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# Preference for High Status Predicts Implicit Outgroup Bias Among Children From Low-Status Groups

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Whereas members of high-status racial groups show ingroup preference when attitudes are measured implicitly, members of low-status racial groups—both adults and children—typically show no bias, potentially reflecting awareness of the ingroup's low status. We hypothesized that when status differences are especially pronounced, children from low-status groups would show an implicit *outgroup* bias, the strength of which might relate to attitudes toward status. We tested these predictions among 6- to 11-year-old Black and Coloured (i.e., multiracial) children from South Africa, a country marked by extreme status differentials among racial groups. As a measure of implicit intergroup bias, children ( $N = 78$ ) completed an Implicit Association Test (IAT), a speeded categorization task that assesses the relative strength of association between 2 target groups (in the present study, either Whites vs. Blacks or Whites vs. Coloureds) and positive vs. negative evaluation. Children also completed explicit (i.e., self-report) measures of attitudes toward racial groups as well as toward rich and poor people (a measure of attitudes toward status). Both groups of children showed an implicit outgroup-favoring (i.e., pro-White) bias, suggesting that children were sensitive to the extent of status differences. The only instance in which implicit pro-White bias did not emerge involved Black children's evaluations of Whites vs. Coloureds, both higher-status outgroups. Explicit preference for high status predicted implicit pro-White bias, particularly when the IAT contrasted 2 outgroups. The impact of status on the development of implicit and explicit intergroup bias is discussed.

**Keywords:** intergroup bias, implicit attitudes, Implicit Association Test, social status, inequality

Groups' relative status plays an important role in the development of intergroup attitudes. For example, a large body of work has established that a status-based asymmetry in explicit (i.e., self-report) intergroup attitudes emerges in the preschool years,

with children from high-status groups (e.g., White American children) showing robust ingroup favoritism but children from low-status groups (e.g., Black American children) preferring the ingroup to a substantially lesser extent (for a recent review, see Hailey & Olson, 2013). This asymmetry is taken to reflect tendencies to prefer both one's ingroup as well as high-status groups. Thus, among children from lower-status groups, ingroup favoritism may be counteracted by awareness of the ingroup's low status. However, whether groups' relative status similarly affects "implicit" (automatic or uncontrolled) intergroup attitudes is relatively less clear. This is important because implicit attitudes are powerful predictors of behavior (Greenwald, Poehlman, Uhlmann, & Banaji, 2009) despite being in large part introspectively inaccessible (and thus typically measured via speeded judgment tasks instead of self-report; Greenwald & Banaji, 1995). Initial evidence suggests that implicit intergroup evaluations are also sensitive to groups' status. For example, whereas White American children implicitly favor their high-status ingroup, Hispanic and Black American children show no implicit bias when their ingroup is contrasted with Whites, a high-status outgroup (Dunham, Baron, & Banaji, 2007; Newheiser & Olson, 2012). These findings have been attributed to Hispanic and Black American children's awareness of their ingroup's low status relative to Whites.

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However, status relationships among groups are more complicated than simply “high” or “low.” Accordingly, in the present research, we examined the novel hypothesis that the *degree* of status inequality among groups predicts children’s implicit intergroup bias. In particular, we propose that when status differences among racial/ethnic groups are highly pronounced, members of low-status groups will show not just a lack of bias but a complete reversal to implicit bias favoring the high-status *outgroup*. Although prior work has demonstrated that groups’ *relative* status plays a role in shaping children’s implicit bias, demonstrating that implicit bias differs qualitatively based on the ingroup’s status (with only majority-group children showing an ingroup-favoring implicit bias; Newheiser & Olson, 2012) and based on the status of the outgroup with which the ingroup is being compared (with ingroup-favoring implicit biases emerging only with respect to low-status outgroups; Dunham et al., 2007), prior work was not in a position to test the specific hypothesis that the force of status might entirely trump the force of ingroup preference. Testing that novel hypothesis requires examining cases in which status differentials among racial groups are extreme, such that the force of preference for high status is so strong that it does not merely counteract but can completely *reverse* the (typically strong) influence of ingroup preference. Such a pattern would definitively demonstrate that the tendencies to prefer the ingroup as well as high-status groups have additive effects on children’s implicit intergroup bias. Importantly, the U.S. cultural context, in which prior relevant work has been conducted, may not provide a fair test of this hypothesis, because status differences among racial groups in the United States are not extreme enough to fully outweigh the tendency toward ingroup preference.

Accordingly, for the present research, we sought a context that would provide a stronger test of the hypothesis that preferences for the ingroup and for high-status groups can have additive effects on children’s implicit intergroup bias and that preference for high status can in some cases exceed the strength of ingroup preference. We opted for South Africa, a society that has a robust race-based status hierarchy as well as substantial race-based inequalities in terms of wealth and advantage that far exceed those present in the United States. Specifically, we examined the impact of groups’ relative status on implicit intergroup bias among 6- to 11-year-old Black and Coloured (i.e., multiracial) South African children. We assessed implicit bias with the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), a speeded categorization task that measures the strength of associations between concepts (e.g., Whites vs. Blacks) and evaluation (positivity vs. negativity). The basic notion underlying the IAT is that categorization is faster when the task requires grouping together more closely associated concepts. Thus, if a child more closely associates Whites, relative to Blacks, with positive evaluation, the child will be faster to group together stimuli denoting Whites and positivity (vs. Blacks and positivity)—a pattern that indicates an implicit pro-White bias. The IAT is perhaps the most commonly used implicit attitude measure, with over 200 published articles reporting research using an IAT (Lane, Banaji, Nosek, & Greenwald, 2007), including an increasing body of developmental research (reviewed in Olson & Dunham, 2010).

We also sought to contribute new knowledge to the growing literature on age-related change (or lack thereof) in implicit and explicit intergroup biases. Prior work has revealed that explicit

ingroup favoritism among children from high-status groups follows a curvilinear trend, increasing between early and middle childhood and then decreasing as children reach age 8–10 (for a meta-analytic review, see Raabe & Beelmann, 2011). Although research on children from low-status groups is less consistent, the evidence generally suggests an increase in explicit ingroup preference (or a decrease in explicit outgroup favoritism) in late childhood (for reviews, see Hailey & Olson, 2013; Raabe & Beelmann, 2011). Thus, explicit attitudes expressed by children from both high- and low-status groups become less influenced by status as children age. Accordingly, one might expect to see developmental trends in children’s *implicit* biases as well, as children gradually acquire more information regarding groups in their environment. However, recent research has instead revealed an early emergence (by age 3; Dunham, Chen, & Banaji, 2013) and developmental stability of implicit biases favoring ingroups (among children from high-status groups) and dominant or high-status groups (among children from both high- and low-status groups; for a review, see Dunham, Baron, & Banaji, 2008).

Taken together, past work suggests that we might observe age-related changes in explicit, but not implicit, intergroup bias in the present work. However, the unique nature of the intergroup context examined in the present work, characterized by extreme status differentials among racial groups in South Africa, suggests that implicit bias in our sample may be qualitatively different from that observed in prior work. Most prominently, tendencies to favor both the ingroup and high-status groups are in particularly strong tension among children from racial groups whose status is extremely low (e.g., Black South African children)—suggesting the prediction, tested in the present work, that the tendency to favor high-status groups may result in a full reversal to *outgroup-favoring* implicit biases (vs. the “mere” lack of implicit bias that is typically observed among children from relatively low-status groups). Accordingly, the present study is in a position to answer questions regarding the development of implicit bias that cannot be addressed in the U.S. context, where the majority of related research has been conducted to date and where status differences among racial groups are not as extreme as in South Africa. Although the majority of prior work strongly supports the prediction of age-related change in explicit but not in implicit bias, we chose to remain agnostic and simply examined whether developmental change could be observed in terms of both explicit and implicit bias.

As noted above, the South African context is particularly well suited for examining the role of status in shaping children’s intergroup attitudes, primarily because the race-based status inequities in South Africa far exceed those present in the United States. The three main racial groups in South Africa are Whites, Blacks, and Coloureds (Statistics South Africa, 2011). *Coloured* is the official term for South Africans of multiracial descent and represents a distinct racial category. Whereas the Coloured category is perceptually similar to the “multiracial” category in the United States, these two categories differ substantially in that Coloured individuals self-identify as Coloured, whereas many multiracial Americans identify with a specific subgroup (e.g., Barack Obama, who identifies as Black). Additionally, despite a wide range of appearances by American or European standards, Coloured individuals are considered a fairly cohesive group (similar to how Whites in the United States are seen as a single racial group despite the fact

that they can also be divided into Irish vs. Italians or Catholics vs. Protestants). The Coloured category also has a distinct cultural heritage, including a unique accent and traditional foods, and was governed under distinct rules and restrictions during Apartheid (separate from both Whites and Blacks).

Due to the segregation enforced under Apartheid policies from 1948 to 1994, South Africa has a pronounced racial hierarchy in which Whites overwhelmingly have the highest status, followed by Coloureds, and finally Blacks (Finchilescu & Tredoux, 2010). This is the case even though Whites are a numerical minority, constituting only 9% of the population (Coloureds constitute another 9%, and Blacks 80%; Statistics South Africa, 2011). Attesting to the extremity of the status hierarchy, Whites' average annual household income is nearly 4 times that of Coloureds and over 7 times that of Blacks (Statistics South Africa, 2008). Although there are large income disparities in the United States as well, the South African differentials by far exceed them: Whereas Black Americans' average annual income is approximately 60% of that of White Americans (U.S. Census Bureau, 2011), in South Africa the analogous figure is 13% (Statistics South Africa, 2008). Thus, although South African society is not unique in being hierarchically structured (Sidanius & Pratto, 1999), its racial hierarchy is particularly extreme.

Although we hypothesized that these stark inequities would lead non-White South African children to develop implicit biases favoring higher status outgroups, prior research requires considering alternative possibilities. For example, aligning with work conducted with children in the United States (Dunham et al., 2007; Newheiser & Olson, 2012) and Japan (Dunham, Baron, & Banaji, 2006), one might expect that South African children from low-status groups show *no bias* when comparing their ingroup with Whites. Indeed, prior research has demonstrated that, among adult respondents, low ingroup status eliminates but does not reverse implicit ingroup bias relative to a higher status outgroup (Lane, Mitchell, & Banaji, 2005). These prior findings suggest that awareness of one's ingroup's low status may serve to cancel out some of the force of ingroup favoritism, or perhaps that self-protective tendencies prevent implicit bias from reversing completely, resulting in a lack of implicit bias instead of implicit bias favoring higher status outgroups.

However, in certain contexts, members of low-status groups do implicitly favor outgroups, implying internalization of the *degree* of status differences. For instance, elderly people often implicitly favor the young (Nosek, Banaji, & Greenwald, 2002), and many overweight adult respondents implicitly favor normal-weight people (Schwartz, Vartanian, Nosek, & Brownell, 2006; Wang, Brownell, & Wadden, 2004). Implicit outgroup bias seems to emerge among respondents who perceive their ingroup to be especially low in status (Jost, Banaji, & Nosek, 2004; Rudman, Feinberg, & Fairchild, 2002). The stratification of South African society, even post-Apartheid, continues to send overt messages about which groups are valued over others. Indeed, research on South African children's *explicit* attitudes revealed that whereas White children showed ingroup favoritism, Black and Coloured children preferred Whites or showed no preference (Olson, Shutts, Kinzler, & Weisman, 2012; Shutts, Kinzler, Katz, Tredoux, & Spelke, 2011). This prior work, although not focusing on the impact of groups' relative status on implicit bias, demonstrates that

Black and Coloured South African children are highly aware of status differences among racial groups in their society.

Accordingly, we predicted that Black and Coloured South African children would implicitly favor Whites, the highest-status racial group in their society, even over their ingroups. Notably, this prediction departs from prior work on implicit bias involving racial/ethnic groups, which has revealed a lack of bias (as opposed to outgroup bias) among adult members of low-status racial groups (e.g., Nosek et al., 2007). Additionally, we explored implicit bias in a context in which two outgroups were contrasted against each other (as opposed to the more typical ingroup–outgroup contrast). That is, we assessed Black children's implicit evaluations of Whites versus Coloureds, and Coloured children's implicit evaluations of Whites versus Blacks. Because these contrasts are not confounded by ingroup favoritism, we expected to find evidence of pro-White bias. However, South Africa's three-tiered status hierarchy makes these intergroup contrasts particularly interesting—for example, for Black children, a White–Coloured contrast involves two outgroups that are both higher in status than the ingroup. This unique intergroup context thus represents a novel opportunity for exploring the extent to which more complex intergroup hierarchies are reflected in children's implicit bias.

Previous research has examined the ingroup's relative or perceived status as a predictor of implicit bias (Lane et al., 2005; Livingston, 2002; Rudman et al., 2002), but little work has focused on exactly how status exerts psychological effects. To begin to explore this key question, we also tested the hypothesis that the extent to which children prefer wealth and high status *in general* predicts implicit bias favoring high-status outgroups. That is, we sought to link liking for status generally with attitudes toward specific high-status groups in the local cultural climate. Prior work has revealed that explicit preference for high status predicted implicit outgroup (i.e., pro-White) bias among Black American children, but was not associated with White American children's implicit bias (Newheiser & Olson, 2012), suggesting that general preference for high status may be specifically associated with implicit bias among members of lower-status groups. In the present work, we predicted that this association might be particularly strong when two outgroups are contrasted, because in this case, children are able to respond on the basis of two indices not confounded with ingroup favoritism: the groups' relative status and their personal preference for high status. In the present context, both of these indices are expected to be associated with implicit pro-White bias. Acknowledging that status is a multidimensional construct, we focused on wealth as an indicator of high status because South African children are aware of wealth disparities among racial groups in their society (Olson et al., 2012) and because wealth cues are likely to be visible and salient in children's environment.

To summarize our approach, Black and Coloured children completed an IAT (contrasting Whites with either Blacks or Coloureds), as well as measures of explicit (i.e., self-report) attitudes toward rich and poor people (our index of general high-status preference), Whites, Blacks, and Coloureds. These data allow us to address novel questions regarding implicit bias among children from low-status racial groups. First, given the extremity of the race-based status differentials in South Africa, we predicted that children would show an implicit pro-White bias even when this pattern reflected a bias favoring an *outgroup*. Support for this prediction would afford one of the first demonstrations of implicit



outgroup bias among members of low-status racial groups (who have previously been described as showing a lack of bias rather than a reversal to outgroup bias; Dunham et al., 2007; Newheiser & Olson, 2012; Nosek et al., 2007). This evidence would further indicate that status exerts graded effects on intergroup attitudes, such that when status disparities grow more extreme, they can completely reverse the otherwise powerful tendency to prefer the ingroup. Such a pattern can only be observed by investigating the development of intergroup attitudes in cultural climates in which status disparities exceed those present in the United States. Second, we explored potential developmental trends in both implicit and explicit forms of intergroup bias, asking whether the presence of more dramatic status disparities leads to more protracted developmental change in intergroup attitudes. Third, our design included IATs contrasting two outgroups, allowing for a test of the hypothesis that explicit preference for high status would predict a stronger implicit pro-White bias especially when the IAT contrasted two outgroups (i.e., when the intergroup contrast was not confounded by ingroup favoritism). Finally, we expected these patterns to emerge over and above the impact of explicit racial attitudes.

## Method

### Participants

Ninety-seven children completed the study. Data from one Coloured child were excluded due to extremely long mean response latencies on the IAT ( $z$  score = 5.00). In addition, data from 16 Black and two Coloured children were excluded due to high error rates on the IAT.<sup>1</sup> Given our participants' youth and lack of familiarity with computer-based instruments, we excluded participants whose error rates were 45% or greater (in more typical samples, the criterion is usually 30%; Greenwald, Nosek, & Banaji, 2003), though we also report supplementary analyses using the more typical IAT error rate criterion (see Footnotes 2 and 4 and the Discussion section).

The final sample ( $N = 78$ ) consisted of 43 Black children (29 girls and 14 boys) and 35 Coloured children (24 girls and 11 boys) aged between 6 years 8 months and 11 years 10 months ( $M = 9$  years 3 months,  $SD = 16.6$  months). Information about participants' race, gender, and age was reported by parents or legal guardians. All participants attended the same elementary school, in which approximately 65% of students were Black and 35% were Coloured. All school teachers and administrators were also Black or Coloured. Participants were from low- to lower-middle socioeconomic status (SES) backgrounds (working class or lower), but because the school charged some tuition, children were likely to have at least one employed parent or legal guardian. Although we did not collect data on individual participants' SES, all children attended the same school and were charged the same tuition, implying that Black and Coloured children likely did not differ markedly in terms of SES (although at the population level, Black South Africans are less advantaged than are Coloured South Africans).

### Measures

**IATs.** Two IATs assessed the extent to which children implicitly associated either Whites and Blacks or Whites and Coloureds with positivity and negativity. Each child completed one IAT. The IAT is a speeded categorization task that assesses the relative strength of

implicit (i.e., automatic or uncontrolled) association between pairs of concepts. In the present work, the IAT measured the speed with which children paired Whites and Blacks (or Whites and Coloureds) with "good" and "bad" attributes. The greater the speed with which one pairs White with good and Black (or Coloured) with bad attributes, versus the opposite pairing, the greater one's implicit bias favoring Whites over Blacks (or Coloureds).

Our IATs differed from the traditional procedure in two ways (following Newheiser & Olson, 2012). First, to avoid confounds with reading ability, we used picture stimuli rather than words. White, Coloured, and Black stimuli were photographs of female and male White, Coloured, and Black children taken in the Greater Cape Town area. The photographs were checked by South African adult informants to ensure that they could be easily categorized in the expected way with high consensus. "Good" stimuli were pictures of four positive objects (a birthday present; flowers; puppies; a portion of ice cream), and "bad" stimuli were pictures of four negative objects (a house on fire; a spider; a snake; a car crash). Second, to avoid onerous task demands, we reduced the number of trials. This strategy has been used successfully in prior work on children's implicit attitudes (Cvencek, Greenwald, & Meltzoff, 2011; Cvencek, Meltzoff, & Greenwald, 2011; Newheiser & Olson, 2012); a reduced-length IAT has also been developed for use with adult respondents (Sriram & Greenwald, 2009).

The White-Black IAT included five blocks in which children categorized (a) White and Black faces (10 trials); (b) good and bad things (10 trials); (c) White faces and good things, and Black faces and bad things (or the reverse pairing; 20 trials); (d) White and Black faces, now on opposite sides than in the first block (10 trials); and (e) Black faces and good things, and White faces and bad things (or the reverse pairing; 20 trials; for a similar IAT procedure, see Cvencek, Greenwald, et al., 2011, and Cvencek, Meltzoff, et al., 2011, whose combined blocks consisted of 24 trials). The lateral positions of the stimuli were counterbalanced, as was the order of the critical combined blocks (following Greenwald et al., 1998). There were no significant effects associated with the order in which the combined blocks were presented; this factor is thus not discussed further.

To illustrate the procedure, in one of the combined blocks (the third or fifth block, depending on counterbalancing order), participants saw pictures of White and Black children as well as pictures of good and bad things appearing in the middle of the computer screen. Their task was to press one computer key (indicated with a sticker on the keyboard) as quickly as possible when they saw a picture of a White child *or* a picture of a good thing, and to press another key (also indicated with a sticker) when they saw a picture of a Black child *or* a picture of a bad thing. The correct categories were labeled in the top right and left corners of the computer screen; category labels remained visible on each trial. For the race categories, the labels were pictures of White and Black children from the same set of photographs taken in the Greater Cape Town Area (none of the category labels was used as a stimulus item); for the "good" and "bad" categories, the labels were a smiley face and

<sup>1</sup> Although more Black than Coloured children were excluded from analyses due to error rates on the IAT, error rates did not differ as a function of children's race within the final sample,  $t(76) = 1.14$ ,  $p = .258$ . Black children ( $M = 21\%$ ,  $SD = 13\%$ ) and Coloured children ( $M = 18\%$ ,  $SD = 12\%$ ) made an equivalent number of errors on the IATs.

a frowny face. In the other combined block, the pairings were reversed (i.e., pictures of White children and bad things were categorized using one response key, and pictures of Black children and good things were categorized using the other response key). Miscategorization errors (i.e., pressing the incorrect key for any stimulus, for instance categorizing a picture of a birthday present as a “bad” thing) were indicated by a red cross, after which children were asked to correct their response in order to continue. The White–Coloured IAT was identical, except that children categorized White and Coloured faces.

Implicit bias is evidenced by faster categorization speed in one combined block relative to the other combined block. That is, the IAT score is an index of the speed with which the participant *simultaneously* categorizes the target groups (e.g., pictures of White and Black children) and stimuli on the evaluative dimension (e.g., pictures of good and bad things). Thus, if a child was faster to categorize pictures of White children and good things together (i.e., using the same response key) as compared with categorizing pictures of Black children and good things together, the child showed evidence of an implicit bias favoring Whites over Blacks. The crucial comparison is therefore speed of responding during the third versus the fifth block; responses during the other three blocks are not used in the computation of IAT scores but are instead treated as practice trials. The IATs were scored using the improved algorithm (Greenwald et al., 2003); scores above zero reflected a pro-White bias, scores below zero reflected a pro-Black or pro-Coloured bias, and a score of zero reflected a lack of bias.

**Explicit attitudes.** Children indicated how much they liked rich people versus poor people; Whites versus Blacks; Whites versus Coloureds; and Coloureds versus Blacks (four separate items; e.g., 1 = *I like rich people much better than poor people*; 2 = *I like rich people a little better than poor people*; 3 = *I like rich people and poor people equally*; 4 = *I like poor people a little better than rich people*; 5 = *I like poor people much better than rich people*). Items were reverse scored such that higher scores indicated greater liking for the higher-status group in each contrast.

## Procedure

Parental or legal guardian consent was secured in advance of school visits. Specifically, after securing permission from the school principal to collect data at the school, consent forms were sent home with all students and were returned by those parents/legal guardians who were interested in having their children participate. Children (who provided verbal assent to participate) completed the study individually, instructed by a same-race South African experimenter. Children first completed the IAT, followed by the explicit measures. Twenty-one Black and 17 Coloured children completed the White–Black IAT; 22 Black and 18 Coloured children completed the White–Coloured IAT. Experimenters ensured children knew they were free to discontinue the study at any point.

## Results

### IAT Effects

To examine whether children showed systematic implicit bias, we conducted one-sample *t* tests that compared mean IAT scores

with zero (which indicates a lack of bias on the IAT). As illustrated in Figure 1, Coloured children showed a pro-White bias on the White–Black IAT ( $M = 0.31$ ,  $SD = 0.49$ ), one-sample  $t(16) = 2.62$ ,  $p = .018$ , and on the White–Coloured IAT ( $M = 0.23$ ,  $SD = 0.29$ ), one-sample  $t(17) = 3.34$ ,  $p = .004$ . Black children showed a pro-White bias on the White–Black IAT ( $M = 0.29$ ,  $SD = 0.35$ ), one-sample  $t(20) = 3.81$ ,  $p = .001$ , but showed a lack of bias on the White–Coloured IAT ( $M = 0.07$ ,  $SD = 0.42$ ), one-sample  $t(21) = 0.77$ ,  $p = .452$ .<sup>2</sup> Furthermore, independent-samples *t* tests conducted separately for Coloured and Black children revealed that whereas Coloured children’s IAT scores did not differ between the White–Coloured and White–Black IATs ( $p = .558$ ), Black children scored higher on the White–Black IAT than the White–Coloured IAT,  $t(41) = 1.91$ ,  $p = .063$ , Cohen’s  $d = 0.60$ .<sup>3</sup> Thus, the only instance in which implicit pro-White bias did not emerge (i.e., IAT scores were not significantly above zero) involved Black children’s evaluations of two outgroups that were both higher in status than the children’s ingroup.

### Explicit Attitudes

We conducted independent-samples *t* tests to compare explicit attitudes reported by Black and Coloured children; the means are presented in Figure 2. These analyses revealed that Coloured children reported greater liking for Coloureds over Blacks than did Black children,  $t(76) = -4.34$ ,  $p < .001$ ,  $d = 1.00$ . Coloured children also reported marginally greater liking for Whites over Blacks than did Black children,  $t(76) = -1.91$ ,  $p = .060$ ,  $d = 0.44$ . However, Black and Coloured children’s liking for rich over poor people (our measure of high-status preference) did not differ ( $p = .852$ ), nor did their liking for Whites over Coloureds ( $p = .661$ ).

To understand the pattern of means in greater detail, we next computed one-sample *t* tests for each explicit attitude item, comparing children’s responses with the scale midpoint representing equal liking for the two groups in each comparison. These analyses showed that Black children scored *below* the scale midpoint on the item measuring liking for Coloureds over Blacks, indicating explicit ingroup preference, one-sample  $t(42) = -2.53$ ,  $p = .015$ .

<sup>2</sup> Using a more commonly used IAT error rate criterion, whereby data from participants whose IAT error rates equal 30% or greater are excluded (Greenwald et al., 2003), yielded a sample of 58 participants in the present study. Supplementary analyses revealed that using this more stringent error rate criterion had no impact on the IAT effects we observed: In this subsample of 58 children, Coloured children showed a pro-White bias on the White–Black IAT ( $M = 0.29$ ,  $SD = 0.45$ ), one-sample  $t(14) = 2.47$ ,  $p = .027$ , and on the White–Coloured IAT ( $M = 0.19$ ,  $SD = 0.29$ ), one-sample  $t(12) = 2.34$ ,  $p = .038$ . Black children showed a pro-White bias on the White–Black IAT ( $M = 0.33$ ,  $SD = 0.37$ ), one-sample  $t(20) = 3.48$ ,  $p = .004$ , but showed no significant bias on the White–Coloured IAT ( $M = 0.10$ ,  $SD = 0.36$ ), one-sample  $t(14) = 1.08$ ,  $p = .301$ . Attesting to the stability of the IAT effects we observed, in each instance the interpretation thus remains exactly the same regardless of which error rate criterion (30% or 45%) is used.

<sup>3</sup> A 2 (children’s race: Black vs. Coloured)  $\times$  2 (IAT type: White–Black vs. White–Coloured) analysis of variance revealed a marginally significant main effect of IAT type,  $F(1, 74) = 2.91$ ,  $p = .092$ ,  $\eta_p^2 = .04$ , with children on average scoring somewhat higher on the White–Black IAT ( $M = 0.30$ ,  $SD = 0.41$ ) than on the White–Coloured IAT ( $M = 0.14$ ,  $SD = 0.37$ ). The main effect of children’s race was nonsignificant ( $p = .309$ ), as was the interaction ( $p = .422$ ).

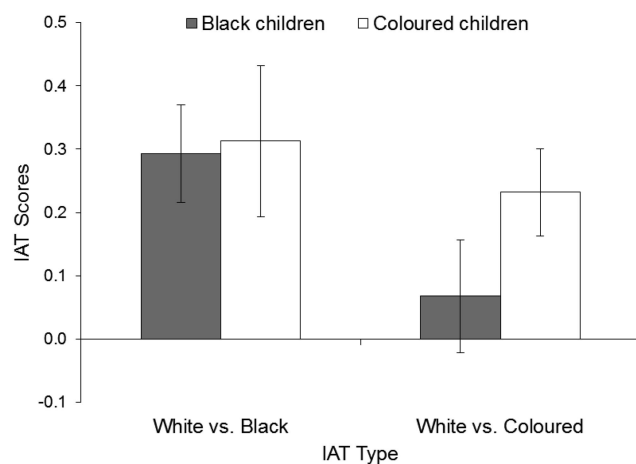
Black children's scores did not differ from the scale midpoint on the item measuring liking for Whites over Blacks ( $p = .694$ ), indicating equal explicit preference for these two groups. Coloured children scored *above* the scale midpoint on the item measuring liking for Coloureds over Blacks, indicating explicit ingroup preference, one-sample  $t(34) = 3.75, p = .001$ . Coloured children also scored above the midpoint on the item measuring liking for Whites over Blacks, indicating explicit preference for Whites over Blacks, one-sample  $t(34) = 2.84, p = .008$ . Neither Black nor Coloured children reported explicit preference on the item measuring liking for rich over poor people, or on the item measuring liking for Whites over Coloureds (i.e., mean scores did not differ from the scale midpoint on these two items,  $ps \geq .279$ ).

In summary, Black children reported explicit preference for their racial ingroup over Coloureds, an intermediate-status outgroup, but not over Whites, a high-status outgroup. Similarly, Coloured children reported explicit preference for their racial ingroup over Blacks, a low-status outgroup, but did not report ingroup preference over Whites. Coloured children also reported an explicit preference for Whites over Blacks.

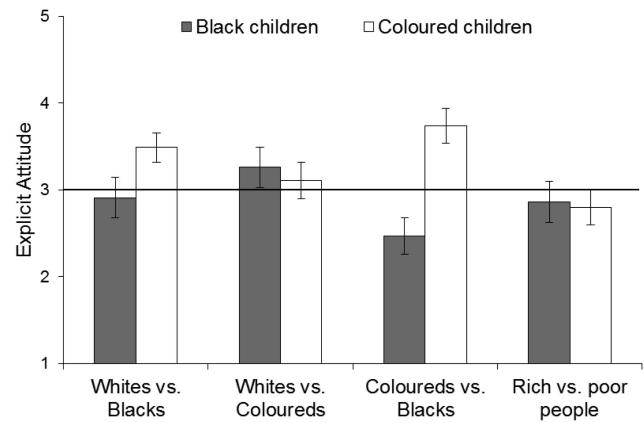
### Predictors of Implicit Intergroup Bias

To examine the possibility that children's *general preference* for high status (measured as explicit liking for rich people over poor people) may predict their implicit intergroup bias, we conducted a linear regression analysis with IAT scores as the outcome (see Table 1). The predictors were children's race (0 = Black, 1 = Coloured), IAT type (0 = White–Black, 1 = White–Coloured), liking for rich people over poor people (mean-centered), all two-way interactions, and the three-way interaction. The model explained 28% of the variance in children's IAT scores,  $F(7, 70) = 3.83, p = .001$ . The three-way interaction was significant ( $b = -0.31, SE = 0.13, p = .018$ ; see Figure 3).

Simple slopes analyses examined responses on the two IATs separately. For the White–Coloured IAT, the Children's Race  $\times$



**Figure 1.** Mean Implicit Association Test (IAT) scores among Black and Coloured children who completed an IAT contrasting Whites with either Blacks or Coloureds. Scores above zero reflect an implicit bias favoring Whites over Blacks or Coloureds; a score of zero reflects a lack of implicit bias. Error bars represent standard errors of the mean.



**Figure 2.** Mean explicit attitudes, presented separately for Black and Coloured children. Higher scores indicate greater preference for the higher status group in each comparison (i.e., preference for Whites over Blacks; for Whites over Coloureds; for Coloureds over Blacks; and for rich people over poor people). Error bars represent standard errors of the mean. Horizontal line indicates scale midpoint (representing no preference).

Preference for Rich People interaction was nonsignificant ( $p = .518$ ). However, the association between IAT scores and preference for rich people was significant ( $b = 0.12, SE = 0.05, p = .021$ ). Thus, both Black and Coloured children reporting a higher preference for rich people showed a greater tendency to implicitly favor Whites over Coloureds.

For the White–Black IAT, a Children's Race  $\times$  Preference for Rich People interaction emerged ( $b = 0.26, SE = 0.10, p = .013$ ). Preference for rich people was not associated with Black children's White–Black IAT scores ( $p = .273$ ) but strongly positively predicted Coloured children's White–Black IAT scores ( $b = 0.32, SE = 0.09, p = .001$ ). Alternatively, when explicit preference for rich people was low ( $-1 SD$ ), Black and Coloured children's scores on the White–Black IAT did not differ significantly ( $p = .136$ ). In contrast, when explicit preference for rich people was high ( $+1 SD$ ), Coloured children scored significantly higher on the White–Black IAT than did Black children ( $b = 0.47, SE = 0.19, p = .018$ ). Coloured children with a high preference for rich people ( $+1 SD$ ) showed a very strong implicit bias favoring Whites over Blacks.<sup>4</sup>

<sup>4</sup> Using the more commonly used IAT error rate criterion of 30% yielded a sample of 58 participants in the present study. Although this small sample reduced power, supplementary regression analyses revealed the same general pattern of results. Specifically, although the Children's Race  $\times$  IAT Type  $\times$  Preference for Rich People interaction did not reach significance ( $b = -0.25, SE = 0.17, p = .146$ ), simple slopes analyses examining the two IATs separately showed that a marginal Race  $\times$  Preference for Rich People interaction emerged for the White–Black IAT ( $b = 0.22, SE = 0.13, p = .094$ ). Preference for rich people was not associated with White–Black IAT scores among Black children ( $p = .389$ ) but was a positive predictor among Coloured children ( $b = 0.27, SE = 0.12, p = .022$ ). The Race  $\times$  Preference for Rich People interaction was nonsignificant for the White–Coloured IAT ( $p = .809$ ); the association between preference for rich people and White–Coloured IAT scores was positive but did not reach significance ( $b = 0.08, SE = 0.06, p = .179$ ). In summary, although not all effects reached significance with the smaller sample, the overall pattern of results was corroborated (and is therefore not an artifact of error rates).

Table 1  
Unstandardized Regression Coefficients From a Linear Regression Model Predicting Children's Implicit Bias Favoring Whites Over Blacks or Coloureds

Predictor	Model 1	Model 2
	<i>b</i> (SE)	<i>b</i> (SE)
Child's race (0 = Black, 1 = Coloured)	0.10 (0.12)	0.09 (0.12)
IAT type (0 = White-Black, 1 = White-Coloured)	-0.18 (0.11)	-0.18 (0.11)
Explicit preference for rich over poor people	0.06 (0.05)	0.05 (0.05)
Race $\times$ IAT Type	0.03 (0.16)	0.04 (0.17)
Race $\times$ Preference for Rich People	0.26 (0.10)*	0.28 (0.11)*
IAT Type $\times$ Preference for Rich People	0.06 (0.07)	0.07 (0.07)
Race $\times$ IAT Type $\times$ Preference for Rich People	-0.31 (0.13)*	-0.34 (0.13)*
Explicit preference for Whites over Blacks		0.03 (0.03)
Explicit preference for Whites over Coloureds		0.02 (0.03)
Explicit preference for Coloureds over Blacks		-0.01 (0.03)
$R^2$	.28**	.29**
$\Delta R^2$ from Model 1 to Model 2 = .01, $p = .720$		

Note. IAT = Implicit Association Test.

\*  $p < .05$ . \*\*  $p < .01$ .

Because our hypothesis involved general preference for high status (operationalized as preference for rich people over poor people) as a predictor of implicit bias, we focused on associations with this variable. However, including explicit racial attitudes (i.e., liking for Whites over Blacks, Whites over Coloureds, and Coloureds over Blacks) as predictors yielded exactly the same pattern of results (see Model 2 in Table 1). Explicit racial attitudes were not associated with IAT scores ( $ps = .433-.847$ ). Supplementary analyses showed that neither children's race nor IAT type interacted with any of the explicit racial attitude measures, attesting to the unique role of preference for high status as a predictor of implicit race bias.

### Associations With Children's Age

We also examined correlations with children's age, beginning with explicit attitude measures. Among Black children, age was negatively associated with explicit liking for Whites over Blacks,  $r(39) = -.32$ ,  $p = .043$ , and Whites over Coloureds,  $r(39) = -.32$ ,  $p = .040$ ; age was not associated with explicit liking for Coloureds over Blacks,  $r(39) = -.08$ ,  $p = .622$ , or rich over poor people,  $r(39) = -.03$ ,  $p = .857$ . Among Coloured children, age was negatively associated with explicit liking for Whites over Coloureds,  $r(33) = -.50$ ,  $p = .002$ ; age was not associated with explicit liking for Whites over Blacks,  $r(33) = -.26$ ,  $p = .135$ ; Coloureds over Blacks,  $r(33) = .11$ ,  $p = .514$ ; or rich over poor people,  $r(33) = -.03$ ,  $p = .856$ . Thus, older (relative to younger) Black and Coloured children showed a greater tendency to report explicit ingroup preference relative to Whites; older (relative to younger) Black children also tended to show less explicit pro-White bias when the contrast was with Coloureds.

Age was very weakly associated with implicit bias. The only correlation that approached, though did not reach, significance involved Black children who completed the White-Black IAT, who showed a slight tendency toward lesser pro-White implicit bias with increasing age,  $r(18) = -.36$ ,  $p = .116$  (other correlations between age and IAT scores,  $-.24 < r < .19$ ,  $ps \geq .329$ ). Finally, including children's age as a predictor in the regression

model for IAT scores (see the previous section for details) did not impact the pattern of results, nor did age predict IAT scores ( $p = .396$ ). Thus, in no instance did we observe a significant association between children's age and implicit bias. A substantial amount of prior work on the development of implicit race bias has also demonstrated a lack of association with age (Dunham et al., 2008).

### Discussion

The present work revealed an outgroup-favoring (i.e., pro-White) implicit bias among 6- to 11-year-old Black and Coloured South African children. Our confidence in these results is bolstered by the finding that they are robust across two IAT error rate criteria (see Footnote 2). Prior work has typically not revealed evidence of implicit outgroup bias involving racial/ethnic groups (except among Black American children reporting a strong explicit preference for high status; Newheiser & Olson, 2012); our results thus extend prior work by demonstrating for the first time that children from low-status groups are aware of not only the existence but also the *degree* of status inequalities among groups in their society. The present work therefore provides the first evidence that tendencies to prefer the ingroup as well as high-status groups represent additive influences on children's implicit race bias, such that depending on the extent of status disparities, preference for high status can attenuate, eliminate, or even reverse the effect of ingroup preference. Prior work on implicit race bias among minority group respondents has revealed null effects, with minority group respondents on average showing a lack of implicit race bias—a pattern that results from IAT scores being normally distributed around zero (which represents a lack of bias; e.g., Newheiser & Olson, 2012). These findings can now be reinterpreted in light of the present findings, in which we observed a *distribution-level* shift in IAT scores. Indeed, only four Black children scored below zero on the White-Black IAT (i.e., in the direction of pro-Black implicit bias). Accordingly, the pattern observed in the present study is not due to a subset of participants demonstrating particularly strong implicit biases favoring Whites, but rather represents a general population shift toward greater pro-White bias.



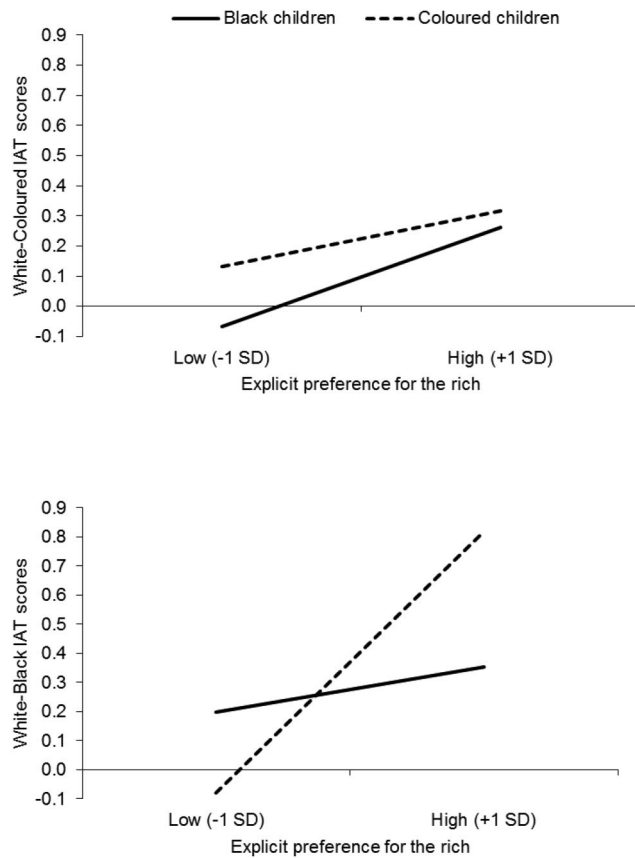


Figure 3. Children's race, Implicit Association Test (IAT) type, and explicit preference for rich people as interactive predictors of IAT scores. Upper panel: White-Coloured IAT; above zero = implicit bias favoring Whites over Coloureds. Lower panel: White-Black IAT; above zero = implicit bias favoring Whites over Blacks.

The only instance in which we did not find evidence of implicit pro-White bias involved Black children's implicit evaluations of Whites versus Coloureds, two higher-status outgroups. We suggest that the impact of the degree of status differences may diminish when one considers outgroups that are both higher in status than one's ingroup. That is, because both White and Coloured South Africans are on average substantially wealthier than Black South Africans, Black children may implicitly associate both of these outgroups with positive valence and therefore be relatively insensitive to the status difference between them. In contrast, all status distinctions—both above and below the ingroup—appear to be salient for Coloured children (members of an intermediate-status racial group). Future work will benefit from directly investigating the salience of different intergroup contrasts among members of groups that occupy various steps of the status hierarchy. Notably, such work will require a context in which status differences indeed exist in multiple steps of the hierarchy (such as in South Africa), a state of affairs that is less obviously present in the United States (for further discussion, see Dunham, Newheiser, Hoosain, Merrill, & Olson, in press).

In terms of explicit (i.e., self-report) intergroup attitudes, we found that both Black and Coloured children reported significant

ingroup favoritism on an item contrasting Blacks and Coloureds. Thus, Black children preferred Blacks over Coloureds, and Coloured children preferred Coloureds over Blacks. In contrast, neither Black nor Coloured children reported explicit preferences when their ingroup was contrasted with Whites (i.e., Black children reported equal liking for Blacks and Whites, and Coloured children reported equal liking for Coloureds and Whites). Thus, Black and Coloured children's explicit intergroup attitudes were similar, insofar as ingroup favoritism emerged only when the intergroup contrast did *not* involve the highest-status group in these children's society. However, whereas Black children reported equal preference for Whites and Coloureds (both higher-status groups than their own ingroup), Coloured children explicitly preferred Whites over Blacks. The overall pattern evident in children's explicit attitudes thus appears to reflect an internalization of South Africa's race-based status hierarchy: All children showed strong evidence of sensitivity to Whites' overwhelmingly highest status; in addition, Black children were also sensitive to the higher (i.e., intermediate) status of Coloureds relative to Blacks. These nuanced results therefore demonstrate that awareness of the *extent* of status differences among groups shapes children's explicit racial attitudes.

Furthermore, developmental work typically shows convergence between explicit and implicit intergroup attitudes among children from high-status groups (e.g., Baron & Banaji, 2006). Our finding that children explicitly preferred their ingroups when the comparison did not involve Whites but implicitly preferred Whites over their own ingroups attests to the early development of a *divergence* between implicit and explicit evaluations among children from low-status groups (see also Dunham et al., 2008). Indeed, extensive work has established that tendencies to favor both the ingroup as well as high-status groups generally interact with the ingroup's status, producing convergence of explicit and implicit attitudes among members of high-status groups but divergence among members of low-status groups (Jost et al., 2004). That is, even members of low-status groups who *explicitly* favor the ingroup may *implicitly* favor high-status groups due to a motive to justify existing relations among groups (Jost & Banaji, 1994; Jost et al., 2004). Our work corroborates these well-established relationships among children from a highly hierarchical society, and further underscores the central and early emerging role of groups' relative status in the development of intergroup attitudes.

The present results also add to the large body of work examining developmental trends in children's intergroup attitudes. We found that both Black and Coloured children showed a tendency to report more explicit preference for the ingroup, relative to Whites, with increasing age. In addition, Black children also tended to show less explicit preference for Whites over Coloureds with increasing age; a similar pattern emerged for Coloured children (who tended to show less explicit preference for Whites over Blacks with increasing age), though the pattern did not reach significance among Coloured children. These findings are consistent with prior work that has revealed an increase in explicit ingroup favoritism relative to a higher-status outgroup in middle childhood (for a meta-analytic review of this prior work, see Raabe & Beelmann, 2011). Thus, although our results demonstrate that Black and Coloured South African children have internalized the race-based status hierarchy of their society by age 6, our findings related to age-related change in explicit attitudes reveal that children also show

some evidence of resistance to this hierarchy as they grow older—a pattern that is particularly encouraging given the extremity of the status hierarchy in South Africa. Of note is that prior research has typically described developmental change in explicit intergroup bias as reflecting decreasing ingroup preference, but these trends can also be described as decreasing reliance on status cues as primary determinants of attitudes. In the case of children from lower-status groups, this trend entails *increasing* (rather than decreasing) ingroup preference as a function of age.

In contrast, a different pattern emerged in terms of implicit evaluations, which were generally stable across the age range examined in the present study (age 6–11), with the sole exception of a moderate (though nonsignificant) negative association between Black children's age and their implicit pro-White bias relative to Blacks. Overall, then, not only is the impact of status stronger on implicit (vs. explicit) evaluations, insofar as implicit measurement revealed a full reversal to *pro-outgroup* bias (vs. lack of preference at the explicit level), this impact furthermore showed few signs of diminishing with increasing age. The implication is thus that whereas older children from low-status groups may be able to resist the “pull” of high status when articulating their explicit preferences, this ability does not extend to more automatic evaluations. Our finding that implicit bias is stable across development in a context in which status differences among groups are as stark as in South Africa implies that even extreme inequalities can be internalized early in development (see also Dunham et al., 2008).

Corroborating prior work conducted in the United States (Newheiser & Olson, 2012), our results also indicate that variability in children's general preference for high status predicted implicit intergroup bias. Children with a higher explicit preference for rich (vs. poor) people showed a greater implicit bias favoring Whites over Coloureds; the magnitude of this relationship was somewhat (though nonsignificantly) stronger for Black children. Additionally, preference for rich people positively predicted Coloured, but not Black, children's implicit bias favoring Whites over Blacks. The finding that preference for high status was more strongly associated with implicit bias when the IAT involved two outgroups likely reflects the fact that in such cases, high-status preference was not in opposition with or otherwise obscured by ingroup favoritism. Thus, in the case of comparisons between two outgroups, relative status was plausibly the primary factor determining children's implicit evaluations. In contrast, in the case of comparisons between the ingroup and an outgroup, evaluations are affected by both sensitivity to status and ingroup favoritism. Accordingly, the impact of general preference for high status will emerge most clearly in implicit evaluations of outgroups that are far apart in status. The finding that the association between general preference for high status and implicit pro-White bias was particularly strong among Coloured children (i.e., children from an intermediate-status group) who completed an IAT contrasting Whites and Blacks (i.e., two outgroups that are far apart in relative status) supports this reasoning and represents further evidence of internalization of the status hierarchy among South African children. More generally, by showing that a generalized liking of wealth predicts intergroup attitudes, these findings contribute to our understanding of the specific pathways by which status permeates the individual's psychology.

We acknowledge that several of the relationships observed in the regression analyses did not reach statistical significance when we used a more stringent IAT error rate criterion (Greenwald et al., 2003), which resulted in a smaller sample size. Indeed, we note that power was low for the correlation and regression analyses reported in the present work, and therefore general conclusions must be drawn with some caution. At the same time, we note that our findings confirmed theoretically grounded predictions and are bolstered by previous, consistent findings (e.g., Newheiser & Olson, 2012) and that overall patterns of results were not artifacts of high error rates (see Footnotes 2 and 4). Thus, our findings contribute novel evidence to the growing literature showing that children's awareness of group-based status differentials represents a key element in the development of intergroup bias.

Although we have provided direct evidence for the specific association between implicit intergroup bias and preference for wealth (see also Newheiser & Olson, 2012), we note that status can be conceptualized in multiple ways. Wealth, our operationalization of high status, represents only one facet of this highly multidimensional concept (Benoit-Smullyan, 1944; Ekehammar, Sidanius, & Nilsson, 1987). A fascinating topic for future work involves disentangling the many factors that are potentially implicated in the present conceptualization of status. For example, factors such as current status disparities, history of discrimination, and direct experiences of unequal treatment may each be involved in the relationship between status and implicit race bias.

In conclusion, the present work underscores the role of groups' relative status, as well as individuals' awareness of the extent of status differentials and general preference for high status, in shaping children's intergroup orientations. Children are not only aware of their ingroups' position in the status hierarchy; this awareness also actively impacts their implicit evaluations, in extreme cases leading to implicit biases favoring high-status outgroups even over the ingroup.

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