

EMPIRICAL ARTICLE

Engaging White parents to address their White children's racial biases in the Black-White context

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Abstract

Multiple studies ($n = 1065$ parents, 625 females, 437 males, 3 nonbinary, 99.06% White; $n = 80$, 5 to 7-year-old children, 35 girls, 45 boys, 87.50% White; data collection September 2017–January 2021) investigated White U.S. parents' thinking about White children's Black-White racial biases. In Studies 1–3, parents reported that their own and other children would not express racial biases. When predicting children's social preferences for Black and White children (Study 2), parents underestimated their own and other children's racial biases. Reading an article about the nature, prevalence, and consequences of White children's racial biases (Study 3) increased parents' awareness of, concern about, and motivation to address children's biases (relative to a control condition). The findings have implications for engaging White parents to address their children's racial biases.

Discrimination due to race is a prevalent experience for Black children in the United States. For example, in a survey probing children's experiences with racial discrimination, one-third of Black U.S. 7-year-old children indicated experiencing someone not wanting to be friends with them because of their race (Marcelo & Yates, 2019; see also Cave et al., 2020). Corroborating findings from survey research, laboratory measures reveal that young children commonly express racial biases. For example, by 4 to 5 years of age, most non-Black children in the United States favor White people (and/or disfavor Black people) on social preference measures (Gollwitzer et al., 2020; Shutts et al., 2013), and such biases are particularly robust among White children (Baron & Banaji, 2006; Dunham et al., 2013).

The pervasiveness of children's racial biases, together with the harmful effects of these biases on the health,

well-being, and academic performance of Black children (Trent et al., 2019), has prompted many efforts to reduce children's biases (for reviews, see Aboud et al., 2012; Beelmann & Heinemann, 2014). Bias reduction efforts are sometimes successful in shifting children's racial biases in the short term (e.g., Qian et al., 2017; Sierksma & Bijlstra, 2018), but creating sustained change has been more elusive. For example, McKeown et al. (2017) directed schoolteachers of 4- to 6-year-old children to read a book about the value of racial diversity to their class. The researchers examined children's lunchroom seating behaviors before the reading, immediately after the reading, and 2 days later. Immediately after the reading, children were less likely to sit with same-race peers than before the reading, but this effect dissipated over time. The temporary nature of changes in racial biases associated with most racial bias intervention attempts, for

Abbreviation: IMS, Internal Motivation to Respond without Prejudice

Preregistrations, data, materials, and supplemental analyses for this project can be found at [OSF](https://osf.io/).

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children and adults alike, has been reinforced in recent bias intervention review papers (e.g., Aboud et al., 2012; Lai et al., 2016).

A role for parents

Many have suggested that the involvement of parents could be one effective approach to producing robust, long-term changes in children's racial biases (Perry et al., 2019; Rutland & Killen, 2015; Scott et al., 2020b). Parents are key socialization agents for their children across a wide variety of domains (e.g., healthy eating: Holley et al., 2016; academic performance: Rowe & Leech, 2019), including the intergroup domain. Indeed, developmental intergroup theory (DIT; Bigler & Liben, 2007) asserts that parents play a crucial role in guiding children's emerging understanding and evaluation of social groups. In alignment with DIT, for example, researchers have shown that the way parents discuss racial groups directly affects the extent to which children essentialize racial outgroups (Segall et al., 2015). Furthermore, correlational studies reveal that parents with more positive racial attitudes have children with more positive racial attitudes (Degner & Dalege, 2013). Thus, both theory and empirical evidence suggest an important role for parents in guiding children's racial biases. However, the potential for parental engagement in addressing children's biases, at least within White families, is undercut by the fact that White parents typically avoid discussing race with their children (J. N. Sullivan et al., 2021).

Research with adults suggests that one reason people avoid taking concrete actions toward their own bias reduction is that they are unaware that they often express bias (Amodio et al., 2007; Monteith, 1993; Plant & Devine, 2009). Similarly, one reason White parents may fail to take concrete actions toward bias reduction with their White children is because they are unaware that there is a problem to be addressed. Indeed, prior research indicates that White U.S. parents typically report being unaware of their White children's racial biases (Pahlke et al., 2012; Scott et al., 2020a). When White U.S. parents were asked whether their White children would express racial biases in imagined scenarios (e.g., "How likely is it that your child would not invite a Black child to a birthday party"; Scott et al., 2020a), they reported that their children were unlikely to express such biases (e.g., $M = 1.44$, on a scale ranging from "Very Unlikely (1)" to "Extremely Likely (9)"). Similarly, when White U.S. parents predicted how their White children would assign positive and negative traits to Black and White people, parents anticipated that their children would show zero bias (Pahlke et al., 2012)—even though White children typically show pro-White/anti-Black biases on such measures (Hughes et al., 2007). Finally, when U.S. adults,

some of whom were parents, were asked to report the age at which children begin expressing racial biases, their expectations were highly inaccurate (J. Sullivan et al., 2021). Although children typically begin to attribute negative traits to low-status racial groups by the preschool years (Dunham et al., 2013), adults in J. Sullivan et al.'s study reported that such biases would not emerge until around age 7.5 years.

How could parents—especially White parents whose White children often exhibit robust racial biases—be made aware that their children may express them? We suggest that information about the prevalence of children's racial biases could be provided in one of two ways. First, information could be provided ideographically, whereby parents would receive evidence regarding their own child's racial biases (e.g., their child's score on a racial bias measure). Evidence regarding their own child's biases would likely be compelling to parents but would require a reliable method for capturing individual children's racial biases. Although children as a group show racial biases, not all children display biases on all tasks or even on the same task across time (Rae & Olson, 2018). Alternatively, information about children's racial biases could be provided nomothetically, whereby parents learn information about children's racial biases generally (e.g., from racial bias research focused on children similar in age to their own child). Providing parents with information about children in general would be efficient but would only be compelling if parents considered the information to be applicable to their own child (i.e., thought about their own child as being similar to other children in the racial bias domain).

The present research

Although the literature has established that White parents do not expect that their White children will express racial biases (Pahlke et al., 2012; Scott et al., 2020a), it is unclear what parents think about the likelihood that *other* White children will display racial biases. Accordingly, in Studies 1 and 2, we evaluated parents' expectations about children's—their own and others'—racial biases as well as the accuracy of their expectations. With such information, we reasoned that we would be in a better position to select an approach for increasing White parents' awareness that their children are likely to express racial biases. In Study 3, we tested the efficacy of a method to increase White parents' awareness of White children's racial biases. In all three studies, we focused on biases directed toward Black children because of the large body of literature indicating that White children are most likely to favor White people and/or disfavor Black people (Baron & Banaji, 2006; Dunham et al., 2013; Rae & Olson, 2018). We preregistered our studies and the preregistrations, data and materials are available on OSF.

STUDY 1

In Study 1, we evaluated whether White parents' beliefs about the likelihood of children's racial bias expressions were similar for their own child and other children. First, we sought to replicate Scott et al.'s (2020a) findings that White parents of 4- to 12-year-old White children report being unaware of children's racial biases and that parents' personal values prohibiting the expression of prejudice predict how they think about their children's biases. Consistent with the methods used in prior research (Scott et al., 2020a), to measure parents' awareness, participants rated how likely their child was to engage in various racially biased behaviors. Scott et al. (2020a) demonstrated that as White parents had more stringent values prohibiting prejudice (operationalized as internal motivation to respond without prejudice), they believed their own child would be less likely to express racial biases. In other words, parents predicted that their child's behavior would align with their standards for what they deemed appropriate.

Consistent with Scott et al. (2020a), we predicted that parents in Study 1 would report a low likelihood of racial biases for their children, but that parents who are highly internally motivated to respond without prejudice would report an especially low probability of racial biases. Following from J. Sullivan et al.'s work (2021), we also considered the possibility that parents in Study 1 would expect a low probability that other children would express racial biases. Finally, although this prior research led us to predict that parents would expect a low likelihood of bias from both their own and other children, we predicted that parents would give especially low bias likelihood ratings for their own children. This prediction aligns with the “better-than-average effect,” wherein people believe they (and their children) are more likely to have desirable characteristics than others (Alicke, 1985; Lench et al., 2006). We tested our preregistered hypotheses in two samples of Amazon Mechanical Turk participants. The first sample afforded an initial test of our hypotheses; the second sample enabled a replication with power to detect moderation as a function of parents' personal values.

Method

Participants

Participants were eligible for the study if they met the following requirements: White parent of a White 4- to 12-year-old child (both with no other racial/ethnic identities), U.S. resident, at least a high school education, and English as a primary language. If participants had more than one child in the target age range, we randomly assigned them to focus on one child throughout the study.

Additional demographic information for participants in all studies reported in this paper is found in Table 1.

The target sample size for Study 1a was determined through an a priori power analysis assuming a small to medium effect size for detecting whether parents would expect their own child to express less racial bias than the average child (Cohen's $d = .35$). This yielded a necessary sample of 67 participants to achieve 80% power. Following our preregistration, we rounded up the sample to 100 participants. The target sample size for Study 1b was determined through an a priori power analysis using the effect sizes obtained from Study 1a. We needed 243 participants to achieve 80% power to detect the interaction between parents' predictions for their own versus other children and internal motivation to respond without prejudice. We posted batches on Amazon's Mechanical Turk and closed data collection after we had reached our desired sample size. We overrecruited participants in Study 1b because we did not anticipate the high response rate among eligible participants and anticipated that more participants would fail attention check questions. We included all participants ($N = 326$) in the reported analyses to respect the effort participants contributed to the study.

Procedure and design

Parents participated in this study in September 2017. They first completed a screening survey on Amazon's Mechanical Turk to determine study eligibility. Eligible participants were invited to complete the full online survey study hosted on Qualtrics. Participants first reported on the likelihood of their own child and the average child expressing racial biases (order counterbalanced between participants). After completing this bias likelihood measure, participants reported on their motivations to respond without prejudice. All measures are described below.

Measures

Bias likelihood

As our indicator of parents' awareness of children's proclivity for expressing racial biases, parents judged how likely children were to express such biases. Parents read 7 short scenarios in which a child expressed racial biases against Black people. The scenarios were created to reflect real situations that parents have reported observing—in blog posts (Leiderman, 2016), news outlets (Yoffe, 2013), and anecdotes told to members of our child development laboratory. Parents then rated how likely their child ($\alpha = .95$) and another child matching their child's age and gender ($\alpha = .94$) were to engage in the behavior on a Likert scale ranging from “Not at all Likely (1)” to “Extremely Likely (9).” Item type order

TABLE 1 Demographic information

| | Study 1 (<i>N</i> = 426 parents) | Study 2 (<i>N</i> = 80 parent-child dyads) | Study 3 (<i>N</i> = 559 parents) |
|------------------------------|--|--|--|
| Parent gender | 284 females, 141 males, 1 nonbinary | 43 females, 37 males | 298 females, 259 males, 2 nonbinary |
| Child gender | 216 girls, 209 boys, 1 unreported | 35 girls, 45 boys | 280 girls, 275 boys, 2 nonbinary, 2 did not report |
| Age of parent | 23–66 years (<i>M</i> = 37.77; <i>SD</i> = 7.50) | Did not collect responses | 20–69 years (<i>M</i> = 36.94; <i>SD</i> = 7.30) |
| Age of child | 4–12 years (<i>M</i> = 7.81, <i>SD</i> = 2.67) | 5–7 years (<i>M</i> = 6.48 years, <i>SD</i> = 0.85) | 5–7 years (<i>M</i> = 5.97 years, <i>SD</i> = 0.85) |
| Race | 100% White | 87.50% White, 10% Asian, 2.50% other | 100% White |
| Education | 13.15% graduate degree, 42.02% bachelor's degree, 24.18% associate degree, 20.66% high school degree | 48.75% graduate degree, 43.75% bachelor's degree, 5.00% associate degree, 1.25% high school degree, 1.25% unreported | Not collected |
| Median annual income bracket | \$60,000–\$69,999 | \$120,000–\$125,000 | \$70,000–\$79,999 |

Note: Study 1 participants are inclusive of participants in Study 1a and Study 1b.

(own child vs. another child) was counterbalanced across participants. When considering another child, parents were randomly assigned to think about either “the average child” or “the average child in your child's class;” the latter phrasing was designed to standardize the reference group because self-other comparisons differ substantially depending on the point of comparison (Davidai & Deri, 2019). An example item is below:

A child is getting ready for bed and talking with a parent about who they are going to invite to an end-of-the-year party. The parent asks if the child wants to invite a Black boy in the class. The child says no and when asked why, the child says, “Because I don't like Black kids.”

We created composite scores for parents' own child and another child by averaging parents' responses on each set of items, respectively. Scores could range from 1 to 9 on each index.

Motivation to respond without prejudice

Parents completed Plant and Devine's (1998) measure of internal motivation to respond without prejudice (IMS; current sample $\alpha = .90$). This measure assesses the extent to which people believe it is personally important to be non-prejudiced. Parents responded to five items (e.g., “I attempt to act in non-prejudiced ways toward Black people because it is personally important to me”) using a Likert scale ranging from “Strongly Disagree” to “Strongly Agree.” We also included five items evaluating parents' external motivation to respond without prejudice

(EMS) because the two subscales were validated together, but we did not preregister or evaluate questions related to EMS. In Study 1a, possible responses ranged from 1 to 7; in Study 1b, possible responses ranged from 1 to 9. Given the different response scales, we stretched responses on each item from Study 1a to match the scale from Study 1b using the following formula: $Y = \text{range of new scale} \times (X - X_{\min}) / (X_{\text{range}}) + 1$, where range of new scale = 1–9, Y = new scores, X = original scores. We then created composite scores by averaging parents' responses to the five items for internal motivation; possible scores could range from 1 to 9 after standardizing across studies.

Results

Our analysis approach utilized integrative data analysis (Curran & Hussong, 2009), which is the gold-standard meta-analytic technique for simultaneously analyzing multiple datasets (McShane & Böckenholt, 2017). The approach pools the data from both samples and then fits models to individual-level observations while statistically controlling for the sample from which the data originated. Separate analyses for Study 1a and Study 1b match the conclusions from the combined sample and are available on OSF. We refer to the comparison between participants' ratings for their own child versus another child as the “own/other variable” and the comparison between the average child and the average classmate as the “comparison child variable.” When collapsing across the average child and the average classmate in summarizing findings, we use the term “another child.”

As in previous research (Scott et al., 2020a), participants gave low likelihood ratings for their own child ($M = 1.48$, $SD = 1.18$). Participants also reported low likelihood ratings for another child ($M = 2.37$, $SD = 1.41$). In fact, participants' ratings were significantly below the midpoint of the scale (i.e., below 5 on a 9-point scale) for both their own child and another child ($ps < .001$). Participants' ratings for their own child's racial biases were highly correlated with their ratings for another child's biases ($r = .64$, $p < .001$).

Next, we fit a linear mixed-effects model using the lme4 package in R. We regressed participants' bias likelihood on the own/other variable (within-subjects; own child = -0.5 , another child = 0.5), the comparison child variable (between-subjects; average child = -0.5 , average classmate = 0.5), and the interaction of these two variables, controlling for the study (Study 1a or 1b). We included a by-subject random intercept and a by-subject random slope for the own/other variable to account for the within-subjects nature of the design. We did not anticipate parent gender to moderate any effects, but we tested for the effect of parent gender and found that there were no significant main effects or interactions involving parent gender, $ps > .30$; thus, analyses collapse across parent gender.

Consistent with our hypothesis, participants reported that their own child was less likely to express racial biases than another child, $b = 1.26$, $F(1, 423.03) = 54.24$, $p < .001$, 95% CI [0.92, 1.59] (see Figure 1). Participants' likelihood ratings were marginally higher when considering the average child ($M = 2.54$; $SD = 1.44$) than the average classmate ($M = 2.22$; $SD = 1.36$), $b = -0.20$, $F(1, 422.96) = 2.99$, $p = .08$, 95% CI [-0.42, 0.03]. The main effects were moderated by the comparison child, $b = -0.24$, $F(1, 422.69) = 5.14$, $p = .02$, 95% CI [-0.46, -0.03]: Differences in participants' ratings for their own child and another child were larger when considering the average child compared to the average classmate.

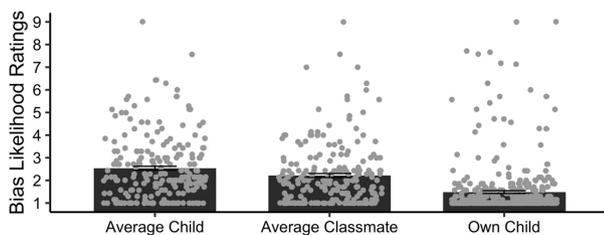


FIGURE 1 Participants' racial bias likelihood ratings in Study 1. Error bars depict standard error of the point estimate. Points depict raw data. All participants rated their own child; half of participants also rated the “average White child” while the remaining half rated the “average White child in your child's class” (here, “average classmate”).

Influence of participants' Internal Motivation to Respond Without Prejudice

Next, we added IMS to the model and allowed IMS to interact with the own/other variable and the comparison child variable. Replicating Scott et al. (2020a), as participants increased in IMS, they reported that children would be less likely to express biases, $b = -0.29$, $F(1, 420.66) = 8.90$, $p = .003$, 95% CI [-0.48, -0.10]. There were no significant interactions with IMS in the model, $ps > .20$.

Influence of child age

We did not have predictions for how the age of the child would influence participants' beliefs about children's racial biases. As such, analyses focused on child age are exploratory. We added child age as a predictor in the main linear mixed-effects model and allowed child age to interact with the own/other variable and the comparison child variable. There was no main effect of child age, $b = 0.03$, $F(1, 420.24) = 1.44$, $p = .23$, 95% CI [-0.02, 0.07]. However, there was a significant interaction between child age and the own/other variable, $b = 0.08$, $F(1, 419.57) = 15.23$, $p < .001$, 95% CI [0.03, 0.12]: Differences in participants' ratings for their own child and another child were larger when considering older children compared to younger children. Simple effect analyses revealed that when participants were considering another child, they expected more bias as children got older ($b = 0.06$, $F(1, 420.81) = 6.41$, $p = .01$, 95% CI [0.01, 0.11]), but when considering their own children, there was no change in bias likelihood due to child age ($b = -0.01$, $F(1, 419.53) = 0.38$, $p = .54$, 95% CI [-0.06, 0.03]).

Discussion

Study 1 both replicates and extends Scott et al.'s (2020a) research. As in Scott et al. (2020a), White parents in the present study reported low expectations about the likelihood that their own White child would express racial biases in the Black-White context—and parents' predictions for their own child's biases were correlated with their personal values prohibiting prejudice. Extending Scott et al.'s (2020a) research, parents in Study 1 also reported low expectations for bias expression on the part of other White children—and parents' expectations for other children were correlated with their personal values prohibiting prejudice (an unsurprising finding given that parents' predictions for their own and another child were correlated).

One important finding from the present study is that White parents think about their own White children's racial biases similarly to how they think about other White children's biases—that is, parents underestimated

both their own child's and other children's racial biases and parents' predictions for their own and other children were correlated. At the same time, in alignment with the better-than-average effect (Alicke, 1985), parents did report that their own children would be less likely to exhibit biases than other children. This effect was particularly strong when parents thought about the average generic child rather than the average child in their child's class (perhaps because when imagining the average classmate, parents imagine a child who is more similar to their own child than when imagining a generic other child).

When considering their own child, White parents might be motivated to report low bias estimates—for example, due to social desirability concerns (e.g., worrying that admitting their child is biased would reflect poorly on themselves or their child). However, there is little reason to believe similar motivational concerns would apply to parents' predictions for another child. Given that participants' predictions for their own and other children were correlated and that underestimation was robust across the board, we feel it is reasonable to conclude that even parents' low bias estimates for their own child were driven by more than simply social desirability concerns.

Because White parents' beliefs about their own White child's racial biases are closely related to their beliefs about other White children's biases, altering beliefs about White children's proclivity to express racial biases generally may be an effective strategy to increase White parents' awareness of their own children's biases. However, before turning to address how to raise White parents' awareness of their children's racial biases, we sought to replicate the findings from Study 1 with a different method to increase our confidence that parents' beliefs about their own child are related to their beliefs about other children. In Study 2, we also employed a method that would allow us to evaluate the accuracy of parents' estimates.

STUDY 2

In Study 2, we tested parents' predictions of children's racial biases by having them estimate the magnitude of their own child's biases as well as the biases of another child on a laboratory task that is commonly used in research on children's social biases (e.g., Baron & Banaji, 2006; Heron-Delaney et al., 2018; Rae & Olson, 2018). In particular, parents (most of whom were White; see below) made predictions about children's responses to 22 trials of a social preference task in which children selected from a pair of children (one White and one Black) the person with whom they wanted to be friends. Parents predicted the number of trials on which the child would choose the White child. While parents made their predictions, their children completed the task. Thus, in addition to providing an opportunity to replicate the findings from Study 1, Study 2 allowed us to investigate whether parents have

some awareness of the extent of their child's biases (but just systematically underestimate them, leading to low group averages) or whether parents are unaware of how their child might respond on a racial bias measure.

In our preregistration, we predicted that parents would underestimate (relative to reality) the number of times their child would choose the White child in the social preference task. Furthermore, we hypothesized that we would replicate the Study 1 pattern of likelihood estimates for the own versus another child, such that parents would predict lower levels of racial biases for their own child than another child. We did not have a preregistered prediction for parents' accuracy about the average child's biases, but following from Study 1, we anticipated that parents would also underestimate the number of times the average child would choose the White child in the social preference task. Given that the own/other effect (i.e., own child vs. another child) and the comparison child effect (i.e., average child vs. average classmate) were not moderated by parents' personal values in Study 1, we did not assess parents' internal motivation to respond without prejudice in Studies 2 and 3.

Method

Participants

Participants were recruited from a child development laboratory database. All participants resided in the upper midwestern region of the United States. We conducted an a priori power analysis assuming a small effect ($\eta_p^2 = .02$) for the difference between parents' estimates for their own child and another child, which yielded a suggested sample size of 76 parent–child dyads. Following our preregistration, we collected data from 80 parents and from their children, after exclusions. Eight dyads were excluded because children chose “neither” ($n = 4$) or “both” ($n = 4$) when asked with whom they would like to be friends (making comparisons to parents' predictions impossible); two dyads were excluded due to experimenter error; one dyad was excluded because the parent did not complete their portion of the study; and one dyad was excluded because the child did not complete the task.

We recruited both mothers and fathers as equally as possible. Our final parent sample consisted of 37 fathers and 43 mothers. Children in the sample ranged from 5 to 7 years ($M = 6.48$ years; $SD = 0.85$ years; 35 girls, 45 boys). Children older than age seven begin to inhibit explicit racial biases on laboratory tasks (Raabe & Beelmann, 2011). Thus, our age range for Study 2 was restricted in comparison to the ages in Study 1 to allow for the detection of racial biases on our laboratory task.

It should be noted that unlike in Studies 1 and 3, we did not know participants' race prior to study enrollment because we recruited using a laboratory database that did not contain such information. Given the typical

demographic composition of our laboratory samples, we anticipated primarily White participants. Indeed, our final sample was 87.5% White, 10% Asian, and 2.5% reporting other races (none reporting Black). Analyses including just White participants are consistent with the full sample and are available on [OSF](#). When drawing conclusions from Study 2, we suggest that the results are primarily applicable to White parents and White children as the sample is primarily White and we do not have the power to evaluate effects for non-White participants independently.

Procedure, design, and measures

Data for this study were collected between June 2019 and December 2019.

Social preference estimation task (parents)

Parents read about a race-based social preference laboratory task for children. Parents were told that the task features 22 pairs of children (one Black, one White) and that for each pair, children are asked to indicate with whom they would want to be friends. Parents viewed an image depicting one trial of the task (see [Figure 2](#)). Then, they estimated how many times (out of 22) their own child and the “average White child” (order counter-balanced across participants) would choose to be friends with the White child. Because the effects in Study 1 were similar for the average child and the average classmate

and because, we could not calculate an actual bias score for the average classmate, we did not ask parents about the “average classmate” in Study 2. When considering the average child, parents were asked to think about a White child who matched their own child's age and gender. Parents' prediction scores could range from 0 to 22, with higher scores indicating that parents expected the target child to choose more White children.

Social preference task (children)

While parents completed the social preference estimation task, children completed the social preference task in another room. Children saw 22 trials with unique photographs of two faces on a computer screen. Each trial displayed a Black child and a White child, each gender-matched to the participant and within the age range of child participants in the study; the photos depicted smiling children who were approximately matched for attractiveness based on adult ratings. A White female experimenter sat with the child and clicked through a slideshow. On each trial, a voice recording said: “Who would you like to be friends with?” The experimenter told the child to point to indicate their responses. Children received a score between 0 and 22, with higher scores indicating more choices of White children. Each participant saw the White or Black child on the left for half of trials. Photos were presented in one of two orders (i.e., from photo pair 1 to pair 22 or from pair 22 to pair 1); the two orders presented each child on opposite sides of the screen.

We have a task in our lab where children are presented pairs of children. In this task, children see 22 pairs of children and are asked which child they would like to be friends with. One of the children is always White and one of the children is always Black. For example, children would see the following children and would be asked which child they would like to be friends with.



If your 7-year-old girl completed this task in our lab, how many times do you think your child would choose to be friends with the White child?

FIGURE 2 Social preference estimation task for parents. The example above depicts what parents of girls saw when they were asked to consider their own child's responses. Parents of boys saw a pair of boys.

Results

For each parent–child dyad, we had three scores: (1) each child's social preference score; (2) each parent's prediction for their own child's social preference score; and (3) each parent's prediction for the average White child's social preference score. We created a score for the “average child” by calculating the mean social preference score for all child participants. Thus, we were able to evaluate parents' accuracy for their own child and for the average child. Consistent with our hypothesis, parents underestimated their own child's racial biases on the social preference task (Prediction: $M = 13.38$, $SD = 4.59$; Actual: $M = 16.77$, $SD = 4.48$), $b = 3.40$, $F(1, 79) = 25.84$, $p < .001$, $\eta_p^2 = .25$, 95% CI [2.07, 4.73]. In addition to underestimating their own child's racial biases, parents also underestimated the average child's racial biases (Prediction: $M = 14.60$, $SD = 4.95$; Actual: $M = 16.77$, $SD = 4.48$), $b = 2.18$, $F(1, 79) = 15.42$, $p < .001$, $\eta_p^2 = .16$, 95% CI [−3.28, −1.07].

To compare parents' accuracy for their own child and the average child, we calculated accuracy scores for both parents' own children and the average child. For parents' own child, the accuracy score was calculated as parents' prediction for their own child minus their child's actual score; for the average child, the accuracy score was calculated as parents' prediction for the average White child minus the mean bias score across all child participants in the study. Positive scores indicate that parents overestimated children's biases; a score of 0 indicates a perfect prediction; negative scores indicate that parents underestimated children's biases. Parents were more inaccurate at predicting their own child's racial biases than at predicting biases of the average child, $b = -1.16$, $F(1, 79) = 8.83$, $p = .004$, $\eta_p^2 = .10$, 95% CI [−1.93, −0.38]; see Figure 3. As in Study 1, parents' predictions for their own child were highly correlated with their predictions for the average White child ($r = .81$, $p < .001$).

Next, in a linear mixed-effects model, we regressed parents' predictions of children's biases on the own/average child variable (average child = −0.5; own child = 0.5). Consistent with Study 1, we replicated the own/average child effect: Parents reported that their own child ($M = 13.38$, $SD = 4.59$) would demonstrate less racial bias than the average White child ($M = 14.60$, $SD = 4.95$), $b = -1.23$, $F(1, 79) = 13.40$, $p < .001$, 95% CI [−1.88, −0.57].

In a model including parent gender and the interaction of parent gender and own/average child, there was a main effect of parent gender, such that mothers ($M = 15.10$, $SD = 4.09$) believed children would demonstrate more racial bias than did fathers ($M = 12.69$, $SD = 5.24$), $b = -2.42$, $F(1, 78) = 6.00$, $p = .017$, 95% CI [−4.35, −0.48]. Parent gender did not moderate the own/average child effect on parents' bias predictions, $b = -0.49$, $F(1, 78) = 0.52$, $p = .47$, 95% CI [−1.81, 0.83]. In exploratory analyses, we also evaluated child age and

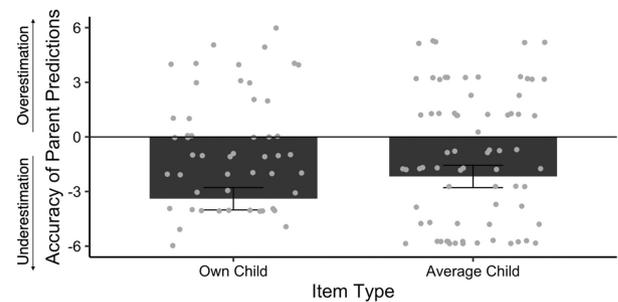


FIGURE 3 Accuracy of parents' predictions in Study 2. Parents made predictions about both their own child's biases and the average White child's biases. Accuracy scores ranged from −19 to 11, however, the presented graph displays 80% of participants' scores. Scores of 0 indicate accurate predictions; negative scores indicate underestimation of children's bias level; positive scores indicate overestimation of children's bias level. Error bars depict standard error of the point estimate. Points depict raw data.

found no main effects of, or interactions with, child age ($ps > .20$); details of age analyses are available in Appendix S1.

Discussion

As in Study 1, parents—most of whom were White—gave predictions for their own children's racial biases that were correlated with their predictions for other children. Also mirroring Study 1, parents anticipated their own child would express less bias than the average White child. Study 2 also revealed two new findings: First, parents underestimate children's racial biases relative to reality (as assessed by the social preference task) both when considering their own child and the average White child. Second, parents' predictions for their own child's biases were wholly inaccurate: there was no correlation between parents' predictions for their children's biases and their children's actual biases. In evaluating these findings, we consider both the strengths and limitations of the task used to measure children's racial biases in Study 2.

One strength of the social preference measure used in Study 2 is that it is commonly used in research on children's social biases (e.g., Baron & Banaji, 2006; Heron-Delaney et al., 2018; Rae & Olson, 2018) and has been shown to have good test–retest reliability and predictive validity of children's discriminatory behavior (Rae & Olson, 2018). In this regard, our work is well situated in existing literatures addressing the emergence and prevalence of children's racial biases. Second, the decisions children are asked to make in the social preference task are not entirely unfamiliar to young children. Children regularly select friends for themselves and sometimes are asked to select one person to join for a friendship activity (e.g., “you can choose one person for a sleepover”).

There are also some limitations to the forced-choice social preference task. First, it is of course not common for children to select friends based on photographs. While affording experimental control, the artificiality of the laboratory task and setting must be acknowledged. Second, in real life, children can choose to have multiple friends at a time or can take turns including different people. We allowed participants to select both children in the task (i.e., we did not force them to choose), but the task structure likely implied that participants should choose just one child. Perhaps the biggest limitation of the social preference task is that children's choices do not distinguish between whether the child favors the chosen person or disfavors the person not selected. As such, in the present study, the average preference for White over Black children may reflect positive attitudes toward White people or antipathy toward Black people (or both). Of course, even mild relative preferences can result in poor social experiences over time for members of stigmatized groups (Buttelmann & Böhm, 2014). Nevertheless, all limitations could be addressed in future research with measures that account for more nuance in children's social decisions or have higher ecological validity.

STUDY 3

White parents' lack of awareness of their children's biases poses a challenge to the frequent suggestion that White parents should address their White children's biases (Scott et al., 2020b). Absent awareness of their children's biases, it is unlikely that White parents would address race with their White children. As such, in Study 3, we sought to increase White parents' awareness of White children's racial biases. Bolstered by findings from Studies 1 and 2 showing that parents' bias likelihood estimates for their own child were correlated with their estimates for other children, we adopted a nomothetic approach for increasing White parents' awareness in Study 3. Following methods common in the social psychology literature (e.g., Daumeyer et al., 2019), we created a newspaper article to teach White parents about the nature, prevalence, and consequences of White children's racial biases (race bias article). Parents were randomly assigned to read the race bias article or a control article, which although about race (i.e., teaching race in schools), did not address the issues of children's racial biases. Next, all parents completed bias likelihood items about their own White child and the average White child (similar to Study 1) to assess whether the race bias article increased parents' awareness of children's racial biases. Parents also completed measures to assess constructs that, in previous research with adults (Devine et al., 2012; Forscher et al., 2017), have been associated with taking action to reduce racial biases: concern about (children's) racial biases and motivation to address (children's) racial biases.

We preregistered predictions that White parents who read the race bias article (vs. control) would give higher bias likelihood ratings. Consistent with research on the role of awareness in guiding feelings of concern about, and motivation to address, racial biases (Amodio et al., 2007; Devine et al., 2012; Monteith, 1993; Plant & Devine, 2009), we further preregistered hypotheses: (1) that parents who read the race bias article would report more concern about, and more motivation to address, children's racial biases than parents in the control condition; and (2) that awareness of children's proclivity for racial biases would mediate the effects between condition and concern, and between condition and motivation.

Method

Participants

An a priori power analysis determined a necessary sample of 558 participants to detect the hypothesized mediational effects (described above) using percentile bootstrapping assuming a small effect for the alpha and beta paths ($\alpha = .14$, $\beta = .14$; see Fritz & MacKinnon, 2007). This sample size also provided 80% power to detect a very small effect size ($\eta_p^2 = .0025$) for the effect of the article.

We recruited parent participants through Prolific. Participants first completed a screening survey in which they answered demographic questions to determine whether they met the following eligibility criteria: White parent of a White 5- to 7-year-old child, U.S. resident, at least a high school education, and English as a primary language. We invited eligible participants to complete the full study. After completing the study, we excluded participants for failing attention check questions ($n = 86$), failing comprehension check questions about the articles ($n = 96$), and spending less than 1 standard deviation below the mean time on the survey (less than 3.95 min; $n = 5$). The final sample consisted of 559 White parents of White 5- to 7-year-old children. (After cleaning the data, we had one participant over our preregistered sample size. The additional participant does not alter the analyses.)

Design and procedure

Participants completed this study between December 2020 and January 2021. Participants were randomly assigned to read the race bias article or a control article, each of which was formatted to resemble an article published in a major news outlet (full articles are available on OSF). After reading the article, participants completed a series of measures described in full below.

Materials

Race bias article

The race bias article was titled “Children show racial bias from a young age, research shows.” The article was modeled after an approach from the adult prejudice-reduction literature in which teaching about the nature and consequences of racial biases and sharing ways to overcome biases increases concern about and motivation to address biases in the self (Devine et al., 2012) and in others (Forscher et al., 2017). The article discussed how children's biases are manifested and measured, the prevalence of children's biases, and likely sources of such biases. For example, participants read text including: “A recent meta-analysis—a review of many studies—showed that the majority of White preschoolers like White children more than Black children, assume that White people have more positive traits and fewer negative traits than Black people, and are more generous toward White children than with Black children.” Next, participants read about Black children's experiences with racial bias to highlight the consequential nature of children's biases (e.g., “Black children report experiencing discrimination and even hearing racial slurs from their White peers at school”). Finally, participants learned about the potential for parents to override children's racial biases with effort (e.g., “If we put in effort over time and learn strategies for addressing race, we can make sure that our children are treating everyone equally”). Throughout the article, descriptions of research findings were complemented by anecdotal stories to increase the vividness of the information.

Control article

The control article—titled “Teaching children about race in school”—controlled for the amount of time participants spent reading and thinking about children and race and completing the reading portion of the study. The control article compared colorblind and multicultural approaches for teaching children about race. Participants read about research showing the benefits of multiculturalism and reasons why teachers may be hesitant to adopt multiculturalism as the default strategy for addressing race with children but did not read about children's racial biases, specifically.

Measures

After reading their assigned article, all participants completed two comprehension check questions. Next, participants completed measures capturing awareness of children's proclivity for racial biases (i.e., bias likelihood items), concern about children's racial biases, and motivation to address children's racial biases; the order of these three measures was randomized between participants. After completing all other measures, participants

completed two additional indicators of motivation, which focused on their interest in participating in a research study evaluating a specific program that would help them address racial biases in their own children.

Bias likelihood

To capture parents' awareness of children's racial biases, participants reported on bias likelihood for their own child and the average child in their community (order counterbalanced across participants). Participants read eight scenarios in which a child expressed biases against Black children. The scenarios were very similar to the scenarios from Study 1 but reflected more variability in the severity of the biases. Participants then rated whether their own child ($\alpha = .92$) or the average White child in their community ($\alpha = .94$) would do what the child in the scenario did on a scale ranging from “Would Definitely Not Do This (1)” to “Would Definitely Do This (9).”

Concern about children's biases

In the absence of established measures for assessing parents' concern about children's racial biases, we developed items to measure parents' concern—both about their own child's biases and about children's biases generally (order counterbalanced across participants). To assess concern about children's biases in general, we adapted a four-item measure that has been used to evaluate adults' concern about racial biases as a social problem (Devine et al., 2012) to focus on children's racial biases ($\alpha = .88$). In adapting the items, we made reference to children in general rather than to the average child because asking parents to report their concern about the average child's bias was awkward (e.g., consider: “People make more fuss about the average child's bias against Black people than necessary”). In referencing children in general, the items are inclusive of the parent's own child (see Table 2).

Because the adapted concern items were not suitable for assessing participants' concern about their own children expressing racial biases, we generated four new items for capturing the extent to which parents worried about their own children's racial biases. For each item, participants responded on a Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (9).” The fourth own-child concern item, which upon reflection is conceptually distinct from the other items, did not correlate with the other items and led to a low alpha for the composite scale ($\alpha = .58$). Accordingly, we dropped the fourth item from the own-child concern index ($\alpha = .68$).

Motivation to address children's racial biases

Regulatory motivation. Participants completed three items evaluating their motivation to monitor and regulate their own child's biases ($\alpha = .89$) and three items focused on biases of children more generally ($\alpha = .89$; order counterbalanced across participants). The items were identical except that “my child” was replaced with “children in my community” for the general items. For

each item, participants responded on a Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (9).” A sample item read: “I want to put effort into making sure my child [children in my community] does [do] not behave with bias towards Black people.”

Interest in and compensation for participation in bias reduction study. After completing the other measures, participants read about a research study evaluating a program to help parents address racial biases with their children. Participants read an overview of the study (i.e., that participants in the study would complete a training focused on addressing race with children and practice strategies for addressing race with their children) and read that participating in the study would additionally require the completion of three video calls with the research team and three surveys.

Participants then reported on their interest in participating in the study and indicated the amount of compensation they would request for participation. To enhance the consequential nature of participants' responses, participants read that if they expressed interest in the program that we may recruit them to participate in the study in the future. Participants first responded on a Likert scale ranging from “Strongly Disagree (1)” to “Strongly Agree (7)” to the question: “I would be interested in participating in this research opportunity.” Participants then provided an open-ended response about the monetary compensation they would request. We reasoned that the amount of compensation participants would require would be lower if they were more intrinsically motivated to address children's racial biases.

Results

We fit linear mixed-effects models for bias likelihood, concern about children's biases, and motivation to regulate children's biases using the lme4 package in R. Means and standard deviations are in Table 3. Results are reported in text and details of the statistical analyses are in Table 4. In exploratory analyses, we also evaluated the

effect of child age in all reported models, allowing child age to interact with all predictors. Across analyses, there were no significant effects of child age ($ps > .09$), so we do not include child age in reported models. Models including child age are available on OSF and in Appendix S1. Following the linear mixed-effects models, we tested whether bias likelihood mediated the relation between article type and the remaining outcomes.

Bias likelihood

As in Study 1, participants' predictions for bias likelihood were low, regardless of the item severity (item-by-item data are available on OSF). We regressed the bias likelihood measure on item type (own child vs. average child) and article type (race bias vs. control). The model included a random intercept and a random slope for item type to account for the within-subjects nature of considering one's own child versus the average child. The analysis revealed a main effect of article type, such that participants reported a higher likelihood of racial biases in the race bias condition than in the control condition. The analysis also revealed a main effect of item type: Replicating Studies 1 and 2, and in line with our preregistered hypothesis, parents gave higher bias likelihood ratings for the average child compared to their own child. There was no interaction between article type and item type, suggesting that the race bias article affected participants' thinking about their own child and the average child similarly.

Concern about children's biases

The analysis of the concern measure followed the same analytic plan as the bias likelihood measure except that item type focused on parents' concern about either their own child's biases or children's biases generally. As predicted, the race bias article raised participants' concern about children's biases compared to the control article. Although we preregistered the hypothesis that participants would be more concerned about their own child's biases than about

TABLE 2 Concern about children's biases items

Own child ($\alpha = .68$)

1. I am personally concerned that my own child may show biases against Black people
2. I am not worried about my child displaying bias toward Black people
3. I am troubled by the idea of my child showing bias toward Black people
4. I want to raise a child who is fair to others regardless of their race (*dropped item*)

Children in general ($\alpha = .88$)

1. I'm not personally concerned about children's biases against Black people
2. People need to stop focusing so much time and energy worrying about children's biases against Black people
3. People make more fuss about children's biases against Black people than is necessary
4. I consider children's biases against Black people to be a serious social problem

Note: The fourth “own-child” item was dropped in the formation of composite scores because it did not cohere with the other items.

TABLE 3 Study 3 descriptive statistics

| Measure | Item type | Article type | |
|---|---------------------|------------------------|------------------------|
| | | Race bias | Control |
| | | <i>M</i> (<i>SD</i>) | <i>M</i> (<i>SD</i>) |
| Bias likelihood | Own child | 2.26 (1.35) | 1.63 (0.77) |
| | Average child | 3.82 (1.49) | 3.12 (1.34) |
| Concern | Own child | 5.79 (2.12) | 4.85 (2.10) |
| | Children in general | 6.73 (2.06) | 6.36 (2.15) |
| Regulatory motivation | Own child | 7.65 (1.63) | 7.50 (1.81) |
| | Children in general | 6.75 (2.05) | 6.33 (2.13) |
| Interest in participating in a bias reduction study | | 4.63 (2.29) | 4.27 (2.32) |
| Compensation for study participation | | 67.53 (107.03) | 99.38 (145.81) |

Note: Means and standard deviations for each measured variable separated by condition.

TABLE 4 Study 3 regression analyses

| | Article type effect | Item type effect | Interaction |
|---|---|---|--|
| Bias likelihood | $B = 0.66$ $F(1, 557) = 47.76$ $p < .001$ 95% CI [0.48, 0.85] | $B = -1.43$ $F(1, 557) = 69.36$ $p < .001$ 95% CI [-1.76, -1.09] | $B = -0.06$ $F(1, 557) = 0.37$ $p = .54$ 95% CI [-0.27, 0.14] |
| Concern | $B = 0.66$ $F(1, 557) = 14.22$ $p < .001$ 95% CI [0.36, 0.95] | $B = -2.07$ $F(1, 557) = 9.12$ $p < .001$ 95% CI [-2.68, -1.45] | $B = 0.56$ $F(1, 557) = 2.88$ $p = .003$ 95% CI [0.19, 0.94] |
| Regulatory motivation | $B = 0.29$ $F(1, 556.68) = 3.76$ $p = .05$ 95% CI [0.00, 0.58] | $B = 1.42$ $F(1, 548.24) = 45.85$ $p < .001$ 95% CI [1.00, 1.83] | $B = -0.26$ $F(1, 548.25) = 4.25$ $p = .04$ 95% CI [-0.52, -0.01] |
| Interest in participating in a bias reduction study | $B = 0.36$ $F(1, 557) = 3.38$ $p = .07$ $\eta_p^2 = .01$ | NA | NA |
| Compensation for study participation | $B = -31.85$ $F(1, 511) = 8.12$ $p = .005$ $\eta_p^2 = .02$ | NA | NA |

biases among children more generally, this prediction was not supported. Participants reported greater concern about biases among children generally than about their own child's biases. Additionally, there was a significant interaction between article type and item type, indicating that the race bias article increased participants' concern about their own child's racial biases more so than their concern about children's racial biases generally.

Motivation to address children's racial biases

Regulatory motivation

The analysis of the regulatory motivation measure used the same approach as the analysis for the concern

measure, with the item type variable focused on participants' motivation to address their own child's biases versus the biases of children in their community generally. The analysis revealed that, as predicted, the item type main effect was significant; overall, participants were more motivated to address their own child's racial biases than the biases of children in their community. In addition, participants were more motivated to address children's biases in the race bias article condition than in the control condition. Finally, there was a significant interaction of article type and item type; although the race bias article increased motivation to address racial biases for both their own child and for children generally, the effect was larger for children in the community.

Interest in and compensation for participating in bias reduction study

Participants' interest in and requested compensation for participating in a bias reduction study were evaluated by regressing their interest or requested compensation on article type. The analysis on interest revealed that participants in the race bias article condition were marginally more likely than participants in the control condition to express interest in the study. Participants in the race bias article condition indicated they would require significantly less compensation to participate in the study than participants in the control condition.

Mediational models

The mediation analyses reported below use only the own-child ratings for both conceptual and measurement reasons. First, parents have more involvement with and control over their own children than other children; as such, responses focused on their own child are likely to be more proximally relevant in the context of noticing and regulating biases. Second, using the own-child measures allows us to maintain a similar focus across the analyses; we have own-child indices for each of the relevant constructs (i.e., bias likelihood, concern, regulatory motivation, interest, and compensation).

We evaluated the mediational models using the lavaan package in R and computed 95% confidence intervals using percentile bootstrapping to evaluate statistical significance at the .05 level. For each model, we calculated the total effect of condition on the outcome (C path), the effect of the condition on the mediator (A path), the effect of the mediator on the outcome variable when statistically controlling for condition (B path), and the indirect effect (A × B path) between condition and the outcome variable. The significance of the indirect path is the clearest indicator of whether the proposed model is consistent with the tested mediational model (Rucker et al., 2011).

We first evaluated the mediation of article type on each dependent variable by bias likelihood ratings for one's own child. Consistent with our hypothesis, bias likelihood mediated the effect of article type on concern

about children's biases and on regulatory motivation, suggesting that increasing White parents' awareness that their White child is likely to express racial biases elicits worry and is motivating. However, increasing awareness of children's bias likelihood did not mediate the effect of condition on the other motivational indicators (i.e., interest, compensation). The 95% confidence intervals are reported in Table 5 and full models are available on OSF and in Appendix S1.

We anticipated that increasing White parents' awareness of their child's racial biases would affect parents' interest in learning how to address children's biases (i.e., participation in a bias reduction study), but it did not. We suggest that awareness may be necessary but not sufficient for taking specific steps to learn how to address children's biases (Monteith, 1993; Plant & Devine, 1998). In particular, awareness may need to be combined with concern about racial biases to trigger actions to address biases (Devine et al., 2012). As such, we considered the possibility that concern about one's child expressing racial biases may be a more proximal predictor of taking action to address biases in one's child. To test this possibility, we added concern about racial biases in one's own child to the mediation models to test the extent to which awareness and concern simultaneously mediate the effect of article type on interest and compensation (and regulatory motivation). Both awareness of and concern about racial biases in one's own child significantly mediated the effect of article type on the regulatory motivation measure (see Table 6). Moreover, concern about children's racial biases, but not awareness, mediated the effect of condition on interest in the bias reduction study. Neither awareness of, nor concern about, racial biases in one's own child mediated the effect of condition on compensation.

Discussion

A primary goal of Study 3 was to evaluate a method for increasing White parents' awareness of White children's racial biases. Guided by findings of Studies 1 and 2 that showed White parents thought similarly about their own and other White children's biases, we used a nomothetic approach in Study 3. Namely, parents read an article

TABLE 5 Study 3 mediation analyses through bias likelihood for one's own child

| Outcome | C path | A path | B path | A × B path |
|---|-----------------|--------------|----------------|----------------|
| Concern | [0.57, 1.31] | [0.45, 0.81] | [0.08, 0.40] | [0.05, 0.28] |
| Regulatory motivation | [-0.15, 0.45] | [0.45, 0.84] | [-0.42, -0.11] | [-0.27, -0.07] |
| Interest in participating in a bias reduction study | [-0.01, 0.78] | [0.45, 0.82] | [-0.22, 0.14] | [-0.12, 0.09] |
| Compensation for study participation | [-54.34, -9.38] | [0.42, 0.78] | [-12.13, 6.44] | [-7.77, 3.39] |

Note. Each mediation analysis evaluates the effect of condition on the specified outcome through bias likelihood. 95% confidence intervals for each tested path are reported in the table.

TABLE 6 Study 3 mediation analyses through awareness of and concern about biases in own child

| Outcome | C path | A ₁ path | A ₂ path | B ₁ path | B ₂ path | A ₁ × B ₁ path | A ₂ × B ₂ path |
|---|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------------------------|--------------------------------------|
| Regulatory motivation | [-0.15, 0.45] | [0.45, 0.82] | [0.57, 1.30] | [-0.49, -0.25] | [0.36, 0.49] | [-0.33, -0.15] | [0.24, 0.56] |
| Interest in participating in a bias reduction study | [-0.04, 0.75] | [0.45, 0.81] | [0.60, 1.28] | [-0.24, 0.10] | [0.04, 0.24] | [-0.14, 0.06] | [0.04, 0.24] |
| Compensation for study participation | [-14.462.54, 36.92] | [0.42, 0.71] | [0.52, 1.21] | [-2815.50, 19.55] | [-3208.92, 21.05] | [-1696.55, 11.41] | [-3016.47, 18.80] |

Note: Paths with subscripts of 1 are effects through bias likelihood; paths with subscripts of 2 are effects through concern. 95% confidence intervals for each tested path are reported in the table.

that described the nature, prevalence, and consequences of White children's racial biases generally (rather than learning about their own child's biases specifically). This approach was successful. Compared to parents who read the control article, those who read an article about White children's racial biases reported increases in their expectations that children would express racial biases. This finding is both encouraging and important. First, the results provide evidence that it is possible to increase White parents' awareness that White children, including their own, may express racial biases. Second, increasing White parents' awareness does not require that parents observe their own child displaying racial biases. Overall, Study 3 provides promising evidence that a nomothetic approach for teaching White parents about White children's racial biases can generalize to how parents think about their own child.

In Study 3, we also examined White parents' concern about White children's racial biases and motivation to address White children's racial biases. Parents who read an article about children's racial biases indicated more concern about children's biases and greater motivation to address children's biases than parents in the control condition. Parents' greater motivation was evident on both the regulatory motivation measure and on a measure probing parents' interest in a study that would teach them strategies for addressing racial biases with their own child. Parents in the race bias article condition also indicated that they would require less compensation for their participation in the research study we described to them, perhaps reflecting greater personal motivation to work on these issues with their children.

It should be noted that the increase in concern was larger for items focused on White parents' own child (vs. White children in general) and the increase in regulatory motivation was larger for items focused on White children in general (vs. parents' own child). In interpreting these patterns, it is instructive to consider differences in baseline (i.e., control group) concern and regulatory motivation for parents' own child and children in general. In the control condition, parents' concern was lower for their own child than for children in general. Parents' increased awareness that their own child may display racial biases—and therefore contribute to discriminatory outcomes—may have been especially worrying, leading to a larger increase in concern for their own child compared to children in general. Parents' regulatory motivation in the control condition was higher for their own child than for children in general. This pattern may reflect the fact that parents likely feel more responsible for their own child than children in general—and their high levels of regulatory motivation at baseline may have constrained the opportunity for large increases in motivation to be observed. In other words, the race bias article may have been more effective for raising regulatory motivation for children in general because parents' regulatory motivation for their own child was already so high.

Beyond positive effects of the article manipulation, we found support for two mechanisms underlying the effects of the manipulation. As anticipated, White parents' awareness of their own child's racial biases mediated the link between article type and concern about their child's racial biases and between article type and regulatory motivation. Contrary to expectations, however, awareness of their child's biases did not mediate the relation between article type and interest in taking a specific action to address racial biases in their child. Yet, in exploratory analyses, we found support for an alternative mechanism leading to increases in parents' regulatory motivation and interest in taking a concrete action to address their child's racial biases (i.e., participation in a study addressing children's biases): Concern about their own child's biases mediated the effect of article type on parents' regulatory motivation and their willingness to participate in research focused on addressing their child's biases. It is possible that awareness of White children's biases, though necessary, is not sufficient to elicit specific actions to address White children's biases (Devine et al., 1991; Monteith, 1993; Plant & Devine, 1998).

Our findings point to a more nuanced analysis, which highlights the role of White parents' concern that their own White child could contribute to ongoing discrimination as a motivating factor for parents to be willing to engage in a specific action that would address biases in their child (in this case, willingness to participate in a research study that would help them address their child's biases). Together, our analysis highlights the critical importance of both awareness and concern in motivating parents to address biases with their child. Although we did not directly measure parents' personal values in Study 3, the concern mechanism suggests that when White parents consider the consequential nature of White children's racial biases, that they are more willing to engage in efforts to address their White children's biases. Thus, White parents who recognize the negative effects of discrimination in childhood could be effective socialization agents for addressing White children's biases. It is worth noting that our inferences from the mediation analyses are tentative given the cross-sectional design; future research should systematically evaluate the causal role of awareness and concern about children's biases on White parents' motivation by manipulating each proposed mediator (awareness and concern).

GENERAL DISCUSSION

The goals of the present research were to explore White parents' expectations about racial biases among their own and other White children, and to identify an effective way to motivate White parents to address their White children's racial biases. Across studies, we found that White parents thought about biases in their own and other White children similarly: They were largely

unaware of the likelihood that their own and other White children would express racial biases and they thought similarly about their own and other children's biases. However, White parents' awareness of their own and other children's biases was increased by providing them with information about the nature, prevalence, and consequences of White children's racial biases. Finally, the impact of increasing White parents' awareness of White children's biases led to outcomes—namely, concern about and motivation to address racial biases—that are likely important in taking steps to address racial biases, particularly for parents' own children. Below, we explore implications of our findings and note directions for future research.

Although it may seem obvious that learning about White children's racial biases increases White parents' awareness of, concern about, and motivation to address White children's biases, what is not obvious is that learning about White children's biases generally would translate into how parents think about *their own* children. Prior research demonstrates that parents are motivated to see their own children as better than the average child (Lench et al., 2006) and that White parents do not believe their White children express racial biases (Pahlke et al., 2012; Scott et al., 2020a). As such, it is plausible that information about White children's racial biases could have changed parents' beliefs about other White children's biases, but that parents would dismiss the information as being irrelevant to their own White children. Parents could have engaged in confirmation bias (Darley & Gross, 1983), in which they only considered behaviors that affirmed their existing beliefs about their children or could have believed their efforts to teach their children non-biased values would prevent their children from expressing racial biases. The fact that information about children's racial biases generalized to how parents thought about their own children is critical for scalable and generalizable methods for increasing White parents' motivation to address their White children's racial biases.

Our findings raise an important question about why White parents are so unaware of their White children's racial biases. Although our studies did not address this issue directly, we offer some suggestions. One possible reason parents are unaware of their children's biases is that parents fall prey to confirmation bias (Darley & Gross, 1983); they may tune into instances in which their child does not express bias while dismissing instances in which their child does display bias. Another possible reason is that parents do not observe their children in situations where biases are likely to be present (e.g., on the school playground). Even without direct observation of children's racial biases, however, it is still surprising that White parents are unaware of White children's biases given the pervasiveness of popular press articles discussing White children's racial biases (for a review, see Scott et al., 2020b). The kind of information we provided about

the nature, prevalence, and consequences of White children's racial biases is present in articles widely available to parents in the popular media.

It is possible that, generally, White parents do not believe that articles about White children's racial biases are personally relevant—and, as a result, they may not encode the information in popular press articles. However, the fact that we could increase White parents' awareness of racial biases in their own children by having them read an article about children's biases casts doubt on this possibility. Alternatively, parents may not read or engage with articles about children's racial biases that regularly appear in popular press outlets. A notable difference between how parents encounter articles in naturalistic settings compared to in our study is that parents in Study 3 not only needed to read our article (i.e., to pass comprehension check questions), but were also encouraged to reflect on the content of the article in the context of thinking about their own behavior and their own child's behavior. The engagement requirements of Study 3 may have been key to helping parents understand and reflect on the information conveyed in the article. Future research should focus on how to increase White parents' engagement with information about White children's biases in uncontrolled situations outside of a study.

Beyond examining whether and how White parents engage with information they encounter about White children's racial biases in everyday settings, a high priority for future research is to examine the mechanisms responsible for achieving the outcomes in Study 3. It is possible that rather than raising parents' awareness of children's biases, that the article simply made parents more comfortable acknowledging their children's potential for biases. Learning about the prevalence of White children's racial biases may have helped parents understand that acknowledging their children's biases does not make them or their child bad people because it is a common problem. Future research should disentangle whether the article raised parents' awareness or their willingness to acknowledge children's biases. Either way, parents' increased awareness or recognition of children's biases—combined with concern about children's biases—increased parents' motivation to address their children's biases.

In addition to understanding the psychological process underlying the effects of Study 3, it will be critical to examine which components of the multifaceted race bias article were particularly impactful. Our race bias article contained information about the prevalence of White children's racial biases, the magnitude of White children's racial biases, the consequences of White children's racial biases, and parents' ability to address these biases. Additionally, the article contained information from research studies alongside anecdotal examples aimed at increasing the vividness of study findings. Determining which of these components are most impactful in guiding White parents' thoughts and

actions regarding their White children's racial biases is an important next step. Understanding the impact of different components could help tailor educational information for parents to highlight the most important information and will be helpful in creating future interventions to engage White parents in efforts to address White children's biases.

The present research takes on added significance in the context of repeated calls, among scholars and in the popular press, for White parents to take an active role in addressing or preventing their White children from expressing racial biases (Scott et al., 2020b). Tacit, if not explicit, in these calls is the idea that White parents bear responsibility for addressing racial biases in their White children. Although White parents generally do feel responsible to address racial biases with their White children (Scott et al., 2020a), our studies reveal that most White parents do not believe their White children are likely to express racial biases. Additionally, increasing awareness, though likely necessary, is not sufficient to create interest in taking specific actions to address racial biases in their child. To catalyze interest in taking a specific action (i.e., participating in a research study that would teach them how to address their child's biases), White parents needed to be both aware of *and* concerned about children's racial biases.

We were able to increase White parents' awareness of, concern about, and motivation to address White children's biases at the group level in Study 3, but not all parents showed increases on these outcomes. In future work, it will be important to explore what individual differences could affect White parents' responsiveness to the information we presented—and, relatedly, to understand how to increase motivation in parents who were not compelled by the approach taken in the present work. Ultimately, it should be acknowledged that some White parents may in fact be motivated to express bias (Forscher et al., 2015). In such cases, increasing awareness of children's biases would be unlikely to create concern about children's racial biases or motivate efforts to reduce children's biases. Helping people recognize the potential for bias and understand how bias is a problem is a different issue than trying to change people's prejudiced values. Interventions focused on changing values will likely need a different approach than those focused on motivating people who strive toward egalitarianism.

There are important limitations to note about the present research. First, we targeted White U.S. parents with White children of particular ages (4–12 years in Study 1, 5–7 years in Studies 2 and 3) and asked them to think about racial biases in the Black-White context. Within the Black-White context, White children demonstrate the most reliable racial biases, but children from other racial groups, including Asian and Latinx children, also exhibit racial biases (Dunham

et al., 2007, 2013; Qian et al., 2017). It is possible that parents from minoritized backgrounds, who themselves may have experienced discrimination, would be more aware of the early emergence of children's racial biases. Future research is needed, therefore, to understand how parents from other racial/ethnic groups in and outside the United States think about their children's racial biases.

Additionally, children's social biases extend far beyond racial biases. Children display social biases based on groupings such as gender, age, language, disability, and accent (Rhodes & Baron, 2019). When considering the self-regulation of prejudice in adults, increasing awareness of one's biases sparks the regulation of bias in both the race context (e.g., Burns et al., 2017) and when considering other social biases (e.g., Monteith, 1993). As such, we would expect the principles from the present paper to apply across different social biases, however this hypothesis awaits testing.

The cross-sectional nature of our research design prohibits us from examining the longevity of the effects on awareness, concern, and motivation that we observed in Study 3. Our measures were collected immediately after parents read the article and, although we observed significant changes, it will be critical to evaluate the longevity of these changes. If the changes do not last over time, the likelihood of White parents taking specific steps to address racial biases in their White children is doubtful. Based on research with adults showing that regulatory effects are sustained over time when awareness of and concern about one's own biases are increased (Devine et al., 2012), we are optimistic that White parents' interest in reducing racial biases in their White children could persist over time. Furthermore, though our findings reveal that we can motivate White parents to express interest in taking action to address racial biases in their children, it has yet to be demonstrated that parents will follow through and do the work needed to address their children's racial biases. Although behavioral intentions are a good predictor of subsequent behavior (Ajzen, 1991), it will be prudent to evaluate the extent to which parents' intentions to address their children's biases translate into direct actions targeting children's racial biases or whether additional information or supports are required. Furthermore, given that children's biases are informed by multiple socialization agents and social inputs, it will likely be critical to pair efforts focused on helping White parents address race with their children with other intervention approaches (e.g., helping teachers effectively address race in their classrooms). Finally, although addressing racial bias at the individual level is important because individuals create norms and cultures that can change social structures, it is important to also implement mixed approaches that synthesize individual and structural interventions (Lewis, 2021).

CONCLUSIONS

Parents are primary socialization agents for their children, and their input has proven especially impactful—at least outside the domain of racial biases (e.g., Smetana, 1999)—during a period of development when racial biases emerge and strengthen in children. With increased awareness of, and concern about, White children's racial biases, White parents who have values prohibiting prejudice could be positioned to meaningfully address children's biases starting early in childhood. Of course, reducing White children's biases is more than a matter of raising White parents' awareness, concern, and motivation to address their children's biases. The field also needs to develop empirically validated tools to provide to parents who are interested in reducing children's biases. The findings from the current studies provide a foundation for future research that evaluates how White parents can be engaged in efforts to address White children's racial biases.

AUTHOR CONTRIBUTIONS

K. E. Scott conceptualized the research project and created the study materials with the feedback of all other authors. K. E. Scott and T. L. Ash collected the data for all studies. B. Immel and M. A. Liebeck assisted in data collection for Study 2. K. E. Scott analyzed the data. K. E. Scott, P. G. Devine, and K. Shutts wrote the manuscript. All authors provided feedback on the manuscript and approved of the final submission.

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