Bilingualism is associated with less racial bias in preschool children

Article in Developmental Psychology - January 2020
DOI: 10.1037/dev0000905

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Bilingualism Is Associated With Less Racial Bias in Preschool Children

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Bilingual children have been shown to differ from monolingual children in several domains of human cognition. Comparatively few studies have investigated social-interactional processes in bilingual populations. Here, we investigated whether monolingual and bilingual children demonstrate similar susceptibility to an aspect of social functioning with broad societal reach: racial bias. We measured both implicit and explicit biases against African race individuals in 2 groups of monolingual preschoolers (native speakers of English or Chinese) and in 2 groups of English-Chinese bilingual preschoolers (tested in English or Chinese; total N = 160). We found that monolingual children demonstrated greater implicit bias against African race individuals than bilingual children, independent of their native language. Monolingual Chinese children demonstrated greater explicit bias than bilingual children, although monolingual English children’s explicit bias scores did not differ from those of bilingual children. Findings are discussed in terms of cognitive and experiential mechanisms that may link bilingualism and racial bias.

Keywords: bilingualism, intergroup dynamics, language development, racial and ethnic attitudes and relations

Much of the world is raised with more than one native language. Consequently, the question of how bilingual experience shapes psychological development is of widespread relevance. Much past research on the impact of bilingualism has focused on its effects on cognitive control within individuals (for a review, see Bialystok, 2017, but also see de Bruin, Treccani, & Della Sala, 2015; Dick et al., 2019; Morton & Harper, 2007; Paap & Greenberg, 2013). However, bilingualism is inherently a social experience that diversifies the range of linguistic, social, and cultural experiences available to a child. Bilingualism can offer opportunities for communication with a broader range of individuals in a child’s environment. This observation raises the question of whether bilingualism is associated with differences in how bilingual children perceive one another and interact. Here, we investigated whether bilingual exposure in early childhood is associated with social bias, both implicit and explicit.

Prior research on bilingual social cognition suggests that bilingualism influences some social and interactional processes. For example, bilingual adults rate themselves as better able to take the perspective of others, adapt to other people, and negotiate more effectively than monolingual adults (Ikizer & Ramírez-Esparza, 2018). Bilingual infants and children also demonstrate precocity in perspective-taking abilities in referential communication tasks (Liberman, Woodward, Keysar, & Kinzler, 2017) and are better able to adapt to a listener’s needs in communication (Gampe, Wermeling, & Daum, 2019). Finally, bilingual children demonstrate more “egalitarian” social preferences, being less inclined to limit their friendship choices to others like themselves (Byers-Heinlein, Behrend, Said, Girgis, & Poulin-Dubois, 2017).

In addition to modifying specific aspects of social cognition (e.g., perspective-taking, friendship choices), bilingualism has particular relevance for children’s interpretation of race. In a recent study, Singh, Quinn, Xiao, and Lee (2019) investigated whether monolingual and bilingual infants, matched on both own-race and other-race exposure, were equally sensitive to race when cued to follow the gaze of an adult informant. At 18 months, infants
viewed reliable and partially reliable adult informants either belonging to their own race or to a different race. Both monolingual and bilingual infants followed the gaze of completely reliable informants, regardless of race (see also Xiao, Wu, et al., 2018). However, the groups differed in their responses to partially reliable informants: Whereas bilingual infants were no more likely to follow an own- other-race informant, monolingual infants were more likely to follow the own- other-race informant. At the same time, monolingual and bilingual infants demonstrated similar sensitivity to racial contrast in both own- and other- racial faces (Singh, Loh, & Xiao, 2017). This latter result suggests that bilingual and monolingual infants may be similar in terms of their perceptual sensitivity within-category differences in own- and other-race faces. However, the two groups may differ in the significance they ascribe to race when following social cues. Specifically, bilingual infants may interpret the actions of others from a “race-neutral” stance.

The consequence of race-neutral responses in social learning for racial bias remains unclear. In the present study, we investigated whether the performance of monolingual and bilingual children differs on established, standard measures of racial bias, both implicit and explicit. These two forms of bias have been extensively studied in adults (Greenwald, Poehlman, Uhlmann, & Banaji, 2009; Nosek, Banaji, & Greenwald, 2002; Nosek, Hawkins, & Frazier, 2011), demonstrating that majority-group adults often harbor both implicit and explicit racial biases against individuals belonging to other racial groups (see also Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2006; Greenwald & Krieger, 2006). Past studies have demonstrated that correlations between implicit and explicit racial bias scores are highly variable, suggesting that each source of bias may be governed by a different process (see Nosek, 2007). Implicit bias is less consciously controllable, less intentional, and more rapid (Nosek & Smyth, 2007; see also Blanton, Jaccard, Gonzales, & Christie, 2006, for critiques of the IAT and interpretations of findings). As a consequence, implicit bias is thought to be a particularly pernicious social force (Hardin & Banaji, 2013; Kelly & Roedder, 2008), which may be less malleable by interpersonal experience (Joy-Gaba & Nosek, 2010). In contrast, explicit responding is more controllable, monitored, more easily inhibited, and can require greater cognitive resources (Nosek, 2007). Child-adapted versions of implicit and explicit racial bias tasks have demonstrated both types of bias as early as 3 years of age in majority-race children (Qian et al., 2016; Qian, Heyman, Quinn, Fu, & Lee, 2019; Setoh et al., 2019).

Here we sought to determine whether bilingualism is associated with lower levels of implicit and explicit racial bias relative to monolingualism. We investigated both types of bias given that implicit and explicit biases reflect different types of responses, and bias scores on each measure are not always correlated (Nosek, 2007). We assessed racial biases via an adaptation of the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998) and an explicit bias paradigm. Both paradigms were developed by Qian et al. (2016, 2019; see also Setoh et al., 2019). We tested bilingual English-Chinese speaking children on these tasks in English and Mandarin Chinese. Bilingual children were tested in two languages because of prior evidence that a range of decision biases can vary based on the language of testing (Costa, Foucart, Arnon, Apa-rici, & Apesteguia, 2014; Danziger & Ward, 2010; Oggunnaike, Dunham, & Banaji, 2010). We compared bilingual children to two monolingual groups: monolingual English speakers and monolingual Chinese speakers. All participants belonged to the same majority race (Chinese) and were matched on age and parental education levels. We compared all groups on implicit and explicit biases against African race individuals. We tested preschoolers as this is the earliest stage at which implicit bias has been experimentally demonstrated (e.g., Qian et al., 2016; but see Xiao, Quinn, et al., 2018, for a possible infant analogue). We hypothesized that bilingual children would demonstrate less explicit bias on account of past findings that bilingual infants demonstrated less racial bias in a gaze following task (Singh et al., 2019). This kind of task is thought to reflect endogenous (or goal-directed) responding, which requires the conscious allocation of attention (Jonides, Long, & Baddeley, 1981). It remains unclear whether implicit bias is associated with bilingual experience.

**Method**

**Participants**

Participants were 160 children (69 females) between 3 and 4 years of age ($M_{age} = 42.70$ months; range $= 36.00$ to 49.97 months). All were Chinese race with full Chinese parentage. Forty participants were raised monolingually with near-exclusive or exclusive exposure to English and were from Singapore. Another 40 participants were raised monolingually with near-exclusive or exclusive exposure to Mandarin Chinese and were from Hangzhou, China. An additional 80 participants were raised bilingually in Singapore, with exposure to English and Mandarin. For those participants raised bilingually in Singapore, half ($n = 40$) were tested in English and half ($n = 40$) were tested in Mandarin. Nineteen additional children were recruited but data were discarded because of inattentiveness during practice trials ($n = 13$), technical error ($n = 2$), or noncompliance during the task ($n = 4$).

For both tasks, bias scores were submitted to a $2 \times 2$ (Language Exposure: Monolingual/Bilingual $\times$ Language of Testing: English/Mandarin) analysis of variance (ANOVA). Data from a group of Mandarin monolinguals, matched on sample size, age, and parental education for each task, were obtained after the Singaporean samples to provide a check on whether bias scores obtained in Singaporean monolinguals would replicate in a monolingual society. As such, for the ANOVA, an a priori power analysis was not conducted. Instead, we provide a post hoc sensitivity analysis following each ANOVA. Prior to testing, we planned to compare bias scores with no-bias scores for each group as in Qian et al. (2016). For these analyses, for the implicit task, we calculated estimated sample sizes based on bias scores and standard deviations obtained by Qian et al. (2016) for trials measuring bias against African race individuals in 3- to 4-year-old Chinese children. Assuming four groups and a power criterion of 0.9, the projected effect size based on Qian et al.’s data was $f = .38$. Given this effect size, a total sample size of 88 participants would be required to detect a difference between a bias score of 0.42 obtained by Qian et al. and a no-bias score of 0 in a one-way...
ANOVAs. For this task, we tested 154 children and our final sample size was 136 due to exclusion criteria applied to the IAT further described in the Results section. On the explicit task, for 3- to 4-year-old Chinese children, Qian et al. obtained an effect size of $f = .37$ for a monolingual sample in trials measuring bias against African race individuals. In a power analysis for a one-way ANOVA assuming 4 groups (power criterion: .9), a minimum sample size of 108 would be required to detect a group difference between a bias score of .67 (Qian et al., 2016) and a no-bias score of .5. Our final sample size was 160. The project was approved by the National University of Singapore Institutional Review Board (Protocol number: A-15-108; Title: Effects of Bilingualism on Linguistic, Cognitive and Social Functioning) and by Hangzhou Normal University (Protocol number: 31771227; Title: The Development of Racial Attitudes in Childhood: Factors and Interventions).

To assess each participant’s language background, parents of each child were administered a Language Exposure Questionnaire (Bosch & Sebastián-Gallés, 1997). The questionnaire is a detailed 25-item survey of the child’s language learning environment administered via oral interview for each potential participant. The results were used to classify children as monolingual or bilingual. Bilingual children had exposure to only two native languages (English and Mandarin), with at least 25% exposure to the second language. Monolingual children had exclusive or near-exclusive exposure to English (>90%). Mean exposure to English for the bilingual group tested in English was 57% ($SD = 11.63$) and mean exposure to Mandarin for the bilingual group tested in Mandarin was 51% ($SD = 9.49$). Mean exposure to English for the English monolingual group was 94% ($SD = 3.14$). Mean exposure to Mandarin Chinese for the Mandarin monolingual group was 99.38% ($SD = 1.31$). All children were citizens and lifetime residents of the country in which they were tested.

Details about each child’s racial exposure were collected via a Race Contact Questionnaire. This questionnaire was identical in format to the Language Exposure Questionnaire but asked specifically about the race of each family member, caregiver, and others in the child’s life with which he or she had habitual contact. The race of each person was then linked to the percentage of time that each person spent with the child to generate an exposure percentage for each race. All children had Chinese parents and interacted predominantly with Chinese individuals. Race contact statistics for each group are reported in Table 1. For all children, other-race exposure was limited to Asian race faces. No child had known exposure to or interaction with African race individuals, the other-race category used in this study. Both language and race contact statistics were collected prior to recruitment and families were invited to participate if their child met the criteria for monolingual and bilingual exposure and had predominant exposure to same-race individuals.

All four participant groups were matched on maternal and paternal education levels to control for demographic variation that may otherwise differentiate monolingual and bilingual samples (see Morton & Harper, 2007). Monolingual and bilingual participants tested in Singapore were further matched on English language proficiency. For the three samples tested in Singapore who spoke English, English proficiency was measured by the Peabody Picture Vocabulary Test (PPVT, 4th ed.; Dunn & Dunn, 2007) to ensure that group differences were not due to English language proficiency. There was no effect of language group on maternal or paternal education across all four groups ($p$ values $> .8$), nor on PPVT scores across the three English-speaking groups ($p = .11$).

In a comparison of the four groups on Chinese face exposure, there was a significant effect of group on exposure to Chinese faces, $F(3, 158) = 6.67, p < .0001$. Follow-up tests indicated that the three samples tested in Singapore did not differ from each other as they all had near-exclusive (between 95% and 97%) exposure to Chinese faces (all $p$ values $> .6$). Other-race experience was limited to non-Chinese Asian faces and no child had experience with African race individuals. However, the three groups tested in Singapore did differ from the monolingual sample tested in China who had exclusive exposure (100%) to Chinese faces (all $p$ values $< .02$). This was unavoidable as it is improbable to have no interaction at all with other races in Singapore, nor is it likely to have other-race interaction in the testing location in China. Nevertheless, all groups had at least 95% regular interaction with Chinese race individuals. Descriptive statistics for each measure are provided in Table 1.

### Stimuli and Procedure

**Implicit Racial Bias Task.** Stimuli from Qian et al. (2016) were used in the present study. They consisted of color photographs of 20 Chinese face and 20 Black faces (10 females and 10 males in each racial category). All photographs were $480 \times 600$ pixels and presented at a resolution of 72 pixels/inch. Faces were matched on attractiveness and distinctiveness ratings provided by 20 Chinese adults. For the implicit task, the procedure was iden-

### Table 1

Descriptive Statistics for Parental Education and English Language Proficiency of the Child Participants

<table>
<thead>
<tr>
<th>Variable</th>
<th>Maternal education (years of education after O-level examinations), $M (SD)$</th>
<th>Paternal education (years of education after O-level examinations), $M (SD)$</th>
<th>PPVT standard score, $M (SD)$</th>
<th>Chinese race exposure, $M (SD)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monolingual–English ($n = 40$)</td>
<td>5.50 (1.73)</td>
<td>5.35 (2.82)</td>
<td>111.61 (12.99)</td>
<td>94.79% (7.91)</td>
</tr>
<tr>
<td>Monolingual–Mandarin ($n = 40$)</td>
<td>5.65 (1.96)</td>
<td>5.30 (1.64)</td>
<td>108.51 (11.67)</td>
<td>95.31% (5.67)</td>
</tr>
<tr>
<td>Bilingual–English ($n = 40$)</td>
<td>5.45 (1.71)</td>
<td>5.30 (2.08)</td>
<td>105.83 (11.16)</td>
<td>96.21% (5.82)</td>
</tr>
<tr>
<td>Bilingual–Mandarin ($n = 40$)</td>
<td>5.30 (2.26)</td>
<td>5.13 (2.76)</td>
<td>101.52 (11.32)</td>
<td>95.72% (5.61)</td>
</tr>
</tbody>
</table>

*Note.* PPVT = Peabody Picture Vocabulary Test.
tical to that described in Qian et al. (2016); Black-Chinese Implicit Racial Bias Task and Setoh et al. (2019).

Children were tested in a child language laboratory in Singapore or in a preschool setting in China. Testing was conducted using E-Prime 2.0 (Psychology Software Tools, Sharpsburg, PA) installed on a Microsoft Surface Pro computer with a touch screen. Children were seated in front of the computer at a table. On the table, two stars were placed at a fixed distance from the computer screen. At the beginning of each trial, children were asked to place their forefingers on each star. On each trial, a Chinese or Black face was presented at the center of the screen. On the lower left and right corners of the screen, there was a frowning face and a smiling face.

There were 16 practice trials, which served to introduce participants to the task and 40 test trials. Children received eight practice trials before each block. Participants were told they would be given a practice block prior to testing, and when this block ended, the test block began. Half of the test trials were “congruent”: children were asked to press the frowning face when they saw a Black face and the smiling face when they saw a Chinese face. The other half were “incongruent”: children were asked to press the frowning face when they saw a Chinese face and the smiling face when they saw a Black face. The sequence of congruent and incongruent blocks and the left-right positions of the smile and frown were counterbalanced across participants. The implicit task was conducted first as in past studies (Qian et al., 2016). The task demands of the practice trials were the same as the test trials (i.e., to match a face with a smiling or frowning icon). The face stimuli differed for practice trials and test trials on account of past findings that familiarity with other-race faces may alter racial bias (Zebrowitz, White, & Wieneke, 2008).

Explicit Racial Bias Task. For the explicit task, the procedure was also identical to that described in Qian et al. (2016) and Setoh et al. (2019). Stimuli consisted of 6 colored photographs of Chinese faces (3 female) and 6 photographs of Black faces (3 female). These faces were different from those used in the Implicit Bias Task, and they were matched on attractiveness and distinctiveness in ratings provided by 20 Chinese adults. Children were provided with three scenarios that involved selecting a doctor, a policeman, or a chef, and asked to imagine themselves in various situations, such as being sick and needing to see a doctor, being lost and needing to find a policeman, or going to a restaurant and wanting to order some food. They were then asked which doctor/policeman/chef they would select. On each trial, a Chinese face was paired with a Black face. There were a total of 6 trials. The left-right positions of the Chinese and Black faces were counterbalanced across participants and scenarios.

Results

Implicit Racial Bias Task

D scores were computed for each participant (see Greenwald, Nosek, & Banaji, 2003). D scores significantly greater than zero reflect bias. As in past studies measuring implicit bias in the same population (e.g., Setoh et al., 2019), participants with 10% responses faster than 300 msec (*N* = 1), an error rate that exceeded 60% (*N* = 3), or an average response latency 3 SD above the mean latency across the entire task (*N* = 14) were removed. The first and last exclusion criteria mainly applied to children who lost interest in the task along the way and had to be extensively prompted to respond, hence the exclusion based on long latencies. One other child began to respond very quickly prior to examining the stimuli in order to finish the task as quickly as possible. These exclusion criteria left 136 participants for analysis on the implicit task (34 participants per group). D scores and standard errors are shown in Figure 1.

![Figure 1](https://example.com/figure1.png)

Figure 1. D scores for English and Chinese monolingual, bilingual (tested in English), and bilingual (tested in Mandarin) participants. Error bars reflect SEM.
A 2 × 2 (Language Exposure: Monolingual/Bilingual × Language of Testing: English/Mandarin) ANOVA was conducted with D scores as the dependent variable. Results revealed a main effect of language exposure, $F(3, 132) = 25.08, p < .0001$, $\eta^2_p = .16$, reflected by higher D scores for monolingual versus bilingual groups. There was no effect of language of testing, $F(3, 132) = .07, p = .79$, nor any interaction of language of exposure and language of testing, $F(3, 132) = .59, p = .44$. A post hoc sensitivity analysis for the main effect of language exposure required a minimum effect size of .06 ($\eta^2_p$, corresponding to $f = .26$) using a power criterion of .95. The obtained effect size was .16 ($\eta^2_p$, corresponding to $f = .44$). Adjusting for multiple comparisons, Tukey’s HSD post hoc tests were performed to compare D scores across groups. These tests revealed that D scores did not differ between the two monolingual groups $(p = .89)$, nor between the two bilingual groups $(p = .98)$. However, D scores were significantly higher for English monolingual children than for bilingual children tested in English $(p = .006)$ and for bilingual children tested in Mandarin $(p = .017)$. Similarly, D scores were significantly higher for Chinese monolingual children in comparison to bilingual children tested in English $(p < .0001)$ and bilingual children tested in Mandarin $(p = .002)$.

A series of one-sample $t$ tests were conducted to compare D scores to a no-bias score of 0 for each group. D scores for monolingual Mandarin and monolingual English children were significantly greater than zero; monolingual English speakers: $t(33) = 4.72, p < .0001$, Cohen’s $d = .81$; monolingual Mandarin speakers: $t(33) = 5.76, p < .0001$, Cohen’s $d = .98$. In contrast, for bilingual children, D scores did not differ significantly from zero for children tested in English or in Mandarin (bilingual [English]: $t(33) = .48, p = .64$; bilingual [Mandarin]: $t(33) = .03, p = .98$). These planned contrasts remained significant following Bonferroni correction for multiple comparisons (adjusted $p$ value = .0125).

Explicit Racial Bias Task

Explicit bias scores and standard errors are shown in Figure 2. A 2 × 2 (language exposure: monolingual/bilingual × language of testing: English/Mandarin) ANOVA was conducted with explicit bias scores as the dependent variable. Results revealed a main effect of language exposure, $F(3, 156) = 12.92, p < .0001$, $\eta^2_p = .08$, reflected in higher explicit bias scores for monolingual versus bilingual groups. There was no effect of language of testing, $F(3, 156) = 2.47, p = .12$, nor any interaction of language of exposure and language of testing, $F(3, 156) = .49, p = .69$. A post hoc sensitivity analysis for the main effect of language exposure required a minimum effect size of .06 ($\eta^2_p$, corresponding to $f = .26$) using a power criterion of .95. The obtained effect size was .08 ($\eta^2_p$, corresponding to $f = .29$). Tukey’s HSD post hoc tests revealed that explicit bias did not differ between the two monolingual groups $(p = .38)$, nor between the two bilingual groups $(p = .93)$. Explicit bias scores were not significantly different for English monolingual children than for bilingual children tested in English $(p = .48)$ or for bilingual children tested in Mandarin $(p = .18)$. However, explicit bias scores were higher for Chinese monolingual children than for bilingual children tested in English $(p = .02)$ and for bilingual children tested in Mandarin $(p = .002)$.

Explicit bias scores were compared to .5 for each group to determine whether each group exhibited significant bias. For monolingual Mandarin children, bias scores were significantly greater than .50, $t(39) = 5.23, p < .0001$, Cohen’s $d = .82$. For monolingual English children, explicit bias scores were not significantly greater than .50 following Bonferroni correction for multiple comparisons, $t(39) = 2.28, p = .028$, adjusted $p$ value = .0125. Similarly, for bilingual children, explicit bias scores did not differ from zero for children tested in English or in Mandarin—English: $t(39) = .68, p = .50$; Mandarin: $t(39) = .07, p = .95$.

Discussion

The objective of the present study was to determine whether racial bias differs in monolingual and bilingual children. Our study revealed three main findings. First, monolingual English-speaking and Chinese-speaking children demonstrated implicit bias against African race models, whereas bilingual children did not, whether tested in English or Mandarin. Second, bias scores were significantly greater in monolingual children as compared
with bilingual children in the implicit bias task. Finally, although the monolingual groups did not differ from each other on explicit bias against African race models, only the monolingual Mandarin group demonstrated higher explicit bias scores than the two bilingual groups.

These results point to less implicit racial bias in bilingual children in comparison to monolingual children. With respect to explicit bias, evidence for monolingual-bilingual differences was less clear. Greater explicit racial bias was found in monolingual Chinese children raised in China, relative to bilingual children raised in Singapore. In contrast, monolingual English children raised in Singapore did not demonstrate greater explicit bias than their bilingual peers. We suggest that the expression of explicit bias may be more dependent on sociocultural factors than on language experience. In comparison to Hangzhou, China, Singapore is a relatively multicultural society. It is likely that Singaporean children have had greater opportunity to interact with other racial groups, reflected by race contact statistics.

Limited interracial contact in the Mandarin monolingual sample may also account for the high D scores observed on the implicit bias task in this group. Although prior studies have observed similar D scores in Mandarin monolingual children tested in China (Qian et al., 2017, 2019), the D scores obtained in the Mandarin monolingual group in particular are higher than those obtained in previous versions of the IAT with children (e.g., Baron & Banaji, 2006; Gonzalez, Steele, & Baron, 2017). The difference may reflect the racially homogenous environment in which the monolingual Chinese participants were tested. It may also reflect differences between our measure and previous instantiations of the IAT used to measure racial bias. For example, our measure used adult faces as stimuli while previous IATs designed to measure childhood racial bias used child faces, which could influence bias. In addition, given the age group tested, we simplified the task by measuring associations between happy/frowning icons and same/other race individuals, whereas prior studies have used associations between words (such as good, nice, bad, mean) and same/other race individuals. Implicit biases based on word-race associations may differ from those based on picture-race associations. These methodological differences may have contributed to higher D scores in our task compared with previous versions of the IAT.

In our study, associations between racial bias and bilingualism were most apparent in the implicit bias task. Reduction of implicit racial bias is an important social endeavor, which receives significant political and scientific attention. There is prior evidence from adult studies that at least some forms of implicit bias can be modified (for a discussion of this issue, see Charlesworth & Banaji, 2019; Lai & Banaji, in press). Additional studies have investigated the effects of interventions to reduce implicit bias (Aboud et al., 2012; Lai et al., 2014). These interventions have included individuation training (e.g., Lerecht, Pierce, Tarr, & Tanaka, 2009; Qian et al., 2017), exposure to positive outgroup exemplars (Gonzalez, Steele, & Baron, 2017), and concurrent exposure to negative ingroup exemplars and positive outgroup exemplars (Dasgupta & Greenwald, 2001). In large part, interventions to reduce bias have focused on purposefully familiarizing individuals with outgroups and modifying individual experiences with outgroups. In contrast to these interventions, bilingualism is not a curated experience; it is an intrinsic property of a child’s environment in many societies. The present findings offer evidence that a habitual everyday experience that does not involve other-race familiarization may be linked to a lower level of implicit bias.

The results raise an important question about the specific mechanism(s) that may link implicit bias and bilingual exposure. Although this study cannot pinpoint the basis for the observed association between bilingualism and bias, we propose three possibilities that may link bilingualism to social cognition via additional mechanisms. The first possibility is that bilingualism may enhance socially relevant aspects of development that then influence later expression of bias. For example, childhood bilingualism has been linked to precocity in perspective-taking (Liberman et al., 2017). In turn, perspective-taking in social communication is negatively related to implicit bias (Todd, Bodenhausen, Richeson, & Galinsky, 2011; Wang, Kenneth, Ku, & Galinsky, 2014). It is therefore possible that domain-specific bilingual enhancement in perspective-taking directly reduces the expression of social bias. Similarly, social choices made by bilingual children may promote intergroup contact. For example, bilingualism predisposes children to social encounters that can promote contact with an outgroup (e.g., Byers-Heinlein et al., 2017). Intervention programs aimed at reducing social bias would suggest that increased contact with outgroups can reduce outgroup negativity (Crisp & Turner, 2009; Turner, Hewstone, & Voci, 2007). Although our study measured regular exposure to other racial groups on the part of children, we could not assess the full range of social choices pursued by each child in their daily lives. A tendency on the part of bilinguals to look beyond the ingroup for social interaction may lessen outgroup negativity on account of increased intergroup contact.

A second possibility is that bilingual experience, like other diversifying experiences, increases cognitive flexibility. Cognitive flexibility, in turn, is associated with less implicit racial bias (Klauser, Schmitz, Teige-Mocigemba, & Voss, 2010). For example, biracial children demonstrate lower levels of racial bias relative to monoracial children (Pauker & Ambady, 2009), a group difference that can be traced to greater cognitive flexibility when reasoning about race in biracial children. Likewise, culturally diversifying experiences such as living overseas can lead to greater cognitive flexibility (Maddux & Galinsky, 2009). Similarly, among individuals who live overseas, those who become bicultural by truly identifying with two cultures in contrast to those that fully assimilate or identify predominantly with their culture of origin also demonstrate greater cognitive flexibility (Tadmor, Galinsky, & Maddux, 2012). Effects of cultural diversity on cognitive flexibility are relevant to our findings in that bilingual children likely straddle two different languages and two different cultures. Bilingualism and biculturalism may therefore be associated with less racial bias via enhanced cognitive flexibility. Furthermore, the notion that diversifying experiences may modify basic cognitive processes is consistent with recent theoretical views of attitudinal change (see Meleady, Crisp, Hodson, & Earle, 2019). Meleady et al. (2019) suggested that social attitudes are liberalized by the presence of social diversity and that this liberalization may transfer to several different domains. One type of transfer relevant to the
present study is “tertiary transfer” whereby social diversity may induce attitude shifts that modify aspects of core cognition, such as cognitive flexibility. In this way, bilingual experience, bicultural experience, or both may increase cognitive flexibility, which may reduce the expression of bias.

A third possibility is that bilingualism modifies a child’s reasoning about the attributes of others in a way that influences the expression of bias. For example, Byers-Heinlein and Garcia (2015) demonstrated that bilingual children are less oriented toward essentialist reasoning in comparison to monolingual children, making predictions about probable behavior that are environmentally determined rather than innately determined. Past research suggests a link between essentialist beliefs and outgroup prejudice (Haslam, Rothschild, & Ernst, 2002; see also Pauker & Ambady, 2009). Although essentialist reasoning is thought to have developmental value in predisposing children to search for causal explanations in their world (Schulz & Gopnik, 2004), essentialist beliefs may have the collateral limitation of predisposing children to make deep (and sometimes, incorrect) attributions based on shallow information. This attributional style may predispose monolingual children who embrace essentialist accounts of behavior toward social biases and bilingual children who resist essentialist accounts toward social equality. In this way, the link between bilingualism and racial bias may be modulated by children’s primitive explanations for the behavior of others.

Here, we discuss caveats and limitations of our study. First, we do not conclude that bilingualism causes lower levels of racial bias. We acknowledge that family language choices are not randomly assigned and may involve selection. Moreover, as described in the above paragraphs, differences between monolingual and bilingual children may not be due solely to bilingual children knowing two languages and monolingual children knowing one language. Instead, bilingualism is likely associated with environmental factors, such as social diversity, cultural diversity, and self-selection. These factors are often integral to bilingualism and may contribute to differences in social bias in bilingual versus monolingual children. Hence, although our study establishes an association between bilingualism and implicit social bias, it does not isolate effects of language or mechanism(s) that may bridge language and social cognition. In ongoing longitudinal research, we are investigating how relevant cognitive mechanisms may link bilingualism and racial bias. Finally, we tested children at the youngest age at which bias has been reported using these tasks (Qian et al., 2016). Given past reports that implicit bias increases with age in early childhood (Qian et al., 2016; Setoh et al., 2019), it is possible that bias sets in later in bilingual populations, a possibility which awaits further testing.

Racial bias is fortunately ubiquitous in human society. The impact of such bias is both profound and pervasive, influencing many aspects of the lives of individuals who encounter prejudice. Employment opportunities, access to health care and education, and treatment in judicial systems are but a few of the many facets of life that are negatively impacted by racial bias (Greenwald & Krieger, 2006). The present study suggests that even in a relatively racially homogenous society, one that is thought to be more susceptible to racial bias (McGlothin & Killen, 2006), bilingual exposure may be associated with a lower level of racial bias compared with monolingual exposure.

References


Received July 15, 2019
Revision received January 2, 2020
Accepted January 9, 2020