PAPER

WILEY **Developmental Science**

A cross-cultural investigation of children's implicit attitudes toward White and Black racial outgroups

Jennifer R. Steele[1] | Meghan George[1] | Amanda Williams[2] | Elaine Tay[1]

[1]Department of Psychology, York University, Toronto, Ontario, Canada

[2]School of Education, University of Bristol, Bristol, UK

Correspondence
Jennifer R. Steele, Department of Psychology, York University, Toronto, ON, Canada.
Email: steeleje@yorku.ca

Abstract

Initial theory and research examining children's implicit racial attitudes suggest that an implicit preference favoring socially advantaged groups emerges early in childhood and remains stable across development (Dunham, Baron, & Banaji, 2008). In two studies, we examined the ubiquity of this theory by measuring non-Black minority and non-White majority children's implicit racial attitudes toward White and Black racial outgroups in two distinct cultural contexts. In Study 1, non-Black minority children in an urban North American community with a large Black population showed an implicit pro-White (versus Black) bias in early childhood. Contrary to previous findings, the magnitude of this bias was *lower* among older children. In Study 2, Malay (majority) and Chinese (minority) children and adults in the Southeast Asian country of Brunei, with limited contact with White or Black peers, showed an implicit pro-White (versus Black) bias in early childhood. However, the magnitude of bias was *greater* for adults. Together, these findings support initial theorizing about the early development of implicit intergroup cognition, but suggest that context may affect these biases across development to a greater extent than was previously thought. A video abstract of this article can be viewed at: https://www.youtube.com/watch?v=vgQP8e4MSCk&feature=youtu.be

1 | INTRODUCTION

Research examining racial prejudice in recent years has focused largely on *implicit* attitudes toward racial groups that can be activated without conscious awareness or intent (Gawronski and De Houwer, 2014; Gawronski & Payne, 2011; Greenwald, McGhee, & Schwartz, 1998). In many cases, researchers have examined implicit attitudes toward White and Black racial groups in particular, as these are two groups that continue to differ dramatically in their relative social advantage (Amodio & Mendoza, 2010; Nelson, 2009).[1] This research has provided compelling evidence that non-Black adults generally show an implicit preference for members of White over Black racial groups, despite expressing egalitarian views when asked to report their racial attitudes (Dovidio, Kawakami, Smoak, & Gaertner, 2009; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; McConnell & Leibold, 2001; Nosek, Hawkins, & Frazier, 2011). For adults, these

automatic race-based associations have at times been found to predict intergroup behavior better than self-reports (Greenwald, Poehlman, Uhlmann, & Banaji, 2009; cf. Oswald, Mitchell, Blanton, Jaccard, & Tetlock, 2013), suggesting that implicit racial biases may contribute to the perpetuation of racial inequalities that disadvantage Black racial group members.

Although far fewer studies have examined children's implicit attitudes, mounting research suggests that implicit racial biases favoring members of White over Black racial groups are present from at least 6 years of age (Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2006, 2007, 2008; Newheiser, Dunham, Merrill, Hoosain, & Olson, 2014; Olson & Dunham, 2010; Rutland, Cameron, Milne, & McGeorge, 2005) and possibly earlier (see Pauker, Williams, & Steele, 2016, for a review). It has further been theorized that implicit intergroup attitudes favoring ingroups and socially advantaged groups emerge early in childhood and remain stable across development (Dunham et al., 2008; cf. Baron, 2015). The goal of the present research was to enhance our empirical knowledge and

theoretical understanding of children's implicit social cognition by examining children's implicit racial biases toward White and Black racial outgroups in two distinct cultural contexts. Specifically, we examined the attitudes of non-Black minority children in an urban North American community with a large Black population (Study 1), as well as Malay (majority) and Chinese (minority) children and adults in the Southeast Asian country of Brunei. We were interested in understanding whether, consistent with initial theorizing, children from these communities would show a pro-White (versus Black) bias from early childhood and whether the magnitude of bias would be similar across development.

1.1 | Children's implicit racial attitudes

Initial research examining implicit racial biases in childhood focused primarily on the biases of White majority children (Baron & Banaji, 2006; Dunham et al., 2006; Rutland et al., 2005) using the most popular measure of implicit attitudes, the Implicit Association Test (IAT; Greenwald et al., 1998). The IAT is a computer-based reaction time task that requires participants to rapidly pair racially prototypical faces (e.g., White or Black) with pleasant and unpleasant attributes. Being faster to pair White faces with pleasant attributes and Black faces with unpleasant attributes, as opposed to the reverse pairing (i.e., White with unpleasant and Black with pleasant) is taken as evidence that an implicit pro-White (versus Black) bias has been acquired.

Studies have consistently demonstrated that White majority children show an implicit preference for their White racial ingroup relative to minority outgroups from at least early childhood. For example, Baron and Banaji (2006) had 6-year-olds, 10-year-olds, and adults complete a White–Black Child IAT and found that all three age groups showed an implicit pro-White bias. The magnitude of bias was comparable for each age group, suggesting that implicit intergroup bias is present in White American children as young as 6 years of age at adult-like levels (see also Dunham et al., 2006; Newheiser & Olson, 2012). Similar findings have been obtained with White British children (Rutland et al., 2005) and White Canadian children (Williams & Steele, in press). Importantly, the developmental invariance of implicit racial bias on the IAT among White children does not mirror that of explicit bias (for a review, see Raabe & Beelmann, 2011). That is, explicitly, young children typically express high levels of bias, whereas 10-year-olds and adults often express less or no explicit preference for their racial ingroup. As such, these findings suggest a different developmental trajectory for implicit and explicit attitudes, at least among White majority children; explicit biases are expressed less often in later development, whereas implicit biases remain relatively stable.

Unlike the findings for White children, minority children in North America typically do not show a preference for *either* group when their implicit attitudes toward their racial ingroup and the White majority are examined. This lack of bias again tends to be stable across development, from early childhood into adulthood. For example, both Black (Newheiser & Olson, 2012) and Hispanic (Dunham et al., 2007) children in the United States failed to show any implicit bias when

Research Highlights

- We examined previously unstudied non-Black minority and non-White majority children's implicit attitudes toward White and Black racial outgroups in two distinct cultural contexts.
- Consistent with initial theorizing, non-Black minority children from Canada (Study 1) as well as non-White majority and non-Black minority children from Brunei (Study 2) showed an implicit pro-White (versus Black) preference in early childhood.
- Unlike previous theory and research, the magnitude of implicit pro-White bias differed by age, suggesting that context may shape implicit racial attitudes across development to a greater extent than was initially theorized.

their racial ingroup was compared to the White majority. Additional evidence suggests that this lack of bias is not due to a lack of automatized positivity toward the ingroup, but rather reflects positivity acquired toward both the ingroup and the advantaged White majority. When minority children's implicit attitudes toward their ingroup are compared to their attitudes toward another minority group, children generally show an implicit preference for their ingroup, suggesting that ingroup bias may be offset by positivity toward the comparison racial group. For example, Dunham et al. (2007) found that Hispanic children were biased in favor of their ingroup when the comparison racial group was Black.

More recently, some cross-cultural research has provided additional evidence for the early emergence and developmental stability of implicit racial biases favoring socially advantaged groups. In a study by Newheiser et al. (2014) conducted in South Africa, Black children and Colored (a multiracial high status group with a "distinct cultural heritage") children between the ages of 6 and 11 years completed child-friendly White–Black and White–Colored IATs. In line with the possibility that children implicitly associate the dominant White minority outgroup with positivity, Black and Colored children showed an implicit pro-White (versus Black) bias that did not differ by age. In addition, Colored children showed a pro-White (versus Colored) bias and Black children showed no bias when two higher status outgroups were compared. These effects did not vary by age and are consistent with current theorizing about the early emergence and developmental invariance of implicit intergroup biases. However, these results differ from those found with minority children in North America, as these non-White South African children demonstrated greater positivity toward the White racial outgroup even when compared to their ingroup. One noteworthy aspect of these findings is that the children studied in South Africa lived in an environment where the social hierarchy of racial groups is evident throughout society (Newheiser et al., 2014). As such, the researchers suggest that although implicit intergroup attitudes can be acquired early in

development, the positivity associated with different racial groups can vary depending on the cultural context.

Despite there being numerous studies demonstrating the early emergence and stability of implicit intergroup preferences, a few cross-cultural studies have provided some evidence that positivity toward specific outgroups might be acquired more gradually when those racial groups are not prominent in that particular cultural context. For example, Dunham et al. (2006) investigated the implicit attitudes of Japanese children who had limited or no contact with racial outgroups, and had little exposure to the cultural norms associated with White Americans. In their study, Japanese children and adults from a remote village in Japan completed Child IATs comparing attitudes toward their ingroup (Japanese), and either White or Black racial outgroups. Because their participants had little direct exposure to outgroup members, the authors hypothesized that children would show an ingroup (pro-Japanese) bias in early development regardless of the comparison group, but that this ingroup bias would be lower among older Japanese participants who had more time to internalize the "cultural prestige" associated with the White racial outgroup. In line with this expectation, participants displayed a pro-Japanese bias that remained consistent across age when the comparison group was Black, but that decreased with age when the comparison group was White. In contrast to Japanese children, Japanese adults showed no implicit ingroup bias when the comparison group was White.

Similar results were obtained in a recent study conducted by Qian et al. (2016) with younger children. The authors examined the implicit attitudes of preschool-aged majority children and adults in both China (Chinese) and Cameroon (Black). Three- to 5-year-olds in China showed a pro-Chinese preference on both Chinese–White and Chinese–Black implicit measures. Similarly, preschool-aged children in Cameroon showed an implicit pro-Black preference when the comparison was either Black–White or Black–Chinese. These results were inconsistent with the biases exhibited by adults in each of these cultures. Implicit ingroup bias on the Chinese–White measure was attenuated for Chinese adults, and ingroup biases were reversed among Cameroonian adults, whose implicit biases instead favored Chinese and White racial outgroups. Taken together, the results of the studies by Dunham et al. (2006) and Qian et al. (2016) suggest that a preference for the ingroup emerged prior to the automatization of positive associations with advantaged outgroups. However, given that participants in these studies always completed measures that compared an ingroup to an outgroup, another possibility is that a modest pro-White bias was also acquired early, but that strong implicit ingroup favoritism typical of early childhood (Aboud, 2008; Williams & Steele, in press) obscured this bias. We anticipate that this might be particularly likely to occur in contexts where there are limited opportunities for direct contact with White outgroup members, and hence fewer chances for emerging positivity to be reinforced. In order to gain a deeper understanding of children's implicit intergroup cognition, it is important to consider not only children's implicit attitudes toward groups relative to their ingroup, but also toward outgroups that differ in relative advantage and proximity.

1.2 | The present research

The primary goal of this research was to further our understanding of children's implicit social cognition. We did so by examining children's implicit racial biases toward "White" and "Black" racial outgroups among non-Black minority and non-White majority group members in two distinct cultural contexts. Despite mounting evidence that children develop positive associations toward both their ingroup and socially advantaged racial outgroups from an early age, research to date has focused almost exclusively on children's attitudes toward outgroups *relative to* an ingroup (cf. Newheiser et al., 2014). However, recent theory and research suggests that the development of ingroup and outgroup attitudes can follow different development trajectories (Baron, 2015; Williams & Steele, in press). By focusing on children's implicit racial attitudes toward White and Black racial outgroups, we eliminated the potential for ingroup favoritism, which is pronounced in early childhood (Aboud, 2008), to obscure the early emergence of intergroup biases toward these groups.

In addition to testing the early emergence of implicit racial biases, we were also interested in examining the developmental invariance of these attitudes. As noted earlier, initial theory and research suggests that implicit racial biases favoring the ingroup and socially advantaged groups emerge early and remain relatively stable across development (Dunham et al., 2008). However, more recent theorizing by Baron (2015) has questioned this latter assumption, stating that "it may be premature to conclude that developmental invariance is a key property of implicit intergroup attitudes" (p. 54; see also Dunham, Baron, & Banaji, 2016, for gender attitudes). Instead, Baron (2015) has noted that the developmental stability of implicit intergroup biases seen in cross-sectional studies may reflect the invariance in cultural messages received by most children across development and should not be taken as evidence for a lack of developmental differences in the capacity for change. In the current research we examined the implicit attitudes of two populations who might be more likely to receive different messaging about White and Black outgroup members, using a White–Black Child IAT (Baron & Banaji, 2006).

Study 1 was conducted in the large urban city of Toronto, Canada and included South Asian, East Asian, Southeast Asian, as well as Black minority children. Study 2 was conducted in the urban city of Bandar Seri Begawan, in the small Southeast Asian country of Brunei Darussalam and included Malay majority and Chinese minority children and adults. Both of these samples differed dramatically in their direct exposure to the target outgroups. Although situated within a context of a White majority, minority children in Toronto were recruited from areas with a large Black population within their schools and local community. By contrast, children from Bandar Seri Begawan had limited opportunities for direct contact with members of either White or Black outgroups in both their immediate environment, as well as the larger Southeast Asian cultural context of Brunei. We examined whether these children (Studies 1 and 2) and adults (Study 2) would show an implicit pro-White bias, and whether

the magnitude of bias would be comparable at different stages of development.

2 | STUDY 1

In Study 1, we examined minority children's implicit attitudes toward two outgroups (White and Black) who were well represented in their immediate (predominantly Black) and larger (predominantly White) community. The implicit racial attitudes of the minority groups sampled (South Asian, East Asian, and Southeast Asian) have been largely unexamined in studies with children (cf. Gonzalez, Steele, & Baron, 2017) and therefore had the potential to provide novel insight into the early development of implicit racial attitudes. Our goal was to examine whether, in line with previous theory and research, both younger and older children would show an implicit pro-White bias of similar magnitude.

A secondary goal of Study 1 was to examine the biases of Black children living in this Toronto community. As noted earlier, researchers have found that Black 4- and 5-year-olds from Cameroon showed an implicit ingroup (pro-Black) preference (Qian et al., 2016), whereas Black children aged 6 to 11 years showed either no implicit preference (US sample; Newheiser & Olson, 2012) or an implicit pro-White preference (South African sample; Newheiser et al., 2014) when their racial ingroup was compared to the White outgroup. We were therefore interested to see what biases might emerge for Black children living in the multicultural setting of Toronto and how this might compare to the biases of non-Black minority children from this community. The cultural environment in Toronto is distinct from the previously studied environments in that Canada lacks a significant history of Black slavery (Hartz, 1969), the federal government strongly supported the anti-apartheid movement in South Africa (Government of Canada, 2014), and the country explicitly values racial diversity (Government of Canada, 2012). Yet, within the greater Toronto and Canadian context, this study took place within a lower SES community (mean household income of $52,280 as compared to the mean household income for Toronto of $87,038; Statistics Canada, 2011), with a large Black and minority population (in 2011, 26% of the community population self-identified as Black and 76% self-identified as belonging to a visible minority; Statistics Canada, 2011), that is comparable to other urban areas in the United States.

Consistent with theory suggesting that early emerging biases favor socially advantaged groups (Dunham et al., 2008), it was possible that non-Black minority children would show an implicit pro-White bias of a similar magnitude in both early and late childhood. However, the diverse nature of this sample combined with recent theory and research regarding the malleability of implicit racial attitudes (Baron, 2015; Gonzalez et al., 2017; Williams & Steele, in press) provided an alternative possibility that non-Black minority children with access to more Black as opposed to White racial group members in their immediate community would show no or attenuated implicit preference in early or late childhood.

Some research with adults suggests that cross-race friendships can decrease implicit racial biases (Aberson, Porter, & Gaffney, 2008; Davies, Tropp, Aron, Pettigrew, & Wright, 2011). In addition, Gonzalez et al. (2017) recently found that older White and Asian children's implicit pro-White (versus Black) bias was attenuated following brief exposure to stories depicting positive Black exemplars. Younger children's biases, by contrast, were not affected by this intervention. Although this study involved only a brief intervention, these findings are consistent with the possibility that older, but not younger, children might have sufficient cognitive flexibility for positive associations with minority outgroup members to be created and activated if the cultural context provides opportunities to develop friendships with Black peers and/or exposure to positive Black exemplars. We tested these possibilities in Study 1.

2.1 | Method

2.1.1 | Participants and procedure

A total of 181 South Asian, East Asian, Southeast Asian, and Black participants were recruited to complete a child-friendly White–Black race IAT (Child IAT; Baron & Banaji, 2006) as part of a larger study. Data from 19 children were removed prior to our analyses because they did not follow instructions and either pressed random buttons ($n = 3$), were highly inattentive ($n = 3$), had difficulty understanding the experiment due to a lack of English fluency ($n = 8$), responded to at least 10% of trials faster than 300 ms ($n = 2$; Greenwald, Nosek, & Banaji, 2003), had an error rate greater than 35% ($n = 1$; Cvencek, Meltzoff, & Greenwald, 2011), or had an average reaction time on all trials that fell three standard deviations above the mean ($n = 2$; Cvencek, Greenwald, & Meltzoff, 2011; Cvencek, Meltzoff, & Greenwald, 2011).[2]

The final sample included 162 South Asian ($n = 56$ (30 girls); $M_{age} = 8$ years, 2 months, $SD = 15.10$ months), East Asian ($n = 27$ (15 girls); $M_{age} = 8$ years, 1 month, $SD = 17.57$ months), Southeast Asian ($n = 27$ (15 girls); $M_{age} = 7$ years, 8 months, $SD = 17.75$ months), and Black ($n = 52$ (35 girls); $M_{age} = 7$ years, 8 months, $SD = 12.95$ months) children. Participants were divided into younger ($M_{age} = 7$ years, 1 month) and older ($M_{age} = 9$ years, 2 months) children. Younger children ($n = 91$) were recruited primarily from grade 1 ($n = 59$), as well as senior kindergarten ($n = 7$) and grade 2 ($n = 25$), and included 27 South Asian, 16 East Asian, 15 Southeast Asian, and 33 Black children (55 girls; $M_{age} = 7$ years, 1 month, $SD = 7.76$ months). Older children ($n = 71$) were recruited primarily from grade 3 ($n = 51$), as well as grade 4 ($n = 10$) and grade 5 ($n = 10$) and included 29 South Asian, 11 East Asian, 12 Southeast Asian, and 19 Black children (40 girls; $M_{age} = 9$ years, 2 months, $SD = 9.97$ months).[3] Children were recruited from, and tested in, racially diverse schools in Toronto after receiving university and school board approval, and consent from the principals, teachers, and parents, as well as verbal assent from each child. Participants were tested individually by a White or Asian experimenter.

2.1.2 | Measures

Implicit racial attitudes

Participants completed a Child IAT designed to measure automatic attitudes toward White and Black racial groups. Our Child IAT followed the format outlined by Rutland et al. (2005), consisting of five blocks (three single-categorization and two critical double-categorization blocks). Similar to previous studies, the measure was reduced in length to be child friendly (Cvencek, Greenwald, & Meltzoff, 2011; Cvencek, Meltzoff, & Greenwald, 2011; Dunham, Newheiser, Hoosain, Merrill, & Olson, 2014; Newheiser et al., 2014; Newheiser & Olson, 2012; Rutland et al., 2005). As with the adult IAT, participants sorted faces by race in the first single-categorization block. Children were presented with a header that remained on the screen, containing cartoon images of a White and Black child, and were asked to use two computer keys to sort each target face by race. Target faces were racially prototypical real-life images of same-sex White (*n* = 4) and Black (*n* = 4) targets cropped at the nose. In the second single-categorization block, the concepts of pleasant and unpleasant were represented by simple line drawings of shapes with either smiling (pleasant; *n* = 4) or frowning (unpleasant; *n* = 4) faces. Children were presented with a header containing one smiling and one frowning cartoon face and were asked to sort comparable pictures by pressing the two colored computer keys (Rutland et al., 2005). Each single-categorization block consisted of 16 trials, and once they were both completed, children proceeded to the first of two critical blocks.

Critical blocks consisted of 32 trials (split into 12 practice and 20 test trials for scoring purposes; Greenwald et al., 2003) in which both racial and valenced stimuli were sorted using the same computer keys. In one of the critical blocks, pictures of Black children and positively valenced stimuli shared one computer key while pictures of White children and negatively valenced stimuli shared the other. Next, participants completed another single-categorization block, only this time the key associations and position of the header were reversed. For instance, if the Black face had appeared on the left-hand side in the header, it now appeared on the right, with the White face now on the left. Finally, children completed the second critical block, where both racial and valenced stimuli were again

sorted, but this time with the reverse pairings (e.g., White paired with positively valenced stimuli and Black paired with negatively valenced stimuli). The order of the critical blocks was counterbalanced between participants.
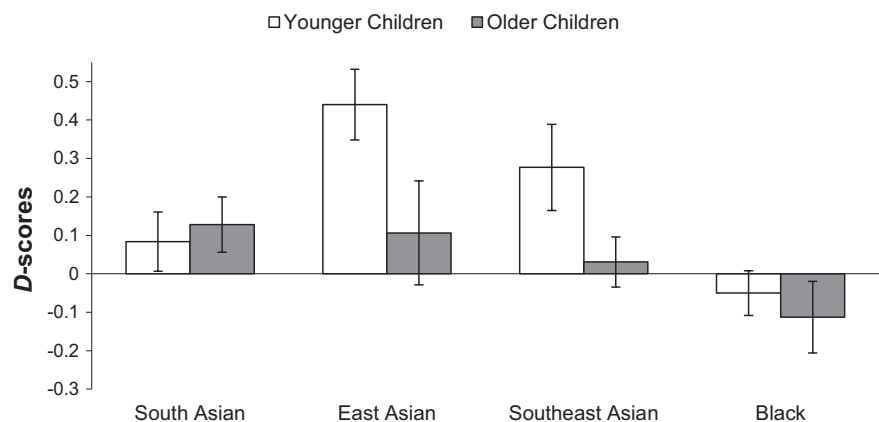
2.2 | Results and discussion

Responses on the Child IAT were scored according to the improved algorithm recommended by Greenwald et al. (2003; Baron & Banaji, 2006), with higher *D*-scores indicating a greater implicit preference for White as compared to Black racial groups.

2.2.1 | Implicit racial attitudes

To examine our first research question, we conducted a 2 (Age of participant: younger or older) × 3 (Race of participant: South Asian, East Asian, or Southeast Asian) between-subjects ANOVA using IAT *D*-scores as the dependent variable. Only a main effect of Age of participant emerged, $F(1, 104) = 5.09$, $p = .03$, $\eta_p^2 = .05$. Neither the main effect of Race of participant, $F(2, 104) = 1.66$, $p = .20$, $\eta_p^2 = .03$, nor the interaction, $F(2, 104) = 2.60$, $p = .08$, $\eta_p^2 = .05$, were significant. Older non-Black minority children ($D = 0.10$, $SD = 0.37$) showed less implicit pro-White bias than younger non-Black children ($D = 0.24$, $SD = 0.42$); however, both younger, $t(59) = 4.40$, $p < .001$, $d = 1.15$, 95% CI [.13, .34], and older, $t(51) = 1.98$, $p = .05$, $d = 0.56$, 95% CI [−.001, .20] non-Black minority children showed a pro-White bias (see Figure 1). In addition, although there was some heterogeneity in IAT scores, a significant pro-White bias was found for each participant racial group ($ts > 2.3$, $ps < .05$).[4]

To address our secondary research questions, we next conducted a 2 (Age of participant: younger or older) × 4 (Race of participant: Black, South Asian, East Asian, or Southeast Asian) between-subjects ANOVA using IAT *D*-scores as the dependent variable. A main effect of Age of participant again emerged, $F(1, 154) = 5.43$, $p = .02$, $\eta_p^2 = .03$, as did a main effect of Race of participant, $F(3, 154) = 5.58$, $p = .001$, $\eta_p^2 = .10$. These main effects were not qualified by a significant interaction, $F(3, 154) = 1.87$, $p = .14$, $\eta_p^2 = .04$. As a group, older children ($D = 0.04$, $SD = 0.39$) again showed less implicit pro-White bias than did younger children ($D = 0.13$,

□ Younger Children   ■ Older Children

FIGURE 1 IAT *D*-scores of younger and older participants across racial group (Study 1). Positive *D*-scores indicate an implicit preference for White relative to Black; negative scores indicate an implicit preference for Black relative to White. Error bars represent the standard error

$SD = 0.41$.[5] In addition, Tukey post-hoc tests revealed that Black children ($D = -0.07$, $SD = 0.36$) showed less bias than South Asian ($D = 0.11$, $SD = 0.39$), $p = .07$, $d = -.48$, East Asian ($D = 0.30$, $SD = 0.43$), $p < .001$, $d = -.94$, and Southeast Asian ($D = 0.17$, $SD = 0.37$), $p = .04$, $d = -.64$, children. None of the non-Black minority children differed from one another in their level of bias (post-hoc $ps > .12$). Similar to what has been found in previous research from the United States, Black children showed no significant bias ($D = -0.07$, $SD = 0.36$), $t(51) = -1.46$, $p = .15$, $d = -0.41$, 95% CI [-.17, .03].

Results from Study 1 provide additional evidence that implicit intergroup biases favoring socially advantaged groups emerge early in development (Dunham et al., 2008). Young non-Black minority children in this sample showed significant pro-White (versus Black) bias, despite living in a neighborhood with a relatively large Black minority population. As such, the current findings add to our theoretical understanding of the development of implicit racial attitudes by suggesting that even in a diverse neighborhood, non-Black minority children show an implicit intergroup preference for White over Black racial groups. This finding is similar to those reported by Newheiser and Olson (2012), who found that White children in both majority-White and majority-Black schools showed an implicit pro-White (versus Black) bias. However, two important distinctions in the current study exist. Unlike this previous research, participants in our studies were non-Black minority children and this implicit preference emerged even when attitudes toward two outgroups were considered.

Importantly, in the present study, we also found a significant difference in bias between younger and older children. While older non-Black minority children demonstrated significant pro-White bias, the magnitude of this bias was significantly *lower* compared to younger children. To our knowledge this is the first study to demonstrate greater implicit positivity toward a minority racial outgroup in late, as compared to early, childhood. It is interesting to note that these findings are not consistent with early theorizing by Dunham et al. (2008) which suggests that "implicit intergroup preferences … are surprisingly stable across development" (p. 249), and instead support more recent suggestions that the claim of developmental invariance in implicit intergroup attitudes should be reconsidered (Baron, 2015). Based on the nature of our implicit measure, it is unclear whether this age-related difference was the result of increased positivity toward Black racial group members, decreased positivity toward White racial group members, or some combination of both, a point we return to in the General Discussion. In addition, given the relatively low sample sizes, some caution might be used in the interpretation of these findings. Nevertheless, these findings provide new information about the biases of largely understudied minority children, who showed an automatized preference for White as opposed to Black racial groups from early childhood.

3 | STUDY 2

In Study 2 we aimed to once again examine whether implicit intergroup biases favoring advantaged groups would emerge early and remain stable across development, this time in a new sample of participants. In this study, we examined the biases of children and adults in a cultural context with limited direct access to White and Black peers, specifically Malay (majority) and Chinese (minority) participants living in the large urban center of Bandar Seri Begawan, in the Southeast Asian country of Brunei Darussalam. This study differs from previous cross-cultural research, which has examined the attitudes of Japanese children in a rural community (Dunham et al., 2006) and the attitudes of children in South Africa, a country with a history of apartheid (Dunham et al., 2014; Newheiser et al., 2014). The population in Brunei consists of a large majority of people who are Malay, with the largest distinct minority group being Chinese (Government of Brunei, 2011). The majority of the population is Muslim and the country's demographics include few people who would racially self-identify as White or Black—these groups are included in 23% of the country's population who classify their ethnicity as "other" (Government of Brunei, 2011). Brunei was a British protectorate until 1984 and students learn both English and Malay during their schooling (Martin, 2008). According to Saxena (2007), "speaking English in Brunei … is associated with being modern, educated, and Western" (p. 156). Both Malay and Chinese participants would be exposed to White and Black outgroups largely through Western media outlets (e.g., the internet, music, films), and not through direct contact (Saxena, 2007). Recruiting these participants allowed us to not only examine the implicit racial attitudes of a previously understudied population, but also provided us with the opportunity to examine attitudes toward two racial outgroups in a context that provides different, and possibly more ambivalent, cultural-level information about the White racial outgroup than Western societies (Baron, 2015).

As in Study 1, participants in Study 2 completed a White–Black Child IAT as a measure of implicit attitudes. In addition, we examined whether children, as a group, perceived status differences between, and demonstrated explicit biases toward, these racial outgroups. Research suggests that children as young as five are able to infer relative status by watching dyadic interactions (Over & Carpenter, 2015), and that preferences for people who are rich (an indicator of status), as well as associations between race and wealth, predict children's implicit racial attitudes (Newheiser et al, 2014; Newheiser & Olson, 2012; Olson, Shutts, Kinzler, & Weisman, 2012). For example, Newheiser and Olson (2012) found that children who associate White people with wealth (and Black people with poverty) show a greater implicit pro-White (versus Black) racial bias. In addition, the more Black children explicitly preferred rich (versus poor) people, the greater their implicit pro-White (versus Black) bias. Building on these findings, we were interested in examining whether the majority of children in this predominantly Malay community perceived status differences between White and Black racial groups, despite having limited direct access to members of these groups.

The design of Study 2 was similar to Study 1, with two exceptions. First, in addition to recruiting child participants, we recruited adult participants from a nearby university campus to examine whether the magnitude of children's intergroup biases would be similar to that of adults in this cultural context. Second, participants

consisted of members from only two racial groups, the Malay majority and Chinese minority. As such, Study 2 had a 3 (Age of participant: younger children, older children, or adults) × 2 (Race of participant: Malay or Chinese) between-subjects design, with implicit racial attitudes (D-score) on the White–Black IAT as the primary dependent measure. As noted earlier, we also examined children's explicit intergroup attitudes toward these two outgroups.

3.1 | Method

3.1.1 | Participants and procedure

Two hundred and fifty-one Malay and Chinese children and adults participated in the current study. This included 172 Malay children (M_{age} = 7 years, 11 months, SD = 16.58 months; n = 134) and adults (M_{age} = 20 years, 8 months, SD = 12.9 months; n = 38) as well as 79 Chinese children (M_{age} = 8 years, 3 months, SD = 15.52 months; n = 71) and adults (M_{age} = 20 years, 10.56 months, SD = 14.95 months; n = 8). Younger children (n = 93) were recruited from grade 1 and included 67 Malay and 26 Chinese children (45 girls; M_{age} = 6 years, 8 months, SD = 5.28 months). Older children (n = 112) were recruited from grades 3 and 4 and included 67 Malay and 45 Chinese children (54 girls; M_{age} = 9 years, 3 months, SD = 6.72 months).

All children were elementary school students in Bandar Seri Begawan, Brunei's urban capital city. Each child was tested individually in a quiet location within the school during school hours. As part of a larger study, children completed the implicit task, followed by the explicit racial attitudes task, and a status measure on a laptop computer. Testing was conducted by an English-speaking Chinese experimenter who had been raised in Brunei. Prior to participation, we received approval from York University, school board officials, principals, teachers, and parents, as well as verbal assent from each child. Due to an agreement with the school board, we tested all children with parental permission who expressed an interest in participating; however, children who were not members of the two main racial groups of interest (Malay majority or Chinese minority) were excluded prior to any analyses. Malay and Chinese undergraduate participants (n = 46; M_{age} = 20 years, 8 months, SD = 13.2 months) were approached on their urban university campus in Bandar Seri Begawan and were asked to take part in a study piloting child-friendly measures. Consenting participants were given instructions on a laptop computer and worked independently in an isolated library cubicle. As part of a larger study, adults completed the implicit measure followed by the explicit racial attitudes measure and were then debriefed. They did not complete the status measure.

Data from 19 children were removed prior to our analyses examining children's implicit racial attitudes because they did not follow instructions (n = 9), experienced a technical error resulting in no recorded data (n = 2), had an error rate greater than 35% (n = 5; Cvencek, Meltzoff, & Greenwald, 2011), or had an average reaction time on all trials that fell three standard deviations above or below the mean (n = 3; Cvencek, Meltzoff, & Greenwald, 2011). Data from 17 children were removed prior to examining children's

explicit racial attitudes either because they did not or could not follow the instructions (n = 12), experienced a technical error resulting in no recorded data (n = 1), or were not administered the task due to experimenter error (n = 4). Finally, data were missing on the status measure for a total of 11 children who either failed to complete the measure (n = 9) or experienced a technical error that resulted in incomplete data (n = 2).

3.1.2 | Measures

Implicit racial attitudes

The Child IAT was similar to the one described in Study 1, except that it consisted of 20 trials in each single-categorization block and 60 trials in each critical double-categorization block (20 practice and 40 test), similar to what is typically administered to adults (Greenwald et al., 2003; see also Baron & Banaji, 2006), and used only pictures of racially prototypical boys, again cropped at the nose.

Explicit racial attitudes

This measure was adapted from Baron and Banaji (2006; see also Dunham et al., 2006) and was designed to be comparable to the implicit measure. Participants were presented with color photographs of pairs of boys and were asked to select, by pressing one of two computer keys, which of the two boys they would rather play with. Participants were randomly presented with a total of 30 trials, including 15 same-race and 15 cross-race pairs. In five cross-race trials, participants were presented with matched photographs of a White and a Black child, and the proportion of trials in which they selected a White partner was calculated.

Status

In order to examine children's beliefs about race-based differences in status, children were presented with a PowerPoint slide containing four quadrants. Each quadrant presented multiple photographs of people from one of four racial groups—White, Black, Malay, and Chinese. The photographs in each quadrant were matched to be comparable in age and attractiveness. Children were told that "there are some groups that seem to be treated best in society, for example they may seem to have more things, and have really good jobs. Other groups may not be treated so well." Children were asked to rank each group according to who they believe is "treated best". They were then shown the slide again and were asked to make three additional assessments, ranking separately how they believed their teachers, parents, and most grown-ups would respond to this question. These three rankings were averaged to provide a score of how children believed adults would respond.

3.2 | Results and discussion

3.2.1 | Status

We first examined whether, as a group, children perceived differences in status between members of White and Black racial

groups, and found evidence that the majority of children ranked people who are White as being more advantaged in society than people who are Black (see Table 1). Seventy-nine percent of Malay children, χ^2 (1, N = 125) = 42.63, p < .001, and 75% of Chinese children, χ^2 (1, N = 69) = 17.75, p < .001, ranked White people as having higher status than Black people. This pattern held for both younger (84%; χ^2 (1, N = 85) = 38.22, p < .001) and older (73%; χ^2 (1, N = 109) =23.86, p < .001) children. Similarly, 77% of Malay children (χ^2 (1, N = 125) = 35.91, p < .001) and 70% of Chinese children (χ^2 (1, N = 69) = 10.56, p = .001) believed that adults (an average of rankings for parents, teachers, and most grown-ups) would similarly rate Whites as being treated better in society than Blacks. This pattern again held for both younger (74%; χ^2 (1, N = 85) = 19.78, p < .001) and older (74%; χ^2 (1, N = 109) =25.77, p < .001) children.

3.2.2 | Implicit racial attitudes

To determine whether participants would show an implicit pro-White bias from early in development, responses on the Child IAT were first scored according to the improved algorithm recommended by Greenwald et al. (2003; Baron & Banaji, 2006), with higher scores indicating greater relative pro-White bias.

A 3 (Age of participant: younger children, older children, or adults) × 2 (Race of participant: Malay or Chinese) between-subjects ANOVA using D-scores as our dependent measure revealed a main effect of Age of participant, F(2, 226) = 2.98, p = .05, η_p^2 = .03. No other main effect or interaction emerged, Fs < 1.00, ps > .55. Younger children (D = 0.14, SD = 0.33), t(77) = 3.66, p < .001, d = 0.83, 95% CI [.06, .21], older children (D = 0.14, SD = 0.28), t(107) = 5.17, p < .001, d = 1.00, 95% CI [.09, .19], and adults (D = 0.29, SD = 0.32), t(45) = 6.17, p < .001, d = 1.84, 95% CI [.20, .39], demonstrated a significant pro-White bias, see Figure 2. However, Tukey post-hoc tests revealed that the magnitude of adults' pro-White bias was greater than the bias shown by younger (p = .02, d = .47) or older (p = .01, d = .51) children. The magnitude of younger and older children's pro-White bias did not differ (p = 1.00, d = .004).
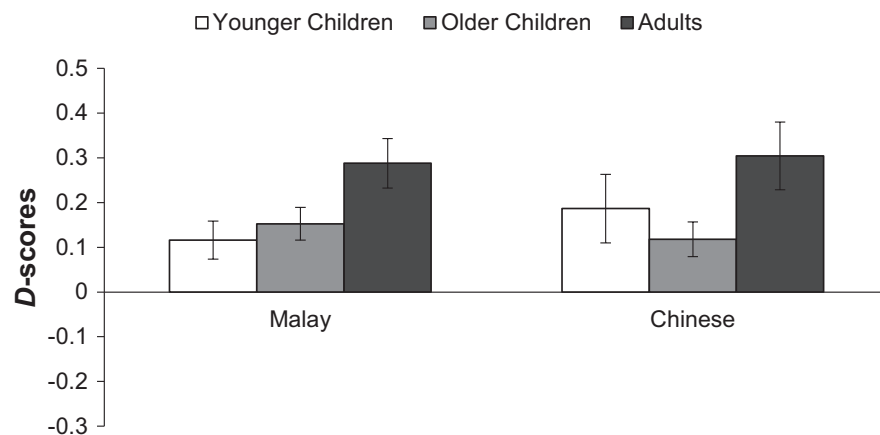
3.2.3 | Explicit racial attitudes

When comparing participants' explicit choice of White versus Black playmates, only a main effect of Age of participant emerged, F(2, 228) = 5.28, p = .006, η_p^2 = .04. Post-hoc tests revealed that younger and older children were significantly more likely than adults to show a preference for White over Black peers (p = .01, d = .57 and p < .001, d = .89, respectively). Younger and older children did not differ

	Malay children		Chinese children	
	Own beliefs	**Most adults**	**Own beliefs**	**Most adults**
Race of targets				
White	1.97 (1.00)	2.30 (0.65)	1.87 (1.19)	2.40 (0.71)
Black	3.22 (0.87)	3.19 (0.66)	3.12 (1.07)	3.15 (0.72)
Malay	1.90 (1.06)	1.82 (0.57)	2.81 (0.96)	2.27 (0.60)
Chinese	2.90 (0.92)	2.69 (0.62)	2.20 (0.80)	2.18 (0.54)

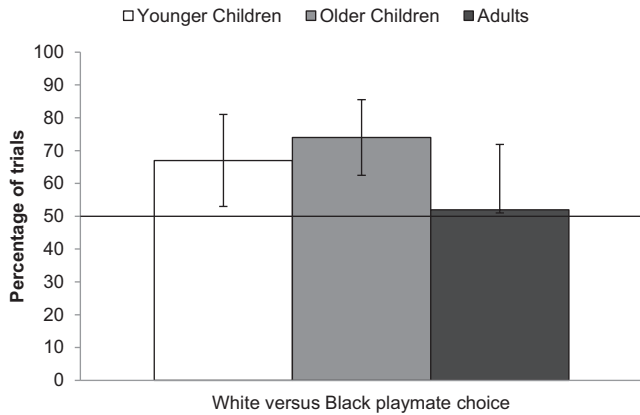**TABLE 1** Children's beliefs about race-based differences in status (Study 2)

Note: Children were asked to rank order people from four different racial groups—White, Black, Chinese, and Malay—for who was "treated best" in society. Children first ranked ordered their own beliefs and then separately ranked ordered how they believed their teachers, parents, and most grown-ups would respond (averaged into "Most Adults"). Numbers represent the mean ranking received for each target group with standard deviations in parentheses.

FIGURE 2 IAT D-scores of younger, older, and adult Malay and Chinese participants (Study 2). Positive D-scores indicate an implicit preference for White relative to Black. Error bars represent the standard error

FIGURE 3 Percentage of trials in which participants indicated that they would rather play with the White versus Black child (Study 2). Error bars represent the standard error

significantly from each other (*p* = .15, *d* = −.27; Figure 3). Consistent with their implicit responses, children expressed a preference for playing with White children over Black children on 71% of the critical trials, *t*(191) = 11.42, *p* < .001, *d* = 1.65, 95% CI [.87, 1.23]. However, no significant correlation emerged between children's implicit and explicit responses, *r*(178) = −.04, *p* = .64. Despite showing an implicit pro-White bias, adults did not demonstrate an explicit preference for the members of either racial group, *t*(41) = 0.48, *p* = .64, *d* = .15, 95% CI [−.31, .50]. In addition, adults' implicit attitudes were unrelated to their explicit preferences, *r*(42) = −.16, *p* = .33.

The results of this study provide additional insight into children's implicit social cognition. In line with theorizing about the early acquisition of racial biases, younger (*M*age = 6 years) Malay and Chinese children from Brunei, as well as older children (*M*age = 9 years) and adults demonstrated an implicit preference favoring Whites. This finding is particularly striking because children in this community have limited direct contact with members of either of these racial groups. Dunham and colleagues (2008) have argued that at an early age, children are sensitive to the positivity associated with groups within their cultural environment. The current findings extend their argument by suggesting that such sensitivity may exist even when considering outgroups beyond one's local context. Because we examined attitudes toward racial outgroups, our findings could not be obscured by the strong implicit ingroup favoritism that can emerge in early childhood, as may have been the case with previous findings (Dunham et al., 2006; Qian et al., 2016).

It is important to note that, as in Study 1, the magnitude of implicit pro-White bias was not consistent across development. In Study 2, we found participants' implicit pro-White bias to be greater among adults as compared to younger and older children, despite the fact that adults were the only group to express egalitarian views explicitly. Similar to what other researchers have suggested (Dunham et al., 2006; Qian et al., 2016), we believe that this reflects adults' increased exposure to information beyond their immediate cultural context and may reflect knowledge of social hierarchies and differentiated associations with racial outgroups in a global (as opposed

to local) context. It is interesting to note, however, that the majority of Malay and Chinese children ranked Blacks as having lower status than Whites, and this knowledge emerged even among the youngest participants—by 6 years of age. Similar to the findings of previous research by Olson and her colleagues (Newheiser et al., 2014; Newheiser & Olson, 2012; Olson et al., 2012), as a group, children's biases were consistent with their beliefs about status differences between these racial outgroups, with children showing a pro-White (versus Black) bias on both implicit and explicit measures.

4 | GENERAL DISCUSSION

The results of the current research contribute to our empirical and theoretical understanding of the emergence of implicit social cognition in childhood. Across two studies in distinct cultural contexts, we found evidence that an implicit preference favoring advantaged relative to disadvantaged racial groups emerges early in childhood (Dunham et al., 2008; Dunham et al., 2014; Newheiser et al., 2014; Newheiser & Olson, 2012). In Study 1, we found that young (*M*age = 7 years) non-Black minority children, within a local community with a relatively large Black population, showed an implicit pro-White (versus Black) bias. In Study 2, this pro-White bias also emerged for young (*M*age = 6 years) Malay and Chinese participants in Brunei, who had limited opportunities for direct contact with members of these two racial outgroups. In addition to showing a pro-White bias, the majority of children in the Brunei sample ranked White people as having higher status than Black people and expressed more positive attitudes toward White as opposed to Black children. These findings provide additional evidence that race-based intergroup biases favoring high status groups can emerge early in development, and this was the case even when attitudes toward two outgroups were compared.

By contrast, the results from both Study 1 and Study 2 suggest that implicit racial preferences may not be as stable across development as was initially theorized (Dunham et al., 2008). Older (*M*age = 9 years) non-Black minority children (Study 1) demonstrated *less* bias than younger children. In addition, Malay and Chinese adults from Brunei showed a significantly *greater* pro-White bias than did Malay and Chinese children. These results fit with more recent theorizing by Baron (2015) suggesting that the typical developmental invariance in implicit racial attitudes found in the literature could be due to a variety of factors including the stability of cultural-level information (i.e., social norms, race-based associations) that people are exposed to across development, and not necessarily an inflexible implicit associative system. Our findings suggest that implicit racial biases emerge early in development through a fast-learning system; however it seems likely that initial associations may be challenged or further reinforced through a slower-learning system.

From the current results, we are not able to confirm the mechanism underlying differences in the magnitude of implicit pro-White bias within our samples. However, taken together with the results

of previous research, some plausible explanations exist. In Study 1, older children's implicit attitudes may have been influenced not only by cultural associations that they had acquired with the White majority group, but also with positive associations that had been developed through contact with Black minority group members in their immediate community (Pettigrew & Tropp, 2006). In support of this possibility, Aberson et al. (2008) found that Hispanic adults with a large number of Black friends showed no bias on a White–Black IAT (see also Davies et al., 2011). In addition, in a brief, one-time intervention, Gonzalez et al. (2017) found that older, but not younger, children's implicit pro-White bias was attenuated after hearing stories about positive Black exemplars. Gonzalez and her colleagues have suggested that at this age children may have "comparatively less reinforcement of biases, but enough cognitive flexibility to overcome the initial bias that has formed" (p. 128), and as such, older childhood might be a particularly effective developmental period for interventions aimed at reducing implicit racial biases. Although this possibility is consistent with the current results, future longitudinal research will be needed to confirm the role of interracial contact, cross-race friendships, and/or exposure to positive outgroup exemplars in changing implicit intergroup attitudes across development— and whether there is an optimal period in development for these cross-race experiences to have a lasting effect.

A related possibility for the findings in Study 1 is that in early childhood, minority children show an implicit preference for the White majority, but as they approach older childhood, the formation of their own identity as members of a racial minority (Nesdale, 1999; Quintana, 1999) may allow them to draw similarities between themselves and the Black outgroup in their immediate community. This would provide increased opportunities for positive associations with Blacks, and possibly also negative associations with Whites, to be acquired. If children begin to identify themselves more broadly as part of a minority group which includes fellow Black minority group members, they may begin to relate to the Black racial group as part of the ingroup, bolstering their implicit positivity toward this group (Oyserman, Kemmelmeier, Fryberg, Brosh, & Hart-Johnson, 2003). Further research is needed to increase our understanding of the long-term malleability of implicit attitudes across development and whether this trajectory differs for majority and minority children. By focusing on the attitudes of minority and non-White majority group members toward racial outgroups, our research extends previous findings and provides insight into the implicit racial attitudes of previously unstudied racial groups.

4.1 | Limitations and future directions

Consistent with much of the literature examining racial attitudes, our current research focused on children's attitudes toward White and Black racial outgroups. Given that children are particularly attuned to visual cues such as skin tone, rather than structural physical facial features that are prototypical of these racial groups (Dunham, Stepanova, Dotsch, & Todorov, 2015), it is difficult to know whether similar biases might exist when comparing other racial groups, who may have more subtle skin tone differences. It is also unclear whether the pro-White bias found in this and other studies reflects an implicit preference for advantaged outgroups, as has frequently been suggested in studies with children (Dunham et al., 2008; Dunham et al., 2007; Newheiser et al., 2014; Newheiser & Olson, 2012), or whether it is driven by a socialized preference for lighter skin tones (e.g., Maddox, 2004), color associations with good and evil (Meier, Robinson, & Clore, 2004), or a preference for what is familiar (Baron & Banaji, 2006; Pettigrew & Tropp, 2006). Some caution must also be taken in interpreting our findings due to relatively low power, uneven cell sizes, and the heterogeneity of findings across groups. Future research that ideally makes use of a variety of implicit measures (Degner & Wentura, 2010; Williams & Steele, in press) with larger samples from different racial and ethnic groups will help enhance our understanding of the mechanisms underlying the early acquisition of implicit intergroup preferences in childhood, and the implication of these biases for intergroup behavior. Importantly, regardless of the underlying mechanism, our findings suggest that when being categorized by race (Pauker et al., 2015; Williams & Steele, in press), White children are more likely to automatically evoke positive affect than Black children. If left unchecked, these pervasive biases have the potential to further perpetuate social inequalities and prejudice in childhood and beyond.

Future longitudinal studies that examine intergroup contact and cross-race friendships have the potential to allow us to make stronger claims about the trajectory of bias from childhood into adulthood, and the role that contact can play in shaping biases across development. In addition, further studies are needed to determine if and when children's implicit attitudes predict intergroup behavior, as has been shown in some studies and meta-analyses with adults (Cameron, Brown-Iannuzzi, & Payne, 2012; Greenwald & Banaji, 1995; Greenwald, Banaji, & Nosek, 2015; Greenwald et al., 2009; McConnell & Leibold, 2001; cf. Oswald et al., 2013). The current findings suggest that there is some degree of flexibility in implicit racial attitudes, even in childhood, and that the magnitude of these biases may be affected by aspects of the social environment. Continued research that extends these findings by examining the antecedents of racial biases throughout the lifespan as well as the consequences of implicit attitudes for intergroup behavior has the potential to provide important theoretical and practical insight for improving attitudes and behavior toward members of socially disadvantaged groups.

ENDNOTES

[1]Throughout this article we use the terms "advantaged" (versus "disadvantaged") and "high(er) status" (versus "low(er) status") to describe

groups whose members, on average, have a relatively favorable position (as opposed to relatively fewer financial, educational and/or social opportunities) in society.

[2] An additional seven participants not included in the initial total started the task, but due to a computer malfunction, their data were corrupted and unusable.

[3] The decision to oversample students from specific grades, and to subsequently group participants into younger and older age groups, was intended to maintain consistency with social-cognitive developmental theories of prejudice (e.g., Aboud, 2008) and led to age groups that are comparable to what has been used in previous intergroup research (Baron & Banaji, 2006; Dunham et al., 2006; Raabe & Beelmann, 2011; see Gonzalez et al., 2017; Williams & Steele, in press, for similar approaches).

[4] As can be seen in Figure 1, the pattern of implicit bias for South Asian children differed somewhat from that of East Asian and Southeast Asian children, with South Asian children showing less pronounced implicit bias in early childhood. It is unclear whether this is a function of earlier cross-race friendships (Aberson et al., 2008; Davies et al., 2011), a perceived similarity with Black children due to a more comparable skin tone (Dunham et al., 2015), or some other reason or combination of reasons. This question is worthy of future investigation.

[5] In both Study 1 and Study 2, each of the analyses was also conducted using gender as a factor. No main effect for gender or interaction involving gender emerged for any of the analyses, and therefore this it is not discussed further.

REFERENCES

Aberson, C.L., Porter, M.K., & Gaffney, A.M. (2008). Friendships influence Hispanic students' implicit attitudes toward White non-Hispanics relative to African Americans. *Hispanic Journal of Behavioral Sciences*, *30*, 544–556.

Aboud, F.E. (2008). A social-cognitive developmental theory of prejudice. In S.M. Quintana & C. McKown (Eds.), *Handbook of race, racism, and the developing child* (pp. 55–71). Hoboken, NJ: John Wiley and Sons.

Amodio, D.M., & Mendoza, S.A. (2010). Implicit intergroup bias: Cognitive, affective, and motivational underpinnings. In B. Gawronski & B.K. Payne (Eds.), *Handbook of implicit social cognition* (pp. 353–374). New York: Guilford Press.

Baron, A.S. (2015). Constraints on the development of implicit intergroup attitudes. *Child Development Perspectives*, *9*, 50–54.

Baron, A.S., & Banaji, M.R. (2006). The development of implicit attitudes: Evidence of race evaluations from ages 6 and 10 and adulthood. *Psychological Science*, *17*, 53–58.

Cameron, C.D., Brown-Iannuzzi, J.L., & Payne, B.K. (2012). Sequential priming measures of implicit social cognition: A meta-analysis of associations with behavior and explicit attitudes. *Personality and Social Psychology Review*, *16*, 330–350.

Cvencek, D., Greenwald, A.G., & Meltzoff, A.N. (2011). Measuring implicit attitudes of 4-year-olds: The preschool implicit association test. *Journal of Experimental Child Psychology*, *109*, 187–200.

Cvencek, D., Meltzoff, A.N., & Greenwald, A.G. (2011). Math–gender stereotypes in elementary school children. *Child Development*, *82*, 766–779.

Davies, K., Tropp, L.R., Aron, A., Pettigrew, T.F., & Wright, S.C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review*, *15*, 332–351.

Degner, J., & Wentura, D. (2010). Automatic activation of prejudice in children and adolescents. *Journal of Personality and Social Psychology*, *98*, 356–374.

Dovidio, J.F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, *33*, 510–540.

Dovidio, J.F., Kawakami, K., Smoak, N., & Gaertner, S.L. (2009). The nature of contemporary racial prejudice. In R.E. Petty, R.H. Fazio & P. Brinol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 165–192). New York: Psychology Press.

Dunham, Y., Baron, A.S., & Banaji, M.R. (2006). From American city to Japanese village: A cross-cultural investigation of implicit race attitudes. *Child Development*, *77*, 1268–1281.

Dunham, Y., Baron, A.S., & Banaji, M.R. (2007). Children and social groups: A developmental analysis of implicit consistency in Hispanic Americans. *Self and Identity*, *6*, 238–255.

Dunham, Y., Baron, A.S., & Banaji, M.R. (2008). The development of implicit intergroup cognition. *Trends in Cognitive Sciences*, *12*, 248–253.

Dunham, Y., Baron, A.S., & Banaji, M.R. (2016). The development of implicit gender attitudes. *Developmental Science*, *19*, 781–789.

Dunham, Y., Newheiser, A.K., Hoosain, L., Merrill, A., & Olson, K.R. (2014). From a different vantage: Intergroup attitudes among children from low- and intermediate-status racial groups. *Social Cognition*, *32*, 1–21.

Dunham, Y., Stepanova, E.V., Dotsch, R., & Todorov, A. (2015). The development of race-based perceptual categorization: Skin color dominates early category judgments. *Developmental Science*, *18*, 469–483.

Gawronski, B., & De Houwer, J. (2014). Implicit measures in social and personality psychology. In H.T. Reis & C.M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (2nd edn.; pp. 283–310). New York: Cambridge University Press.

Gawronski, B., & Payne, B.K. (Eds.) (2011). *Handbook of implicit social cognition: Measurement, theory, and applications*. New York: Guilford Press.

Gonzalez, A.M., Steele, J.R., & Baron, A.S. (2017). Reducing children's implicit racial bias through exposure to positive outgroup exemplars. *Child Development*, *88*, 123–130.

Government of Brunei. (2011). Brunei Darussalam key indicators. Retrieved from: www.bedb.com.bn/documents/bdki/bdki.2011.pdf

Government of Canada. (2012). Canadian multiculturalism: An inclusive citizenship. Retrieved from: http://www.cic.gc.ca/english/multiculturalism/citizenship.asp

Government of Canada. (2014). Canada–South Africa relations. Retrieved from: http://www.canadainternational.gc.ca/southafrica-afriquedusud/bilateral_relations_bilaterales/canada_sa-as.aspx?menu_id=7&lang=eng

Greenwald, A.G., & Banaji, M.R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*, 4–27.

Greenwald, A.G., Banaji, M.R., & Nosek, B.A. (2015). Statistically small effects of the Implicit Association Test can have societally large effects. *Journal of Personality and Social Psychology*, *108*, 553–561.

Greenwald, A.G., McGhee, D.E., & Schwartz, J.L.K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, *74*, 1464–1480.

Greenwald, A.G., Nosek, B.A., & Banaji, M.R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. *Journal of Personality and Social Psychology*, *85*, 197–216.

Greenwald, A.G., Poehlman, T.A., Uhlmann, E.L., & Banaji, M.R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, *97*, 17–41.

Hartz, L. (1969). *The founding of new societies: Studies in the history of the United States, Latin America, South Africa, Canada, and Australia.* Boston, MA: Houghton Mifflin Harcourt.

Maddox, K.B. (2004). Perspectives on racial phenotypicality bias. *Personality and Social Psychology Review*, *8*, 383–401.

Martin, P. (2008). Educational discourses and literacy in Brunei Darussalam. *International Journal of Bilingual Education and Bilingualism*, *11*, 206–225.

McConnell, A.R., & Leibold, J.M. (2001). Relations among the Implicit Association Test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology*, 37, 435–442.

Meier, B.P., Robinson, M.D., & Clore, G.L. (2004). Why good guys wear white: Automatic inferences about stimulus valence based on brightness. *Psychological Science*, 15, 82–87.

Nelson, T.D. (Ed.) (2009). *The handbook of prejudice, stereotyping, and discrimination*. New York: Psychology Press.

Nesdale, D. (1999). Social identity and ethnic prejudice in children. In P. Martin & W. Noble (Eds.), *Psychology and society* (pp. 92–110). Brisbane: Australian Academic Press.

Newheiser, A.K., Dunham, Y., Merrill, A., Hoosain, L., & Olson, K.R. (2014). Preference for high status predicts implicit outgroup bias among children from low-status groups. *Developmental Psychology*, 50, 1081–1090.

Newheiser, A., & Olson, K.R. (2012). White and Black American children's implicit intergroup bias. *Journal of Experimental Social Psychology*, 48, 264–270.

Nosek, B.A., Hawkins, C.B., & Frazier, R.S. (2011). Implicit social cognition: From measures to mechanisms. *Trends in Cognitive Sciences*, 15, 152–159.

Olson, K.R., & Dunham, Y. (2010). The development of implicit social cognition. In B. Gawronski & B.K. Payne (Eds.), *Handbook of implicit social cognition: Measurement, theory, and applications* (pp. 241–254). New York: Guilford Press.

Olson, K.R., Shutts, K., Kinzler, K.D., & Weisman, K.G. (2012). Children associate racial groups with wealth: Evidence from South Africa. *Child Development*, 83, 1884–1899.

Oswald, F.L., Michell, G., Blanton, H., Jaccard, J., & Tetlock, P.E. (2013). Predicting ethnic and racial discrimination: A meta-analysis of IAT criterion studies. *Journal of Personality and Social Psychology*, 105, 171–192.

Over, H., & Carpenter, M. (2015). Children infer affiliative and status relations from watching others imitate. *Developmental Science*, 18, 917–925. https://doi.org/10.1111/desc.12275

Oyserman, D., Kemmelmeier, M., Fryberg, S., Brosh, H., & Hart-Johnson, T. (2003). Racial-ethnic self-schemas. *Social Psychology Quarterly*, 66, 333–347.

Pauker, K., Williams, A., & Steele, J.R. (2016). Children's racial categorization in context. *Child Development Perspectives*, 10, 33–38.

Pettigrew, T.F., & Tropp, L.R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, 90, 751–783.

Qian, M.K., Heyman, G.D., Quinn, P.C., Messi, F.A., Fu, G., & Lee, K. (2016). Implicit racial biases in preschool children and adults from Asia and Africa. *Child Development*, 87, 285–296.

Quintana, S.M. (1999). Children's developmental understanding of ethnicity and race. *Applied and Preventive Psychology*, 7, 27–45.

Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences. *Child Development*, 82, 1715–1737.

Rutland, A., Cameron, L., Milne, A., & McGeorge, P. (2005). Social norms and self-presentation: Children's implicit and explicit intergroup attitudes. *Child Development*, 76, 451–466.

Saxena, M. (2007). Multilingual and multicultural identities in Brunei Darussalam. In A.B.M. Tsui & J.W. Tollefson (Eds.), *Language policy, culture and identity in Asian contexts* (pp. 143–162). Mahwah, NJ: Lawrence Erlbaum Associates.

Statistics Canada National Household Survey. (2011). City of Toronto ward profiles: Ward 8—York West. Retrieved from: http://www1.toronto.ca/City%20Of%20Toronto/City%20Planning/Wards/Files/pdf/W/Ward%2008%20NHS%20Profile%202011.pdf

Williams, A., & Steele, J. R. (in press). Examining children's implicit racial attitudes using exemplar and category-based measures. *Child Development*. https://doi.org/10.1111/cdev.12991