

Childhood Experiences and Intergroup Biases among Children

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Children show signs of intergroup biases from early in development, and evidence suggests that these biases increase through middle childhood. Here we critically review and synthesize the literature on the different types of childhood experiences that have been associated with increases or decreases in childhood intergroup bias. Based on the review, one type of childhood experience stands out as being reliably associated with increased intergroup bias over multiple studies—specific overt messages communicating intergroup conflict with, or negativity from, other groups. Three types of childhood experiences were found to be reliably associated with reduced intergroup bias: (a) structured intergroup contact, (b) explicit education about prejudice, and (c) imagined contact with members of other groups. We highlight the social and policy implications of this work and delineate specific experiences and interventions that might be helpful in ameliorating childhood intergroup biases. We also highlight developmental issues concerning the ways that interventions need to vary to be maximally effective at different ages. Finally, recommendations are offered on key factors to incorporate in childhood intergroup bias interventions, as well as what to avoid when attempting to design such programs due to negative (unintended) consequences. This review attempts to

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integrate state-of-the-art findings from developmental psychology with principles and theories in social psychology that derive from work with adults.

Childhood Experiences and Intergroup Biases among Children

Children show signs of intergroup biases from surprisingly early ages in human development. Experimental studies have provided evidence of 3- to 5-year-old children showing biases in favor of own-gender and own-race children (Cvencek, Greenwald, & Meltzoff, 2011; Hilliard & Liben, 2010; Renno & Shutts, 2015), preferring to befriend native speakers of their language versus children with foreign accents (Kinzler, Shutts, DeJesus, & Spelke, 2009), and even dehumanizing children who were members of a national or gender outgroup (McLoughlin & Over, 2017; McLoughlin, Tipper, & Over, 2017). Thus, children show knowledge about social groups and preference for some groups over others well before age 5 (Cameron, Alvarez, Ruble, & Fuligni, 2001; Cvencek, Greenwald, & Meltzoff, 2016). There are also developmental changes: Most evidence suggests that these intergroup biases increase through age seven or eight (Raabe & Beelmann, 2011).

Here we identify the types of childhood experiences that have been associated with the development and change of intergroup bias and discuss the social and policy implications of this work—including interventions that may potentially ameliorate childhood intergroup biases or curb their increase. Developmental psychologists have argued that childhood is an optimal time to intervene upon intergroup biases before they become entrenched patterns of behavior and cognition, which are then more difficult to change in adulthood (Lee, Quinn, & Heyman, 2017). Moreover, intervening on intergroup biases in early childhood may help reduce the experience of childhood stigmatization and discrimination, which can have long-term impacts on the health and wellbeing of stigmatized individuals (e.g., Cheng, Cohen, & Goodman, 2015; Forrest-Bank & Jenson, 2015; Salinas-Miranda et al., 2015).

We conducted a systematic review of the literature using PsycINFO (see Appendix for the full list of search terms and criteria). Relevant research identified through other means (e.g., Google Scholar) was also incorporated if it met our inclusion criteria. We purposely chose to include all types of intergroup bias so far investigated in children (e.g., based on ability, gender, weight, race, etc.) and examine childhood experiences broadly. We adopted this broad net, rather than limiting the review to a specific subset of experiences (such as intergroup contact), for three reasons. First, this diverse literature has not previously been synthesized. Second, we wanted to be able to identify cross-cutting themes that hold across multiple domains of intergroup bias, in order to draw generalizable inferences about childhood intergroup biases. Third, several factors may be usefully combined in future bias-reduction interventions. Even so, the majority of the extant empirical research (approximately 63%) was focused on race, ethnicity, or culture-based

intergroup biases (e.g., immigrants, refugees), though studies on intergroup biases based on age, disability, weight, and gender were also identified in the existing literature and thus are included here.

We used six specific selection criteria for determining which studies to include in this review and analysis. Studies must have: (a) been published in English in a peer-reviewed journal, (b) measured or manipulated an independent variable that could (at least in principle) be manipulated or changed, (c) included a dependent measure of intergroup bias (i.e., reflecting positive or negative valence toward another group),¹ (d) used a child participant sample (0–12 years old), (e) fully reported methodological and statistical information, and (f) included a minimum of 20 participants per condition (as recommended by Simmons, Nelson, & Simonsohn, 2011). Studies that report results collapsed across ages met our inclusion criteria if the mean age of participants was younger than 13 years (preteens). We focused on a wide age range with the goal of determining what interventions are most effective across different developmental stages.

Based on these criteria, we identified four types of childhood experiences that have been systematically examined in relation to childhood intergroup bias: (a) parental socialization, (b) specific overt messages, (c) intergroup contact, and (d) intergroup education. Each of these constitutes a separate section in this review. Within each of these four sections, we first review the correlational studies, which measure situations that already exist or emerged spontaneously. These provide initial (noncausal) suggestions about associations that are ripe for further examination. Next, we review the experimental studies, which show whether and how things can be changed by experimentally manipulating an experience. Thus, the reviews of experimental studies offer the most relevant sections for policymakers seeking ways to intervene upon childhood intergroup biases. Although various age groups are examined across studies, we generally refer to samples composed of children younger than 8 years as being in “early childhood,” whereas we refer to samples composed of children in the 8- through 12-year-old range as being in “middle childhood.” All studies utilized explicit measures of intergroup bias unless otherwise noted.

¹ We focused on measures of behaviors, attitudes, and cognitions that reflect underlying positive or negative valences linked with social groups, which is consistent with social psychological conceptualizations of “intergroup bias” (e.g., Allport, 1954; Brewer, 1999; Greenwald & Pettigrew, 2014; Hewstone, Rubin, & Willis, 2002; Smith, 2014). A broad range of measures fit these criteria, such as expressed liking or preference, desired social distance, and attribution of positive or negative characteristics. Measures that do not reflect underlying valence, such as measures of specific beliefs about the characteristics of social groups (i.e., stereotypes), which do not clearly reflect positivity or negativity, fell outside the scope of this review (e.g., that girls play with dolls and boys play with trucks).

Parental Socialization

Approximately 13% of the studies included in this review incorporated an assessment of the association between parental socialization and children's intergroup biases. Unlike some of the other categories of research we will describe, the research on parental socialization has exclusively utilized correlational approaches, and it has included a range of measures of intergroup bias (e.g., Clark Doll test, Preschool Racial Attitudes Measure II; PRAM II), as well as study-specific measures of the attribution of positive and negative qualities.

Correlational Findings

We identified two key parental factors that have been examined in relation to children's intergroup biases: (a) Individual differences in parents' intergroup messages and (b) individual differences in parents' intergroup attitudes and friendships.

Individual differences in parents' intergroup messages. Results are mixed from the correlational studies that investigated the relation between the intergroup messages provided by parents and their children's intergroup biases. Few mothers reported explicitly speaking to their children about race or interracial interactions in early childhood; moreover, the frequency of such conversations was unrelated to children's racial biases in the one study investigating this relation in a White U.S. sample (Pahlke, Bigler, & Suizzo, 2012). Studies focused on the intergroup messages provided by Black U.S. parents indicate that education on issues of civil rights, Black history, and racial discrimination are associated with *decreased* explicit pro-White bias (Gibson, Rochat, Tone, & Baron, 2017; Spencer, 1983).² However, in the one study to examine implicit biases, these types of intergroup messages were associated with *increased* implicit pro-White bias among Black children, but only among those attending racially homogeneous schools (Gibson et al., 2017).

Individual differences in parents' intergroup attitudes and friendships. The most extensively investigated aspect of parental socialization is parents' own intergroup biases, but these results are also mixed. Some studies indicate that the explicit biases of parents and children are positively associated (Branch & Newcombe, 1986; Costello & Hodson, 2014; Holub, Tan, & Patel, 2011), one indicated that they are negatively associated (Branch & Newcombe, 1986), and still others indicated that they are unrelated (Branch & Newcombe, 1986; Castelli,

² Black children in the United States often show pro-White biases (e.g., Spencer, 1983), thus a decrease in pro-White bias moves Black children toward ingroup positivity.

Zogmaister, & Tomelleri, 2009; Jugert, Eckstein, Beelmann, & Noack, 2016; Perkins & Mebert, 2005; Pirchio, Passiatore, Panno, Maricchiolo, & Carrus, 2018; Sinclair, Dunn, & Lowery, 2005; Vittrup & Holden, 2011). This is likely due to social desirability concerns about the explicit expression of intergroup biases. Social desirability concerns are known to influence adults' explicit reports of intergroup bias and have an increasingly large impact on children's explicit intergroup bias as they transition into middle childhood (Aloise-Young, 1993; Banerjee, 2002). Several studies have found that differences in parents' preferences for dominance (Social Dominance Orientation) and authority (Right Wing Authoritarianism) are associated with greater intergroup bias among children (Costello & Hodson, 2014; Holub et al., 2011; Jugert et al., 2016). The fact that these measures do not explicitly index intergroup attitudes, but are known to underlie adults' intergroup biases (Whitley, 1999), may explain why they are more reliably associated with children's intergroup biases than parents' explicit intergroup biases.

In contrast with studies that relied exclusively on explicit measures, evidence suggests that when implicit measures are used (e.g., the Implicit Association Test, IAT) there may be a more reliable link between children's biases and those of their parents and other close adults (Castelli et al., 2009; Pirchio et al., 2018; Sinclair et al., 2005; Vezzali, Giovannini, & Capozza, 2012). Pirchio et al. (2018) found that in early childhood Italian parents' explicit ethnic biases predicted their children's implicit (but not explicit) ethnic biases.³ Similarly, Sinclair et al. (2005) found that in middle childhood, among U.S. children who highly identified with their parents, children's implicit (but not explicit) racial biases were consistent with their parent's explicit racial biases. Moreover, the two studies that have examined the relation between parents' (and other close adults') implicit intergroup biases and children's explicit intergroup biases found evidence that they are consistent with one another. More specifically, White Italian children's racial biases in early childhood were significantly associated with their mothers' (but not their fathers') implicit racial biases (Castelli et al., 2009). Vezzali, Giovannini, and Capozza (2012) found that the implicit anti-immigrant biases of another close adult (the child's favorite teacher) also predicted Italian children's anti-immigrant biases in middle childhood. (This is also supported by studies indicating that mothers' implicit gender stereotyping predicts their child's implicit gender stereotyping, and that mothers may subtly communicate their gender stereotypes to their children when reading storybooks; Endendijk et al., 2013; Endendijk et al., 2014.) Taken together, this work provides suggestive evidence that intergroup biases may be transmitted to children through subtle behavioral channels rather than through conscious, deliberate, and explicit verbal messaging. This is consistent with a significant body of data with adults. For example, meta-analytic evidence indicates

³ Pirchio, Passiatore, Panno, Maricchiolo, and Carrus (2018) found this relation with parents' subtle ethnic biases but not blatant ethnic biases.

that implicit racial biases significantly predict discrepancies in nonverbal signals when interacting with members of different racial groups (Kurdi et al., 2018; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013).

The notion that children might pick up biases from observing patterns of behavior and unintended cues from trusted adults is also compatible with evidence that parental intergroup friendships are associated with reduced intergroup bias among children (Pahlke et al., 2012; Vittrup & Holden, 2011). Thus, the subtle patterning and regularities in parental behaviors and affective tone that children observe when parents interact with members of different groups may be just as impactful, or even more impactful, than the specific verbal attitudes that parents profess. Because explicit and implicit measures of bias are often weakly correlated (Oswald et al., 2013), future work that assesses the explicit and implicit biases of both parents and their children will be useful for illuminating the mechanisms by which the intergenerational transfer of intergroup biases is accomplished.

Specific Overt Messages

Approximately 23% of the studies included in this review assessed the association between children's intergroup biases and the specific overt messages they receive about outgroup members and intergroup relations. In contrast to parental socialization messages (reviewed in the previous section), here we focus on the specific content of messages that were manipulated in experimental settings. For example, when adults specifically tell children that members of out-groups are "nice," or that one's group "gets along with" other groups, this may be specific information that blunts intergroup bias. Whereas it might be difficult to change the subtle messages children receive from their parents at home, the work reviewed in this section demonstrates the influence of specific overt messages provided to children. There have been no correlational studies on the relation between specific overt messages that children receive and intergroup bias, therefore we only summarize experimental findings. The results of this work could potentially be utilized in intergroup bias reduction interventions. Measures of intergroup bias used in these studies included items and scales assessing liking, trust, playmate preferences, attribution of positive and negative traits, as well as established measures of bias (e.g., PRAM II).

Experimental Findings

We identified three kinds of specific, overt messages: (a) those about norms, competition, and influence over groups, (b) references to group membership, and (c) messages indicating that children's biases will be publicly available.

Messages about norms, competition, and influence over groups. Evidence from multiple countries (e.g., Scotland, Australia, the United States) indicates that specific, overt messages that provide negative information about outgroups, express norms of exclusion, or emphasize group membership, tend to increase intergroup bias among children (e.g., Bigler, Jones, & Lobliner, 1997; Durkin, Nesdale, Dempsey, & Mclean, 2012; Hilliard & Liben, 2010; Nesdale, Durkin, Maass, & Griffiths, 2004; Nesdale, Durkin, Maass, & Griffiths, 2005; Nesdale, Maass, Durkin, & Griffiths, 2005; Patterson & Bigler, 2006). This work with children is compatible with similar work with adults, which shows that overt intergroup messages and norms significantly influence intergroup biases (e.g., Blanchard, Crandall, Brigham, & Vaughn, 1994; Monteith, Deneen, & Tooman, 1996). In early childhood, evidence suggests that specific overt messages children receive are sometimes even more powerful than children's own personal experiences. Children who were told that members of an outgroup would treat their group badly (but were subsequently treated well by the outgroup) expressed more intergroup bias than children who were actually treated badly by the outgroup (but were told that the outgroup would treat them well; Kang & Inzlicht, 2012). However, this tendency seems to wane with age: Children in middle childhood favored groups that they had positive personal experiences with, despite previously receiving negative overt messages about the group.

Changes in intergroup bias have also been linked to messages promoting or discouraging the exclusion of outgroup members. In middle childhood, those who are told that their school has a norm of inclusion show reduced intergroup bias (Nesdale & Dalton, 2011; Nesdale & Lawson, 2011). In contrast, children of the same age show increased intergroup bias if they are told that their novel ingroup does not like other groups and sees them as competition (Nesdale et al., 2005), has a norm of exclusion (Nesdale & Dalton, 2011; Nesdale & Lawson, 2011), or a norm of unfriendliness toward other groups (Nesdale & Lawson, 2011; Nesdale et al., 2009). In some cases, just emphasizing positive information about the child's own group increases intergroup bias (Nesdale et al., 2005; Over, Eggleston, Bell, & Dunham, 2018), although this is not always the case (Nesdale et al., 2004).

Being told that one does or does not have control over how social groups are evaluated can also impact intergroup bias. Boys in middle childhood who were informed that they had complete control over both the ingroup and the outgroup showed less intergroup bias than boys who were told that they shared control with members of the outgroup (Vanbeselaere, Boen, Van Avermaet, & Buelens, 2006). One interpretation of this effect is that being told that one has control over an outgroup increases children's sense of responsibility for that group, reducing intergroup biases.

References to group membership. A second kind of specific overt messaging involves the degree to which adults reference group memberships and use social

group labels functionally to separate children (e.g., asking children in two groups to line up separately). Using social group labels functionally increases the perceived importance (i.e., informational value) and cognitive salience of specific group memberships, which, in turn, is thought to increase intergroup bias (Bigler, 1995; Bigler & Liben, 2007). Three studies provide evidence in early childhood classrooms that using gender- and novel-group labels functionally to divide groups according to attributes increases intergroup biases (Bigler et al., 1997; Hilliard & Liben, 2010; Patterson & Bigler, 2006).

Messages indicating that children's biases will be publicly available. A third kind of specific, overt message has to do with whether children are told that they will be publicly accountable for their intergroup biases. Our review also suggests that by approximately age eight, children become increasingly aware of egalitarian norms and concerned about explicitly expressing biases, particularly in public settings (e.g., FitzRoy & Rutland, 2010; Monteiro, de França, & Rodrigues, 2009; Rutland, Cameron, Milne, & McGeorge, 2005). Thus, measures of explicit bias in children older than 8 years should be interpreted with caution (they may be less about children's "true" levels of intergroup bias than about learned norms about expressing these biases).

Monteiro et al. (2009) hypothesized that the reduced tendency to report explicit intergroup biases as children age may be associated with their increasing understanding of egalitarian norms and the social consequences of expressing intergroup bias. To test this, they manipulated whether or not White Portuguese children were primed with egalitarian norms before completing explicit measures of racial bias. When primed, older children (9- to 10-year-olds) reported significantly less racial bias. In contrast, younger children (6- to 7-year-olds) reported equivalent levels of racial bias in both conditions, presumably because they had not yet developed awareness of the social consequences of expressing intergroup bias. This is supported by evidence that as children are transitioning from early to middle childhood, those who better understand the social demands of explicit social judgments *and* perceive the group to have a norm of nonbias report lower levels of explicit intergroup bias (FitzRoy & Rutland, 2010). Implicit measures of intergroup bias, however, seem to be unaffected by public accountability (Rutland et al., 2005), likely because implicit biases are difficult to control without sufficient motivation and training (Gawronski & De Houwer, 2013). Thus, greater use of implicit measures of bias may be helpful for parsing children's intergroup biases from socially desirable responding. Such measures also have their critics, however, and there has been debate over their interpretation and relation to behavior (Blanton & Jaccard, 2006; Greenwald, Banaji, & Nosek, 2015; Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2015). With these concerns in mind, research that utilizes both implicit and explicit measures of bias may be a fruitful approach moving forward.

Interpersonal and Intergroup Contact

A relatively large proportion (approximately 31%) of the studies included in this review examined the relation between intergroup contact and intergroup bias among children. Measures of bias examined in these studies included: ranked liking for various groups, desired social distance, attribution of positive and negative traits, and measures of explicit (e.g., PRAM II) and implicit (e.g., IAT) bias.

Correlational Findings

Correlational studies on the relation between intergroup contact and children's intergroup biases have been conducted across several different countries (e.g., Britain, Canada, Chile, Holland, Italy, Serbia, and the United States), but results are mixed. Some studies indicated that intergroup contact was associated with reduced intergroup bias (Brown, Eller, Leeds, & Stace, 2007; Cameron, Rutland, Hossain, & Petley, 2011; Dutton, Singer, & Devlin, 1998; Knifsend & Juvonen, 2017; Koslin, Amarel, & Ames, 1969; McGlothlin & Killen, 2010; Rutland, Cameron, Bennett, & Ferrell, 2005; Sirlopú et al., 2008; Turner, Hewstone, & Voci, 2007; Wright & Tropp, 2005; Žeželj, Jakšić, & Jošić, 2015). In contrast, a couple indicated that intergroup contact was associated with increased intergroup bias (Kurtz-Costes, Defreitas, Halle, & Kinlaw, 2011; Vezzali, Giovannini, et al., 2012), and still others indicated that intergroup contact and intergroup bias were unrelated (Aboud, Friedmann, & Smith, 2015; Gibson et al., 2017; Graffi & Minnes, 1988; Huckstadt & Shutts, 2014; Koslin et al., 1969; Kurtz-Costes et al., 2011; Pahlke et al., 2012; Verkuyten & Kinket, 2000; Vittrup & Holden, 2011). The inconsistencies in these findings are likely due to unmeasured variation in factors such as the *quality* of these contact experiences and whether they facilitated cooperation or competition. The experimental findings, reviewed next, address the impact of these factors.

Experimental Findings

Given the mixed findings observed in the correlational literature, experimental research is particularly valuable for determining the causal impact of intergroup contact on intergroup bias and the conditions in which it has positive, mixed, or negative effects. However, the few experimental studies that did not regulate the quality of intergroup contact also had mixed findings (Baggett, 1981; Prather & Chovan, 1984; Seefeldt, 1987). Each of these studies lacked adequate controls to ensure that children's contact experiences were positive. In the following subsection, we discuss experimental research that controlled or directly manipulated the *quality* of intergroup contact.

Quality of intergroup contact. Overall, *positive, cooperative* contact experiences reduced intergroup bias (e.g., Berger, Abu-Raiya, & Gelkopf, 2015; Vezzali, Stathi, Crisp, & Capozza, 2015; Walker & Crogan, 1998). Results deriving from a program specifically designed to provide positive high-quality intergroup contact (e.g., scaffolded by adults to emphasize common goals and intergroup cooperation; Pettigrew & Tropp, 2000), indicated that contact can reduce intergroup bias among Arab and Jewish children (Berger et al., 2015). Similar findings have been reported among (a) Italian children in collaborative intergroup contact programs (Vezzali, Stathi, Crisp, et al., 2015), (b) Australian children in a “Jigsaw” classroom (facilitating cooperation and interdependence among students from different groups; Walker & Crogan, 1998), and (c) U.S. children enrolled in a program providing multicultural contact in a supportive, noncompetitive atmosphere (London, Tierney, Buhin, Greco, & Cooper, 2002).

Work that has experimentally manipulated quality of contact confirms that the valence of the contact experiences influences intergroup bias in a systematic way. Negative experiences and competition with outgroup members increase intergroup bias throughout childhood (Fulcher & Perry, 1973; Kang & Inzlicht, 2012). In contrast, positive experiences and cooperation with outgroup members reduce intergroup bias. For example, young children in racially integrated classrooms that used cooperative tutoring groups showed less racial bias than children in racially integrated classrooms without cooperative tutoring (Rooney-Rebeck & Jason, 1986).

It is well known from work with adult samples that intergroup contact is associated with reduced intergroup bias (e.g., Pettigrew & Tropp, 2000). However, our review suggests that in order to use contact to reliably reduce intergroup biases among children, the contact interventions should be structured to provide positive, cooperative intergroup experiences. One practical recommendation is that scientists/policymakers monitor intergroup contact interventions and consider increasing the quantity of contact in controlled and systematic ways if lower levels of structured intergroup contact fail to reduce intergroup biases.

Interpersonal experiences. Personal experience being the target of bias may reduce children’s tendency to display intergroup biases. In middle childhood, White children in the United States who experienced an intergroup bias and discrimination manipulation at school subsequently showed less racial bias and greater interest in interacting with Black students, than children in the control group (Weiner & Wright, 1973). This is not to say that all rejection experience has this effect. Instead, it may need to be relevant to a broader intergroup context, and taking the perspective of the group that experiences discrimination in that context. This is evidenced by studies showing that children who are socially rejected in a minimal groups paradigm, relative to those who are accepted, show heightened

intergroup bias (against their former group and members of another outgroup; Nesdale et al., 2007, 2009, 2010).

Intergroup Education

Approximately 32% of the studies included in this review incorporated an assessment of the relation between intergroup education and children's intergroup biases. Here we focus on the broad themes usually implemented in intergroup education, such as a pro-diversity curriculum. This work was largely experimental, though there were a handful of correlational studies. As with the previous sections, a wide range of measures were used to assess intergroup bias, such as explicit preference items, attribution of positive and negative traits, prosocial behavior, imitation, and other established measures of bias (e.g., Black/White Evaluative Trait Scale, PRAM II, IAT).

Correlational Findings

Correlational studies examining the relation between diversity curricula and intergroup biases show mixed results—with two studies indicating no relation and the other showing a reduction in racial/ethnic bias (Perkins & Mebert, 2005; Pirchio, Passiatore, Carrus, & Taeschner, 2017; Wright & Tropp, 2005).

Researchers who have examined young children's intergroup biases before and after a diversity-themed TV series airs have found evidence of intergroup bias reduction among young children in Northern Ireland (Connolly, Fitzpatrick, Gallagher, & Harris, 2006), Israel, and Palestine (Cole et al., 2003). Cole et al. (2003) found that Israeli Jewish and Palestinian Israeli children showed decreased intergroup bias over the time the diversity-themed show was on the air, but Palestinian (non-Israeli) children actually showed an increase in intergroup bias.⁴ More research is needed to investigate what determines the impact of large-scale interventions like these, particularly given that intergroup biases were exacerbated among some groups of children. A potential explanation for the observed pattern is the broader social context and status of the children's groups as being minority/majority or the group in power or not (Cole et al., 2003).

⁴ Other correlational studies have examined the relation between many different measures of media consumption (e.g., various television shows, video games, magazines) and intergroup bias (Latner, Rosewall, & Simmonds, 2007; Zuckerman, Singer, & Singer, 1980). We have refrained from drawing conclusions from these studies due to the large number of correlations run with mixed results, which make it unclear how to interpret the findings.

Experimental Findings

We identified four different experimental approaches to intergroup education: (a) pro-diversity curriculum and reinforcement, (b) educating children about prejudice, (c) exposure to physical representations, stories, and guided imagination, and (d) televised media.

Pro-diversity curriculum. A study examining the effectiveness of pro-diversity curricula with younger children indicated that it had no impact on the racial biases of predominately White British children who were exposed to a variety of pro-diversity activities (plays, improvisation, art, and circle-time discussions) on several days over the course of 4 weeks (Connolly & Hosken, 2006). A similar study, conducted with young White U.S. children, also found that two 45-minute sessions of pro-diversity curricula (e.g., race-related stories, discussion, and art) a week over the course of 8 weeks failed to reduce racial biases (Best, Smith, Graves, & Williams, 1975). In contrast, the one study to examine this type of curriculum in middle childhood indicated that providing education on the music and culture of racial outgroup members (a total of twenty 90-minute sessions over the course of 6 months) produced a long-lasting (more than 2 years) reduction in implicit and explicit skin tone bias (favoring light skin) among Portuguese children (Neto, da Conceição Pinto, & Mullet, 2016).

Another curricular approach to intergroup education involves establishing and reinforcing positive associations with outgroup members. That is, children were trained to associate Black people with positive things and White people with negative things through a classical conditioning procedure in which they were rewarded (e.g., provided a token) for making these associations. Young White and Black children in the United States showed significantly less (anti-Black) racial bias after behavioral reinforcement training to associate Black people and things with the concept of “good” and White people and things with the concept of “bad” (Best et al., 1975; Spencer & Horowitz, 1973; Yancey & Singh, 1975).

Educating children about prejudice. Some of the most robust findings from this section came from studies in which children were explicitly educated about prejudice and discrimination (e.g., Aboud & Doyle, 1996; Aboud & Fenwick, 1999; Brinkman, Jedinak, Rosen, & Zimmerman, 2011; Hughes, Bigler, & Levy, 2007). White U.S. children who learned about the racism and discrimination faced by Black historical figures (Hughes et al., 2007) and children in Canada and the United States who learned about stereotypes, intergroup biases, and social justice issues, (Aboud & Fenwick, 1999; Brinkman et al., 2011) subsequently showed reduced intergroup bias. This reduction was particularly strong among children with high levels of intergroup bias (Aboud & Fenwick, 1999). Critically, results also suggest that for racial minority group children (e.g., Black children in the

United States), learning about racism and discrimination faced by members of their own group did not increase intergroup bias (Hughes et al., 2007). This is reassuring because it suggests that, if done carefully, educating diverse groups of students about these topics will not adversely impact (i.e., increase) the intergroup biases of children who are members of stigmatized minority groups. Moreover, even when social justice education is conducted by peers (rather than being presented by an adult instructor), it can reduce intergroup bias (Aboud & Doyle, 1996). Children with high racial biases who were paired with children with low racial biases to discuss their intergroup attitudes, subsequently showed reduced racial bias.

Exposure to physical representations, stories, and guided imagination. Gaither et al. (2014) found that exposing young Black–White and Asian–White biracial children to images of members of their parents’ racial groups increased bias in favor of that racial group. Yet other studies, conducted with young Han Chinese children, indicated that exposure to physical representations of outgroup members did not impact implicit or explicit racial bias (Qian et al., 2017). In this study, only children who were trained to individuate multiple members of the same group showed a significant decrease in implicit (but not explicit) racial bias. In sum, current evidence, although limited, suggests that exposure to physical representations of one’s own group may increase intergroup biases, whereas training to individuate outgroup members may aid in reducing intergroup bias.

A related approach, which was successful in the one study that examined it, was exposure to images of diverse racial ingroup members. Young White Scottish children who were exposed to photographs and descriptions of racially diverse ingroup (Scottish) children subsequently showed less racial bias than children who were exposed to images depicting all-White ingroup children (Durkin et al., 2012). Beyond merely exposing children to ethnically diverse ingroup members, this study primed children to think about a common superordinate national identity that they share with members of other racial groups—which likely bolstered the effects of this manipulation. There is similar evidence from the adult literature, which indicates that emphasizing shared ingroup identities reduces intergroup biases (e.g., Dovidio, Gaertner, Ufkes, Saguy, & Pearson, 2016; Gaertner & Dovidio, 2012).

Reading about or imagining contact with outgroup members consistently reduces intergroup bias among children (e.g., Cameron & Rutland, 2006; Cameron, Rutland, Brown, & Douch, 2006; Cameron, Rutland, Turner, Holman-Nicolas, & Powell, 2011; Stathi, Cameron, Hartley, & Bradford, 2014; Vezzali, Capozza, et al., 2012; Vezzali, Stathi, Giovannini, Capozza, & Visintin, 2015), as well as adults (e.g., Lai et al., 2014; Lai et al., 2016). Several studies have shown that reading and acting out stories about members of other groups reduces intergroup biases, perhaps because they promote perspective-taking or intergroup empathy—which

are associated with positive intergroup attitudes (e.g., Nesdale, Griffiths, Durkin, & Maas, 2005). In middle childhood, students in the United States who read and acted out scenes from plays depicting the heritage and lifestyles of several different ethnic groups over the course of a school year showed a reduction in intergroup bias (Gimmestad & De Chiara, 1982). In a less intensive, story-based intervention, reading stories about a child with a disability and engaging in discussion about the stories over several weeks reduced young children's biases against disabled people (Cameron, Rutland, & Brown, 2007). Children who were told a story about a racially diverse bowling team (vs. an all-White bowling team) and imagined being a member of the team subsequently showed lower levels of racial bias (Durkin et al., 2012). Although a much briefer story-based training (less than an hour) failed to reduce implicit racial bias among younger White and Asian Canadian children, it did significantly reduce implicit racial biases among those in middle childhood (Gonzalez, Steele, & Baron, 2017).

Others have examined how features of the story and the way it is presented moderate its impact. Findings suggest that the most impactful stories emphasize (a) the group membership of the outgroup member and (b) their typicality as a member of their group (Cameron & Rutland, 2006; Cameron et al., 2006). Hearing stories about intergroup friendships seems to be particularly impactful among children who have experienced little intergroup contact themselves (Cameron et al., 2011; Vezzali, Giovannini, et al., 2012). Speaker's group membership and endorsement of the story do not seem to moderate these effects (Johnson & Aboud, 2013).

Relatedly, leading children to think about another group, through a guided imagination task, has also been associated with reductions in intergroup bias. Nondisabled children who imagined playing with a disabled child (Cameron et al., 2011), White British children who imagined interacting with an Asian child (Stathi et al., 2014), Italian children who imagined positively interacting with immigrant children (Vezzali, Capozza, et al., 2012; Vezzali, Stathi, Giovannini, et al., 2015), and U.S. children who imagined the daily lives of disabled children (Langer, Bashner, & Chanowitz, 1985) all showed significant reductions in (implicit and/or explicit) intergroup bias. Positive effects of imagined interactions and stories have even been observed when imagined groups are fictional, by facilitating perspective taking (Vezzali, Stathi, Giovannini, et al., 2015). In middle childhood, those who engaged in fictional intergroup interactions (pretending to be from different planets) or read about fictional characters experiencing prejudice—subsequently showed reduced intergroup bias (Vezzali, Stathi, Crisp, et al., 2015; Vezzali, Stathi, Giovannini, et al., 2015).

Televised media. Merging work on intergroup contact with training studies, researchers have also examined the impact of pro-diversity videos. The results have been mixed. One possible explanation for the discrepancies among the studies has to do with the age of participants, given that young children may have a

limited understanding of the concept of race (Kinzler & Dautel, 2012). Thus, interventions that require a strong conceptual understanding of race may not be very effective for young children. Indeed, the only study conducted with very young children relied upon overt messages about race and cross-race similarities in a 10-minute video, and failed to reduce intergroup biases (Persson & Musher-Eizenman, 2003). In contrast, two studies conducted with older children (ranging from early to middle childhood) provided evidence that pro-diversity videos can reduce intergroup bias. Houser (1978) found that exposing children to 10- to 15-minute videos promoting racial colorblindness (that race is not important) led to reduced racial bias. (However, it is important to note that more recent research is often critical of colorblind ideology, suggesting that it may undermine efforts to reduce racial inequality; Pahlke et al., 2012.) In Vittrup and Holden's (2011) study, children who watched several 10- to 15-minute videos highlighting positive interracial relationships over the course of a week showed reduced racial bias relative to children who did not watch videos.

Media and videos also have the potential to produce and *increase* bias if they highlight negative intergroup relations or affirm negative attitudes or beliefs, as with the intergroup contact findings. The extant evidence indicates that exposure to others expressing nonverbal biases (e.g. disapproval or uneasiness when interacting with members of one group relative to another) can actually *create* intergroup biases among young children (Skinner, Meltzoff, & Olson, 2017). In this study, young children who were experimentally exposed to negative nonverbal signals directed toward an unfamiliar adult (and positive toward another) subsequently demonstrated bias against that adult and another person who was portrayed as that adult's "friend" and fellow group member.

Moreover, evidence suggests that biased nonverbal signals can exacerbate pre-existing intergroup biases in early childhood. White children who were exposed to videos in which a White adult demonstrated negative nonverbal signals toward a Black adult showed more anti-Black bias than children who saw the White adult demonstrate positive nonverbal signals toward the Black adult (Castelli, De Dea, & Nesdale, 2008). This finding held whether the White adult explicitly expressed egalitarian racial attitudes in the video or spoke about a topic unrelated to race. Taken together with the Skinner et al. (2017) work, this suggests that the implicit messages conveyed by adults' nonverbal signals may be a particularly potent influence on children's intergroup biases—perhaps because of young children's strong tendency to absorb and re-enact the behaviors and attitudes of the adults they observe (e.g., Bandura, 1971, 1986; Meltzoff, 2007, 2013). We believe that this tendency can be usefully harnessed in future intervention work aimed at *reducing* intergroup bias. For example, this could be done by exposing children to *positive* nonverbal signals directed toward outgroup members (thereby extending studies showing that children "catch" attitudes from adult nonverbal behavior).

Implications for Translational Research and Policy

Scientists, educators, and policymakers are interested in understanding how to eliminate childhood intergroup biases (e.g., Rutland & Killen, 2015; Skinner & Meltzoff, 2017; United Nations Educational, Scientific, and Cultural Organization, International Bureau of Education, 2016). One of the take-away messages from this review is that although children's intergroup biases tend to align with the existent biases in the broader social context, there is limited information on the *mechanisms* by which intergroup biases are created in childhood. Just one type of childhood experience that creates or increases intergroup bias has garnered wide and repeated support over multiple studies—specific overt messages communicating intergroup conflict, negativity, or threat from other groups. Even so, experimental research offers promise for reducing established intergroup biases through controlled interventions (e.g., school-based interventions). Indeed, considerably more attention has been paid to the childhood experiences that *reduce intergroup bias*. We identified three specific childhood experiences that were reliably associated with reduced intergroup bias: (a) positive, cooperative intergroup contact, (b) explicit education about prejudice, and (c) reading about or imagining contact with outgroup members. Yet, the broad range of idiosyncratic measures and manipulations used in this work limited our ability to draw firm conclusions in some cases. In addition, data was collected across several cultural contexts over the span of nearly 50 years, thus unaccounted for cultural variations may have also contributed to the observed inconsistencies in the literature.

Where Do We Go from Here?

There are a number of open questions about how childhood experiences relate to children's intergroup attitudes. One broader question is whether childhood experiences operate differently across domains of intergroup bias (e.g., racial vs. disability-based biases). The majority of the literature across all types of experiences focused on racial/ethnic intergroup biases; therefore, conclusions drawn from this literature should be generalized to other domains of intergroup bias with caution. For instance, many of the factors that shape racial biases (e.g., intergroup conflict, cultural and language differences, societal segregation) may be quite different from the factors that shape biases against people with disabilities (e.g., fear, lack of knowledge/familiarity).

A second broader issue is that the extant literature is largely focused on nonmarginalized majority group children (e.g., White children in the United States). Evidence suggests that the attitudes and experiences of racial and ethnic minority children often differ from those of majority group children (e.g., Dunham, Newheiser, Hoosain, Merrill, & Olson, 2014; Newheiser & Olson, 2012; Newheiser, Dunham, Merrill, Hoosain, & Olson, 2014; Rogers & Meltzoff, 2017).

Most notably, children from disadvantaged minority groups often do not show the ingroup biases that other children tend to show (Dunham, Baron, & Banaji, 2008; Dunham, Chen, & Banaji, 2013). Thus, it remains to be seen how the experiences reviewed here might influence children who are members of marginalized minority groups. It is also critical to point out that the majority of studies were conducted in the context of WEIRD cultures (Western, Educated, Industrialized, Rich, and Democratic; Henrich, Heine, & Norenzayan, 2010). Examining how culture moderates the relation between childhood experiences and intergroup biases will inform our understanding of the cultural specificity of these effects.

In addition to these broad future directions, there are more specific questions about how childhood experiences relate to children's intergroup attitudes. In Table 1 we summarize conclusions and recommended future directions for each of the four types of childhood experiences we have discussed.

From the Lab to Society: Practical Recommendations

Based on the current review of the childhood experiences associated with intergroup bias, what recommendations can be offered for parents, educators, and policymakers? More research is needed before one would have full confidence in scaling up relevant interventions, but in the spirit of pointing to fruitful directions, we offer Table 2 as a summary of key design considerations accompanied by a more detailed discussion of recommended considerations when designing interventions.

Based on the extant literature, interventions that provide children with concrete experiences (e.g., interactions) and physical representations seem to be most effectual in early childhood. Given that younger children are often not familiar with racial labels (e.g., Hirschfeld, 1995) and do not understand race constancy (e.g., Aboud, 1988; Kinzler & Dautel, 2012; Semaj, 1980), interventions tailored to young children may be most effective if they do not require an abstract or conceptual understanding of racial group membership. Throughout the studies reviewed here, we observed that early childhood experiences which provided positive representations of groups and intergroup relations (e.g., videos, images, and interactions that offer positive depictions of racial outgroup members) were most consistently associated with children's reduced intergroup biases. In contrast, those in middle childhood generally have a more sophisticated understanding of group membership (and often more ingrained intergroup biases). Thus, older children seem to benefit from interventions that draw upon their conceptual understanding of groups to provide information about the broader cultural context (e.g., education about historical oppression) and promote empathy and perspective-taking with members of other groups. Future research that examines the effects of comparable experiences from early through middle childhood will be important for better understanding these developmental shifts and developing age-specific intergroup bias-reduction interventions.

Table 1. Summary of Findings and Outstanding Questions for Future Investigation within Each Type of Experience

Childhood experience	Summary of findings	Future directions/open questions
Parental socialization	<ul style="list-style-type: none"> • There is a more reliable link between children's biases and those of close adults when implicit measures are used (for adults or children). • Evidence suggests that children might pick up biases from observing patterns of behavior (e.g., intergroup friendships) and unintended cues (e.g., nonverbal signals) from trusted adults. 	<ul style="list-style-type: none"> • Does consistency between the intergroup biases of parents and their children increase with age? • Do parents' intergroup friendships causally impact their children? • What is the relation between parents' implicit biases and the intergroup biases of their children?
Specific overt messages	<ul style="list-style-type: none"> • Specific, overt messages that provide negative information about outgroups, express norms of exclusion, or emphasize group membership, tend to increase intergroup bias. • By approximately age 8 children become increasingly aware of egalitarian norms, learning to conceal their explicit biases. 	<ul style="list-style-type: none"> • Can positive overt messages be used to interfere with the development of intergroup biases or alter existing intergroup biases? • Do specific overt messages have a weaker impact on children's intergroup biases as they get older?
Intergroup contact	<ul style="list-style-type: none"> • Positive intergroup contact experiences are associated with reduced intergroup bias. • Structured intergroup contact programs that promote cooperation, positive relations, and interdependence lead to reduced intergroup bias. 	<ul style="list-style-type: none"> • How much contact with outgroup members do children need to influence intergroup bias? • How do quantity and quality of intergroup contact interact? Is more contact only better if it is high quality?
Intergroup education	<ul style="list-style-type: none"> • Education about prejudice and discrimination reduces intergroup bias. • Exposure to stories and guided imagining about members of other groups (and positive intergroup interactions) can reduce intergroup bias. 	<ul style="list-style-type: none"> • Can exposure to biased nonverbal signals lead to the development of bias against entire groups? • Can exposure to positive nonverbal signals directed toward members of an outgroup reduce bias or produce positive evaluations of that group?

Moreover, it is important to emphasize that hearing about conflict and antagonism between the ingroup and another group tends to promote intergroup biases among children (e.g., Durkin et al., 2012; Kang & Inzlicht, 2012; Nesdale

Table 2. Recommended Considerations for Crafting Intergroup Bias Interventions for Children

Intervention considerations

How old are the children?

- Interventions tailored toward younger children should center around concrete experiences and representations of groups/intergroup relations that do not require an abstract or conceptual understanding of group membership.
- In middle childhood, interventions should involve more sophisticated messages about groups: promoting empathy and perspective-taking, explicitly positive messages about other groups, and/or information about the broader cultural context that shapes intergroup attitudes/relations.

Experiences to foster and promote:

- Explicitly positive messages about other groups and norms of social inclusion.
- Positive cooperative intergroup contact experiences that encourage interdependence.
- Discussion about prejudice, inequality, and discrimination.
- Books, stories, and activities that promote individuation, perspective-taking, and empathy for members of other groups.
- Modeling positive intergroup relations and friendships.

Experiences to avoid:

- Explicit or implied negative messages about other groups.
- Hostile, negative, or highly competitive intergroup contact experiences.
- Exposing children to negative nonverbal signals directed toward members of other groups.

et al., 2005; Nesdale et al., 2005). When children are provided positive messages about their ingroup and provided no information about other groups, they also may piece that information together to infer that their group is better than others—promoting intergroup bias (Nesdale et al., 2005; Over et al., 2018). This is particularly important given that children are known to seek out socially biased information (Over et al., 2018). One promising avenue may be to develop strategies to reduce children’s exposure to negative characterizations of other groups and intergroup relations. In classrooms, teachers might try to promote a balance such that when ingroup positivity or outgroup negativity becomes a focus of discussion that

something equally positive about the outgroup should also be pointed out. Evidence from the adult literature indicates that providing positive overt messages like this can reduce intergroup biases (e.g., McConnell, Rydell, Strain, & Mackie, 2008).

Providing children with opportunities for intergroup contact can reduce intergroup biases, although, in the absence of structure (e.g., adult oversight promoting and facilitating cooperation, interdependence, and positive relations), contact also has the potential to exacerbate existing biases (Kurtz-Costes et al., 2011; Vezzali, Giovannini, et al., 2012). Intergroup contact programs that are scaffolded by adults to promote cooperation and the pursuit of common goals have shown to be particularly effective in reducing intergroup biases among children (Berger et al., 2015; London et al., 2002; Rooney-Rebeck & Jason, 1986; Vezzali, Stathi, Crisp, et al., 2015; Walker & Crogan, 1998). By promoting more diverse and integrated teams and groups, school officials and policymakers may be able to support and encourage the development of positive intergroup attitudes among children (London et al., 2002; Walker & Crogan, 1998).

The existing evidence also suggests that talking to children about prejudice, inequality, and discrimination reduces children's racial biases (Aboud & Doyle, 1996; Aboud & Fenwick, 1999; Brinkman et al., 2011; Hughes et al., 2007). For example, Hughes et al. (2007) found that White children who were taught about the prejudice and discrimination faced by Black historical figures showed more positive intergroup attitudes than children who were merely educated about the historical figures (without mentioning the discrimination they faced). Thus, providing children with social–historical context to make sense of the inequalities they observe may help them resist the tendency to perpetuate that inequality (Olson, Dweck, Spelke, & Banaji, 2011).

Exposing children to stories (Cameron et al., 2007; Gimmestad & De Chiara, 1982; Gonzalez et al., 2017) and guided imagination activities (Cameron et al., 2011; Langer et al., 1985; Stathi et al., 2014; Vezzali, Capozza, et al., 2012; Vezzali, Stathi, Giovannini, et al., 2015) that lead children to think about members of other groups and intergroup interactions, has been shown to reduce intergroup biases. Evidence suggests that such experiences are especially impactful for children with few opportunities for intergroup contact in their own daily lives (Cameron et al., 2011; Vezzali, Giovannini, et al., 2012).

Another crucial consideration is the messages that are communicated to children through *nonverbal* patterns of activity. Young children are avid observers and imitators. Whether or not adults mean to teach, even very children infer patterns of behavior, norms, and rules from the social behaviors they observe (Bandura, 1986; Meltzoff, Kuhl, Movellan, & Sejnowski, 2009; Wang, Williamson, & Meltzoff, 2015; Williamson, Jaswal, & Meltzoff, 2009). It has been documented that children pick up differences in patterns of nonverbal signals directed toward others, such that children will show bias against someone who receives a pattern of

cold nonverbal signals (Skinner et al., 2017). In fact, this bias is even generalized to the friends and affiliates of the targets of nonverbal signals (Skinner et al., 2017).

Some evidence suggests that nonverbal signals can even override other information (Brey & Shutts, 2018; Castelli et al., 2008). For example, if one child clearly performs worse than another on a task, children will nonetheless infer that that child is smarter if a teacher directs positive, approving nonverbal signals toward him or her (Brey & Shutts, 2018). Thus, nonverbal signals can be quite powerful in shaping children's worldview. Such subtle nonverbal transfer of attitudinal information may help account for the association between children's intergroup attitudes and the implicit intergroup attitudes of close adults (Castelli et al., 2009; Pahlke et al., 2012; Vezzali, Giovannini, et al., 2012; Vittrup & Holden, 2011). Taken together, current findings suggest the power of adult role models, with the implication that by endeavoring to reduce social segregation (e.g., Cox, Navarro-Rivera, & Jones, 2016) and to develop positive intergroup relationships and friendships, adults may be conveying positive intergroup relations to their children.

The research reviewed here provides evidence of the experiences that can, in principle, influence intergroup bias in childhood, but in order for these factors to have broad impact on children, they will need to be taken up by other levels of society (e.g., schools, policymakers). For instance, although evidence suggests that parents' modeling of positive intergroup interactions through their own friendships may be important, inviting an outgroup person over to dinner a few times may not have a large or lasting effect if the messages provided at school and in the local community routinely cast members of other groups in a negative light and restrict children's interactions with them. Thus, repeated and sustained efforts from multiple different people (e.g., parents, teachers, and trusted others) will be important, perhaps even necessary to infuse change in children's daily environments and promote egalitarianism. Ultimately our children are acquiring powerful and long-lasting views about the social world from watching and listening to us.

Appendix

PsycINFO search criteria

Population Group: "Human"

Publication Type: "Peer-Reviewed Journal"

Language: "English"

Age group: "birth–12 years"

Key Words: "intergroup bias," "prejudice," "race bias," "gender bias," "language bias," "group bias," "accent bias," "social categorization," "race," "intergroup attitudes," and "social preferences."

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