition,  $p = .008, 95\% \text{ CI} [-1.05, -0.13]$ . Although participants who read about discrimination experiences reported somewhat greater recognition of personal bias compared to the control condition, the difference was not significant,  $p = .231$ .

The main effect for strategy was just short of significance when predicting motivation to combat personal bias,  $F(2, 461) = 2.85, p = .059, \eta_p^2 = .01$ . Contrary to predictions, motivation to combat personal bias was comparable in the IAT and control conditions,  $p = .992$ . There was, however, a nonsignificant trend for participants in the discrimination experiences condition to report greater motivation to combat personal bias than participants in the control condition,  $p = .079$ . The IAT and discrimination experiences conditions did not differ,  $p = .123$ .

In sum, we found partial support for the hypothesis that personal outcomes would be influenced in the IAT condition. Participants were more likely to recognize their personal bias in the IAT condition compared to the control condition; however, they did not report more motivation to combat it. We also found a nonsignificant trend relevant to the crossover hypothesis, in that participants who read about discrimination experiences reported somewhat greater motivation to combat their personal bias compared to control condition participants.

*Systemic bias measures.* Contrary to predictions, strategy was not significantly related to recognition



**Table 1.** Measures and example items, Experiment 1.

<i>Personal bias measures</i>	
<b>Recognition of personal bias</b> (nine items; adapted from Hahn & Gawronski, 2019; Perry et al., 2015)	<ul style="list-style-type: none"> <li>• When talking to Black people, I may be unintentionally acting in a prejudiced way.</li> <li>• I recognize that stereotypes and unintentional biases could influence my behavior toward Black people.</li> </ul>
<b>Motivation to combat personal bias</b> (six items)	<ul style="list-style-type: none"> <li>• I am motivated to be on guard so that stereotypes do not affect my judgments of Black people.</li> <li>• I'm willing to learn more about my biases so that I can behave in non-prejudiced ways toward Black people.</li> </ul>
<i>Systemic bias measures</i>	
<b>Recognition of systemic bias</b> (eight items; adapted from Adams et al., 2008; Henry & Sears, 2002; Shin et al., 2016)	<ul style="list-style-type: none"> <li>• I recognize that racism is embedded in the legal, educational, and economic systems within our society.</li> <li>• Structural and institutional racism in society (e.g., racist laws, policies, customs) are responsible for racial inequality.</li> </ul>
<b>Motivation to combat systemic bias</b> (seven items; adapted from Rapa et al., 2020)	<ul style="list-style-type: none"> <li>• I am motivated to do what I can to correct social and economic inequality that disadvantages Black people.</li> <li>• I am willing to learn more about how systemic bias operates in society (e.g., in housing, education, healthcare) so that I can get involved with combatting it.</li> </ul>
<b>Support for Black Lives Matter</b> (six items; adapted from Holt & Sweitzer, 2018)	<ul style="list-style-type: none"> <li>• The BLM movement behaves in ways that are justifiable to obtain their goals.</li> <li>• The BLM movement has a positive set of goals.</li> </ul>
<b>Support for policies that address racial inequality</b> (four items; Kaiser et al., 2009)	<ul style="list-style-type: none"> <li>• Efforts should be made to promote equal access to healthcare for minorities.</li> <li>• Affirmative action programs are still needed today.</li> </ul>
<i>Exploratory measures</i>	
<b>Affect</b> (Monteith, 1993)	<ul style="list-style-type: none"> <li>• Negative self-directed affect (negself; 10 items; e.g., guilt, disappointment with myself)</li> <li>• Negative other-directed affect (negother; four items; e.g., angry at others; irritated at others)</li> </ul>
<b>Thought-listing task</b>	<ul style="list-style-type: none"> <li>• Participants listed thoughts they had while completing their assigned experimental task.</li> </ul>

of systemic bias,  $p = .176$ . In contrast, the effect of strategy on motivation to combat systemic bias was significant,  $F(2, 461) = 4.71, p = .009, \eta_p^2 = .02$ . As expected, reading about discrimination experiences prompted significantly greater motivation to combat systemic bias, compared to the control condition,  $p = .029$ , 95% CI [0.04, 0.84], and also compared to the IAT condition,  $p = .017$ , 95% CI [0.07, 0.91]. The IAT and control conditions did not differ,  $p = .954$ .

Contrary to predictions, strategy was not significantly related to support for Black Lives Matter,  $p = .356$ . In retrospect, because the BLM movement was salient and drawing support from a majority of Americans when our data were collected (Parker et al., 2020), participants' attitudes toward the movement may have been impervious to the experimental manipulation.

Finally, the effect of strategy on support for policies that address racial inequality was

**Table 2.** Means, standard deviations, and correlations among measures, Experiment 1.

	$\alpha$	$M$	$SD$	1	2	3	4	5	6	7	8
1. Recognition of personal bias	.87	4.39	1.73	-							
2. Motivation to combat personal bias	.87	7.19	1.48	.20***	-						
3. Recognition of systemic bias	.89	6.91	1.53	.19***	.64***	-					
4. Motivation to combat systemic bias	.88	6.61	1.54	.00	.71***	.71***	-				
5. Support for BLM	.95	6.34	2.09	.07	.59***	.78***	.66***	-			
6. Policy support	.84	6.96	1.57	.12**	.66***	.74***	.69***	.67***	-		
7. Negself	.95	2.48	1.49	.18***	.15***	.20***	.14**	.14**	.18***	-	
8. Negrother	.92	2.89	1.85	.04	.17***	.20***	.23***	.15**	.20***	.38***	-

Note. All measures completed on 1–9 scales except affect, which was completed using a 1–7 scale. Negself = negative self-directed affect; Negrother = negative other-directed affect.

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  (two-tailed)

**Table 3.** Means and standard deviations for personal and systemic bias measures as a function of strategy, Experiment 1.

Dependent variables	Control	IAT	Discrimination experiences
Recognition of personal bias	4.10 <sub>a</sub> (1.75)	4.69 <sub>b</sub> (1.59)	4.41 <sub>ab</sub> (1.80)
Motivation to combat personal bias	7.07 <sub>a</sub> (1.56)	7.09 <sub>a</sub> (1.58)	7.42 <sub>a</sub> (1.27)
Recognition of systemic bias	6.84 <sub>a</sub> (1.57)	6.80 <sub>a</sub> (1.50)	7.10 <sub>a</sub> (1.50)
Motivation to combat systemic bias	6.48 <sub>a</sub> (1.59)	6.43 <sub>a</sub> (1.54)	6.91 <sub>b</sub> (1.46)
Support for BLM	6.37 <sub>a</sub> (2.07)	6.15 <sub>a</sub> (2.12)	6.49 <sub>a</sub> (2.08)
Policy support	6.86 <sub>a</sub> (1.65)	6.81 <sub>a</sub> (1.60)	7.23 <sub>a</sub> (1.44)

Note. For each dependent variable, means not sharing a subscript differ significantly,  $p < .05$ , according to Tukey's HSD tests. All measures completed on 1–9 scales.

significant,  $F(2, 461) = 3.26$ ,  $p = .039$ ,  $\eta_p^2 = .01$ . Follow-up comparisons pointed to a trend for participants in the discrimination experiences condition to report greater policy support than other participants, with control versus discrimination experiences,  $p = .087$ , and discrimination experiences versus IAT,  $p = .057$ . The IAT and control conditions were comparable,  $p = .962$ .

In sum, the expectation that reading about Black people's experiences with discrimination would stimulate recognition of and motivation to combat systemic bias was partially supported. Recognition of systemic bias was not greater, but participants' motivation to combat systematic bias was, relative to the control (and IAT) conditions. Policy support was also influenced



by strategy, with trends for greater support in the discrimination experiences condition than in the other conditions. Finally, contrary to the crossover hypothesis, scores on all systemic bias measures were unaffected by receiving feedback about one's own bias.

### *Exploratory measures*

*Negative self-directed affect (negself).* There was a significant strategy main effect,  $F(2, 460) = 48.76$ ,  $p < .001$ ,  $\eta_p^2 = .18$ . The full IAT experience ( $M = 3.37$ ,  $SD = 1.71$ ) elicited greater negself compared to the control ( $M = 1.86$ ,  $SD = 1.27$ ),  $p < .001$ , 95% CI [1.14, 1.87], and discrimination experiences ( $M = 2.32$ ,  $SD = 1.06$ ),  $p < .001$ , 95% CI [0.68, 1.42], conditions. The discrimination experiences condition also elicited greater feelings of negself relative to the control condition,  $p = .008$ , 95% CI [0.10, 0.82].

*Negative other-directed affect (negother).* There was a significant strategy main effect,  $F(2, 460) = 218.33$ ,  $p < .001$ ,  $\eta_p^2 = .49$ . Reading about discrimination experiences ( $M = 4.67$ ,  $SD = 1.76$ ) elicited greater negother compared to the control ( $M = 1.68$ ,  $SD = 0.98$ ),  $p < .001$ , 95% CI [2.63, 3.33], and IAT ( $M = 2.37$ ,  $SD = 1.11$ ),  $p < .001$ , 95% CI [1.93, 2.66], conditions. The IAT condition also elicited greater negother relative to the control condition,  $p < .001$ , 95% CI [0.33, 1.04].

*Thought-listing task.* We examined participants' thoughts to determine whether they questioned the veracity of study materials. Twenty-seven participants questioned their IAT feedback (e.g., "I only missed 3 options on the test. I don't get how I had an implicit bias"). Excluding these participants did not change the results.

## **Discussion**

Experiment 1 provided some support for the hypothesis that exposure to multiple discrimination experiences across institutional contexts influences systemic bias outcomes: Compared to both the control and IAT conditions, reading about

discrimination experiences caused significantly greater motivation to combat systemic bias, and a trend toward stronger support for policies to reduce systemic bias. We also found a trend consistent with the crossover hypothesis, with participants who read about discrimination experiences reporting greater motivation to combat their personal biases than control condition participants, although this comparison did not reach statistical significance. Note that, aside from recognition of personal bias, overall agreement levels for personal and systemic bias outcomes were well above the scale midpoints. We considered that the proximity of data collection (March 2021) to the "racial reckoning of summer 2020" and aftermath may have inflated favorable reporting on the racial measures and depressed the effects of our experimental manipulation. Testing hypotheses again seemed prudent. Finally, Study 1 revealed that participants were angered and irritated with others after reading about discrimination experiences relative to undergoing the IAT procedure and a control strategy, which may suggest empathy for the targets of discrimination – a possibility that we investigated in Experiment 2.

Other findings supported the hypothesis that highlighting personal biases influences personal bias outcomes: Receiving IAT feedback indicating racial bias and an explanation of implicit bias (vs. control condition) heightened recognition of personal biases, replicating Vitriol and Moskowitz (2021). This strategy also created more negative self-directed affect relative to the control condition, which aligns with past research showing that people experience disappointment with themselves and guilt when biases that conflict with their personal standards are made salient (e.g., Amodio et al., 2007; Monteith et al., 2002). Surprisingly, participants in the IAT condition did not report greater motivation to combat personal bias compared to the control condition. In addition, we found no evidence of a crossover effect with the personal bias strategy: Undergoing the IAT procedure (vs. control) was unrelated to all systemic bias outcomes. Perhaps strategies to reduce personal bias do not have implications for addressing bias beyond the self. However, given

some researchers' argument about the limitations of the IAT for raising racial consciousness (Hahn et al., 2014; Howell et al., 2017), perhaps our procedure was inadequate. In Experiment 2, we used an alternative procedure to highlight personal racial biases.

## Experiment 2

One goal of Experiment 2 was to assess replicability. We again predicted that reading about discrimination experiences across institutional contexts would cause greater recognition of and motivation to combat systemic bias relative to the control condition. As for crossover effects to personal bias outcomes, we again expected exposure to discrimination experiences to heighten motivation to combat personal biases. However, given the results of Experiment 1, we did not predict an influence of reading about discrimination experiences on recognition of personal bias. Note that we dropped the BLM measure given that it was not sensitive to the strategy manipulation in Experiment 1, and – although not a main focus – we added two measures with potentially greater relation to behavior.

We used a different strategy than the IAT for examining the consequences of highlighting personal biases, which entailed making participants' propensity for stereotypic inferences salient. We predicted that this strategy would cause greater recognition of and motivation to combat personal biases compared to the control condition. However, because Experiment 1 showed no effects of the personal bias strategy (vs. control) on systemic outcomes, we became skeptical that highlighting personal bias can foster reflection on systemic bias, and we did not predict these effects in Experiment 2.

A second goal was to test the role of affective reactions to the different strategies. We considered a possible role for empathy (including parallel empathy, such as anger, and reactive empathy, such as compassion; Finlay & Stephan, 2000). Prior research has shown that learning about gender-based discrimination experiences activated empathy and increased awareness of women's experiences with gender bias and reduced sexist

attitudes (Moss-Racusin et al., 2018). A sizeable body of research has also shown that reading about a single marginalized group member's experience with discrimination causes a reduction in prejudiced attitudes toward the group and other favorable interpersonal outcomes, with empathy playing a mediating role (see Todd & Galinsky, 2014, for a review). Our research differs from past work in that we examined how exposure to multiple discrimination experiences across institutional contexts influences recognition of and motivation to combat one's own bias and systemic bias. However, we expected empathy to play a key role in our research as well. Specifically, we hypothesized that (a) reading about various discrimination experiences creates greater empathy relative to the control condition, and (b) empathy would be a statistical mediator of observed direct effects of discrimination experiences on personal and systemic outcomes.

In contrast, we expected an experience that highlighted people's personal bias to activate negative self-directed affect, as in Experiment 1 and past research. Furthermore, we expected negative self-directed affect to statistically mediate any direct effects of the personal bias strategy on personal bias measures (Monteith, 1993; Monteith et al., 2002).

## Method

*Design and participants.* Data were collected in March 2022 from 519 non-Black US citizens (each paid \$2.00) from Amazon Mechanical Turk. After preregistered exclusions (four participants did not provide post-session consent; three self-identified as Black; nine failed attention or comprehension checks; 18 disbelieved the cover story), 485 participants remained ( $M_{\text{age}} = 43.48$ ,  $SD_{\text{age}} = 13.54$ ; 291 women, 184 men, seven nonbinary, three specified another gender identity; 396 White, 44 Asian or Asian American, 28 Hispanic or Latino/a, three Native American, two Middle Eastern non-Arab, 10 specified more than one of these races, two missing). A sensitivity analysis indicated that our sample size provided 80% power to detect an effect size of  $f = 0.14$  with  $\alpha = .05$ .

*Procedure.* The procedure replicated Experiment 1 except we used a racial stereotypic inference task (SIT) instead of the IAT to highlight people's personal proneness to racial bias (e.g., Burns et al., 2017; Czopp et al., 2006). On each trial, participants viewed a picture of a person accompanied by a short description (e.g., "This person is often found with a camera"). Then they typed a label fitting the picture and description (e.g., "tourist"). The instructions encouraged participants to generate sensible labels as fast as possible (although no time limit was imposed). Across 38 trials presented in randomized order, four critical trials were included that could elicit stereotypic responses. For instance, a Black man paired with the description "This person can be found behind bars" could elicit a stereotypic label (e.g., criminal, prisoner), although a nonstereotypic label (e.g., bartender, guard) was possible. As expected, when responses were later coded as stereotypic or nonstereotypic, most (95%) participants provided at least one stereotypic response ( $M = 2.20$ ,  $SD = 1.37$ ).<sup>2</sup>

Participants then read that they would view a "randomly selected" subset of their responses alongside "a previous participant's responses" to see how well they compared. Of ten photo-description pairs presented, four were critical trials. Participants saw that the ostensible other participant provided nonstereotypical labels for all critical trials. We reasoned that participants would realize their racial bias upon seeing the "other participant's" responses.

*Measures.* Measures were identical to Experiment 1 with the following exceptions: (1) Support for Black Lives Matter measure was omitted; (2) empathy was assessed by modifying the affect measure; and (3) two new measures were included at the end of the study to tap into more behaviorally relevant outcomes.

*Empathy.* We added items to the affect measure as needed to assess empathy (Finlay & Stephan, 2000). This measure included items tapping into parallel (e.g., anger, irritated) and reactive (e.g., concerned, compassion) empathy. Results

were redundant when the two types of items were analyzed separately, so we averaged all items to form an empathy index.<sup>3</sup>

*Jokes evaluations.* Under the guise of a task for a separate study, participants were asked to pilot test items by rating the humor of 43 jokes on a sliding scale ranging from 0 (labeled "HA!") to 100 (labeled "HA!HA!HA!HA!HA!HA!HA!HA!"). Three jokes (drawn from Burns et al., 2017) played on stereotypes about Black people.

*Willingness to engage in social justice action.* Participants completed five items assessing their willingness to engage in social justice action on a 1 (*not at all willing*) to 7 (*extremely willing*) scale (adapted from Tropp et al., 2021). Items included "I am willing to attend demonstrations, protests or rallies against racial injustice" and "I am willing to attend meetings or workshops on racial issues."

## Results

Descriptive statistics and intercorrelations among measures are shown in Table 4. Data were analyzed as in Experiment 1, except where noted.

### *Personal and Systemic Bias*

Means and standard deviations for personal and systemic bias measures as a function of strategy are presented in Table 5.

*Personal bias measures.* Contrary to predictions and Experiment 1, the strategy main effect was not significant when predicting recognition of personal bias,  $p = .957$ .

The strategy main effect was significant when predicting motivation to combat personal bias,  $F(2, 482) = 5.57$ ,  $p = .004$ ,  $\eta_p^2 = .02$ . Similar to Experiment 1 and consistent with the crossover hypothesis, motivation to combat personal bias was comparable in the SIT and control conditions,  $p = .993$ . However, participants in the discrimination experiences condition reported greater motivation to combat personal bias than participants in the control condition,  $p = .008$ ,

**Table 4.** Means, standard deviations, and correlations among measures, Experiment 2.

	$\alpha$	$M$	$SD$	1	2	3	4	5	6	7	8	9
1. Recognition of personal bias	.95	4.34	2.12	-								
2. Motivation to combat personal bias	.92	6.08	2.18	.33***	-							
3. Recognition of systemic bias	.93	6.28	2.08	.21***	.64***	-						
4. Motivation to combat systemic bias	.93	5.73	2.23	.09*	.68***	.75***	-					
5. Policy support	.91	6.39	2.26	.16***	.64***	.87***	.79***	-				
6. Joke evaluations	-	.58	.49	.14**	-.21***	-.23***	-.24***	-.23***	-			
7. Social justice action	.93	5.27	2.47	.09*	.60***	.69***	.86***	.74***	-.20***	-		
8. Empathy	.89	2.08	1.52	.07	.29***	.24***	.36***	.30***	.00	.35***	-	
9. Negself	.96	1.92	1.31	.27***	.22***	.15**	.22***	.18***	.10*	.22***	.55***	-

Note. All measures completed on 1–9 scales except affect and social justice intentions, which were completed using 1–7 scales. Negself = negative self-directed affect.

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$  (two-tailed)

**Table 5.** Means and standard deviations for personal and systemic bias measures as a function of strategy, Experiment 2.

Dependent variables	Control	SIT	Discrimination experiences
Recognition of personal bias	4.32 <sub>a</sub> (2.17)	4.38 <sub>a</sub> (2.06)	4.32 <sub>a</sub> (2.12)
Motivation to combat personal bias	5.84 <sub>a</sub> (2.16)	5.87 <sub>a</sub> (2.23)	6.56 <sub>b</sub> (2.10)
Recognition of systemic bias	6.05 <sub>a</sub> (2.02)	6.05 <sub>a</sub> (2.13)	6.76 <sub>b</sub> (2.02)
Motivation to combat systemic bias	5.55 <sub>a</sub> (2.16)	5.50 <sub>a</sub> (2.22)	6.16 <sub>b</sub> (2.27)
Policy support	6.21 <sub>a</sub> (2.25)	6.11 <sub>a</sub> (2.31)	6.86 <sub>b</sub> (2.17)
Negative self-directed affect	1.67 <sub>a</sub> (1.23)	2.00 <sub>ab</sub> (1.33)	2.12 <sub>bc</sub> (1.34)
Empathy	2.35 <sub>a</sub> (1.15)	2.63 <sub>a</sub> (0.94)	3.68 <sub>b</sub> (1.35)

Note. For each dependent variable, means not sharing a subscript differ significantly,  $p < .05$ , according to Tukey's HSD tests. All measures completed on 1–9 scales.

95% CI [0.16, 1.28]. The SIT and discrimination experiences conditions also differed significantly,  $p = .015$ , 95% CI [-1.27, -0.11].

In sum, we did not find evidence that the SIT strategy heightened personal bias recognition or

motivation to combat it. However, a crossover effect was observed, such that reading about Black people's experiences with discrimination increased participants' motivation to combat their personal bias.

*Systemic bias measures.* The main effect for strategy was significant when predicting recognition of systemic bias,  $F(2, 482) = 6.16, p = .002, \eta_p^2 = .03$ . As predicted, participants in the discrimination experiences condition recognized systemic bias more than participants in the control,  $p = .006$ , 95% CI [0.17, 1.24], and SIT,  $p = .008$ , 95% CI [0.15, 1.26], conditions. The SIT and control conditions were comparable,  $p = 1.00$ .

The main effect for strategy was significant when predicting motivation to combat systemic bias,  $F(2, 482) = 4.26, p = .015, \eta_p^2 = .02$ . Replicating Experiment 1, reading about discrimination experiences prompted greater motivation to combat systemic bias, compared to the control,  $p = .036$ , 95% CI [0.03, 1.18], and SIT,  $p = .026$ , 95% CI [0.06, 1.25], conditions. The SIT and control conditions were comparable,  $p = .975$ .

Finally, strategy predicted support for policies that address racial inequality,  $F(2, 482) = 5.15, p = .006, \eta_p^2 = .02$ . As predicted, participants in the discrimination experiences condition reported significantly greater policy support than participants in the control,  $p = .024$ , 95% CI [0.07, 1.23], and SIT,  $p = .010$ , 95% CI [0.15, 1.35], conditions. The SIT and control conditions were comparable,  $p = .913$ .

In sum, the expectation that reading about discrimination experiences would increase recognition of and motivation to combat systemic bias was fully supported. Also as expected, we found no support for the crossover hypothesis, as the personal bias strategy had no effects on systemic bias outcomes.

### *Negative Self-directed Affect and Empathy*

*Negative self-directed affect.* The main effect for strategy on negself was significant,  $F(2, 482) = 5.36, p = .005, \eta_p^2 = .02$  (see Table 5). Participants in the SIT condition reported somewhat higher negself than participants in the control condition, although the comparison fell short of significance,  $p = .058$ . Greater negself was reported in the discrimination experiences vs. control condition,  $p = .005$ , 95% CI [0.11, 0.78]

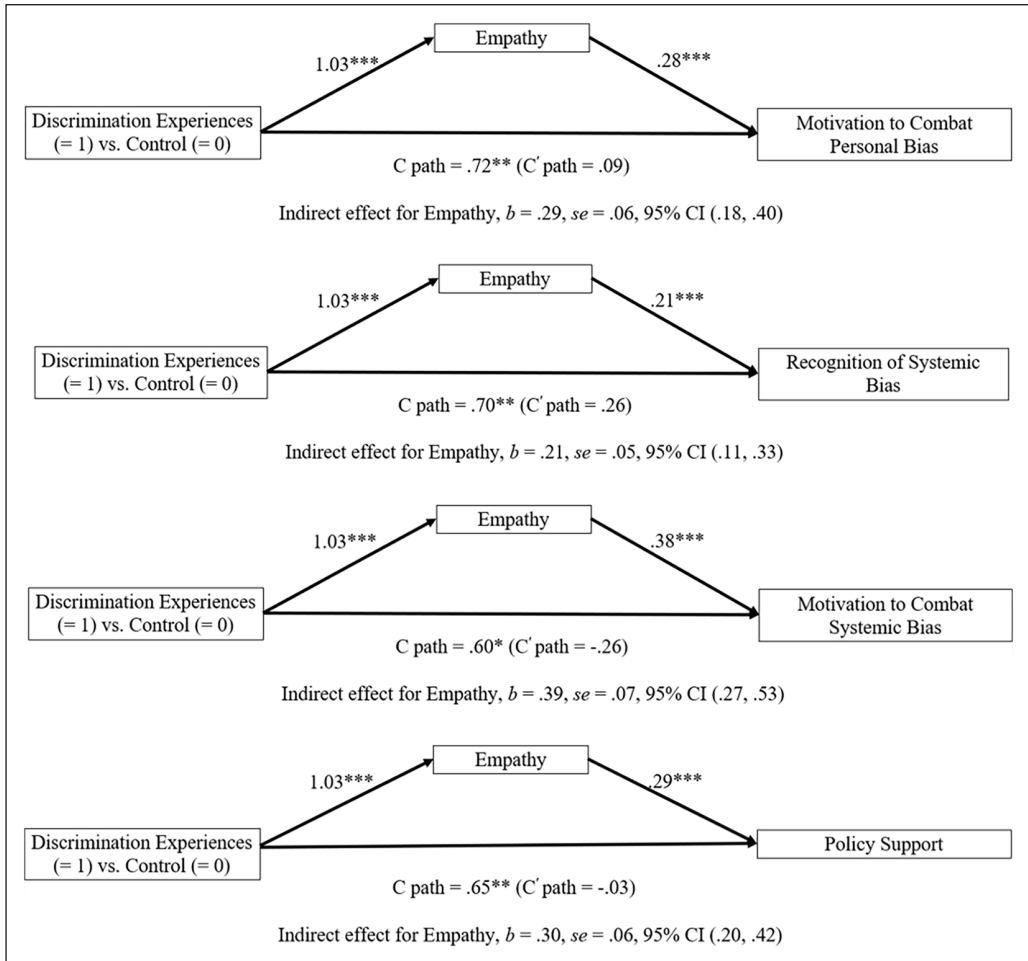
and the discrimination experiences and SIT conditions were comparable  $p = .697$ .

*Empathy.* As expected, strategy predicted empathy,  $F(2, 482) = 58.85, p < .001, \eta_p^2 = .20$ . Reading about discrimination experiences ( $M = 3.68, SD = 1.35$ ) elicited greater feelings of empathy, relative to control ( $M = 2.35, SD = 1.15$ ),  $p < .001$ , 95% CI [1.03, 1.63], and SIT ( $M = 2.63, SD = 0.94$ ),  $p < .001$ , 95% CI [0.74, 1.37], conditions. The SIT and control conditions were comparable,  $p = .077$ .

### *Mediation Models*

For measures that showed a direct effect of strategy, as reported above, we used Hayes's (2018) PROCESS macro (Model 4; 5,000 bootstrapped samples) to test whether empathy was a significant mediator.<sup>4</sup> These measures included motivation to combat personal bias, recognition of and motivation to combat systemic bias, and policy support. Strategy was dummy coded to compare (a) the discrimination experiences and control conditions and (b) the SIT and control conditions. None of the indirect effects for the SIT vs. control condition comparison were significant. However, as shown in Figure 1, for the discrimination experiences vs. control condition comparison, the indirect effect of empathy was significant for each dependent variable. These results suggest that exposure to discrimination experiences caused increased empathy, which in turn was associated with greater motivation to combat personal bias, recognition of and motivation to combat systemic bias, and support for policies to address systemic bias.

*Joke evaluations.* The distribution for joke evaluations was severely skewed, with 41.8% of participants giving each racial joke the lowest possible rating of zero. Given this distribution, we deviated from our preregistered analysis plan by dichotomizing racial joke evaluations into 0 (for joke score = 0) versus 1 (for joke score > 0) and predicting it using logistic regression. We entered the average of ratings for non-racial jokes as a

**Figure 1.** Indirect effects for empathy, Experiment 2.

Note. Path values are standardized coefficients. \* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

covariate, and two dummy codes as a set to capture strategy condition. The effect of strategy was not significant,  $p = .336$ .

*Willingness to engage in social justice actions.* Strategy did not predict willingness to engage in social justice actions,  $p = .140$ . Although participants reported greater willingness to engage in social justice actions in the discrimination experiences condition ( $M = 5.53$ ,  $SD = 2.56$ ) relative to the control ( $M = 5.31$ ,  $SD = 2.37$ ), and SIT ( $M = 4.98$ ,  $SD = 2.46$ ), conditions, no condition differences were significant,  $ps \geq .120$ .

## Discussion

Experiment 2 provided evidence consistent with Experiment 1 and our predictions, showing that exposure to multiple discrimination experiences across institutional contexts influenced systemic bias outcomes: Recognition of and motivation to combat systemic bias and support for policies to reduce systemic bias increased after reading about discrimination experiences (vs. control condition). Supporting the “crossover” hypothesis, learning about discrimination experiences increased participants’ motivation to combat



their personal biases. Furthermore, these effects were all statistically mediated by parallel and reactive empathy experienced for targets of discrimination. These findings suggest that exposure to discrimination experiences influences both personal and systemic bias outcomes and are consistent with empathy being a critical mediator in both cases.

However, the strategy in Experiment 2 that we intended to highlight personal proneness to racial bias had little effect. It created somewhat greater negative self-directed affect compared to the control condition, but this effect was weak. Furthermore, it did not influence personal bias outcomes, let alone systemic bias outcomes. The stereotypic inference task that we used has elicited negative self-directed affect and triggered self-regulatory processes and personal bias reduction in past research (e.g., Chaney & Sanchez, 2018; Czopp et al., 2006; Hildebrand et al., 2024); however, in past research, another person confronted participants about their racial bias, whereas our procedure left participants to conclude their responses were racially biased in comparison to race-neutral responses that another participant had supposedly provided.

Null results were observed for the racial jokes measure, likely due to floor effects. We are uncertain why the strategy manipulation did not influence the social justice action measure. One possibility is that the perceived effort required for taking actions (e.g., attending a rally) was a primary determinant of ratings, and the strategy manipulation was not potent enough to exert an influence beyond this. When it comes to influencing actual action, more potent experiences may be needed than found in our experiment.

### Integrative Data Analysis

We combined data from Experiment 1 and 2 and treated experiment as a factor in integrative data analyses (Curran & Hussong, 2009) to test the effects of the strategy manipulation on the personal and systemic bias outcomes. The main effect for experiment was significant for all measures,  $F$ s ranging from 9.74 to 83.94,  $p$ s  $\leq$  .002 and

$\eta_p^2$  ranging from .010 to .082, such that participants consistently reported stronger agreement in Experiment 1 than 2. This is consistent with our speculation that strategy effects in Experiment 1 may have been difficult to detect given overall high levels of agreement.

More importantly, the integrative analyses revealed small but reliable strategy effects for all but the recognition of personal bias measure,  $p = .187$ : The main effect for strategy was significant for motivation to combat personal bias,  $F(2, 945) = 8.38, p < .001, \eta_p^2 = .02$ ; for recognition of systemic bias,  $F(2, 945) = 7.67, p < .001, \eta_p^2 = .02$ ; for motivation to combat systemic bias,  $F(2, 945) = 8.56, p < .001, \eta_p^2 = .02$ , and for support for policies addressing systemic bias,  $F(2, 945) = 8.35, p < .001, \eta_p^2 = .02$ . As shown in Table 6, compared to the control condition, participants who read about discrimination experiences reported significantly greater motivation to combat personal bias,  $p < .001$ , 95% CI  $[-.90, -.21]$ , recognition of systemic bias,  $p < .001$ , 95% CI  $[-.83, -.16]$ , motivation to combat systemic bias,  $p < .001$ , 95% CI  $[-.89, -.18]$ , and policy support,  $p < .001$ , 95% CI  $[-.88, -.16]$ .

### General Discussion

Progress toward racial equality requires that bias be reduced both within individual people (i.e., personal prejudice) and systemically, yet social psychological research has historically focused more on personal prejudice. Furthermore, researchers tend to assess whether strategies for addressing bias influence either personal or systemic bias outcomes, rather than both. The current research investigated whether single strategies increase recognition of and motivation to combat both personal and systemic racial bias among non-Black people. The findings suggest that learning about multiple Black people's experiences with racial discrimination across institutional contexts fostered recognition of and motivation to combat systemic bias and simultaneously increased people's motivation to reduce their personal prejudice. In contrast, procedures for learning about one's personal racial bias had

**Table 6.** Means and standard deviations across Experiments 1 and 2 for personal and systemic bias measures as a function of strategy (integrative data analyses).

Dependent variables	Control	IAT/SIT	Discrimination experiences
Recognition of personal bias	4.39 <sub>a</sub> (1.93)	4.67 <sub>a</sub> (1.84)	4.53 <sub>a</sub> (1.94)
Motivation to combat personal bias	6.43 <sub>a</sub> (1.99)	6.45 <sub>a</sub> (2.03)	6.99 <sub>b</sub> (1.79)
Recognition of systemic bias	6.43 <sub>a</sub> (1.86)	6.41 <sub>a</sub> (1.89)	6.93 <sub>b</sub> (1.79)
Motivation to combat systemic bias	6.00 <sub>a</sub> (1.96)	5.95 <sub>a</sub> (1.97)	6.53 <sub>b</sub> (1.94)
Policy support	6.52 <sub>a</sub> (2.00)	6.45 <sub>a</sub> (2.03)	7.04 <sub>b</sub> (1.85)

*Note.* For each dependent variable, means not sharing a subscript differ significantly,  $p < .05$ , according to Tukey's HSD tests. All measures completed on 1–9 scales.

more limited consequences, influencing only some personal bias outcomes and no systemic bias outcomes.

Our research is consistent with past findings that learning about disadvantaged group members' experiences with discrimination increases recognition of bias and decreases personal prejudiced feelings and beliefs (e.g., Carter & Murphy, 2017; Moss-Racusin et al., 2018; Todd & Galinsky, 2014). However, the current research extends prior research in several ways. First, consistent with recent calls to investigate systemic as well as personal bias (e.g., Richeson & Sommers, 2016; Skinner-Dorkenoo et al., 2023), we investigated both types of bias. Second, our finding that learning about discrimination experiences increased motivation to reduce one's personal bias constitutes a novel contribution to the self-regulation of prejudice literature. Whereas past research has used strategies to highlight people's *own* propensity for bias to influence personal bias outcomes (e.g., Burns et al., 2017; Cox & Devine, 2019; Monteith & Voils, 1998), we found that learning about discrimination perpetuated by *other* people can foster motivation to reduce one's own bias. Thus, other strategies beyond highlighting people's prejudice-related discrepancies may be useful for motivating people to reduce personal biases.

Third, empathy explained the positive effect of learning about discrimination experiences on people's motivation to combat personal bias, as well as on systemic bias outcomes. Previous research found that empathy explains advantaged group members' positive attitudes toward disadvantaged groups (e.g., Dovidio et al., 2004; Vescio et al., 2003). Adding to this positive effect of empathy on reducing prejudiced attitudes, our findings demonstrate its role in fostering motivation to combat more subtle and often unintentional biased responses.

Notably, learning about discrimination experiences did not influence recognition of personal bias. Given people's strong motivation to maintain a nonprejudiced self-image (Bobo, 2001; Dovidio & Gaertner, 2000; Howell et al., 2015; O'Brien et al., 2010), perhaps only strategies that provide concrete evidence of the nature and negative influence of one's own biases will influence recognition of personal bias. Consistent with this reasoning, we found that racial bias feedback on the IAT elicited negative self-directed affect and recognition of personal bias in Experiment 1. The stereotypical inference task elicited negative self-directed affect in Experiment 2 but, unexpectedly, not personal bias recognition.

We were surprised to find that neither of the strategies for raising participants' awareness of

their personal biases influenced their motivation to combat their personal biases. These results conflict with past research showing that self-regulatory and bias reduction processes are triggered when people become aware of personal biases that conflict with their personal standards for non-biased responding (Amodio et al., 2007; Cox & Devine, 2019; Monteith, 1993; Monteith et al., 2002). We suspect that our procedures for raising participants' awareness of their largely unintentional personal biases were not as convincing or potent as paradigms used previously.

Use of more potent procedures for highlighting personal bias is also critical for a firmer understanding of whether recognition of and motivation to combat systemic bias can be increased by highlighting personal bias. The current research provided no support for this possibility; however, replication with more potent procedures is important.

### *Future Directions*

Although our results contribute to understanding how people may be encouraged to recognize and to be motivated to combat personal and systemic bias, we assessed these outcomes immediately following exposure to our experimental manipulations. Future research should examine whether effects last across time, as well as whether self-reported findings translate into behavioral outcomes.

Future research is also needed to understand the necessary and sufficient conditions under which discrimination experiences influence personal and systemic bias outcomes. For instance, we presented participants with five discrimination experiences across different institutional domains (e.g., healthcare and policing). Future research should determine how many and what domains are essential for this strategy's effectiveness.

Also, while we took care to ensure participants' attention as they read the discrimination scenarios, reading may be minimally engaging. In contrast, virtual reality (VR) environments are highly immersive (Cummings & Bailenson, 2016) and produce race-related responses that mirror real-life experiences (Taylor et al., 2020).

Discrimination experience exposure through VR may have stronger and longer-lasting influence on systemic and personal bias outcomes. Importantly, sharing discrimination experiences is costly and can be painful for disadvantaged group members (Pietri et al., 2019), and we caution against putting the burden of possible bias reduction on the shoulders of people who are asked to share their experiences. However, people can learn about discrimination experiences through other means, and the use of VR presents a promising avenue.

Future research might also examine the effects of strategies that target personal biases that are more explicit in nature to determine whether such strategies influence not only personal but also systemic bias outcomes (i.e., have crossover effects). Because people are held more accountable for explicit than implicit biases (Daumeier et al., 2019; Simon et al., 2019), perhaps a strategy that effectively increases recognition of and motivation to combat explicit personal bias would also encourage recognition and motivation to combat systemic bias.

Finally, the majority of participants in our samples were White, but we also included non-Black racial minorities. Inclusion of non-Black racial minority participants did not systematically alter the findings (see SOM). However, perhaps with a larger sample of non-Black racial minority participants and methods to highlight similarities across different marginalized group members' discrimination experiences, exposure to Black people's experiences with discrimination would evoke solidarity (Cortland et al., 2017; Craig & Richeson, 2012). If solidarity were experienced among non-Black racial minority participants, exposure to Black people's discrimination experiences may have a greater impact on recognition and motivation to combat bias among these participants than among White participants.

### **Conclusion**

We took a novel approach by investigating the effects of individual strategies for addressing bias on people's recognition and motivation to combat

bias both within themselves and in policies, practices, and institutions in society. Learning about Black people's experiences with discrimination across institutional contexts, in contrast to a strategy that highlighted one's personal proneness to racial bias, elicited empathy, which in turn was associated with personal as well as systemic bias outcomes. Whereas diversity training often attempts to raise people's awareness of their own privilege and vulnerability to biases (Pendry et al., 2007), our findings highlight that an other-focused approach highlighting discrimination experiences across institutional contexts may be valuable. We hope the current research will spur further investigations of the discrimination experiences strategy and other strategies that influence not only personal but also systemic bias outcomes.

### Acknowledgements

We would like to thank the previous and current members of our laboratory for their helpful feedback and assistance.

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### ORCID ID

Elisabeth S. Noland  <https://orcid.org/0000-0003-3661-8008>

### Supplemental material

Supplemental material for this article is available online.

### Notes

1. As preregistered for Experiments 1 and 2, we assessed Internal Motivation to Respond Without Prejudice (IMS; Plant & Devine, 1998), to test whether it interacted with strategy. IMS was a moderator for exploratory measures only, resulting in attenuated but still significant effects among lower IMS participants (see SOM). Given

IMS's minimal influence, we deviate from the preregistration to present strategy condition effects only in the main text.

2. Excluding participants who provided no stereotypical responses did not change results.
3. After making their ratings, participants described toward whom their anger and irritation, and compassion and concern, were directed, if they were experiencing such emotions. Coding confirmed that participants in the discrimination experiences condition were angry and irritated at perpetrators of discrimination and felt compassion and concern for targets of discrimination. See SOM for details.
4. We initially included *negself* as a simultaneous mediator per our preregistration, but no significant effects emerged, and we trimmed it from subsequent analyses.

### References

- Adams, G., Edkins, V., Lacka, D., Pickett, K. M., & Cheryan, S. (2008). Teaching about racism: Pernicious implications of the standard portrayal. *Basic and Applied Social Psychology, 30*(4), 349–361. <https://doi.org/10.1080/01973530802502309>
- Amodio, D. M., Devine, P. G., & Harmon-Jones, E. (2007). A dynamic model of guilt: Implications for motivation and self-regulation in the context of prejudice. *Psychological Science, 18*(6), 524–530. <https://doi.org/10.1111/j.1467-9280.2007.01933.x>
- Banaji, M. R., Fiske, S. T., & Massey, D. S. (2021). Systemic racism: Individuals and interactions, institutions and society. *Cognitive Research, 6*, 82. <https://doi.org/10.1186/s41235-021-00349-3>
- Banaji, M. R., & Greenwald, A. G. (2013). *Blindspot: Hidden biases of good people*. Delacorte Press.
- Bobo, L. D. (2001). Racial attitudes and relations at the close of the twentieth century. In N. J. Smelser, W. J. Wilson, & F. Mitchell (Eds.), *American becoming: Racial trends and their consequences* (pp. 264–301). National Academy Press.
- Bonam, C. M., Nair Das, V., Coleman, B. R., & Salter, P. (2019). Ignoring history, denying racism: Mounting evidence for the Marley hypothesis and epistemologies of ignorance. *Social Psychological and Personality Science, 10*(2), 257–265. <https://doi.org/10.1177/1948550617751583>
- Borders, A., & Wiley, S. (2020). Rumination about discrimination mediates the unique association

- between anger and collective action intentions. *Group Processes & Intergroup Relations*, 23(7), 979–995. <https://doi.org/10.1177/1368430219875214>
- Burns, M. D., Monteith, M. J., & Parker, L. R. (2017). Training away bias: The differential effects of counterstereotype training and self-regulation on stereotype activation and application. *Journal of Experimental Social Psychology*, 73, 97–110. <https://doi.org/10.1016/j.jesp.2017.06.003>
- Carter, E. R., & Murphy, M. C. (2017). Consensus and consistency: Exposure to multiple discrimination claims shapes Whites' intergroup attitudes. *Journal of Experimental Social Psychology*, 73, 24–33. <https://doi.org/10.1016/j.jesp.2017.06.001>
- Chaney, K. E., & Sanchez, D. T. (2018). The endurance of interpersonal confrontations as a prejudice reduction strategy. *Personality and Social Psychology Bulletin*, 44, 418–429. <https://doi.org/10.1177/0146167217741344>
- Cortland, C. I., Craig, M. A., Shapiro, J. R., Richeson, J. A., Neel, R., & Goldstein, N. J. (2017). Solidarity through shared disadvantage: Highlighting shared experiences of discrimination improves relations between stigmatized groups. *Journal of Personality and Social Psychology*, 113(4), 547–567. <https://doi.org/10.1037/pspi0000100>
- Cox, W. L. T., & Devine, P. G. (2019). The prejudice habit-breaking intervention: An empowerment-based confrontation approach. In R. Mallet & M. J. Monteith (Eds.), *Confronting prejudice and discrimination: The science of changing minds and behaviors* (pp. 250–274). Academic Press.
- Craig, M. A., & Richeson, J. A. (2012). Coalition or derogation? How perceived discrimination influences intraminority intergroup relations. *Journal of Personality and Social Psychology*, 102(4), 759–777. <https://doi.org/10.1037/a0026481>
- Craig, M. A., & Richeson, J. A. (2016). Stigma-based solidarity: Understanding the psychological foundations of conflict and coalition among members of different stigmatized groups. *Current Directions in Psychological Science*, 25(1), 21–27. <https://doi.org/10.1177/0963721415611252>
- Cummings, J. J., & Bailenson, J. N. (2016). How immersive is enough? A meta-analysis of the effect of immersive technology on user presence. *Media Psychology*, 19(2), 272–309. <https://doi.org/10.1080/15213269.2015.1015740>
- Curran, P. J., & Hussong, A. M. (2009). Integrative data analysis: The simultaneous analysis of multiple datasets. *Psychological Methods*, 14(2), 81–100. <https://doi.org/10.1037/a0015914>
- Czopp, A. M., & Monteith, M. J. (2003). Confronting prejudice (literally): Reactions to confrontations of racial and gender bias. *Personality and Social Psychology Bulletin*, 29(4), 532–544. <https://doi.org/10.1177/0146167202250923>
- Czopp, A. M., Monteith, M. J., & Mark, A. Y. (2006). Standing up for a change: Reducing bias through interpersonal confrontation. *Journal of Personality and Social Psychology*, 90, 784–803. <https://doi.org/10.1037/0022-3514.90.5.784>
- Daumeier, N. M., Onyeador, I. N., Brown, X., & Richeson, J. A. (2019). Consequences of attributing discrimination to implicit vs. explicit bias. *Journal of Experimental Social Psychology*, 84, 103812.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56(1), 5–18. <https://doi.org/10.1037/0022-3514.56.1.5>
- Devine, P. G., Forscher, P. S., Austin, A. J., & Cox, W. T. L. (2012). Long-term reduction in implicit race bias: A prejudice habit-breaking intervention. *Journal of Experimental Social Psychology*, 48(6), 1267–1278. <https://doi.org/jjesp.2012.06.003>
- Dix, E. L., & Devine, P. G. (2024). “It’s not an overreaction”: Increasing White people’s acceptance of the reality of bias and receptivity to Black people’s bias concerns. *Journal of Experimental Social Psychology*, 110, 104545. <https://doi.org/10.1016/j.jesp.2023.104545>
- Dovidio, J. F., & Gaertner, S. L. (2000). Aversive racism and selection decisions: 1989 and 1999. *Psychological Science*, 11(4), 315–319. <https://doi.org/10.1111/1467-9280.00262>
- Dovidio, J. F., ten Vergert, M., Stewart, T. L., Gaertner, S. L., Johnson, J. D., Esses, V. M., Riek, B. M., & Pearson, A. R. (2004). Perspective and prejudice: Antecedents and mediating mechanisms. *Personality and Social Psychology Bulletin*, 30(12), 1537–1549. <https://doi.org/10.1177/0146167204271177>
- Eberhardt, J. L. (2020). *Biased: Uncovering the hidden prejudice that shapes what we see, think, and do*. Penguin.
- Feagin, J. R. (2014). *Racist America: Roots, current realities, and future reparations* (3rd ed.). Taylor & Francis.
- Finlay, K. A., & Stephan, W. G. (2000). Improving intergroup relations: The effects of empathy on racial attitudes. *Journal of Applied Social Psychology*, 30(8), 1720–1737. <https://doi.org/10.1111/j.1559-1816.2000.tb02464.x>



- Forscher, P. S., Mitamura, C., Dix, E. L., Cox, W. T. L., & Devine, P. G. (2017). Breaking the prejudice habit: Mechanisms, time course, and longevity. *Journal of Experimental Social Psychology, 72*, 133–146. <https://doi.org/10.1016/j.jesp.2017.04.009>
- Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin, 132*(5), 692–731. <https://doi.org/10.1037/0033-2909.132.5.692>
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review, 102*(1), 4–27. <https://doi.org/10.1037/0033-295X.102.1.4>
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464–1480. <https://doi.org/10.1037/0022-3514.74.6.1464>
- Hahn, A., & Gawronski, B. (2019). Facing one's implicit biases: From awareness to acknowledgment. *Journal of Personality and Social Psychology, 116*(5), 769–794. <https://doi.org/10.1037/pspi0000155>
- Hahn, A., Judd, C. M., Hirsh, H. K., & Blair, I. V. (2014). Awareness of implicit attitudes. *Journal of Experimental Psychology: General, 143*(3), 1369–1392. <https://doi.org/10.1037/a0035028>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis* (3rd ed.). Guilford Press.
- Henry, P. J. (2010). Institutional bias. In J. F. Dovidio, M. Hewstone, P. Glick, & V. M. Esses (Eds.), *The SAGE handbook of prejudice, stereotyping and discrimination* (pp. 426–440). Sage.
- Henry, P. J., & Sears, D. O. (2002). The symbolic racism 2000 scale. *Political Psychology, 23*(2), 253–283. <https://doi.org/10.1111/0162-895X.00281>
- Hildebrand, L. K., Monteith, M. J., & Arriaga, X. B. (2024). The role of trust in reducing confrontation-related social costs. *Journal of Personality and Social Psychology, 126*(2), 240–261.
- Holt, L. F., & Switzer, M. D. (2018). More than a Black and White issue: Ethnic identity, social dominance orientation, and support for the Black Lives Matter movement. *Self and Identity, 19*(6), 1–16. <https://doi.org/10.1080/15298868.2018.1524788>
- Howell, J. L., Gaither, S. E., & Ratliff, K. A. (2015). Caught in the middle: Defensive responses to IAT feedback among whites, blacks, and biracial black/whites. *Social Psychological and Personality Science, 6*(4), 373–381. <https://doi.org/10.1177/1948550614561127>
- Howell, J. L., Redford, L., Pogge, G., & Ratliff, K. A. (2017). Defensive responding to IAT feedback. *Social Cognition, 35*(5), 520–562. <https://doi.org/10.1521/soco.2017.35.5.520>
- Kaiser, C. R., Drury, B. J., Spalding, K. E., Cheryan, S., & O'Brien, L. T. (2009). The ironic consequences of Obama's election: Decreased support for social justice. *Journal of Experimental Social Psychology, 45*(3), 556–559. <https://doi.org/10.1016/j.jesp.2009.01.006>
- Lai, C. K., Marini, M., Lehr, S. A., Cerruti, C., Shin, J. L., Joy-Gaba, J., Ho, A. K., Teachman, B. A., Wojcik, S. P., Koleva, S. P., Frazier, R. S., Heiphetz, L., Chen, E. E., Turner, R. N., Haidt, J., Kesebir, S., Hawkins, C. B., Schaefer, H. S., Rubichi, S., . . . Nosek, B. A. (2014). Reducing implicit racial preferences: I. A comparative investigation of 17 interventions. *Journal of Experimental Psychology General, 143*(4), 1765–1785. <https://doi.org/10.1037/a0036260>
- Massey, D. S., & Rugh, J. S. (2017). The intersections of race and class: Zoning, affordable housing, and segregation in US metropolitan areas. In G. Squires (Ed.), *The fight for fair housing: Causes, consequences and future implications of the 1968 federal fair housing act* (pp. 245–265). Taylor & Francis.
- Miles, E., & Crisp, R. J. (2014). A meta-analytic test of the imagined contact hypothesis. *Group Processes & Intergroup Relations, 17*(1), 3–26. <https://doi.org/10.1177/1368430213510573>
- Monteith, M. J. (1993). Self-regulation of prejudiced responses: Implications for progress in prejudice-reduction efforts. *Journal of Personality and Social Psychology, 65*(3), 469–485. <https://doi.org/10.1037/0022-3514.65.3.469>
- Monteith, M. J., Ashburn-Nardo, L., Voils, C. I., & Czopp, A. M. (2002). Putting the brakes on prejudice: On the development and operation of cues for control. *Journal of Personality and Social Psychology, 83*(5), 1029–1050. <https://doi.org/10.1037/0022-3514.83.5.1029>
- Monteith, M. J., & Voils, C. I. (1998). Proneness to prejudiced responses: Toward understanding the authenticity of self-reported discrepancies. *Journal of Personality and Social Psychology, 75*(4), 901–916. <https://doi.org/10.1037/0022-3514.75.4.901>
- Monteith, M. J., Voils, C. I., & Ashburn-Nardo, L. (2001). Taking a look underground: Detecting,



- interpreting, and reacting to implicit racial bias. *Social Cognition*, 19(4), 395–417. <https://doi.org/10.1521/soco.19.4.395.20759>
- Moss-Racusin, C. A., Pietri, E. S., Hennes, E. P., Dovidio, J. F., Brescoll, V. L., Roussos, G., & Handelsman, J. (2018). Reducing STEM gender bias with VIDS (video interventions for diversity in STEM). *Journal of Experimental Psychology: Applied*, 24(2), 236–260. <https://doi.org/10.1037/xap0000144>
- Nelson, J. C., Adams, G., & Salter, P. S. (2013). The Marley hypothesis: Denial of racism reflects ignorance of history. *Psychological Science*, 24(2), 213–218. <https://doi.org/10.1177/0956797612451466>
- O'Brien, L. T., Crandall, C. S., Horstman-Reser, A., Warner, R., Alsbrooks, A., & Blodorn, A. (2010). But I'm not bigot: How prejudiced White Americans maintain unprejudiced self-images. *Journal of Applied Social Psychology*, 40(4), 917–946. <https://doi.org/10.1111/j.1559-1816.2010.00604.x>
- Parker, K., Menasce-Horowitz, J., & Anderson, M. (2020). *Amid protests, majorities across racial and ethnic groups express support for the Black Lives Matter movement*. Pew Research Center. <https://www.pewresearch.org/social-trends/2020/06/12/amid-protests-majorities-across-racial-and-ethnic-groups-express-support-for-the-black-lives-matter-movement/>
- Payne, B. K., & Hannay, J. W. (2021). Implicit bias reflects systemic racism. *Trends in Cognitive Sciences*, 25(11), 927–936. <https://doi.org/10.1016/j.tics.2021.08.001>
- Pendry, L. F., Driscoll, D. M., & Field, S. C. (2007). Diversity training: Putting theory into practice. *Journal of Occupational and Organizational Psychology*, 80(1), 27–50. <https://doi.org/10.1348/096317906X118397>
- Perry, S. P., Murphy, M. C., & Dovidio, J. F. (2015). Modern prejudice: Subtle, but unconscious? The role of bias awareness in Whites' perceptions of personal and others' biases. *Journal of Experimental Social Psychology*, 61, 64–78. <https://doi.org/10.1016/j.jesp.2015.06.007>
- Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology*, 49, 65–85. <https://doi.org/10.1146/annurev.psych.49.1.65>
- Pew Research Center. (2016). *2016 racial attitudes in America survey [Data and codebook]*. Pew. <https://www.pewresearch.org/social-trends/2016/06/27/on-views-of-race-and-inequality-blacks-and-whites-are-worlds-apart/>
- Pietri, E. S., Hennes, E. P., Dovidio, J. F., Brescoll, V. L., Bailey, A. H., Moss-Racusin, C. A., & Handelsman, J. (2019). Addressing unintended consequences of gender diversity interventions on women's sense of belonging in STEM. *Sex Roles*, 80, 527–547. <https://doi.org/10.1007/s11199-018-0952-2>
- Plant, E. A., & Devine, P. G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 75(3), 811–832. <https://doi.org/10.1037/0022-3514.75.3.811>
- Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology*, 17(1), 271–320. <https://doi.org/10.1080/10463280601055772>
- Rapa, L. J., Bolding, C. W., & Jamil, F. M. (2020). Development and initial validation of the short critical consciousness scale (CCS-S). *Journal of Applied Developmental Psychology*, 70, 1–10. <https://doi.org/10.1016/j.appdev.2020.101164>
- Richeson, J. A., & Sommers, S. R. (2016). Toward a social psychology of race and race relations for the twenty-first century. *Annual Review of Psychology*, 67, 439–463. <https://doi.org/10.1146/annurev-psych-010213-115115>
- Rucker, J. M., & Richeson, J. A. (2021a). Toward an understanding of structural racism: Implications for criminal justice. *Science*, 374(6565), 286–290. <https://doi.org/10.1126/science.abj7779>
- Rucker, J. M., & Richeson, J. A. (2021b). Beliefs about the interpersonal vs. structural nature of racism and responses to racial inequality. In C. Tileaga, M. Augoustinos, & K. Durrheim (Eds.), *Routledge international handbook of prejudice, stereotyping, and discrimination* (pp. 13–25). Routledge.
- Shin, R. Q., Ezeofor, I., Smith, L. C., Welch, J. C., & Goodrich, K. M. (2016). The development and validation of the contemporary critical consciousness measure. *Journal of Counseling Psychology*, 63(2), 210–223. <https://doi.org/10.1037/cou0000137>
- Simon, S., Moss, A. J., & O'Brien, L. T. (2019). Pick your perspective: Racial group membership and judgments of intent, harm, and discrimination. *Group Processes & Intergroup Relations*, 22(2), 215–232.
- Skinner-Dorkenoo, A. L., George, M., Wages, J. E., III, Sánchez, S., & Perry, S. P. (2023). A systemic approach to the psychology of racial bias within individuals and society. *Nature Reviews Psychology*,

- 2, 392–406. <https://doi.org/10.1038/s44159-023-00190-z>
- Taylor, V. J., Valladares, J. J., Siepser, C., & Yantis, C. (2020). Interracial contact in virtual reality: Best practices. *Policy Insights from the Behavioral and Brain Sciences*, 7(2), 132–140. <https://doi.org/10.1177/2372732220943638>
- Todd, A. R., & Galinsky, A. D. (2014). Perspective-taking as a strategy for improving intergroup relations: Evidence, mechanisms, and qualifications. *Social and Personality Psychology Compass*, 8(7), 374–387. <https://doi.org/10.1111/spc3.12116>
- Tropp, L. R., Uluğ, Ö. M., & Uysal, M. S. (2021). How intergroup contact and communication about group differences predict collective action intentions among advantaged groups. *International Journal of Intercultural Relations*, 80, 7–16. <https://doi.org/10.1016/j.ijintrel.2020.10.012>
- Uluğ, Ö. M., & Tropp, L. R. (2021). Witnessing racial discrimination shapes collective action for racial justice: Enhancing awareness of privilege among advantaged groups. *Journal of Applied Social Psychology*, 51(3), 248–261. <https://doi.org/10.1111/jasp.12731>
- Vescio, T. K., Sechrist, G. B., & Paolucci, M. P. (2003). Perspective taking and prejudice reduction: The mediational role of empathy arousal and situational attributions. *European Journal of Social Psychology*, 33(4), 455–472. <https://doi.org/10.1002/ejsp.163>
- Vitriol, J. A., & Moskowitz, G. B. (2021). Reducing defensive responding to implicit bias feedback: On the role of perceived moral threat and efficacy to change. *Journal of Experimental Social Psychology*, 96, 104165. <https://doi.org/10.1016/j.jesp.2021.104165>