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CHILDREN'S PREJUDICE DEVELOPMENT AND REDUCTION

Challenges and Opportunities

Katharine E. Scott, Kristin Shutts,
and Patricia G. Devine

An enduring challenge in the prejudice, stereotyping, and discrimination literature is that children and adults alike show intergroup biases that have pernicious effects on those targeted by these biases (Carter et al., 2017; Cave et al., 2020; Del Toro et al., 2021; Hailey & Olson, 2013; Hoffman et al., 2019; Marcelo & Yates, 2019; Shutts, 2015; Simons et al., 2002; Skinner & Meltzoff, 2019; Trent et al., 2019; Wong et al., 2003). Over time, scholars, legislators, politicians, and laypeople have called for efforts to eradicate these biases. Heeding this call, social psychologists have explored a wide range of methods to reduce intergroup biases or otherwise mitigate their adverse effects (see Devine et al., 2024, for a comprehensive review).

Working primarily with adults, the social psychology literature provides lessons in just how deeply engrained intergroup biases are in culture and in the minds of social perceivers. Reducing intergroup biases in adults requires overcoming a lifetime of socialization and learning processes that, unfortunately, promote the development of intergroup biases (Allport, 1954; Devine, 1989). This type of reasoning has led many to believe that it may be most beneficial to address intergroup biases much earlier in development—before intergroup biases become deeply entrenched in children's minds (Rizzo et al., 2022; Rutland & Killen, 2015; Scott et al., 2020b). The central purpose of this chapter is to explore what is known about mechanisms supporting the emergence of intergroup biases in childhood and consider how to best develop efforts to reduce such biases.

Developmental psychologists have long considered how children develop intergroup biases and have begun to uncover methods for addressing intergroup biases in childhood. Some of the earliest work and theorizing on the development and reduction of children's intergroup biases began with work by the

distinguished developmental psychologist, Phyllis Katz (2003). Katz famously compared the development of prejudice and intergroup biases in children to a twig being bent (Katz, 1976b). Though initially straight, a wide range of forces in children's environments have the effect of bending the twig in ways that promote prejudice and intergroup disparities. These external forces include media, which reinforces group-based stereotypes; both subtle and direct messages children receive from parents, teachers, and peers; and information present in the culture about which groups are valued and which are devalued in society. Katz largely portrays children as passive recipients of the various socialization forces that lead to the development of intergroup biases. Katz (1976a, 1976b) argued that these early experiences are potent and that once the biases are firmly in place, they prove to be difficult to eliminate. When reviewing what was known at the time about how to straighten the twig to reduce intergroup biases, Katz (1976a) discussed various methods (interventions) that could act on children to reduce their stereotypes, improve their intergroup attitudes, and encourage intergroup contact.

Katz's (1976a, 1976b) reviews of the development and reduction of intergroup biases left one pessimistic about the possibility of addressing intergroup biases in children. Katz was clear that the forces leading to the bending of the twig were plentiful, potent, and omnipresent. However, her review of extant intervention efforts designed to straighten the twig yielded limited evidence of success, with few suggestions emerging about how to create meaningful, long-term improvements in children's intergroup biases. Because Katz described children as simply absorbing biased information in the world around them, there was little hope for the development of a straight twig absent changing the world. Largely absent from Katz's analysis of the twig being bent or straightened, however, is consideration of the qualities and abilities children possess that might make them especially likely to develop intergroup biases or how these qualities or abilities might be leveraged to reduce intergroup biases. Katz alluded to new research that focused on how children's cognitive capacities may contribute to the development of bias, but at the time of her chapters, this research was just beginning.

Since the time Katz was articulating her perspective, there has been an explosion of research on children's apprehension of the social world. In the first part of this chapter, we consider both the need for children to learn, as well as children's capacity to learn, about the individuals and groups that comprise their society. Next, we consider how the skills that allow children to function effectively in society can also make them vulnerable to the development of intergroup biases. Finally, we discuss how we can leverage children's learning and motivation in the social domain to prevent or reduce intergroup biases early in development. In doing so, we highlight multiple promising approaches for straightening the twig.

Learning to Function in a Complex Social World

Children have a tremendous amount to learn about the social world—including about the social groups that comprise their society. Because groups

are fundamental to human social life, becoming a full-fledged member of society requires knowing how to identify relevant groups and understanding what group membership means (e.g., which groups have power, how group members ought to behave; see Shutts & Kalish, 2021 for review). Group arrangements vary substantially across contexts and time (e.g., race is a modern construct, and different modern cultures also mark different racial groups). Thus, much of the information children learn about social groups must occur through immersion in their own culture. Recent research in developmental science suggests children's social group thinking begins early in life, supported by children's interest in, and commitment to, learning from and about members of their culture.

Children's intense curiosity about the social world is evident in the first year of life (Begus & Southgate, 2018). For example, young infants pay more attention to faces than to complex objects, actively seek guidance from others about how to behave when they are uncertain, and readily imitate other people's actions and gestures (e.g., Di Giorgio et al., 2012; Frank et al., 2009; Harris et al., 2018; Jones, 2007; Kwon et al., 2013; Meltzoff & Moore, 1989; Striano & Rochat, 2000; Walden & Ogan, 1988). In addition to engaging with social partners themselves, infants are also interested in, and capable of learning about, how other people are connected to one another (e.g., who is friends with whom, which people are in which groups; Liberman et al., 2014, 2018; Powell, 2022; Powell & Spelke, 2013, 2018; Rhodes et al., 2015; Thomas et al., 2022).

With age, children gain more exposure to the broader social world and begin to learn about the specific groups that are relevant in their society (e.g., Hirschfeld, 1998; Rhodes & Baron, 2019; Rhodes & Gelman, 2009). For example, 5-year-old children in Israel can classify people according to whether they are Arab or Jewish, and use these category distinctions to make assumptions about novel people (Birnbaum et al., 2010). Young children in the United States are not attuned the Arab/Jewish distinction (Diesendruck et al., 2013), but do classify people by race and use racial categories (e.g., Black vs. White) to make inferences about people's attributes (e.g., whether someone is nice or mean; e.g., Pauker et al., 2010; Rhodes & Baron, 2019; Sierksma et al., 2022; Weisman et al., 2015).

Children's learning about the social world occurs in a variety of ways. Some of what children learn about social groups is supported by their capacity to detect patterns in the environment. For example, most White four-year-old children in the United States report that White people have more wealth and power than Black people (Mandalaywala et al., 2020; Shutts et al., 2016). Yet, most White United States families report never (or rarely) talking to their young children about race (Pahlke et al., 2012; J. Sullivan et al., 2021, 2022; J. N. Sullivan et al., 2021; Vittrup, 2018; Vittrup & Holden, 2011; Zucker & Patterson, 2018). A likely explanation for children's early race-status beliefs is that they learn this information from patterns in the environment (e.g., by observing which people have more resources; from watching media that depict Black people in lower-status positions; Lamer et al., 2022; Weisbuch et al.,

2009). Indeed, laboratory research reveals that children can learn associations between groups and status via observation alone (Horwitz et al., 2014).

Children also learn about the structure of their social world, as well as how they should behave in it, from other people's actions and testimony. In many cases, information provided by others can override children's own thinking about how the world works, as well as their intuitions about what is right vs. wrong (Bridgers et al., 2016; Finiasz et al., 2024; Harris, 2012; Harris et al., 2018; Hermansen et al., 2021). For example, even though young children typically judge acts that harm other people (e.g., hitting) as morally unacceptable, children's judgments can change when presented with testimony from an adult that such behavior is acceptable. In one recent study, 3–5-year-old children in the United States and China who heard an adult from their culture say that an action that caused harm was actually "good" later judged the actions as less wrong (vs. children who heard no testimony; Li et al., 2019).

When learning from other people, children are especially attentive to the words and actions of social ingroup members, including members of their culture (e.g., Harris et al., 2012; Harris & Corriveau, 2011; Li & Koenig, 2022) as well as cultural ingroup members with whom they have close relationships (e.g., parents, teachers, friends; Harris & Corriveau, 2011). Children are more likely to imitate the actions of, and trust information provided by, native-accented rather than foreign-accented speakers (Kinzler et al., 2011). And children also trust information provided by teachers and parents over information provided by strangers (Corriveau & Harris, 2009; Dore et al., 2023). Studies with four-to-seven-year-old children, for instance, show that children's beliefs (e.g., "I believe in God" or "climate change is real") are shaped by testimony from parents (Dore et al., 2019) but not from strangers (Dore et al., 2023).

In sum, research reveals that children are prodigious learners when it comes to mastering the structure of the social world and learning their place in it. And learning about social structures is crucial to children's social functioning: Imagine a child incapable of discerning the different roles of children vs. adults; imagine a child uninterested in what they can expect from family vs. strangers; imagine a child unable to understand what members of their cultural group think is appropriate to eat on a given holiday. Such children would have a difficult time functioning in society. However, as will be elucidated in the next section, children's amazing capacities for learning about social groups can also lead to undesirable outcomes.

The Problem of Social Biases

Although children need and want to learn about the social world, some of their learning can result in biased thinking and behavior—including biases that are harmful to other people. This is the issue at hand: children are eager to learn about the social world, and are adept at learning social information, but the capacities that support their learning can lead to deleterious outcomes.

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Take, for example, children's capacity to readily detect associations between status and social group membership that are present in their culture. Children not only are able to learn such patterns, but they then also apply their learning to new people—e.g., to form stereotypes and make assumptions about the socioeconomic status of people they have never met (Enright et al., 2020; Horwitz et al., 2014; Mandalaywala et al., 2020; Shutts et al., 2016). Further, children use (depicted or presumed) information about status to guide their social preferences and actions, preferentially selecting social partners for themselves who are higher in status (Enright et al., 2020; Horwitz et al., 2014; Shutts et al., 2016).

As another example, consider children's trust in information provided by other people. To the extent that other members of their culture speak and act toward members of different social groups in only positive ways, and consistently mark unfair treatment as wrong, children should view other groups positively and show concern about the welfare of other groups. However, most adults possess biases themselves (Bertrand & Mullainathan, 2004; Galvan et al., 2022; Nosek et al., 2007), and such biases, whether intentional or unintentional, are observable to children (Castelli et al., 2008, 2009; Lamer et al., 2022; Skinner et al., 2017) and harmful to targets of bias (Carter et al., 2017; Cave et al., 2020; Eberhardt et al., 2006; Green et al., 2007; Hurd et al., 2022; Okonofua & Eberhardt, 2015; Simons et al., 2002; Trent et al., 2019; Wong et al., 2003).

A final consideration relevant to children's social biases is that children tend to normativize what they have learned about social groups—in other words, to assume that "what is is what ought to be." Many studies reveal that children—especially young children—readily turn descriptive information that they hear or observe about groups (e.g., the fact the one group usually does one thing) into prescriptive rules (Foster-Hanson & Rhodes, 2019; Kalish, 2012; Roberts, 2022; Roberts, Ho, et al., 2017; Roberts et al., 2018, 2021; Tworek & Cimpian, 2016). For example, 4-to-13-year-old children and adults in one study saw pictures and heard testimony from an adult about the properties of two novel group—e.g., one group eats berries that are orange while another group eats berries that are green. Following the presentation of this information, children were asked whether it would be okay for the groups to eat different kinds of berries. Most children (but not adults) said that it was *not* okay for the groups to eat different foods. Thus, even though the information about food preferences was presented descriptively, children quickly treated the information prescriptively (Roberts, Gelman, et al., 2017). And, longstanding research in the gender domain provides a clear example of how children's ideas about how people in one group ought to behave can constrain the behaviors of others: Children "police" the behaviors of other children who do not behave in accordance with gender norms (Blakemore, 2003; Levy et al., 1995).

Together, this research reveals that because children are such good social learners, they are unfortunately quick to learn and apply biased messages that are pervasive in the social world. Overriding the biased information that

children gather throughout their early years is likely to be an enormous undertaking. However, we believe that if interventions deeply engage with children's capacities and approaches to social learning, there is great potential for reducing children's social biases in generalizable and enduring ways.

Reducing Children's Social Biases

In considering the task at hand for reducing children's social biases, we identify several features that are likely necessary for creating sustained and generalizable reductions in bias. Below, we highlight considerations regarding the structure and content of interventions that are likely necessary for the interventions to be maximally effective. We also identify important considerations related to the evaluation of the efficacy of interventions. We then review existing interventions that align with at least some of the suggestions and show some promise in addressing children's social biases.

Structural Considerations

To the extent that children learn social biases in their everyday lives, effective interventions need to recognize both the embedded nature of social biases in culture and that children—even very young children—have considerable experience learning to function in a social world that promotes the development of social biases. Successfully countering the forces that lead to the development of social biases is likely to be a major challenge.

From the time of Katz's (1976a) review onward, psychologists—especially experimental psychologists—who carry out bias intervention studies with children tend to land on a similar approach: experimenters recruit a group of children, direct children to complete a task (e.g., exposure to members of different racial groups; Qian et al., 2017) or deliver a brief lesson that is thought to reduce bias (e.g., that women are good at math and science; Block et al., 2022) and then immediately measure the effects of their manipulation on some measure of social bias (Aboud et al., 2012; Aboud & Levy, 2000; Beelmann & Heinemann, 2014; Skinner & Meltzoff, 2019). Against the backdrop of what we know about how children think about social groups and how they learn social biases, this typical approach is unlikely to produce meaningful and sustained changes in children's social biases.

A principal problem with these types of studies is their short-term nature. They are typically conducted in a single session and involve participating in brief bias reduction activities. The impact of these brief bias reduction intervention activities likely pales in comparison to children's prior learning as well as children's experiences following the intervention session; after the study session, children return to their everyday context where biased messages about social groups abound. And indeed, these types of interventions often have immediate effects that do not hold up over time (e.g., McKeown et al., 2017; Savenye, 1990). A second problem arises when such interventions are delivered

by experimenters: As unfamiliar adults, experimenters may not be viewed as trusted sources for how to behave. A third problem emerges when interventions take place in contexts that are not meaningfully connected to children's everyday lives (e.g., a laboratory at a university)—in the absence of structured guidance on how to apply information to other contexts. Again, such practices do not fully respect the reality of the embedded nature of bias in children's everyday experiences. A final problem is that these types of interventions often fail to set into motion processes and behaviors that are self-sustaining and enable bias reducing efforts to continue following the conclusion of the intervention sessions.

For an intervention approach to be practically effective in addressing children's social biases, the approach should meet a number of critical criteria. First, the approach should be embedded into children's social lives, across situations and over time. Understanding that young children spend most of their time at home, in school, or in organized activities (e.g., sports teams, dance groups, and structured after-school programs), it may be prudent to embed the intervention content in these contexts.

Second, the approach should capitalize on the reality that children look to trusted sources for guidance on what is appropriate behavior (Dore et al., 2019). This consideration suggests that it would be beneficial to work with parents, teachers, or coaches—trusted adults who interact with children over time and in contexts where children spend considerable time. These trusted adults can provide consistent messages regarding social groups and biases over time, provide guidance on how to address social biases in relevant social contexts, serve as role models for children to emulate, and monitor changes in children's behavior over time.

Third, the interventions should create opportunities for trusted adults to scaffold the learning of the intervention content and for children to practice what they have learned. For example, rather than simply reading a book about intergroup friendship, a promising intervention might involve helping children find opportunities to create and maintain positive relationships with outgroup members. Ideally, interventions would involve more than one trusted adult and be incorporated into multiple contexts to enhance the opportunity to provide consistent messages that apply broadly and over time.

Content Considerations

Beyond the structural considerations regarding how an intervention is delivered, careful attention must be paid to the content being delivered. It seems clear that successful interventions should capitalize on children's extraordinary learning skills and their keen interest in learning the ways to function most adaptively in the social world. But, beyond these suggestions, what should those hoping to reduce children's social biases say or ask children to do exactly? There are likely many useful approaches to reducing children's biases, and we do not think we have the best or only answer for what to say or do. Thus, rather than

prescribing particular content, below we have identified some potential pitfalls to be attended to when designing the content of interventions as well as some resources that could be consulted to guide the messaging and selection of specific strategies that can be woven into interventions.

Motivational Considerations

Interventions designed to address children's social biases are likely to provide content that runs counter to much of children's prior learning about social groups as well as their intuitions about "what is is what should be." In this regard, bias interventions effectively change the rules for what are appropriate ways to think and behave to function effectively in the social world. Learning new rules is hard and upending their typical way of thinking may not feel natural to children. Further, many children may feel they are functioning just fine as they are (especially members of high-status groups) and may not feel naturally motivated to change how they think and act toward members of other groups—especially if those changes are hard.

For these reasons, we offer two recommendations regarding the content of interventions: First, we recommend *explicit and consistent messaging* about social values relevant to biases—i.e., clearly communicated standards for children's behavior. Second, we recommend providing children with content about *why* they should care about biases. Such content could dovetail with issues children care about from a young age (e.g., being fair; Baillargeon et al., 2015, p. 2007; Dawes et al., 2007; Graham et al., 2013; Olson et al., 2011; Shaw & Olson, 2012) and introduce new motivational sources for children (e.g., a parent telling their child they would be proud if their child stood up to a racist bully at school). Taken together, these actions could set the foundation for children to develop their own values relevant to social biases (Hughes et al., 2016; Plant & Devine, 1998). When internalized, these values could be carried across situations and over time, and promote children's engagement in efforts to reduce intergroup biases in self-sustaining ways.

Adults May Need Training

A careful consideration of the literature focused on adults reveals additional potential pitfalls to address in developing bias intervention content for children. Although trusted adults are likely to be the most effective messengers of intervention content, they are not always willing or able to serve as interventionists delivering the intervention content. First, some adults are biased themselves and uninterested in equity values (Forscher et al., 2015); these people are unlikely to be effective at delivering bias-reduction content or serving as models. Second, even adults who are interested in equity are not always aware of children's biases (Pahlke et al., 2012; Scott et al., 2020a, 2023; J. Sullivan et al., 2021). Third, once adults are aware that children express social biases and become concerned about their effects as well as motivated to address such

biases, they need training in what to say or do (Scott et al., 2020b, 2023). The training should address two interrelated considerations.

First, many adults appear to have intuitions that sharing messages such as "everyone is the same," "be equal," or "race doesn't matter" are sufficient to convey both their values and how to treat others (Apfelbaum et al., 2012). These messages, however, fall short in eliminating social biases and in some cases exacerbate biases (Apfelbaum et al., 2008; Plaut et al., 2018). One reason they likely fall short is that the value messaging is general and not tied to clear, explicit, concrete behaviors to enact to achieve the goal. In addition, encouraging children to ignore race or social category membership denies the reality that people come from different social groups and that despite many people agreeing that all people should be treated equally, intergroup biases persist. We anticipate that successful interventions will require communicating values encouraging equality along with specific recommendations about what adults should attempt to teach children about social groups and social biases (e.g., what could be said, done, or modeled to achieve the overarching goal).

A second issue brought into sharp relief in this context is that being motivated to address children's social biases and having the efficacy to address biases are distinct. Even when motivated to address children's social biases, many adults report not knowing how to translate that intention into actions (Scott et al., 2020b), avoid addressing these issues directly (Pahlke et al., 2012; Rogers et al., 2024; J. Sullivan et al., 2021), or fail when they try to address these issues because they have not been trained adequately (Ülger et al., 2018; Vittrup & Holden, 2011; Vrdoljak et al., 2023). Successful interventions will need to address this lack of self-efficacy by training adults in how to deliver consistent and explicit messages about equality, how to model egalitarian behavior in effective ways, or have effective discussions with children about social groups and social biases. And, of course, this type of training must consider children's age to ensure the content and training opportunities are age appropriate (e.g., messaging for kindergarteners will likely differ dramatically from for messaging for adolescents). If the goal is to have adults serve as interventionists with children, it is important to provide them with the education and support needed to enable them to take effective action to address children's social biases.

Identifying Promising Content

As suggested throughout the discussion of structure and content considerations, interventions need to offer strategies that have the potential to counteract existing social biases and promote more inclusive, equitable behaviors. A potentially fruitful approach is to look to laboratory studies for ideas about strategies that could be integrated into intervention content for children of a particular age. Although most often laboratory studies are single session studies in which the impact of the intervention is assessed immediately, they provide proof of concept that these strategies *can* change children's social

biases—at least in the short term. For example, laboratory interventions have demonstrated that individuation—helping children differentiate outgroup members and learn individual characteristics about outgroup members—can reduce 5-to 6-year-old children's implicit racial biases (Qian et al., 2017). Other research has demonstrated that helping 8-to-13-year-old children engage in perspective-taking can reduce their tendency to provide more help to in-group members than to out-group members (Sierksma et al., 2015).

Laboratory studies are valuable because they can provide insights into the mechanisms through which change can be achieved and can serve as a testing ground for strategies during early stages of intervention development when researchers are unsure what the content should be. For example, for those interested in using storybooks to discuss bias with children, a laboratory study could help shed light on which storybooks invite the best discussions with children or result in the most robust changes on a bias measure (in the short term). Of course, interventionists, while building on the literature on what strategies have produced short-term change in the laboratory, should be mindful that some strategies may not be effective or may require more repetition in the real-world when competing with all of the other messages children are receiving. Additionally, some approaches may not show immediate effects but may have effects that emerge over time (Cook et al., 2014). For this reason, the field needs both short-term laboratory studies as well as larger-scale longitudinal intervention studies, as a part of its toolkit.

Laboratory studies also typically examine the effects of a single method (e.g., counterstereotyping, perspective-taking, evaluative conditioning) on a central outcome of interest (e.g., stereotyping, play preferences, group attitudes) under highly controlled conditions. The everyday contexts in which intergroup biases are expressed are considerably more complex, and interventionists should recognize the possibility that strategies that are shown to be effective in the lab may not survive the transition to the natural context or may need to be tweaked for application to everyday settings. Moreover, because no one method is likely to apply to every situation and intergroup biases manifest in various ways in natural contexts, successful interventions will likely need to incorporate multiple strategies that may have synergistic effects to afford the best chance to create meaningful changes in intergroup biases across situations and over time.

Assessment Considerations

Interventions are valuable only insofar as they yield intended effects. As such, careful attention is needed in identifying the outcomes on which the efficacy of the intervention is to be evaluated. We suggest that all interventions should start with a clear analysis of the problem the intervention should alleviate. In the present context, interventions are designed to reduce children's social biases. Note, however, that we have used the term "social biases" as an umbrella term that encompasses the types of outcomes for which there are frequently observed patterns of favoring one's own group over others attitudinally or behaviorally

(Shutts et al., 2013), stereotyping of outgroup members (Pauker et al., 2010), excluding outgroup members from activities (Abrams & Killen, 2014), among others. Selecting outcomes for evaluating the efficacy of an intervention is complex when social biases manifest in a variety of ways. As such, chief among assessment considerations is the selection of the outcome or outcomes targeted for change in the intervention. These assessment considerations must be considered in tandem with intervention development as assessment is inextricably linked to the content of the intervention.

Beyond tying the outcomes to the intervention content, useful measures would be those on which bias has been established previously, especially measures that predict behavior in the real world. Relatedly, in choosing both outcomes and measures, we suggest carefully considering capturing the type of behavior that would meaningfully impact targets of bias. A feeling measured in the laboratory that does not relate to anything or anyone outside the laboratory is likely not worth targeting in an intervention (Brauer, 2024). Finally, picking up on points made earlier about the utility of longitudinal studies, the most effective assessments of bias intervention approaches will necessarily involve measurement over time with measures that have good test-retest reliability— and assess outcomes across situations to examine the generalizability of the intervention's effects (see Devine & Ash, 2022 and Moss-Racusin et al., 2014 for a deeper analysis of design and assessment considerations in interventions developed to address social biases in adults; their recommendations also apply to interventions with children).

Promising Interventions

To make the suggestions in the previous section more concrete, here we highlight two interventions that incorporate some of the structural, content, and assessment consideration we outlined above. Though neither of the interventions include every suggestion we advanced, each of these interventions shows some promise for effectively addressing children's social biases.

Parent-Led Intervention

We begin by highlighting our own intervention approach that was designed to engage White United States parents in efforts to address race and racial biases with their 5-to-7-year-old children (Scott et al., 2024; see also Devine et al., 2012 for a similar theoretical approach for addressing adults' racial biases). Our program—Empowering Behaviors to Address Race with Kids (EmBARK)—was designed to address several core problems: (1) White children express racial biases starting around age five; (2) White parents are unaware of and unconcerned about their children's racial biases; (3) White parents do not know how to address race with their children; (4) As a result, White parents typically do not address race and racial biases with their children (Hailey & Olson, 2013; Hoffman et al., 2019; Pahlke et al., 2012; Scott et al.,

2020b, 2023; Shutts, 2015; Skinner & Meltzoff, 2019; Vittrup & Holden, 2011). In developing EmBARK, we identified an opportunity to engage children's trusted sources—in this case, parents—in efforts to address race and racial biases with their children across situations and over time. To do so, we reasoned that we would have to increase parents' awareness of, concern about, and motivation to address children's biases. Moreover, we anticipated the need for providing parents with strategies for addressing race and racial biases with their children that could be embedded into children's everyday lives, across situations and over time.

To fulfill these goals, EmBARK begins with an educational training session for parents that motivates and trains parents on serving as interventionists. Parents first learn about the nature, prevalence, and consequences of children's racial biases. Throughout this section of the program, parents learn about children's remarkable learning capacities and how these capacities lead children to develop social biases. This section is designed to motivate parents to counteract the biased information that children learn from many sources. This approach increases White parents' awareness of children's racial biases, concern about children's racial biases, and motivation to address children's racial biases (Scott et al., 2023, 2024).

Following the information about children's racial biases, EmBARK provides training on how to address race and racial biases with their children. This section of the training program is designed to foster self-efficacy for parents and to provide strategies for addressing race with children. The strategies provided were drawn from the literature and have been shown to provide short-term bias reducing effects in laboratory studies. Because bias manifests in a variety of ways, EmBARK provides parents with multiple bias-reduction strategies that could be implemented in different settings over time and provides parents with examples of how the strategies can be embedded into children's everyday lives. Some of the strategies also promote curiosity about race and diversity, some explicitly teach children about the importance of diversity and inclusion, and some provide explicit messaging about parents' values. To create natural opportunities for parents to practice the strategies with their children in a familiar context, parents are asked to practice each strategy with their children for two weeks while reading storybooks about race and racial bias, doing activities about race or racial bias, and while engaging in their daily lives.

As an illustrative example, one of the strategies focuses on intergroup contact. During the educational training session, parents learn the logic for why intergroup contact works, different situations in which intergroup contact can be applied, and are given suggestions for how to provide opportunities for intergroup contact for their child. To help parents practice this strategy with their children in their own homes, parents are sent storybooks featuring children of color and interracial friendships. Throughout the storybooks, parents are provided with discussion prompts to explicitly address interracial contact and friendships with their children. Parents are also provided with a hands-on activity that encourages their child to imagine having intergroup friendships

(Stathi et al., 2014). Following some initial practice, parents are provided with concrete suggestions for helping their child engage in intergroup contact with people at school, in their neighborhood, and in their community. Together, these steps provide opportunities to practice the strategy over time, embed the strategy into children's lives, promote curiosity about outgroup members, and explicitly share parents' values surrounding interracial friendships.

EmBARK is still in the early phases of testing, but a preliminary evaluation of the program provides hope for the efficacy of EmBARK. Following our assessment recommendations, we evaluated the extent to which EmBARK led to change on target outcomes critical to parents serving as interventionists with their children (e.g., awareness of children's biases, self-efficacy to address children's biases). Specifically, we found that compared to those in a control condition, parents who participated in EmBARK addressed race and racial biases in deep and meaningful ways and showed increases in concern about and self-efficacy to address children's racial biases (Scott et al., 2023, 2024). In ongoing research, we are evaluating the impact of EmBARK on children's racial biases across time and contexts.

Teacher-Led Intervention

Another promising intervention for addressing children's social biases with children a bit older than those targeted in the EmBARK program is the Developing Inclusive Youth (DIY) program (Killen et al., 2022). DIY was designed to address two core problems: (1) children express prejudice; and (2) children have trouble recognizing inequitable treatment of others—particularly pertaining to social exclusion of social outgroup members. To address these two problems, DIY leverages the assistance of trusted adults—in this case, teachers—to implement an intervention that helps 8- to 11-year-old children detect inequitable treatment of others, engage in inclusive ways, and reject discrimination across different situations and over the course of many weeks.

Similar to in EmBARK, teachers first complete a workshop that teaches them about children's social biases and provides guidance on how to facilitate conversations about inclusivity and discrimination with children. In addition to the workshop, teachers receive an extensive teachers' manual and weekly discussion guides. These materials help teachers become well-trained interventionists who are prepared to address social inequality with their students. During the training, teachers learn multiple strategies to help reduce children's biases and to help children recognize social inequity: direct intergroup contact, indirect intergroup contact, and standing up to bias (i.e., explicit messages about how bias is wrong and what you can do about it). These strategies have demonstrated short-term efficacy in previous research and provide very explicit messaging to children about what is right and wrong (e.g., Gaias et al., 2018; Johnson & Aboud, 2017; Turner & Cameron, 2016).

Over the course of eight weeks, children complete a web-based curriculum that introduces topics of inclusivity and discrimination and presents examples

of indirect intergroup contact. Each week, teachers discuss the curriculum with children in the class and help children practice recognizing situations in which inclusivity and standing up to discrimination could be important in their own lives—in other words, teachers help embed the intervention content into children's everyday circumstances. Through the curriculum and discussions, children are learning values about egalitarianism and inclusivity that can lead to self-sustaining behaviors to address biases beyond the conclusion of the intervention program.

The DIY program was evaluated in a multi-site randomized controlled trial in 48 classrooms. Given that a core focus of DIY was helping children identify inequitable treatment of others, a core outcome measure focused on children's evaluation of intergroup social exclusion. Additionally, the researchers measured children's trait attributions, competency beliefs, and reported play with people of different racial and gender backgrounds. Each of these outcomes was theorized to change as a function of intergroup contact experiences during DIY. In comparison to a control condition, children in the DIY program were more likely to disapprove of discrimination, ascribed more positive traits to outgroup members, and reported more intergroup friendships. Future research will be needed to evaluate the longevity of DIY effects.

Both EmBARK and DIY, interventions that follow many of the structural, content, and assessment considerations outlined in the previous sections, show promise for addressing children's social biases. Each intervention is embedded in children's natural habitats (i.e., home and school) and involves trusted adults as interventionists. The adults are provided with training on how to provide explicit and consistent messaging about social groups and social biases and how to provide children with scaffolded guidance on how to behave in fair and equitable ways. And, each intervention assesses outcomes that are important to evaluating the efficacy of the intervention. Building on additional suggestions above, as well as the initial promise of these two intervention approaches, future work might assess the utility of an intervention that works with children both in the home and at school (i.e., across contexts).

Conclusion

Returning to where we started, we note optimism about the potential to "straighten the twig" when interventionists seriously consider the depth of the problem of children's social biases. In the past few decades, we have witnessed enormous growth in our knowledge about children's learning and social development and in our methodological toolkit for addressing children's social biases. These advances create a strong foundation upon which interventionists can build when designing interventions that address the embedded nature of social biases in the world and in children's minds in the service of enacting meaningful, self-sustained change. Research of this type is still nascent, and, as the field advances, we hope to see researchers bringing together different approaches to addressing children's social biases. We eagerly await the

outcomes of approaches similar to what we have proposed here, as well as new and different approaches from other researchers.

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References

Aboud, F. E., & Levy, S. R. (2000). Interventions to reduce prejudice and discrimination in children and adolescents. In S. Oskamp (Ed.), *Reducing prejudice and discrimination* (pp. 269–295). Lawrence Erlbaum Associates.

Aboud, F. E., Tredoux, C., Tropp, L. R., Brown, C. S., Niens, U., & Noor, N. M. (2012). Interventions to reduce prejudice and enhance inclusion and respect for ethnic differences in early childhood: A systematic review. *Developmental Review*, *32*(4), 307–336. https://doi.org/10.1016/j.dr.2012.05.001

Abrams, D., & Killen, M. (2014). Social exclusion of children: Developmental origins of prejudice: social exclusion and children. *Journal of Social Issues*, *70*(1), 1–11. https://doi.org/10.1111/josi.12043

Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.

Apfelbaum, E. P., Norton, M. I., & Sommers, S. R. (2012). Racial color blindness: Emergence, practice, and implications. *Current Directions in Psychological Science*, *21*(3), 205–209. https://doi.org/10.1177/0963721411434980

Apfelbaum, E. P., Sommers, S. R., & Norton, M. I. (2008). Seeing race and seeming racist? Evaluating strategic colorblindness in social interaction. *Journal of Personality and Social Psychology*, *95*(4), 918–932. https://doi.org/10.1037/a0011990

Baillargeon, R., Scott, R. M., He, Z., Sloane, S., Setoh, P., Jin, K., Wu, D., & Bian, L. (2015). Psychological and sociomoral reasoning in infancy. In *APA handbook of personality and social psychology, Volume 1: Attitudes and social cognition* (pp. 79–150). American Psychological Association. https://doi.org/10.1037/14341-003

Beelmann, A., & Heinemann, K. S. (2014). Preventing prejudice and improving intergroup attitudes: A meta-analysis of child and adolescent training programs. *Journal of Applied Developmental Psychology*, *35*(1), 10–24. https://doi.org/10.1016/j.appdev.2013.11.002

Begus, K., & Southgate, V. (2018). Curious learners: How infants' motivation to learn shapes and is shaped by infants' interactions with the social world. In M. M. Saylor & P. A. Ganea (Eds.), *Active Learning from Infancy to Childhood* (pp. 13–37). Springer International Publishing. https://doi.org/10.1007/978-3-319-77182-3_2

Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *American Economic Review*, *94*, 991–1013. https://doi.org/10.1257/0002828042002561

Birnbaum, D., Deeb, I., Segall, G., Ben-Eliyahu, A., & Diesendruck, G. (2010). The development of social essentialism: The case of Israeli children's inferences about Jews and Arabs. *Child Development*, *81*(3), 757–777. https://doi.org/10.1111/j.1467-8624.2010.01432.x

Blakemore, J. E. O. (2003). Children's beliefs about violating gender norms: Boys shouldn't look like girls, and girls shouldn't act like boys. *Sex Roles*, *48*(9/10), 411–419. https://doi.org/10.1023/A:1023574427720

Block, K., Gonzalez, A. M., Choi, C. J. X., Wong, Z. C., Schmader, T., & Baron, A. S. (2022). Exposure to stereotype-relevant stories shapes children's implicit gender stereotypes. *PLOS ONE*, *17*(8), e0271396. https://doi.org/10.1371/journal.pone.0271396

Brauer, M. (2024). Stuck on intergroup attitudes: The need to shift gears to change intergroup behaviors. *Perspectives on Psychological Science*, *19*(1), 280–294. https://doi.org/10.1177/17456916231185775

Bridgers, S., Buchsbaum, D., Seiver, E., Griffiths, T. L., & Gopnik, A. (2016). Children's causal inferences from conflicting testimony and observations. *Developmental Psychology*, *52*(1), 9–18. https://doi.org/10.1037/a0039830

Carter, R. T., Lau, M. Y., Johnson, V., & Kirkinis, K. (2017). Racial discrimination and health outcomes among racial/ethnic minorities: A meta-analytic review. *Journal of Multicultural Counseling and Development*, *45*(4), 232–259. https://doi.org/10.1002/jmcd.12076

Castelli, L., De Dea, C., & Nesdale, D. (2008). Learning social attitudes: Children's sensitivity to the nonverbal behaviors of adult models during interracial interactions. *Personality and Social Psychology Bulletin*, *34*(11), 1504–1513. https://doi.org/10.1177/0146167208322769

Castelli, L., Zogmaister, C., & Tomelleri, S. (2009). The transmission of racial attitudes within the family. *Developmental Psychology*, *45*(2), 586–591. https://doi.org/10.1037/a0014619

Cave, L., Cooper, M. N., Zubrick, S. R., & Shepherd, C. C. J. (2020). Racial discrimination and child and adolescent health in longitudinal studies: A systematic review. *Social Science & Medicine*, *250*, 112864. https://doi.org/10.1016/j.socscimed.2020.112864

Cook, J. E., Purdie-Vaughns, V., Meyer, I. H., & Busch, J. T. A. (2014). Intervening within and across levels: A multilevel approach to stigma and public health. *Social Science & Medicine*, *103*, 101–109. https://doi.org/10.1016/j.socscimed.2013.09.023

Corriveau, K., & Harris, P. L. (2009). Choosing your informant: Weighing familiarity and recent accuracy. *Developmental Science*, *12*(3), 426–437. https://doi.org/10.1111/j.1467-7687.2008.00792.x

Dawes, C. T., Fowler, J. H., Johnson, T., McElreath, R., & Smirnov, O. (2007). Egalitarian motives in humans. *Nature*, *446*(7137), 794–796. https://doi.org/10.1038/nature05651

Del Toro, J., Hughes, D., & Way, N. (2021). Inter-relations between ethnic-racial discrimination and ethnic-racial identity among early adolescents. *Child Development*, *92*(1), e106–e125. https://doi.org/10.1111/cdev.13424

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Attitudes and Social Cognition*, *56*(1), 5–18. https://doi.org/10.1037/0022-3514.56.1.5

Devine, P. G., & Ash, T. L. (2022). Diversity training goals, limitations, and promise: A review of the multidisciplinary literature. *Annual Review of Psychology*, *73*(1), 403–429. https://doi.org/10.1146/annurev-psych-060221-122215

Devine, P. G., Ash, T. L., & Scott, K. E. (2024). Prejudice reduction. In D. T. Gilbert, S. T. Fiske, E. Finkel, & W. B. Mendes (Eds.), *Handbook of Social Psychology* (6th ed.). Situational Press.

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/10.1016/j.jesp.2012.06.003

Diesendruck, G., Goldfein-Elbaz, R., Rhodes, M., Gelman, S., & Neumark, N. (2013). Cross-cultural differences in children's beliefs about the objectivity of social categories. *Child Development*, *84*(6), 1906–1917. psyh. https://doi.org/10.1111/cdev.12108

Di Giorgio, E., Turati, C., Altoè, G., & Simion, F. (2012). Face detection in complex visual displays: An eye-tracking study with 3- and 6-month-old infants and adults. *Journal of Experimental Child Psychology*, *113*(1), 66–77. https://doi.org/10.1016/j.jecp.2012.04.012

Dore, R. A., Woolley, J. D., & Hixon, J. G. (2019). "I believe in cusk": The effect of explicit belief statements on children's reality status judgments and beliefs about consensus. *Journal of Cognition and Development*, *20*(1), 35–55. https://doi.org/10.1080/15248372.2018.1545657

Dore, R. A., Woolley, J., Nissel, J., & Hixon, J. G. (2023). Never trust a stranger: Effects of explicit belief statements from strangers on children's reality status beliefs and beliefs about consensus. *British Journal of Developmental Psychology*, *41*(2), 117–127. https://doi.org/10.1111/bjdp.12437

Eberhardt, J. L., Davies, P. G., Purdie-Vaughns, V. J., & Johnson, S. L. (2006). Looking deathworthy: Perceived stereotypicality of Black defendants predicts capital-sentencing outcomes. *Psychological Science*, *17*(5), 383–386. https://doi.org/10.1111/j.1467-9280.2006.01716.x

Enright, E. A., Alonso, D. J., Lee, B. M., & Olson, K. R. (2020). Children's understanding and use of four dimensions of social status. *Journal of Cognition and Development*, *21*(4), 573–602. https://doi.org/10.1080/15248372.2020.1797745

Finiasz, Z., Gelman, S. A., & Kushnir, T. (2024). Testimony and observation of statistical evidence interact in adults' and children's category-based induction. *Cognition*, *244*, 105707. https://doi.org/10.1016/j.cognition.2023.105707

Forscher, P. S., Cox, W. T. L., Graetz, N., & Devine, P. G. (2015). The motivation to express prejudice. *Journal of Personality and Social Psychology*, *109*(5), 791–812. https://doi.org/10.1037/pspi0000030

Foster-Hanson, E., & Rhodes, M. (2019). Normative social role concepts in early childhood. *Cognitive Science*, *43*(8), e12782. https://doi.org/10.1111/cogs.12782

Frank, M. C., Vul, E., & Johnson, S. P. (2009). Development of infants' attention to faces during the first year. *Cognition*, *110*(2), 160–170. https://doi.org/10.1016/j.cognition.2008.11.010

Gaias, L. M., Gal, D. E., Abry, T., Taylor, M., & Granger, K. L. (2018). Diversity exposure in preschool: Longitudinal implications for cross-race friendships and racial bias. *Journal of Applied Developmental Psychology*, *59*, 5–15. https://doi.org/10.1016/j.appdev.2018.02.005

Galvan, M. J., Alvarez, G. M., Cipolli, W., Cooley, E., Muscatell, K., & Payne, K. (2022). *Is discrimination widespread or concentrated? Evaluating the distribution of hiring and housing discrimination against Black Americans* [Preprint]. PsyArXiv. https://doi.org/10.31234/osf.io/sxeg4

Graham, J., Haidt, J., Koleva, S., Motyl, M., Iyer, R., Wojcik, S. P., & Ditto, P. H. (2013). Moral foundations theory: The pragmatic validity of moral pluralism. In P. G. Devine & A. Plant (Eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 55–130). Academic Press. https://doi.org/10.1016/B978-0-12-407236-7.00002-4

Green, A. R., Carney, D. R., Pallin, D. J., Ngo, L. H., Raymond, K. L., Iezzoni, L. I., & Banaji, M. R. (2007). Implicit bias among physicians and its prediction of thrombolysis decisions for Black and White patients. *Journal of General Internal Medicine*, *22*(9), 1231–1238. https://doi.org/10.1007/s11606-007-0258-5

Hailey, S. E., & Olson, K. R. (2013). A social psychologist's guide to the development of racial attitudes: The development of racial attitudes. *Social and Personality Psychology Compass*, *7*(7), 457–469. https://doi.org/10.1111/spc3.12038

Harris, P. L. (2012). *Trusting what you're told: How children learn from others*. Harvard University Press.

Harris, P. L., & Corriveau, K. H. (2011). Young children's selective trust in informants. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *366*(1567), 1179–1187. https://doi.org/10.1098/rstb.2010.0321

439

Harris, P. L., Corriveau, K. H., Pasquini, E. S., Koenig, M. A., Fusaro, M., & Clément, F. (2012). Credulity and the development of selective trust in early childhood. In M. J. Beran (Ed.), *Foundations of metacognition* (1st ed, pp. 193–210). Oxford University Press.

Harris, P. L., Koenig, M. A., Corriveau, K. H., & Jaswal, V. K. (2018). Cognitive foundations of learning from testimony. *Annual Review of Psychology*, *69*(1), 251–273. https://doi.org/10.1146/annurev-psych-122216-011710

Hermansen, T. K., Ronfard, S., Harris, P. L., & Zambrana, I. M. (2021). Preschool children rarely seek empirical data that could help them complete a task when observation and testimony conflict. *Child Development*, *92*(6), 2546–2562. https://doi.org/10.1111/cdev.13612

Hirschfeld, L. A. (1998). *Race in the making: Cognition, culture, and the child's construction of human kinds* (1. paperback ed). MIT Press.

Hoffman, A. J., Rivas-Drake, D., Settles, I. H., Brassel, S. T., & Pinetta, B. J. (2019). Ethnic and racial prejudice across the life span. In H. E. Fitzgerald, D. J. Johnson, D. B. Qin, F. A. Villarruel, & J. Norder (Eds.), *Handbook of children and prejudice* (pp. 23–41). Springer International Publishing. https://doi.org/10.1007/978-3-030-12228-7_2

Horwitz, S. R., Shutts, K., & Olson, K. R. (2014). Social class differences produce social group preferences. *Developmental Science*, *17*(6), 991–1002. https://doi.org/10.1111/desc.12181

Hughes, J. M., Alo, J., Krieger, K., & O'Leary, L. M. (2016). Emergence of internal and external motivations to respond without prejudice in White children. *Group Processes & Intergroup Relations*, *19*(2), 202–216. https://doi.org/10.1177/1368430215603457

Hurd, N. M., Trawalter, S., Jakubow, A., Johnson, H. E., & Billingsley, J. T. (2022). Online racial discrimination and the role of white bystanders. *American Psychologist*, *77*(1), 39–55. https://doi.org/10.1037/amp0000603

Johnson, P. J., & Aboud, F. E. (2017). Evaluation of an intervention using cross-race friend storybooks to reduce prejudice among majority race young children. *Early Childhood Research Quarterly*, *40*, 110–122. https://doi.org/10.1016/j.ecresq.2017.02.003

Jones, S. S. (2007). Imitation in infancy: The development of mimicry. *Psychological Science*, *18*(7), 593–599. https://doi.org/10.1111/j.1467-9280.2007.01945.x

Kalish, C. W. (2012). Generalizing norms and preferences within social categories and individuals. *Developmental Psychology*, *48*(4), 1133–1143. https://doi.org/10.1037/a0026344

Katz, P. A. (1976a). Attitude change in children: Can the twig be straightened? In *Towards the elimination of racism* (pp. 213–241). Elsevier. https://doi.org/10.1016/B978-0-08-018316-9.50015-1

Katz, P. A. (1976b). The acquisition of racial attitudes in children. In *Towards the Elimination of Racism* (pp. 125–154). Elsevier. https://doi.org/10.1016/B978-0-08-018316-9.50012-6

Katz, P. A. (2003). Phyllis A. Katz: Award for distinguished senior career contributions to the public interest. *American Psychologist*, *58*(11), 897–909. https://doi.org/10.1037/0003-066X.58.11.897a

Killen, M., Burkholder, A. R., D'Esterre, A. P., Sims, R. N., Glidden, J., Yee, K. M., Luken Raz, K. V., Elenbaas, L., Rizzo, M. T., Woodward, B., Samuelson, A., Sweet, T. M., & Stapleton, L. M. (2022). Testing the effectiveness of the Developing Inclusive Youth program: A multisite randomized control trial. *Child Development*, *93*(3), 732–750. https://doi.org/10.1111/cdev.13785

Kinzler, K. D., Corriveau, K. H., & Harris, P. L. (2011). Children's selective trust in native-accented speakers: Selective trust in native-accented speakers. *Developmental Science*, *14*(1), 106–111. https://doi.org/10.1111/j.1467-7687.2010.00965.x

Kwon, M.-K., Setoodeh, M., & Oakes, L. (2013). Infants prefer faces to non-faces but their face processing is not always automatic. *Journal of Vision*, *13*(9), 284–284. https://doi.org/10.1167/13.9.284

Lamer, S. A., Dvorak, P., Biddle, A. M., Pauker, K., & Weisbuch, M. (2022). The transmission of gender stereotypes through televised patterns of nonverbal bias. *Journal of Personality and Social Psychology*, *123*(6), 1315–1335. https://doi.org/10.1037/pspi0000390

Levy, G. D., Taylor, M. G., & Gelman, S. A. (1995). Traditional and evaluative aspects of flexibility in gender roles, social conventions, moral rules, and physical laws. *Child Development*, *66*(2), 515. https://doi.org/10.2307/1131594

Li, P. H., Harris, P. L., & Koenig, M. A. (2019). The role of testimony in children's moral decision making: Evidence from China and United States. *Developmental Psychology*, *55*(12), 2603–2615. https://doi.org/10.1037/dev0000839

Li, P. H., & Koenig, M. A. (2022). The roles of group membership and social exclusion in children's testimonial learning. *Journal of Experimental Child Psychology*, *216*, 105342. https://doi.org/10.1016/j.jecp.2021.105342

Liberman, Z., Kinzler, K. D., & Woodward, A. L. (2014). Friends or foes: Infants use shared evaluations to infer others' social relationships. *Journal of Experimental Psychology: General*, *143*(3), 966–971. https://doi.org/10.1037/a0034481

Liberman, Z., Kinzler, K. D., & Woodward, A. L. (2018). The early social significance of shared ritual actions. *Cognition*, *171*, 42–51. https://doi.org/10.1016/j.cognition.2017.10.018

Mandalaywala, T. M., Tai, C., & Rhodes, M. (2020). Children's use of race and gender as cues to social status. *PLOS ONE*, *15*(6), e0234398. https://doi.org/10.1371/journal.pone.0234398

Marcelo, A. K., & Yates, T. M. (2019). Young children's ethnic–racial identity moderates the impact of early discrimination experiences on child behavior problems. *Cultural Diversity and Ethnic Minority Psychology*, *25*(2), 253–265. https://doi.org/10.1037/cdp0000220

McKeown, S., Williams, A., & Pauker, K. (2017). Stories that move them: Changing children's behaviour toward diverse peers. *Journal of Community & Applied Social Psychology*, *27*(5), 381–387. https://doi.org/10.1002/casp.2316

Meltzoff, A. N., & Moore, M. K. (1989). Imitation in newborn infants: Exploring the range of gestures imitated and the underlying mechanisms. *Developmental Psychology*, *25*(6), 954–962. https://doi.org/10.1037/0012-1649.25.6.954

Moss-Racusin, C. A., van der Toorn, J., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2014). Scientific diversity interventions. *Science*, *343*(6171), 615–616. https://doi.org/10.1126/science.1245936

Nosek, B. A., Smyth, F. L., Hansen, J. J., Devos, T., Lindner, N. M., Ranganath, K. A., Smith, C. T., Olson, K. R., Chugh, D., Greenwald, A. G., & Banaji, M. R. (2007). Pervasiveness and correlates of implicit attitudes and stereotypes. *European Review of Social Psychology*, *18*(1), 36–88. https://doi.org/10.1080/10463280701489053

Okonofua, J. A., & Eberhardt, J. L. (2015). Two strikes: Race and the disciplining of young students. *Psychological Science*, *26*(5), 617–624. https://doi.org/10.1177/0956797615570365

Olson, K. R., Dweck, C. S., Spelke, E. S., & Banaji, M. R. (2011). Children's responses to group-based inequalities: Perpetuation and rectification. *Social Cognition*, *29*(3), 270–287. https://doi.org/10.1521/soco.2011.29.3.270

Pahlke, E., Bigler, R. S., & Suizzo, M.-A. (2012). Relations between colorblind socialization and children's racial bias: Evidence from European American mothers and their preschool children. *Child Development*, *83*(4), 1164–1179. https://doi.org/10.1111/j.1467-8624.2012.01770.x

441

Pauker, K., Ambady, N., & Apfelbaum, E. P. (2010). Race salience and essentialist thinking in racial stereotype development: Racial stereotype development. *Child Development*, *81*(6), 1799–1813. https://doi.org/10.1111/j.1467-8624.2010.01511.x

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

Plaut, V. C., Thomas, K. M., Hurd, K., & Romano, C. A. (2018). Do color blindness and multiculturalism remedy or foster discrimination and racism? *Current Directions in Psychological Science*, *27*(3), 200–206. https://doi.org/10.1177/0963721418766068

Powell, L. J. (2022). Adopted utility calculus: Origins of a concept of social affiliation. *Perspectives on Psychological Science*, *17*(5), 1215–1233. https://doi.org/10.1177/17456916211048487

Powell, L. J., & Spelke, E. S. (2013). Preverbal infants expect members of social groups to act alike. *Proceedings of the National Academy of Sciences*, *110*(41). https://doi.org/10.1073/pnas.1304326110

Powell, L. J., & Spelke, E. S. (2018). Human infants' understanding of social imitation: Inferences of affiliation from third party observations. *Cognition*, *170*, 31–48. https://doi.org/10.1016/j.cognition.2017.09.007

Qian, M. K., Quinn, P. C., Heyman, G. D., Pascalis, O., Fu, G., & Lee, K. (2017). Perceptual individuation training (but not mere exposure) reduces implicit racial bias in preschool children. *Developmental Psychology*, *53*(5), 845–859. https://doi.org/10.1037/dev0000290

Rhodes, M., & Baron, A. (2019). The development of social categorization. *Annual Review of Developmental Psychology*, *1*(1), 359–386. https://doi.org/10.1146/annurev-devpsych-121318-084824

Rhodes, M., & Gelman, S. A. (2009). A developmental examination of the conceptual structure of animal, artifact, and human social categories across two cultural contexts. *Cognitive Psychology*, *59*(3), 244–274. https://doi.org/10.1016/j.cogpsych.2009.05.001

Rhodes, M., Hetherington, C., Brink, K., & Wellman, H. M. (2015). Infants' use of social partnerships to predict behavior. *Developmental Science*, *18*(6), 909–916. https://doi.org/10.1111/desc.12267

Rizzo, M. T., Britton, T. C., & Rhodes, M. (2022). Developmental origins of anti-Black bias in White children in the United States: Exposure to and beliefs about racial inequality. *Proceedings of the National Academy of Sciences*, *119*(47), e2209129119. https://doi.org/10.1073/pnas.2209129119

Roberts, S. O. (2022). Descriptive-to-prescriptive (D2P) reasoning: An early emerging bias to maintain the status quo. *European Review of Social Psychology*, *33*(2), 289–322. https://doi.org/10.1080/10463283.2021.1963591

Roberts, S. O., Gelman, S. A., & Ho, A. K. (2017). So it is, so it shall be: Group regularities license children's prescriptive judgments. *Cognitive Science*, *41*, 576–600. https://doi.org/10.1111/cogs.12443

Roberts, S. O., Guo, C., Ho, A. K., & Gelman, S. A. (2018). Children's descriptive-to-prescriptive tendency replicates (and varies) cross-culturally: Evidence from China. *Journal of Experimental Child Psychology*, *165*, 148–160. https://doi.org/10.1016/j.jecp.2017.03.018

Roberts, S. O., Ho, A. K., & Gelman, S. A. (2017). Group presence, category labels, and generic statements influence children to treat descriptive group regularities as prescriptive. *Journal of Experimental Child Psychology*, *158*, 19–31. https://doi.org/10.1016/j.jecp.2016.11.013

Roberts, S. O., Ho, A. K., & Gelman, S. A. (2021). Should individuals think like their group? A descriptive-to-prescriptive tendency toward group-based beliefs. *Child Development*, *92*(2), e201–e220. https://doi.org/10.1111/cdev.13448

Rogers, L. O., Scott, K. E., Wintz, F., Eisenman, S. R., Dorsi, C., Chae, D., & Meltzoff, A. N. (2024). Exploring whether and how Black and White parents talk with their children about race: M(ai)cro race conversations about Black Lives Matter. *Developmental Psychology*. https://doi.org/10.1037/dev0001693

Rutland, A., & Killen, M. (2015). A developmental science approach to reducing prejudice and social exclusion: Intergroup processes, social-cognitive development, and moral reasoning. *Social Issues and Policy Review*, *9*(1), 121–154. https://doi.org/10.1111/sipr.12012

Savenye, W. C. (1990). Role models and student attitudes toward nontraditional careers. *Educational Technology Research and Development*, *38*(3), 5–13. https://doi.org/10.1007/BF02298177

Scott, K. E., Ash, T. L., Immel, B., Liebeck, M. A., Devine, P. G., & Shutts, K. (2023). Engaging White parents to address their White children's racial biases in the Black-White context. *Child Development*, *94*(1), 74–92. https://doi.org/10.1111/cdev.13840

Scott, K. E., Huth, N., Fukuda, E., Shutts, K., & Devine, P. G. (2024). Empowering Behaviors to Address Race with Kids (EmBARK): Development and efficacy of a racial socialization program for White families. *Journal for Applied Developmental Psychology, 94*, 101696. https://doi.org/10.1016/j.appdev.2024.101696

Scott, K. E., Shutts, K., & Devine, P. G. (2020a). Parents' expectations for and reactions to children's racial biases. *Child Development*, *91*(3), 769–783. https://doi.org/10.1111/cdev.13231

Scott, K. E., Shutts, K., & Devine, P. G. (2020b). Parents' role in addressing children's racial bias: The case of speculation without evidence. *Perspectives on Psychological Science*, *15*(5), 1178–1186. https://doi.org/10.1177/1745691620927702

Shaw, A., & Olson, K. R. (2012). Children discard a resource to avoid inequity. *Journal of Experimental Psychology: General*, *141*(2), 382–395. https://doi.org/10.1037/a0025907

Shutts, K. (2015). Young children's preferences: Gender, race, and social status. *Child Development Perspectives*, *9*(4), 262–266. https://doi.org/10.1111/cdep.12154

Shutts, K., Brey, E. L., Dornbusch, L. A., Slywotzky, N., & Olson, K. R. (2016). Children use wealth cues to evaluate others. *PLoS ONE*, *11*(3). https://doi.org/10.1371/journal.pone.0149360

Shutts, K., & Kalish, C. W. (2021). Intuitive sociology. In *Advances in child development and behavior* (Vol. 61, pp. 335–374). Elsevier Ltd.

Shutts, K., Roben, C. K. P., & Spelke, E. S. (2013). Children's use of social categories in thinking about people and social relationships. *Journal of Cognition and Development*, *14*(1), 35–62. https://doi.org/10.1080/15248372.2011.638686

Sierksma, J., Brey, E., & Shutts, K. (2022). Racial stereotype application in 4-to-8-year-old White American children: Emergence and specificity. *Journal of Cognition and Development*, *23*(5), 660–685. https://doi.org/10.1080/15248372.2022.2090945

Sierksma, J., Thijs, J., & Verkuyten, M. (2015). In-group bias in children's intention to help can be overpowered by inducing empathy. *British Journal of Developmental Psychology*, *33*(1), 45–56. https://doi.org/10.1111/bjdp.12065

Simons, R. L., Murry, V., Mcloyd, V., Lin, K.-H., Cutrona, C., & Conger, R. D. (2002). Discrimination, crime, ethnic identity, and parenting as correlates of depressive symptoms among African American children: A multilevel analysis. *Development and Psychopathology*, *14*(2), 371–393. https://doi.org/10.1017/S0954579402002109

Skinner, A. L., & Meltzoff, A. N. (2019). Childhood experiences and intergroup biases among children. *Social Issues and Policy Review*, *13*(1), 211–240. https://doi.org/10.1111/sipr.12054

Skinner, A. L., Meltzoff, A. N., & Olson, K. R. (2017). "Catching" social bias: Exposure to biased nonverbal signals creates social biases in preschool children. *Psychological Science*, *28*(2), 216–224. https://doi.org/10.1177/0956797616678930

443

Stathi, S., Cameron, L., Hartley, B., & Bradford, S. (2014). Imagined contact as a prejudice-reduction intervention in schools: The underlying role of similarity and attitudes. *Journal of Applied Social Psychology*, 44(8), 536–546. https://doi.org/10.1111/jasp.12245

Striano, T., & Rochat, P. (2000). Emergence of selective social referencing in infancy. *Infancy*, 1(2), 253–264. https://doi.org/10.1207/S15327078IN0102_7

Sullivan, J., Wilton, L., & Apfelbaum, E. P. (2021). Adults delay conversations about race because they underestimate children's processing of race. *Journal of Experimental Psychology: General*, 150(2), 395–400. https://doi.org/10.1037/xge0000851

Sullivan, J., Wilton, L., & Apfelbaum, E. P. (2022). How age and race affect the frequency, timing, and content of conversations about race with children. *Child Development*, 93, 633–652. https://doi.org/10.1111/cdev.13787

Sullivan, J. N., Eberhardt, J. L., & Roberts, S. O. (2021). Conversations about race in Black and White US families: Before and after George Floyd's death. *Proceedings of the National Academy of Sciences*, 118(38), e2106366118. https://doi.org/10.1073/pnas.2106366118

Thomas, A. J., Saxe, R., & Spelke, E. S. (2022). Infants infer potential social partners by observing the interactions of their parent with unknown others. *Proceedings of the National Academy of Sciences*, 119(32), e2121390119. https://doi.org/10.1073/pnas.2121390119

Trent, M., Dooley, D. G., Dougé, J., Section on Adolescent Health, Council on Community Pediatrics, & Committee on Adolescence. (2019). The impact of racism on child and adolescent health. *Pediatrics*, 144(2), 1–14. https://doi.org/10.1542/peds.2019-1765

Turner, R. N., & Cameron, L. (2016). Confidence in contact: A new perspective on promoting cross-group friendship among children and adolescents. *Social Issues and Policy Review*, 10(1), 212–246. https://doi.org/10.1111/sipr.12023

Tworek, C. M., & Cimpian, A. (2016). Why do people tend to infer "ought" from "is"? The role of biases in explanation. *Psychological Science*, 27(8), 1109–1122. https://doi.org/10.1177/0956797616650875

Ülger, Z., Dette-Hagenmeyer, D. E., Reichle, B., & Gaertner, S. L. (2018). Improving outgroup attitudes in schools: A meta-analytic review. *Journal of School Psychology*, 67, 88–103. https://doi.org/10.1016/j.jsp.2017.10.002

Vittrup, B. (2018). Color blind or color conscious? White American mothers' approaches to racial socialization. *Journal of Family Issues*, 39(3), 668–692. https://doi.org/10.1177/0192513X16676858

Vittrup, B., & Holden, G. W. (2011). Exploring the impact of educational television and parent-child discussions on children's racial attitudes: Exploring children's racial attitudes. *Analyses of Social Issues and Public Policy*, 11(1), 82–104. https://doi.org/10.1111/j.1530-2415.2010.01223.x

Vrdoljak, A., Jelić, M., Čorkalo Biruški, D., & Stanković, N. (2023). Efficacy of imagined contact intervention with children and adolescents in reducing negative intergroup outcomes: A systematic review. *Social Psychology of Education*. https://doi.org/10.1007/s11218-023-09869-w

Walden, T. A., & Ogan, T. A. (1988). The development of social referencing. *Child Development*, 59(5), 1230. https://doi.org/10.2307/1130486

Weisbuch, M., Pauker, K., & Ambady, N. (2009). The subtle transmission of race bias via televised nonverbal behavior. *Science*, 326(5960), 1711–1714. https://doi.org/10.1126/science.1178358

Weisman, K., Johnson, M. V., & Shutts, K. (2015). Young children's automatic encoding of social categories. *Developmental Science*, 18(6), 1036–1043. https://doi.org/10.1111/desc.12269

Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. *Journal of Personality*, *71*(6), 1197–1232. https://doi.org/10.1111/1467-6494.7106012

Zucker, J. K., & Patterson, M. M. (2018). Racial socialization practices among White American parents: Relations to racial attitudes, racial identity, and school diversity. *Journal of Family Issues*, *39*(16), 3903–3930. psyh. https://doi.org/10.1177/0192513X18800766