Positive Exemplar Exposure: A Method for Early Implicit Racial Bias Change

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Author Note:

This manuscript is a pre-print of an invited book chapter to be published in *Cultural Methods in Psychology: Describing and Transforming Cultures*. This manuscript is not the copy of record and therefore will not replicate the final, authoritative version of the manuscript.

Abstract

In adults, implicit racial bias has been linked to prejudiced and discriminatory behavior. However, implicit racial biases emerge well before adulthood; as young as age six, children have already internalized the racial attitudes of their culture. Thus, it is critical for researchers to understand how to change implicit racial bias early in development, before its negative effects compound across the lifespan. The following chapter highlights one potential method of bias reduction in childhood: exposure to positive exemplars. As this method is both scalable and child-friendly, it has the potential to be used with young children on a broader cultural level. This chapter details child-friendly methods for measuring bias change and provides two examples of studies that have successfully employed positive exemplar exposure to reduce children's implicit racial bias. I conclude the chapter with recommendations for future use of this intervention cross-culturally, as well as broader cultural applications.

Keywords: implicit bias, racial bias, prejudice, social cognitive development, social cognition, cross-cultural psychology, child development

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Intergroup bias is a devastating hallmark of human history, with consequences ranging from daily experiences of subtle prejudice to interpersonal violence toward members of marginalized groups. While the importance of different social categories, such as race, gender, ethnicity, religion, or social class can vary across historical eras and cultures, instances of social group inequality are timeworn and nearly universal. The internalization of historically entrenched systems of intergroup hierarchy, coupled with our cognitive predisposition to divide the world into “us” and “them”, plays a role in the continued oppression of culturally lower-status social group members across the world.

Racial bias is one salient form of intergroup bias that threatens the wellbeing and safety of members of culturally marginalized racial groups. In the United States, anti-Black racial bias, in conjunction with the institutional racism embedded in policing, is linked to ongoing killings of Black civilians at the hands of police officers (Hall, Hall, & Perry, 2016; Jones, 2017). Furthermore, Black, Indigenous, People of Color (BIPOC) in America are constantly subjected to prejudiced interpersonal interactions and institutional policies that suppress social and economic mobility. These experiences have been linked to racial trauma, which is broadly defined as the physiological, psychological, and emotional stress resulting from racial discrimination (Carter, 2007; Jernigan & Daniel, 2011). As such, racial bias threatens the lives of members of marginalized racial groups, and it is imperative to find ways to reduce its influence.

Concerningly, the psychological foundations of racial bias are present from infancy; by three months of age, babies prefer unknown individuals from familiar racial groups over unknown individuals from unfamiliar racial groups (Bar-Haim et al., 2006; Xiao et al., 2018). By age three, children demonstrate a robust in-group racial bias, and prefer their own racial group

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over others (Dunham, Chen, & Banaji, 2013; Qian et al., 2016). By age six, children's biases reflect the status of racial groups within their culture (Baron, 2015). Specifically, children's racial group preferences are modulated by the racial hierarchies embedded within a culture. For example, in the United States, where cultural messaging and institutional oppression coalesce to privilege Whites over BIPOC, children from marginalized racial groups exhibit lower levels of in-group preference as compared to their White peers. Thus, the roots of racial bias are entrenched long before adulthood, when biased behavior manifests most powerfully.

Due to the early emergence of racial bias, researchers have begun to examine the possibility of trying to change it earlier in development, before its negative consequences compound across the lifespan. Furthermore, recent work suggests that childhood might actually be a more optimal time period to try and change bias, as associations might be more flexible earlier in development, before they are reinforced across development (see Baron, 2015; Devine, 1989; Greenwald & Banaji, 1995; Gonzalez, Baron & Steele, 2017; Rudman, 2004). Additionally, younger children (ages 6-7) may be more receptive to learning about racial bias through instruction than older children (ages 10-11), who rely more on their past experiences when making judgments about social groups (Kang & Inzlicht, 2012).

The following chapter will highlight a method of bias change that has been shown to be effective with children: exposure to positive exemplars. This chapter will begin by reviewing recent findings on the development of implicit racial bias. Next, I will provide a detailed methodological description of how to measure bias change and two examples of studies with children using positive exemplar exposure. Finally, I will discuss theoretical gaps in our knowledge regarding this type of intervention, as well as future directions for conducting exemplar interventions cross-culturally. In summary, the goal of this chapter is to provide an

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overview of a potential method of transforming culture by reducing implicit racial bias in childhood, as well as guidelines for researchers to investigate the efficacy of this method cross-culturally.

The Development of Implicit Racial Bias

Though the presence of intergroup bias is most apparent when it is expressed verbally, a more subtle form of bias, known as implicit bias, can also shape behavior without our conscious knowledge (Greenwald & Banaji, 1995; Greenwald & Banaji, 2017; see also Pauker, Lamer, Ansari, & Weisbuch, this volume). As compared to its counterpart, explicit bias, implicit bias is more automatic and less conscious; while some individuals might be somewhat aware of implicit biases that they hold but do not wish to express, others might not even recognize the presence of certain biases. Previous research has shown that implicit and explicit forms of bias tap into distinct associations and differentially predict biased behavior (e.g., Greenwald et al., 2009). For example, studies suggest that higher levels of explicit racial bias negatively affect interracial interactions through verbal expressions, while higher levels of implicit racial bias negatively affect interactions through non-verbal behavior signals (e.g., Dovidio, Kawakami, & Gaertner, 2002; McConnell & Leibold, 2001).

In addition to predicting distinct behaviors, implicit and explicit bias have a low positive correlation, suggesting that while these constructs are related, they can diverge (Hofmann, Gawronski, Gschwender, Le, & Schmitt, 2005; Nosek, Banaji, & Greenwald, 2002). Accordingly, it is possible for implicit and explicit biases to contradict one another, particularly when biases are viewed as socially inappropriate, as in the case of racial bias (Raabe & Beelmann, 2011). Specifically, implicit bias tends to be less susceptible to social desirability and

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persists regardless of egalitarian desires or expectations. As such, implicit racial bias is generally recognized as being more pervasive than explicit racial bias.

The cognitive associations that comprise implicit racial bias can take the form of either attitudes, which are an association between a social group and positivity/negativity, or stereotypes, which are an association between a social group and a particular attribute or concept. The following chapter will focus on the development of implicit racial attitudes (e.g., pro-White attitudes; White = good), which have been shown to affect the quality of interracial interactions, and influence behaviors such as hiring and medical treatment of members of marginalized racial groups (Green et al., 2007; Greenwald, Poehlman, Uhlmann, & Banaji, 2009).

The detrimental consequences of implicit racial bias have motivated recent interventions to change these negative attitudes. However, it appears that implicit racial bias change in adulthood is often short-lived and does not always correspond with behavioral change (Forscher et al., 2016; Forscher, Mitamura, Dix, Cox, & Devine, 2017; Lai et al., 2016; see also Pauker et al., this volume). For example, in a recent comparison of nine interventions to reduce implicit racial bias, researchers found that all nine interventions successfully reduced bias immediately after implementation. However, after a delay of several hours, bias magnitude returned to pre-intervention levels (Lai et al., 2016). Another meta-analysis of almost 500 studies showed that while interventions can successfully change implicit and explicit bias in adults short-term, bias change did not lead to behavioral change (Forscher et al., 2016).

A possible explanation for these findings is that implicit associations may be too rigid to easily change in *adulthood*, but less rigid at earlier points in development (Baron, 2015). Adults have had a lifespan of reinforcement from cultural messages of bias, while in contrast, children have had much less exposure. Thus, it may be worthwhile to consider addressing intergroup bias

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earlier in development, before implicit associations have been continually reinforced over many years. Similar to the build-up of dental plaque on teeth, this reinforcement of bias across the lifespan may make these biases and behaviors more difficult to “clean” away.

Childhood is also an optimal time in development to implement bias interventions for practical reasons. Early reduction of implicit bias could reduce instances of discrimination and prejudice that occur across the lifespan by counteracting consistent cultural messaging. As such, many researchers have begun to examine the nature of implicit racial attitudes in childhood, in order to understand how to change these biases earlier in development.

Child-Friendly Measures of Implicit Bias

In order to measure implicit bias in adults, researchers have most commonly used the Implicit Association Test (IAT) developed by Greenwald, McGee, & Schwartz (1998). This test measures the strength of an individuals’ association between a social group and valence (in the case of attitudes) or between a social group and a particular attribute (in the case of stereotypes). Other forms of implicit cognition, such as self-esteem, self-concept, and identity can also be measured using the IAT (Greenwald et al., 2002).

The premise of the IAT is that due to implicit associations between concepts, participants will be faster to sort words when associated categories share a response key. For example, if an individual has pro-White/anti-Latinx racial bias, they would be faster to sort images of White and Latinx individuals and good and bad words into their respective categories if “White” and “good” share a response key, while “Latinx” and “bad” share a response key. In contrast, an individual with this racial bias would be slower, and find it more difficult to sort stimuli correctly when “White” and “bad” share a response key and “Latinx” and “good” share a response key.

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The IAT measures overall response times on different sets of sorting trials and computes a difference score reflecting the strength of participants' racial attitudes.

This measure has been adapted for use with children as young as age five (see “Measuring Implicit Racial Bias Change using the Child IAT” below), using modifications such as child-friendly buttons, color coding, acoustic presentation of words, and experimenter assistance (Baron & Banaji, 2006). Though the Child IAT is commonly used to measure racial bias in children, it is important to note that it has a number of limitations. Firstly, though there have been some researchers who have been able to modify the IAT for children as young as four (see Cvencek, Greenwald, & Meltzoff, 2011), it is still a relatively complex measure for children ages five and under to complete. Secondly, the Child IAT is a relative measure, and does not isolate specific racial attitudes. For example, on an IAT measuring implicit Latinx and White racial attitudes, the D-score would reflect how strongly participants associate Latinx people with positivity and White people with negativity *as compared to* how strongly they associate Latinx people with negativity and White people with positivity. As such, the IAT indicates an individual's relative associative preference for one group over another, but does not necessarily disentangle whether racial attitudes are driven by associations with one racial group.

In an attempt to address some of these limitations, a number of other measures have been designed or modified to measure children's implicit racial attitudes. The Implicit Racial Bias Test (IRBT) was designed to measure implicit racial bias in children as young as age three (Qian et al., 2016). This measure uses more recent touch-screen technology to record children's reaction times. Children are presented with a smiley face button and a frowny face button on a touch screen. On the first set of trials, they are assigned to tap the smiley face when they see members of one racial group (e.g., Asian = “smiley face”) and the frowny face when they see

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members of the comparison racial group (e.g., White = “frowny face”). On the next set of trials, they must press the smiley and frowny faces in response to the opposite pairing (e.g., Asian = “frowny face” and White = “smiley face”). Difference scores are then computed in a similar manner as the IAT, in order to calculate which set of trials children responded to more quickly. This method is easier for younger children to complete, as they only need to focus on sorting stimuli into two categories. However, the racial attitudes measured by the IRBT are still relative.

Another measure called the Affective Misattribution Procedure has been adapted for use with children as young as age five (Williams, Steele, & Lipman, 2016). In this measure, which was initially designed for use with adults (Payne, Cheng, Govorun, & Stewart, 2005), a picture of an individual from one of the target racial groups is shown on the screen very quickly. Participants are then presented with an ambiguous inkblot and must judge the inkblot as good or bad. Research has shown that children are primed by the stimuli they see and proceed to judge the inkblot in an affectively congruent manner. Importantly, this method is not based off of reaction times (unlike the Child IAT and the IRBT), and instead focuses on the proportion of inkblots children judge as good or bad. This can be considered an advantage of this method, as reaction times can be strongly influenced by context (Williams et al., 2016). Furthermore, this method allows researchers to examine independent racial attitudes, as it is not a relative measure. However, as the AMP does not facilitate racial categorization, children might not think of the presented images in terms of racial group membership. As such, this measure might be less likely to detect the presence of implicit racial attitudes.

Acquisition of Implicit Racial Bias

Recent developmental research has examined the cognitive mechanisms underlying acquisition of implicit racial bias. These studies have primarily been conducted using novel

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social groups, in order to understand how implicit bias is acquired more generally. In actuality, these cognitive processes are modulated by cultural context (see “Cross-Cultural Patterns of Implicit Racial Bias” below). However, it is useful to understand them in the absence of existing cultural bias to identify the specific cognitive processes that could contribute to acquisition and ongoing reinforcement of harmful racial biases. The following section will briefly review three cognitive processes that contribute to the acquisition of implicit racial bias in childhood: in-group preference, high-status preference, and associative learning.

The first process that is posited to underlie implicit racial bias is ingroup preference. Past research using novel groups has shown that children as young as 5 tend to demonstrate an automatic preference for their ingroup (Dunham, Baron, & Carey, 2011; Baron & Dunham, 2015). Specifically, when children are randomly assigned to a novel group, without any information provided that would warrant privileging that group, children immediately show relative preference for their new ingroup on a Child IAT. As such, it has been suggested that this automatic and implicit ingroup preference is potentially an evolutionary adaptation to identify one’s own group and associate it with positivity. Thus, it is plausible that when children learn their racial ingroup, they have an automatic implicit preference for members of their own group.

In addition to preferring one’s ingroup, children consistently prefer higher-status groups (Shutts, Kinzler, Katz, Tredoux, & Spelke, 2016; Horwitz, Shutts, & Olson, 2014), which are groups that exhibit social dominance or have access to more resources. Like in-group preference, this preference for higher-status groups may partially stem from an evolutionary bias, as infants begin to demonstrate implicit preference for higher-status individuals as early as six months (Pun, Birch, & Baron, 2016; 2017). Specifically, infants assume that higher-status individuals will prevail in social confrontations and are likely to have more resources (Enright, Gweon, &

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Sommerville, 2017; Mascaro & Csibra, 2012; Thomsen, Frankenhuys, Ingold-Smith, & Carey, 2011). This translates into social preference later in development, when preschool children positively evaluate higher-status individuals who have more resources (Horwitz et al., 2014; Shutts et al., 2016). As such, when children internalize beliefs about which racial groups have access to resources, this may lead them to prefer higher-status groups (Newheiser, Dunham, Merrill, Hoosain, & Olson, 2014).

Finally, the cognitive process of associative learning plays a key role in the acquisition of implicit intergroup bias. As members of a culture, we inevitably internalize the positive or negative associations that are repeatedly presented to us through media sources, conveyed through interpersonal interactions, and perpetuated through racist institutions (see Salter et al., 2017). Furthermore, research indicates that implicit associations form rapidly from limited exposure to cultural exemplars. Studies with both adults and children ages 5-12 have shown that immediately after hearing short stories about imaginary social groups engaging in positive or negative actions, individuals demonstrate internalization of the presented association (Gregg, Seibt & Banaji, 2006; Gonzalez, Dunlop, & Baron, 2017). For example, when children were presented with stories of one imaginary social group engaging in negative actions toward an outgroup (e.g., pushing another person), they later demonstrated an implicit association between that group and negativity on an Implicit Association Test. Thus, as early as age five, we can learn social group associations from just a few examples of social group positivity or negativity.

Importantly, learning these social group associations is easier than unlearning them. Research with adults indicates that after implicit associations are learned, exposure to counterexamples of behavior is not sufficient to reverse the learned association (Gregg et al., 2006). For example, while adults who heard negative stories about a novel social group

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immediately demonstrated an implicit association between that group and negativity, subsequent learning about positive actions of that social group did not immediately lead to an implicit association between the group and positivity. Instead, both associations appeared to be activated simultaneously, resulting in attenuation, but not reversal of the initial implicit attitude. This result has also been found with children, with evidence that after exposure to positive and negative information about a social group, both associations were learned and could be activated in different contexts (see Gonzalez, Dunlop, & Baron, 2017). As such, even when we are given information to counteract the negative social group associations we have been taught, this information will not automatically override previous biases. These findings emphasize the detrimental consequences of early and limited exposure to negative cultural messaging about racial groups. Once children have learned to implicitly associate a racial group with negativity, it may be difficult to prevent that association from being activated, even when positive implicit associations have also been learned.

It is important to note that while this research implicates these three cognitive processes in the acquisition of implicit racial bias, additional cross-cultural research is required to generalize these findings beyond North America. Few studies have conducted novel group experiments outside of this context, and as a result, it is unclear how much they generalize to other cultures (see Syed & Kathawalla, this volume). As such, future research is required to understand whether these processes of bias acquisition are applicable more broadly.

Cross-Cultural Patterns of Implicit Racial Bias

Though an examination of implicit bias acquisition using novel groups has not been conducted cross-culturally, numerous studies have been conducted to examine the development of implicit racial bias in existing cultural contexts. Though the historical antecedents,

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institutional systems, and cultural messages of racism can vary substantially between and within cultures, cross-cultural comparisons can help researchers to identify common patterns in bias acquisition, as well as understand how these unique and distinct cultural contexts differentially impact implicit racial bias. As the majority of this research has used relative measures, such as the Child IAT and the IRBT, to measure implicit racial bias, this work must be interpreted in light of the comparison racial group used as well as the relative status of groups within the cultural context. It is also imperative to interpret this work with an understanding that many of the methodologies used to measure implicit racial bias were initially developed in a Western context with primarily White samples (see Syed & Kathawalla, this volume).

Research suggests that children who are members of majority, culturally higher-status social groups exhibit implicit preference for their racial ingroup early as age three, and this bias may remain relatively stable through adulthood (e.g., Dunham, Chen, & Banaji, 2013; Baron, 2015). For example, research conducted with White Americans, the majority and higher-status racial group within their culture, indicated that children as young as age six showed a robust pro-White/anti-Black implicit attitude on a Child IAT, and this bias persisted across development (Baron & Banaji, 2006). Other studies examining the implicit bias of majority, higher-status racial groups, using relative measures of implicit racial bias, have replicated these results with White American children (Newheiser & Olson, 2012) and found similar results of developmentally stable ingroup racial preference in children ages 3 to 12 in the United Kingdom (Anglo-British children; Rutland et al., 2005), Japan (Japanese children; Dunham, Baron, & Banaji, 2006), Canada (White Canadian children; Williams & Steele, 2019) and China (Han-Chinese children; Qian et al., 2016). Specifically, for children who are members of majority, culturally higher-status racial groups, a preference for one's own racial group appears to remain

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stable across development when the comparison group is a marginalized or minority group within their culture.

In contrast, researchers examining the implicit intergroup attitudes of individuals from culturally marginalized or lower-status racial groups have found no in-group preference; instead, when one's own racial group is contrasted with a higher-status racial group within one's culture, children tend to show no preference for either group. This pattern has been seen in Black children ages 7-11 (Newheiser & Olson, 2012) and Latinx children ages 5-12 (Dunham, Baron, & Banaji, 2007) in the United States when their racial group is contrasted with White people on a Child IAT. This effect is proposed to occur as a result of two contrasting associations: (1) positive attitudes toward one's racial ingroup, which stem from an early-emerging and automatic preference for one's own group and (2) negative cultural attitudes toward marginalized or lower-status racial groups, which stem from the institutional racism that creates racial hierarchies, as well as cultural messaging from media and interpersonal interactions (see Jones, 1972).

Additional evidence of the link between status and racial attitudes can be found in cultures where racial group status differences are particularly prominent and negative cultural attitudes may actually override ingroup preference. One such case is that of South Africa, where government policies of segregation and discrimination were only abolished in 1994 and status differences between racial groups continue to be extremely pronounced (Newheiser et al., 2014). In this research, it was found that Black and Coloured (a multiracial group with historically higher status than Black South Africans) children ages 6-11 showed an implicit preference for White South Africans over their own racial group on a Child IAT. Furthermore, children's implicit racial bias was predicted by their preference for high status (i.e., more access to wealth

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and resources) more generally, suggesting that children's internalization of racial group status is an important component of their implicit racial attitudes.

Other cross-cultural work further supports the hypothesis that children from marginalized or lower-status racial groups begin with an overall ingroup preference that is modulated by cultural messages as development progresses. Research with children and adults in a rural Japanese village indicated that 6-year-old children had pro-Japanese preference on a Child IAT when the comparison group was White Americans, but by adulthood, when individuals had internalized pro-White cultural messaging, this preference had attenuated (Dunham et al., 2007). Other work with children from China and Cameroon has demonstrated similar developmental trajectories, with majority group children from both countries showing an ingroup preference for their own group over White at ages 3-5, but lower levels of ingroup preference in adulthood, potentially due to increased awareness of institutionalized racial hierarchies that privilege White people and increased exposure to Western messaging about race (Qian et al., 2016).

Cultural modulation of racial bias across development also appears to be present when measuring children's implicit racial attitudes regarding racial outgroups; non-White, non-Black children in Canada (South Asian, East Asian, and Southeast Asian) and Brunei (Malay and Chinese) demonstrated pro-White/anti-Black bias on a Child IAT in early childhood (6-7 years of age), but this bias shifted based on interracial contact and cultural messaging in later childhood (ages 9-10) and adulthood (Steele, George, Williams, & Tay, 2018). Specifically, in Canada, where children from this sample were increasingly exposed to Black individuals across development, pro-White/anti-Black bias was reduced. In Brunei, where individuals were increasingly exposed to Western media, with little to no contact with Black or White people in the immediate environment, pro-White/anti-Black bias increased across development.

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There is also recent evidence from North America indicating that positive cultural messaging can increase ingroup racial positivity for members of culturally marginalized racial groups. For example, one recent study conducted in the United States found that Black young adults who attend Historically Black Colleges, where Black racial identity is celebrated and positively reinforced, have stronger levels of implicit pro-Black/anti-White racial bias on an IAT than those who do not attend these colleges (Gibson, Rochat, Tone, & Baron, 2017). Furthermore, aforementioned work conducted in Canada suggests that intergroup contact could potentially reduce implicit bias toward racial outgroups; a finding that is consistent with adult work on this topic, as well as work with children exploring the effect of racial diversity on explicit and indirect racial bias (Brown & Hewstone, 2005; Hewstone, Rubin, & Willis, 2012; McGlothlin & Killen, 2005).

In conclusion, cross-cultural research provides additional evidence that implicit racial attitudes are acquired and reinforced through preference for one's ingroup, preference for higher-status racial groups within one's culture, and associative learning from negative cultural messaging. Though underlying cognitive biases scaffold the development of implicit racial bias, cultural context plays a critical role in determining which groups are viewed as higher-status and how implicit racial attitudes change over time (see also Pauker et al., this volume). For example, the United States has a long history of oppression of and violence toward BIPOC and privileges White people through cultural messaging and racist institutions (see Salter, Adams, & Perez, 2017). While explicit racism has decreased over time (Charlesworth & Banaji, 2019), systemic racism against people of color remains deeply engrained in American institutions, which continues to reinforce implicit racial attitudes within cultural settings (Payne, Vuletich, & Lundberg, 2017). As such, the cognitive and cultural components of implicit racial bias are

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inextricable, and it is essential for researchers to develop racial bias interventions that consider both.

Methods of Early Implicit Racial Bias Change

Researchers have recently begun testing methods to change harmful implicit racial attitudes in childhood. While there is a large body of work examining implicit bias change in adults (see Lai et al., 2016), few studies have examined the application of these methods to children. Critically, it cannot be assumed that interventions that have successfully reduced implicit racial bias in adults would similarly reduce bias in children. Childhood is a broad period in development where numerous cognitive and socioemotional changes occur. Interventions that are tailored to be developmentally appropriate for preschool age children could be too child-friendly for adolescents or adults, potentially resulting in reduced efficacy or backlash. Additionally, conditions that do result in bias change may be constrained to particular periods in development. For example, young children are less likely to spontaneously categorize by race than older children and are more likely to focus on other relevant social categories (e.g., gender, accent, language; Degner & Wentura, 2010; Kinzler, Shutts, DeJesus, & Spelke, 2009; Shutts, Banaji, & Spelke, 2010). As such, interventions that are dependent on children's racial categorization of exemplars may be less effective with younger children (Gonzalez, Steele, & Baron, 2017).

One method that has been shown to effectively decrease bias in children ages 3-5 is perceptual individuation training (Qian et al., 2016). This method is based on the hypothesis that implicit racial bias is in part due to difficulties individuating other-race faces (Lee, Quinn, & Heyman, 2017). When we fail to individuate outgroup members, it is easier to generalize negativity to the group as a whole, rather than considering individual-level differences. As such,

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this method seeks to reduce the extension of negative racial bias by teaching children to individuate members of racial outgroups. In studies demonstrating the efficacy of this method, children in China were trained to individuate different Black exemplars (Xiao et al., 2015). Researchers found that children who received this training had significantly lower levels of anti-Black bias, and this reduction in bias lasted over two months (Qian et al., 2017). However, it is important to note that the children in this study had very limited intergroup contact and grew up in a cultural environment where 99% of people were Han Chinese. As such, while this method may help to reduce implicit racial bias when intergroup contact is limited, it may not successfully change bias in more diverse interracial contexts where children already individuate outgroup members, but continue to generalize racial bias to these individuals nonetheless.

Other interventions conducted with adolescents ages 11-13 have also been shown to successfully reduce implicit racial bias long-term. These interventions were conducted in Italy and Portugal and both involved intensive indirect methods of exemplar exposure (Neto et al., 2015; Vezzali et al., 2011). In the first intervention, conducted in Italy, children engaged in multiple sessions over the course of three weeks where they imagined intergroup contact with immigrants. One week after the conclusion of the intervention, children who had engaged in imagined contact had lower levels of implicit anti-immigrant prejudice as compared to children in a control condition. In the intervention conducted in Portugal, children were exposed to a cultural music program featuring musicians from Cape Verde over the course of six weeks. The goal of this intervention was to reduce anti-dark skin bias, and researchers found that children in this music program had significantly less implicit bias two years later. Taken together, these studies indicate that methods of outgroup exemplar exposure may be particularly effective in reducing children's implicit racial bias. Furthermore, unlike perceptual individuation training

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which seeks to interrupt generalization of negative bias, exemplar exposure focuses on strengthening positive implicit associations. As such, it is possible that this method may be more effective at shifting bias in diverse environments.

The results of studies with children showing that exemplar exposure effectively decreases implicit racial bias are consistent in research with adults. In a comparison of seventeen different interventions to reduce implicit pro-White, anti-Black racial bias, researchers found that exposure to positive outgroup exemplars who demonstrated counter-stereotypical behavior was one of the most effective methods of short-term implicit racial bias reduction (Lai et al., 2016). This aligns with previous work indicating that exposure to positive Black exemplars and negative White exemplars can decrease implicit racial bias in adults for up to 24 hours (Dasgupta & Greenwald, 2001; Joy-Gaba & Nosek, 2010). Other methods of exemplar exposure, through indirect intergroup contact, have also been found to effectively decrease adult's implicit racial bias (e.g., Crisp & Turner, 2009). For example, in one recent study, researchers were able to reduce implicit pro-White, anti-Arab/Muslim racial bias by exposing participants to a relatable television show featuring Arab/Muslim characters (Murrar & Brauer, 2018). As compared to participants who were exposed to a similar sitcom featuring White main characters, these participants had reduced implicit bias up to four weeks after exemplar exposure.

Positive Exemplar Exposure as a Method for Implicit Racial Bias Change

Taken together, preliminary evidence with young children and adolescents and research with adults suggests that exposure to positive racial group exemplars can potentially reduce implicit racial bias both immediately after exemplar exposure and in the long-term. Furthermore, positive exemplar exposure can be easily adapted into a scalable, child-friendly format, which means it has the potential for broader usage outside the laboratory. If positive exemplar exposure

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can be used to reduce implicit racial bias, integration of this intervention at a cultural level (e.g., in educational settings, children's media), could help to shift implicit racial bias more broadly.

In the following section, I describe two recent studies testing positive exemplar exposure as a method of implicit racial bias change in children ages 5-12. Additionally, this section describes use of the Child IAT as a measure of implicit racial bias change. These methodological descriptions are intended as examples of potential positive exemplar exposure interventions that could be used with children. Ideally, researchers and educators can use these descriptions to guide future investigations of this method for bias change.

Measuring Implicit Racial Bias Change using the Child IAT

As previously discussed, there are a number of child-friendly implicit racial bias measures that could be used to assess the efficacy of positive exemplar exposure (see "Methods of Early Implicit Racial Bias Change" above). The following section will describe the use of the Child IAT as a measure of implicit racial bias, as it is the most commonly used measure, and allows for comparison between past and future research on positive exemplar exposure (Baron & Banaji, 2006). Though it has some limitations as a relative measure of bias, the Child IAT has been found to be both reliable (Williams & Steele, 2016) and predictive of children's behavior (Rae & Olson, 2018). Specifically, when measuring implicit racial bias using the Child IAT, researchers found that children with higher levels of pro-White/anti-Black racial bias were more likely to select a White child over a Black child as the winner of an art contest. Though additional work on the predictive validity of the Child IAT is needed, these results suggest that this measure can predict race related behavior in children ages 6-11.

Materials. The Child IAT is an adaptation of the adult version of the Implicit Association Test and similarly operates on the assumption that individuals will be faster to

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respond on a sorting task when corresponding concepts share a response key (Baron & Banaji, 2006). Pre-programmed versions of this task can be found on the Inquisit™ Millisecond Website (<https://www.millisecond.com/download/library/iat/childiat/>). Using the Inquisit™ testing software, researchers can edit the images and words presented in the task in order to test the appropriate associations. In an implicit racial bias IAT, children are presented with a minimum of four different images of children from each comparison racial group (e.g., on a Child IAT measuring implicit White vs. Black racial bias, stimuli would consist of four images of White children and four images of Black children) and a minimum of four different child-friendly words representing “good” and “bad” (e.g., good words = good, fun, happy, nice; bad words = bad, mad, mean, yucky). These words are traditionally presented acoustically in a female voice, sometimes with visual accompaniment of the actual word.

In order to adapt this measure for use with children, child-friendly buttons are used instead of keyboard keys so children can quickly and easily identify which key to press. Furthermore, these buttons should be color coded to match corresponding sides of the screen (e.g., yellow and blue). On each side of the screen, the corresponding categories (e.g., Black, White, good, bad) are depicted with “category markers”, which are child friendly images and/or words (e.g., a compilation of the images of White children could be the category marker for White, a smiley face could represent the category marker for good). On either side of the screen, there is also a solid colored bar (matching the corresponding button colors) to indicate which button should be pressed when a stimulus from that category appears on the screen.

Procedure. Children should be guided through the different trials by an experimenter to ensure that they understand how to complete the task. During practice trials it is appropriate to offer guidance to children who may initially struggle with understanding the task. During test

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trials, children should complete the task on their own after initial instructions. At the beginning of the task, experimenters normally tell children that they are going to play a game.

During the first set of Child IAT practice trials for a racial attitude test, children are told that they will see pictures in the middle of the screen. If they see an image of one of the people on the yellow side of the screen, they are told to press the yellow button. If they see an image of one of the people on the blue side of the screen, they are told to press the blue button. They are also told to respond as quickly as they can. For example, if children were to categorize Black and White racial groups, they would see images of Black and White children, one at a time, in the center of the screen. On either side of the screen, participants would see the category markers to indicate which button to press when they see an image from that category (e.g., the Black category marker on the yellow side would mean pressing the yellow button when you see an image of a Black child) and then press the button to sort the images into the appropriate category.

On the next set of practice trials, children are told that they will hear different words, and told to press the button corresponding with the type of words they hear. For example, children might hear and see “good” and “bad” words. On either side of the screen, they would see a smiley face and a frowny face as category markers to indicate which button to press (e.g., the smiley face on the yellow side would mean pressing the yellow button when you hear/see a good word). Both sets of practice trials are intended to familiarize participants with the stimuli and categories, as well as the keys that they will be using to sort stimuli on critical test trials.

During the first set of critical test trials, referred to as a critical test block, children must sort stimuli from all four categories. On these trials, the same buttons are used as were used during the practice trials, which results in one key being used for both a social group and an attribute (e.g., press the yellow button if you see picture of a Black person or hear/see a “good”

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word, press the blue button if you see a picture of a White person or hear/see a “bad” word). They must sort these stimuli as quickly as possible over the course of 20 or more test trials (see Williams & Steele, 2016). On these trials, reaction time is indicative of the strength of the association between concepts that share the same button (e.g., the strength of an association between Black=good / White=bad). Faster categorization of the stimuli is indicative of a stronger cognitive association between the two concepts (e.g., faster response times would indicate a stronger association between Black + positivity or White + negativity).

The next set of trials are practice trials where the attribute categories are reversed (e.g., press the yellow button if you hear/see a “bad” word, press the blue button if you hear/see a “good” word), which prepares participants for the next set of critical test trials. During the final set of critical test trials, participants are again asked to sort stimuli from all four categories when one social group category and attribute share a response key (e.g., press the yellow button if you see a picture of a Black person or see a “bad” word, press the blue button if you see a picture of a White person or see a “good” word, measuring the strength of an association between Black = bad / White = good). The reaction times on this set of test trials are then compared to those on the first set of critical trials to compute a relative difference score.

This standardized difference score, otherwise known as a D-score, is indicative of the relative strength of participants’ associations and how quickly they are associating one social group with positivity as compared to the other (see Greenwald, Nosek, & Banaji, 2003 for recommended scoring procedures). It is important to note that the side placement of category markers, as well as the order of social group-attribute pairings should be counterbalanced across participants, and order of pairings can be entered into analyses as an additional moderator or covariate (e.g., Gonzalez, Dunlop, & Baron, 2017).

Study 1: Positive Adult Exemplars

Using the Child IAT as our measure of implicit racial bias, we recently examined whether positive outgroup exemplar exposure would reduce the bias of children ages 5-12 (Gonzalez, Steele, & Baron, 2017). Our research was conducted in Vancouver, Canada, where White and Asian are the two majority racial groups and less than 1% of the city's population identifies as Black (Statistics Canada, 2019). Our goal was to reduce pro-White/anti-Black racial bias. We only included children who identified as White and/or Asian to ensure that Black exemplars would be considered by participants to be a racial outgroup.

We hypothesized that children who were exposed to positive Black exemplars would show decreased pro-White/anti-Black implicit racial bias on a Child Implicit Association Test. Children were randomly assigned to one of three groups. In our experimental condition, children were exposed to short stories about four positive Black adult exemplars (two men and two women) who had contributed positively to their community (e.g., doctor, hockey coach; see Gonzalez et al., 2017 for additional details). In one control condition, children were exposed to the exact same stories, but with photos of White adult exemplars. In the other control condition, they heard positive anecdotes about four different types of flowers. Compared to the control conditions, we found that children who heard about positive Black exemplars had lower levels of pro-White/anti-Black racial bias after exemplar exposure.

Importantly, there was an age difference in the efficacy of the intervention; while children ages 9-12 had decreased levels of implicit racial bias after exemplar exposure, children ages 5-8 had similar levels of bias across conditions. We speculate that this could be due to a number of elements of the intervention itself. Firstly, it is possible that the positivity of the exemplar exposure may not have been salient enough for young children, as our stories were not

overtly positive, but instead implied positivity on the part of the actors. Secondly, the exemplars presented in the stories were adults, which could make them less relatable to children (Williams & Steele, 2019). Lastly, age differences in intervention efficacy could be due to developmental differences in racial categorization, as younger children are less likely to categorize individuals based on race, which could have limited their internalization of a positive outgroup association (Degner & Wentura, 2010; Kinzler et al., 2009; Shutts et al. 2010).

Study 2: Positive Child Exemplars

We decided to follow up on this research and test whether modified positive outgroup exposure could be used to change implicit racial bias in children younger than age eight (Gonzalez, Steele, Chan, Lim, & Baron, 2020). Our sample again included 5 to 12-year-old White and Asian children from Vancouver, Canada, and our goal was to reduce pro-White/anti-Black racial bias. This time, children were exposed to a series of three short stories featuring two prosocial and two antisocial child exemplars (two pairs of children, each pair consisting of a boy and a girl). These exemplars engaged in child-friendly actions that were either positive (e.g., helping a neighbor carry groceries) or negative (e.g., taking groceries from a neighbor; see Gonzalez et al., 2020 for additional details). In the experimental condition, the prosocial characters were Black and the antisocial characters were White. In the control condition, both sets of characters were White. Other than the race of the prosocial characters, the stories were identical across conditions. In an additional departure from the original study, we decided to examine whether or not exposure to positive outgroup exemplars could potentially reduce implicit racial bias long-term. As a first step to examining this possibility, we tested children's implicit racial bias both immediately after exemplar exposure, and one hour later.

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Unlike the previous exemplar exposure, which was only effective with older children, we found that children across our age range of 5-12 years had reduced implicit racial bias after exposure to positive Black exemplars, as compared to children who were exposed to positive White exemplars. Furthermore, children's implicit racial bias remained reduced after an hour. However, it is unclear which aspects of the story increased the efficacy of this intervention with a younger age group: children in this study were presented with child exemplars, presented with both positive and negative exemplars, provided with only two exemplars engaging in multiple child-friendly actions (rather than an overall character description of four exemplars), and race may have been made more salient by including both Black and White exemplars in our experimental condition. Future research should seek to disentangle these possibilities in order to identify optimal conditions for changing implicit racial bias in young children.

When taken together with previous research on positive outgroup exemplar exposure in adults, as well as evidence of the long-term malleability of implicit racial bias in children, these two studies indicate that positive outgroup exemplar exposure may be a promising method of changing implicit racial bias in children. The next section of this chapter outlines the limitations of our current knowledge regarding this method, as well as potential future directions to better understand the efficacy of positive outgroup exemplar exposure across development.

Methodological Limitations and Future Directions

Cross-Cultural Considerations

An important limitation of current work on positive exemplar exposure and implicit bias change in children is a lack of research across cultural settings. Thus far, research on this method has only been conducted in one location (Vancouver) and examined only one specific racial attitude within North American culture (pro-White/anti-Black racial bias). As such, it remains

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unclear whether this method is effective in other cultural settings. For example, in other environments, interactions with racial outgroup members may be more common (as compared to interactions between White or Asian children with Black children in Vancouver). Cultural variation in racial diversity may have an impact on the efficacy of this method by influencing the malleability of bias and receptivity to positive novel information about familiar racial groups.

Another important limitation of positive exemplar exposure as a method of bias change is that the content of racial bias varies drastically, even within the United States (Zou & Cheryan, 2017). As a result, positive exemplar exposure may not be enough to combat all cultural forms of prejudice. For example, according to the Racial Position Model, racial and ethnic minorities in the United States experience prejudice along two distinct dimensions: perceived inferiority and cultural foreignness. Due to historical and institutional oppression, Black and Indigenous individuals most often experience prejudice along the dimension of perceived inferiority and are often associated with negative characteristics. In contrast, Asian Americans most often experience prejudice along the dimension of cultural foreignness and are recipients of negative bias based on a perception that they are “not American”. Latinx and Arab Americans experience prejudice along both dimensions and are often associated with negative characteristics as well as being perceived as foreign. As such, while positive outgroup exposure may be effective in reducing prejudice toward Black Americans, other racial groups who experience prejudice based on cultural foreignness may require other forms of exemplar exposure to change bias.

Furthermore, while these dimensions of racial prejudice are applicable to the United States, other settings require additional understanding of bias content within that culture in order to design effective and culturally competent forms of exemplar exposure. It is prudent for researchers who are working outside their own culture to collaborate with individuals from the

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cultural setting of interest to develop an understanding of the cultural context of racial bias.

Furthermore, researchers working within their own culture may benefit from collaborations with other scholars, particularly BIPOC scholars in psychology as well as sociology, history, or other fields in order to establish appropriate context and an understanding of the institutional and cultural racism that perpetuates implicit racial bias. I also would encourage readers to read Pauker et al. (this volume), which dives more into the use of cultural snapshots as a method to understand the ways in which an individuals' surrounding cultural context may serve as a source of racial bias.

Changing Bias Across Development

In addition to extending examinations of implicit bias change to cross-cultural settings, another important future direction is to more clearly identify which bias reduction strategies to employ at various points in development. The majority of this work has been conducted with adults and has had varied degrees of success; while some studies have shown that implicit racial bias can be changed temporarily, interventions with adults have not consistently demonstrated the long-term malleability of implicit racial bias (see Lai et al., 2016).

In the aforementioned research, where we exposed children to prosocial and antisocial exemplars to try and change implicit racial bias, we tested this same intervention with university aged White and Asian adults (Gonzalez et al., 2020). We found that this intervention did not work with adults; participants showed significant levels of implicit pro-White/anti-Black racial bias regardless of condition. It is plausible that this intervention may not have worked with adults due to its overt and child-friendly nature. However, another possibility is that adult biases may be more difficult to change than children's due to years of bias reinforcement (see Baron, 2015). As such, adults may require a stronger "dosage" of exemplar exposure in order to induce

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effective bias change (e.g., entertainment education, Murrar & Brauer, 2018), while children may be able to internalize positive associations from less exemplar exposure.

It is important to note that while researchers have struggled to change underlying implicit associations between racial groups and negativity, there are a number of interventions with adults that have been shown to successfully interrupt the link between implicit racial bias and biased behavior. For example, intensive prejudice interventions that train individuals to identify and combat bias through various strategies have been shown to increase awareness of and concern about expression of racial bias (Devine, Forscher, Austin, & Cox, 2012). Other work suggests that motivated self-regulation of bias application is more successful in reducing stereotype application than attempts to retrain implicit associations (Burns, Monteith, & Parker, 2017).

It may be the case that strategies designed to interrupt the effect of bias on behavior may be more effective with adults, while positive exemplar exposure, which seeks to directly modify underlying implicit associations, may be more effective earlier in development, when associations are not as solidified. Furthermore, even when considering interventions within childhood, exposing children to positive exemplars at an early age might be an optimal intervention to use before engaging in more complex conversations about racism as children get older. Future research should systematically examine the efficacy of these different types of strategies on the reduction of implicit racial bias across development.

Long-Term Change

While the research discussed in this chapter is a preliminary step toward an understanding of long-term implicit racial bias change, it remains to be seen whether positive exemplar exposure can change children's bias long-term. When children return to their everyday lives after positive exemplar exposure, they will inevitably encounter cultural messages

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reinforcing their previous biases. It may be essential to provide children with repeated examples of exemplar exposure in order to counteract the messaging and systems of oppression that maintain bias in the cultural environment. One case of exposure to positive racial group exemplars will most likely not be enough for long-term bias change. Future longitudinal studies will be necessary to determine the efficacy of this method over time.

Ultimately, the hope is that broader cultural change, through increased positive representation and decreased acceptance of negative racial group portrayals in mainstream culture, will strengthen and maintain the positive implicit associations that children are exposed to. Positive exemplar exposure cannot undo centuries of systemic racism and oppression on its own; it must be done in conjunction with broader cultural change to dismantle systems of oppression (see Salter et al., 2017). Though past research suggests that negative racial biases are pervasive, the hope is that reinforcement of positive associations through exemplar exposure may serve to increase the activation and application of positive associations over negative ones, which in turn, might reduce instances of interpersonal racism and encourage individuals to support initiatives for BIPOC equality.

Conclusion

In this chapter, I outlined the existing literature on patterns of bias across development. This research indicates that while the content and trajectory of bias varies across cultures, children appear to be cognitively primed to learn racial bias relatively early in development. As a result of pervasive historical and institutional racism and negative cultural messaging about marginalized racial groups, children internalize racial bias in early childhood. The chapter then presented a potential method for reducing implicit racial bias in childhood: exposure to positive exemplars from culturally marginalized racial groups. Recent research suggests that this method

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has the potential to reduce negative implicit racial bias in children as young as age five. Coupled with evidence that intensive interventions can result in long-term racial bias reduction in childhood, these findings provide preliminary evidence that positive exemplar exposure could be used to induce long-term racial bias change in children.

I have outlined potential avenues of future research on this topic, in particular, the need for additional cross-cultural and developmental work examining the efficacy of this method. Regardless of the need for additional work on this method, I believe that these findings are generally supportive of the recent cultural push for positive diverse representation in the media. As an understanding of the development of implicit racial bias grows, researchers will be better able to tailor interventions for more effective change, but in the meantime, we can build off the current work to start changing children's bias through exemplar exposure. I recommend that parents and educators consider exposing young children to positive depictions of individuals from culturally marginalized racial groups in their educational materials and media consumption, and that creators of children's content support BIPOC writers, illustrators, directors, and other creatives who can develop child-friendly positive representations of diverse racial group members. By taking these tangible steps to reshape our culture, we can start the process of cultivating positive racial attitudes early in development, before negative biases take their toll.

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