



## Minority children's intergroup attitudes about peer relationships

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Intergroup attitudes were assessed in African-American ( $N = 70$ ) and non-African-American minority ( $N = 80$ ) children, evenly divided by gender, in first ( $M = 6.5$  years old) and fourth ( $M = 9.6$  years old) grades attending mixed-ethnicity public schools in a suburban area of a large mid-Atlantic city in the USA. Children were interviewed to test hypotheses about implicit racial biases, perceptions of similarity between peer dyads, and judgments about cross-race friendships. Implicit racial biases emerged when children evaluated ambiguous picture cards, with children viewing a White child as more likely to be a transgressor than a Black child in certain situations. There were no racial biases when evaluating potential cross-race friendship (it was judged to be feasible); nor was there any evidence of an outgroup homogeneity effect. Children who used ethnicity as a reason for judging peers to be similar, however, were less likely to judge that the cross-race dyads could be friends. The findings indicate the ways in which minority children's judgments about the majority and their perceptions of similarity between peer dyads influence their interpretations of peer interactions.

Recent research on children's prejudice and racial attitudes<sup>1</sup> has focused on intergroup bias (Aboud & Levy, 2000; Bigler, Jones, & Lobliner, 1997; McGlothlin, Killen, & Edmonds, 2005). These studies have examined the extent to which children have biases about others based solely on group membership. Social psychological research has extensively examined this topic with adults (Brown & Gaertner, 2000; Dovidio & Gaertner, 1998; Fiske, 2002; Oskamp, 2000). In this research, a number of distinctions are made, including implicit and explicit biases (Dovidio, Kawakami, & Gaertner, 2000). Only recently have developmental psychologists modified and adapted these constructs for use in examining children's intergroup attitudes (see Aboud & Levy, 2000; Killen,

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<sup>1</sup> We use the term 'racial attitudes' given that race is still widely used as a construct to refer to differential attitudes based on skin colour. We recognize that the term 'race' is often used erroneously. There are many skin tones but the term race typically refers to Black or White in the USA. Given that there is no biological basis for race (Graves, 2001), we refer to children's backgrounds in terms of ethnicity (e.g. African-American, European-American, Latin-American), while we refer to our stimulus items in terms of race (Black potential transgressor, White potential transgressor).

Margie, & Sinno, 2005). Some studies have focused on implicit attitudes measured through ambiguous situations (Lawrence, 1991; McGlothlin *et al.*, 2005; Sagar & Schofield, 1980), while others have concentrated on ingroup and outgroup attitudes (Bennett *et al.*, 2004; Bennett & Sani, 2003; Nesdale, 1999) as well as social categorization (Bar-Tal, 1996; Bigler *et al.*, 1997). The overwhelming amount of this research, however, has examined intergroup attitudes in majority populations (i.e. European or European-Americans). Little is known about minority children's intergroup biases, particularly when minority is defined by ethnicity as in the United States (e.g. African-American, Latin-American).

The aim of this study was to investigate US minority children's intergroup biases, including their implicit racial attitudes, perceptions of similarity, and judgments about the potential for cross-race friendships. Guided by intergroup attitudes theories (Brewer, 2001; Dovidio & Gaertner, 1998; Pettigrew & Tropp, 2000) and social cognitive domain theory (Killen, Lee-Kim, McGlothlin, & Stangor, 2002; Turiel, 1983), this study was designed to specifically examine whether minority children: (1) attribute negative intentions to a potential transgressor based on race; (2) focus on race or shared interests when evaluating the similarity of same-race and cross-race dyads; and (3) have a positive view about the potential for cross-race friendships. In addition, we evaluated whether minority children's implicit biases in ambiguous situations were related to their perceptions of similarity, and whether their perceptions of similarity were related to their judgments of friendship.

Our sample was comprised of African-American, Latin-American, and Asian-American children. Because these are the three largest minority racial/ethnic groups in the United States (Grieco & Cassidy, 2001), cross-race peer interactions in the US will likely involve a child from at least one of these groups. Our hypotheses differentiated between African-American children's perceptions and non-African-American minority children's perceptions since prior studies focused on European-American or African-American students, but not on non-African-American minority students. In addition, we distinguished between these groups because the tasks in the current study required African-American participants to make judgments concerning members of their in-group as well as an outgroup, whereas non-African-American minority participants were required to make judgments concerning members of outgroups only.

### **Implicit racial biases**

Using explicit measures with children and adolescents, research in the United States has found that majority (European-American) and minority (African-American, Latin-American, and Asian-American) children generally judge it wrong or unfair to not interact with someone solely because of his or her race (Killen *et al.*, 2002). However, according to aversive racism theory, someone who explicitly denies having prejudicial beliefs may still hold implicit biases (Dovidio & Gaertner, 1998). In fact, studies with adults have found that even when European-American participants denounce racial prejudice and discrimination, they subconsciously treat African-Americans differently than European-Americans (Dovidio & Gaertner, 1998; Gaertner & Dovidio, 1986).

Much less is known about children's implicit biases. Two studies have examined implicit biases in majority and minority children using ambiguous measures (Lawrence, 1991; Sagar & Schofield, 1980), and found that European-American children judged the actions of African-American characters more negatively than the actions of European-American characters. African-American children showed no bias (Lawrence, 1991).

or evidenced a negative bias towards African-American characters (Sagar & Schofield, 1980). These studies had several limitations, though. Lawrence examined 6- to 9-year-old children's judgments concerning ambiguous peer interactions involving same-race pairs of children (i.e. two European-American children, two African-American children). Because Lawrence only used same-race encounters in her measure, this study does not provide information on children's implicit biases in cross-race peer interactions. While Sagar and Schofield examined cross-race as well as same-race interactions, their sample was limited to sixth grade boys. Therefore, the information their study provides on children's implicit biases is limited in its generalizability. In addition, neither study included children from racial/ethnic minority groups other than African-American. The current study was designed to correct these limitations by including a diverse sample both in age and in race/ethnicity, and by using a measure that included cross-race peer interactions.

Recently, McGlothlin *et al.* (2005) designed an implicit bias task that used ambiguous picture cards with White and Black characters to assess children's interpretations of characters' motivations and judgments of peer interactions in familiar, everyday settings. The findings revealed that European-American children attending racially and ethnically heterogeneous schools did not display implicit racial biases when interpreting children's intentions to commit a moral transgression towards a peer. Implicit biases were revealed, however, when asking children to judge cross-race friendship potential. In other words, European-American children (boys in particular) were less likely, in some situations, to judge that the characters could be friends when the potential transgressor was Black than when the potential transgressor was White (McGlothlin *et al.*, 2005). Moreover, fourth grade European-American children evaluated cross-race friendship potential as less likely than did first grade European-American children. In another study, however, European-American children attending racially and ethnically homogeneous schools (more than 85% European American) displayed implicit racial biases in their interpretations of ambiguous potential transgressions using the same measure employed in the McGlothlin *et al.* study (see McGlothlin, 2005). These results clearly indicate that implicit racial biases in children are complicated. As would be suggested by social cognitive domain theory, which proposes that how people understand and react to social interactions varies depending on the situation, there were age-related, context-related, and experience-related patterns of response bias. In addition, while these results contribute to our understanding of intergroup attitudes, it is still not known how minority children respond to these same tasks. Specifically, how does the ethnicity of the participant impact the display of negative implicit racial bias in childhood?

Social cognitive domain research on explicit bias found that African-American, Latin-American, and Asian-American students' judgments about racial exclusion did not differ significantly (Killen *et al.*, 2002). Yet, measures of implicit biases could reveal a different pattern of results (Dovidio & Gaertner, 1998); in other words, African-American and non-African-American children might exhibit negative outgroup biases in ambiguous situations. Thus, we predicted that African-American children would evidence implicit biases against the White characters and the non-African-American minority children would show a bias against both European-American and African-American characters.

#### ***Perceptions of intergroup similarity***

Children's intergroup bias can also be examined through their perceptions of similarity regarding race/ethnicity. Previous research on racial attitudes using measures of

perceptions of intra- and intergroup similarity has shown that children and adults are more likely to recognize diversity of physical characteristics, personality, and preferences within their own ethnic group (e.g. ingroup heterogeneity) and to view members of other ethnic groups as similar, referred to as the *outgroup homogeneity effect* (see Ryan, Park, & Judd, 1996). For the most part, this effect has been demonstrated with members of the majority group, such as European Americans in the USA.

The findings for minority individuals are somewhat different. Specifically, the out-group homogeneity effect does not appear to be as pervasive in members of minority cultures, who often assume homogeneity of the ingroup and recognize heterogeneity of the outgroup (Simon & Brown, 1987). One explanation for this reversal is that members of minority groups are continually exposed to negative stereotypes of their own group (thus reinforcing homogeneity assumptions), while at the same time, exposed to the variation of the outgroup in daily social contact and through exposure to the media. This reversal indicates that ingroup and out-group processes that apply to members of the majority culture may not apply to members of minority cultures. Because previous research has found that racial/ethnic minority group members are less likely to evidence the outgroup homogeneity effect (Simon & Brown, 1987), we predicted that participants would not perceive same-race peer dyads as more similar than cross-race peer dyads. That is, we did not expect these children to focus on skin colour in their evaluations of similarity.

In addition, social cognitive domain theory proposes that children's peer interactions contribute to how they reason about the social world. Because our sample consisted of minority children attending racially and ethnically heterogeneous schools in which they have daily exposure to and interaction with children from racial/ethnic groups different from their own, we expected that these students would not focus on race when making judgments about similarity but would, instead, focus on shared interests. This prediction is further supported by a recent study by McGlothlin *et al.* (2005), which found that when European-American children attending the same heterogeneous schools as used in the present study were given multiple features by which to judge similarity (i.e. skin colour and shared sports interests), these children focused on shared interests rather than skin colour. Yet, given that the experiences of minority children differ in some ways from the experiences of majority children, we expected that there might be some age-related and gender-related interactions for this task.

### **Friendship potential**

Children tend to have friends who are similar to them in race/ethnicity, gender, and age (Clark & Ayers, 1992; Rubin, Bukowski, & Parker, 1998). Lack of similarity in race and ethnicity is considered to contribute to the predominance of same-race friendships over cross-race friendships. The importance of racial/ethnic similarity in children's choice of friends, though, may differ depending on whether a child belongs to the majority or a minority racial/ethnic group. For instance, studies have found that European-American children are more likely than children from other racial and ethnic groups to say they would prefer to play with same-race peers (Aboud, Mendelson, & Purdy, 2003; Clark & Ayers, 1992; Levy, 2000; Newman, Liss, & Sherman, 1983; Ramsey & Myers, 1990).

In addition, children's tendency to categorize people by race/ethnicity may be related to their peer preferences. Specifically, Levy (2000) found that, regardless of their racial/ethnic group membership, children who were more likely to focus on ethnicity

preferred same-ethnic peers more often than children who were less likely to focus on ethnicity. Aboud *et al.* (2003), though, did not find a relation between attributions of traits to individuals and cross-race friendships for African-American children. However, since we did not expect our participants to focus on race/ethnicity in their judgments of similarity, we predicted that they would judge cross-race friendship as possible. Still, we expected that there might be differences between African-American and non-African-American minority participants given past findings of different friendship preferences by ethnicity (Newman *et al.*, 1983; Rubin *et al.*, 1998).

***Predictions about relations between implicit biases, perceptions of similarity, and judgments of friendship***

We examined the relation between children's perceptions of similarity and their implicit biases in ambiguous situations. We expected that children who held negative implicit racial biases towards a particular group would also be more likely to perceive people of that group as similar based on skin colour (Levy, 2000). We hypothesized that those children who rated cross-race dyads as highly similar, particularly when they did not share a sports interest, would also show less negative implicit bias, which would be evidenced in their more positive evaluations of the ambiguous situations. This means that children who did not focus on race when making judgments about similarity would be less likely to display a negative implicit bias.

We also tested the relation between children's perceptions of similarity and their judgments of the potential for cross-race friendship. Due to mixed findings concerning the relation between African-American children's racial categorization tendencies and their peer preferences (Aboud *et al.*, 2003; Levy, 2000), it was unclear how perceptions of similarity would be related to judgments of friendship potential in African-American children. In addition, the paucity of research related to these issues in children from other minority groups left the relation between similarity perceptions and judgments of friendship potential in the non-African-American minority group an open question. However, because similarity has been found to be an important factor in friendship choice (see Rubin *et al.*, 1998), we predicted that children who rated cross-race dyads as more similar would also be more likely to judge that the dyad could be friends.

In sum, the current study examined intergroup racial bias in a sample of African-American and non-African-American minority (Latin-American and Asian-American) children using familiar, everyday peer situations. Specifically, this study investigated: (1) intergroup biases through the use of ambiguous situations involving cross-race peers, (2) judgments of similarity of cross-race and same-race peer dyads, and (3) judgments regarding the potential for friendship in both tasks. Finally, we also examined the relations between children's implicit biases in ambiguous situations and their perceptions of similarity, and children's perceptions of similarity and their judgments of friendship.

## **Method**

### ***Participants***

Participants in the current study attended the same public schools that the European-American participants in the McGlothlin *et al.* (2005) study attended. Data collection was conducted during the same time period for both studies.

In the current study, participants included 70 African-American and 80 non-African American minority (51 Latin-American, 24 Asian-American, 5 other) children attending four mixed-ethnicity public schools in a suburban area of a large mid-Atlantic city. First-graders and fourth-graders were interviewed. There were 32 African-American first-graders ( $M = 6.4$  years,  $SD = 0.37$ ; 12 girls, 20 boys), and 31 first-graders from other minority ethnic groups ( $M = 6.7$  years,  $SD = 0.53$ ; 11 girls, 20 boys). There were 38 African-American fourth-graders ( $M = 9.4$  years,  $SD = 0.64$ ; 28 girls, 10 boys), and 49 fourth-graders from other minority ethnic groups ( $M = 9.7$  years,  $SD = 0.49$ ; 26 girls, 23 boys). The students were from primarily middle-class and working-class backgrounds as determined by school district records. All four schools were ethnically diverse, with percentages of European-American students ranging from 20–71%. Preliminary analyses revealed no significant differences between children's responses from the different schools and thus the data from all schools were combined for subsequent analyses.

### **Procedure and assessments**

Since the current study used the same procedure, interview, and coding system (with one exception) as McGlothlin *et al.* (2005), only an overview is given here (see McGlothlin *et al.* for further details).

The interview consisted of three tasks given in the following order: the ambiguous situations task, a filler task, and the perceptions of similarity task. Answers to the ambiguous situations task and the perceptions of similarity task were analysed in the current study. The ambiguous situations task included four ambiguous situations—money, toys, academic, swings – for which there was a version with a White child as the potential transgressor and another version with a Black child as the potential transgressor. For each situation, participants were asked a set of seven questions. The first four questions assessed (1) participants' initial interpretations of the picture and the potential transgressor's actions (interpretation), (2) their evaluation of the goodness/badness of the potential transgressor's initial actions (initial event rating), (3) their judgment of what the potential transgressor would do next (subsequent action evaluation), and (4) their evaluation of the goodness/badness of the potential transgressor's subsequent action (subsequent action rating). The last three questions measured the participants' evaluations of the possibility of friendship. Participants were asked (5) if the characters were friends before the incident (friendship potential), (6) if they could be friends afterwards (subsequent friendship potential), and (7) why they could or could not be friends afterwards (friendship potential reasoning).

As in McGlothlin *et al.* (2005), interpretation and subsequent action evaluation were coded as *positive/neutral* (0) or *negative* (1). Initial event rating and subsequent action rating were assessed using a 9-point Likert scale ranging from *very, very bad* (−4) to *very, very good* (+4). Friendship potential and subsequent friendship potential were coded either *yes* (1) or *no* (0). Finally, friendship potential reasoning was coded using five categories derived from McGlothlin *et al.*'s three categories: (1) 'friendship is not possible because a transgression had occurred' (friendship not possible), (2) 'friendship is possible because the victim is not aware of the transgression' (unaware of transgression), (3) 'friendship is possible because of reconciliation' (i.e. the potential transgressor said he/she was sorry; reconciliation), (4) 'friendship is possible because the friendship was not affected by the transgression' (friendship not affected) and (5) 'friendship is possible because no transgression had occurred' (no transgression).

In the perceptions of similarity task, participants sequentially viewed six pairs of cards depicting same-race and cross-race characters that did or did not share an interest in a sports activity. Each participant was asked four questions following the presentation of each pair of cards. Specifically, participants were asked (1) to rate how alike the two characters were (rating of similarity), (2) why they were alike or not alike (comparison), (3) whether or not the characters could be friends (friendship potential), and (4) why they could or could not be friends (reason for potential friendship). Rating of similarity was assessed using a 6-point Likert scale ranging from *not at all alike* (1) to *very, very alike* (6). The codes for comparison were (1) non-racial physical characteristics, (2) skin colour/race, and (3) sports interest. Friendship potential was coded either yes (1) or no (0). Finally, reason for potential friendship included the same codes as comparison plus a fourth code: non-sports-related interests.

#### **Coding reliability**

Interrater reliability was conducted for 25% of the interviews. Interrater agreement using Cohen's  $\kappa$  was .89 for interpretation, .88 for subsequent action evaluation, .93 for friendship potential reasoning, .97 for comparison and .75 for reason for potential friendship.

## **Results**

The hypotheses related to the ambiguous situations task and to the perceptions of similarity task were tested using repeated measures analyses of variance (ANOVA). All follow-up tests to these analyses were conducted using *t* tests. Our hypotheses related to interactions between results of the ambiguous situations task and results of the similarity task were tested using regression. In all situations, the Likert scale for the ambiguous situations task was converted from negative to positive scaling (e.g. -4, -3, -2, -1, 0, +1, +2, +3, +4 changed to 1, 2, 3, 4, 5, 6, 7, 8, 9) with 1 = *very, very good* and 9 = *very, very bad*.

#### **Ambiguous situations task**

##### *Implicit biases in interpreting ambiguous situations*

To test whether minority students' responses to the picture cards revealed a negative outgroup bias in the ambiguous situations task, we analysed participants' responses using two (gender of participant: female, male)  $\times$  two (grade of participant: first, fourth)  $\times$  two (ethnicity of participant: Black, non-Black minority)  $\times$  four (story: money, toys, academic, swings)  $\times$  two (race of potential transgressor: Black, White) ANOVAs with repeated measures on the last two factors for each of our dependent measures: interpretation, initial event rating, subsequent action evaluation, and subsequent event rating assessments.

For the interpretation assessment ('What happened in this picture?'), we did not find implicit intergroup biases. That is, there was no effect for race of the transgressor found in participants' interpretation of what happened in the picture. Further, there were no differences found for the ethnicity of the participants.

For participants' ratings, as reflected in the initial event rating, a Story  $\times$  Race of Transgressor interaction effect was found,  $F(3, 142) = 2.66, p < .01$ . In the money

situation, participants, regardless of ethnicity, rated the White character's stealing behaviour ( $M = 5.87$ ) as worse than the Black character's behaviour ( $M = 5.14$ ),  $p < .01$ . In other words, as we predicted, participants displayed implicit bias against the White character in the money context although not in the other contexts. In addition, a Race of Transgressor  $\times$  Ethnicity of Participant interaction was significant,  $F(1, 142) = 5.66$ ,  $p < .05$ , indicating that, overall, African-American participants rated White potential transgressor's initial actions ( $M = 6.69$ ) worse than Black potential transgressor's initial actions ( $M = 6.26$ ). Beyond the initial event rating, there were no further significant findings for subsequent action evaluation or subsequent action rating. Analyses indicated that, except for the initial rating of the character's actions, race was not a factor in children's interpretations of the ambiguous pictures.

#### *Evaluations of cross-race friendships in ambiguous situations*

In order to determine if participants revealed implicit biases in their evaluations of the possibility of friendship, repeated measures ANOVAs were conducted for both the friendship potential ('Were the characters friends before the possible transgression?') and subsequent friendship potential ('Were the characters friends after the possible transgression?') measures. There were no significant differences for race of transgressor or for the ethnicity, grade, or gender of participant. As expected, overall, participants did not display implicit bias in their judgments of whether the characters were or could be friends.

#### *Reasons for cross-race friendship potential in the ambiguous situations*

Because we were interested in children's reasoning about friendship as well as their judgments of whether the two characters could be friends after a possible transgression, repeated measures ANOVAs were conducted for each reasoning category. Again, there were no overall differences based on race of transgressor or ethnicity of participant in the use of the four reasoning categories relevant to when a transgression was perceived to have occurred.

Follow-up analyses, however, indicated that participants used the fifth reasoning category, no transgression, differently as a function of the race of the potential transgressor and as a function of the gender of the participant. A Race  $\times$  Story  $\times$  Gender interaction,  $F(3, 142) = 2.590$ ,  $p < .05$ , revealed that while both boys and girls, regardless of their ethnicity, displayed implicit bias against White characters in their reasoning about friendship potential, their bias was elicited by different situations. As shown in Table 1, boys were more likely to justify friendship because there was no transgression in the swings-Black ( $M = 0.23$ ) than in the swings-White ( $M = 0.12$ ) scenario,  $p < .05$ . That is, in the swings situation, boys were more likely to say that friendship was possible because there was no transgression when the potential transgressor was Black than when he was White. Girls were more likely to judge that friendship was feasible because there was no transgression in the academic-Black ( $M = 0.29$ ) than in the academic-White ( $M = 0.19$ ) situation,  $p < .05$ . Thus, girls were more likely to focus on friendship and not the transgression when the Black child was the potential transgressor than when the White child was the potential transgressor in the academic situation. In addition, girls were more likely than boys to focus on friendship and not the transgression in the swings-White situation ( $M_s = 0.29, 0.12$  for girls and

**Table 1.** Proportions of 'no transgression' reasoning used in the ambiguous situations task

	Ambiguous situations task			
	Swings-Black	Swings-White	Academic-Black	Academic-White
Girls				
<i>M</i>	0.30	0.29	0.29	0.19
<i>SD</i>	(0.69)	(0.45)	(0.45)	(0.40)
Boys				
<i>M</i>	0.23	0.12	0.14	0.22
<i>SD</i>	(0.43)	(0.33)	(0.35)	(0.42)
Total				
<i>M</i>	0.27	0.21	0.21	0.21
<i>SD</i>	(0.58)	(0.41)	(0.41)	(0.41)

Note:  $N = 150$ .  $M$  = Mean;  $SD$  = Standard deviation.

boys, respectively) and the academic-Black situation ( $M_s = 0.29, 0.14$  for girls and boys, respectively),  $ps < .05$ .

In sum, boys evaluated the White character more negatively than the Black character when the potential transgression involved physical aggression (swings), whereas girls evaluated the White character more negatively than the Black character when the potential transgression involved cheating (academic). Overall, girls were also more likely than boys to justify their friendship evaluation based on the interpretation that no transgression had occurred.

### **Perceptions of similarity task**

#### *Ratings of similarity*

In order to test our hypothesis that minority participants would not perceive same-race peer dyads as more similar than cross-race peer dyads, we conducted a two(gender of participant)  $\times$  two (grade of participant)  $\times$  two (ethnicity of participant)  $\times$  three (race of peer dyad: cross-race, White, Black)  $\times$  two(activity: same, different) ANOVA with repeated measures on the last two factors on the ratings of similarity. Again, there were no overall differences in judgments of similarity for the ethnicity of participant. There were, however, significant grade differences in children's perceptions of similarity.

A significant Race of Peer Dyad  $\times$  Grade interaction,  $F(2, 284) = 3.29, p < .05$ , indicated that older participants (fourth-graders) used race as a factor when judging peer dyad similarity more often than did younger participants (first-graders). While first-graders did not differentiate between the three racial groupings, fourth-graders were more likely to judge the White peer dyads ( $M = 4.11$ ) and Black peer dyads ( $M = 4.13$ ) as more similar than the cross-race peer dyads ( $M = 3.95$ ),  $p < .05$  (see Table 2 for ratings of all dyads). In general then, older children used race as a factor when evaluating similarity between peer dyads, while younger children did not.

We also expected that participants' perceptions of similarity would be influenced by whether or not the dyad shared an interest in the same sport. Indeed, a significant main effect for activity was found,  $F(1, 142) = 509.14, p < .001$ , indicating that ratings of similarity differed depending upon whether or not the dyad shared the same sports

**Table 2.** Means for ratings of similarity in the perceptions of similarity task

Peer dyads by activity type					
Black peer dyad different activities	Black peer dyad same activities	White peer dyad different activities	White peer dyad same activities	Cross-race peer dyad different activities	Cross-race peer dyad same activities
<b>First grade</b>					
<i>M</i>	2.10	5.49	2.32	5.57	2.52
<i>SD</i>	(1.55)	(1.13)	(1.54)	(0.91)	(1.73)
<b>Fourth grade</b>					
<i>M</i>	2.78	5.48	2.71	5.52	2.57
<i>SD</i>	(1.31)	(0.80)	(1.20)	(0.87)	(1.16)

Note:  $N = 150$ .  $M = \text{Mean}$ ;  $SD = \text{Standard deviation}$ . 1 = *not at all alike*; 6 = *very, very alike*.

interest. Peer dyads sharing the same sports interest ( $M = 5.47$ ) were rated as more alike than the peer dyads with different sports interests ( $M = 2.53$ ).

#### *Reasons for ratings of similarity*

In order to investigate the reasons that children gave for their ratings of similarity, a two (gender of participant)  $\times$  two (grade of participant)  $\times$  two (race of peer dyad)  $\times$  two (activity) ANOVA with repeated measures on the last two factors was conducted for each of the three reasoning categories (non-racial physical characteristics, skin colour/race, and sports interest). Overall, there were no differences based on the ethnicity of the participant. There were significant grade and gender differences, however, for the use of the three reasoning categories.

*Non-racial physical characteristics.* A significant main effect for activity was found,  $F(1, 142) = 5.55, p < .05$ , indicating that participants referred to non-racial physical characteristics, such as the same coloured socks, more often when the characters did not share the same sports interest ( $M = 0.18$ ) than when the characters shared the same sports interest ( $M = 0.15$ ). In addition, a Race of Peer Dyad  $\times$  Gender interaction effect was found,  $F(2, 284) = 3.0, p < .05$ . Follow-up analyses revealed that boys used reasoning based on non-racial physical characteristics more often than did girls for the cross-race dyads ( $M_s = 0.20, 0.11$  for boys and girls, respectively) and the White dyads ( $M_s = 0.22, 0.12$  for boys and girls, respectively),  $ps < .05$ . There were no gender differences in the use of non-racial physical characteristics in reasoning about the similarity of the Black dyads.

*Skin color/race.* Analyses on the use of skin colour/race in children's reasoning about similarity revealed a significant Activity  $\times$  Race of Peer Dyad interaction,  $F(2, 284) = 4.831, p < .01$ . An examination of the means, however, indicated that the overall mean use of this category was less than 0.10, and thus further analyses were not conducted.

*Sports interest.* A significant main effect for activity,  $F(1, 142) = 4.20, p < .05$ , was found for the use of sports interests in reasoning about similarity. Participants used reasoning based on sports interests more often when the dyads shared an activity interest ( $M = 0.80$ ) than when the dyads did not share activity interests ( $M = 0.77$ ),  $p < .05$ .

#### *Summary of reasons for similarity*

In sum, children focused on non-racial physical characteristics in their evaluations of similarity more often when the dyads did not share activity interests than when they did share an interest. In contrast, children focused on sports interests more often when the dyads shared an activity interest than when they did not share an interest. Boys, especially fourth grade boys, were more likely than girls to focus on physical appearance when judging similarity. Specifically, physical characteristics were more salient for boys than for girls when evaluating the cross-race dyads and the White dyads. When the dyads shared a sports interest, this served as the basis for similarity, and much more so than did race or skin colour.

#### *Friendship potential in similarity task*

In order to test our hypothesis about children's views of cross-race friendship potential, we conducted a two (gender of participant)  $\times$  two (grade of participant)  $\times$  three (race of peer dyad)  $\times$  two (activity) ANOVA with repeated measures on the last two factors of friendship potential ('Could the two characters be friends?'). Overall, there were no differences based on the ethnicity of the participant.

A significant main effect for activity was found,  $F(1, 142) = 22.49, p < .01$ , which indicated that friendship was evaluated as more likely when the dyads shared a sports interest ( $M = 0.96$ ) than when the dyads did not share a sports interest ( $M = 0.83$ ). In addition, a significant Activity  $\times$  Race  $\times$  Grade interaction was found,  $F(2, 284) = 4.70, p < .01$ . First-graders ( $M = 1.00$ ) were more likely than fourth-graders ( $M = 0.95$ ) to judge that the White dyad with shared activity interests could be friends,  $p < .01$ . Overall, participants judged that the peer dyads could be friends, regardless of whether the dyad was same-race or cross-race ( $Ms = 1.00, 0.95$  for first- and fourth-graders, respectively). Thus, in general, the race of the child in the picture card did not influence children's judgment that the two children could be friends.

#### *Reasons for potential friendship*

In order to investigate the reasons that children used to support their evaluations of friendship between the dyads, ANOVAs were conducted on each of the four reasoning categories (non-racial physical characteristics, skin colour/race, sports interest, non-sports-related interests).

*Non-racial physical characteristics.* A Race  $\times$  Grade  $\times$  Gender interaction,  $F(2, 284) = 5.33, p < .01$  revealed age differences. First grade boys ( $M = 0.23$ ) used non-racial physical characteristics more often than did fourth grade boys ( $M = 0.04$ ) as a reason for or against friendship for the cross-race dyads,  $p < .01$ . In addition, first grade boys used non-racial physical characteristics, such as 'he has short hair', more often for the cross-race dyads ( $M = 0.23$ ) than for the White dyads ( $M = 0.06$ ) and for the Black dyads ( $M = 0.11$ ),  $ps < .05$ .

*Skin color/race.* The means for the use of skin colour/race in reasoning about potential friendship were too low to conduct meaningful tests. Very few participants used race or skin colour as a reason for why characters could or could not be friends. Therefore, while the racial makeup of the dyads had a significant effect on the participants' reasoning about similarity, it did not have a significant impact on participants' reasoning about potential friendship.

*Sports interest.* Two main effects were found for the use of sports interest (e.g. 'They'll be friends because they both like soccer') as a reason for potential friendship. First, a main effect for activity was found,  $F(1, 142) = 116.2, p < .01$ , which indicated that sports interest was used more often for the dyads with shared activity interests ( $M = 0.81$ ) than for the dyads with different activity interests ( $M = 0.39$ ). Second, a main effect for race,  $F(2, 284) = 3.95, p < .05$ , revealed that sports interest was used as a reason for friendship more often for the White dyads ( $M = 0.65$ ) than for the cross-race dyads ( $M = 0.57$ ) or for the Black dyads ( $M = 0.59$ ),  $p < .05$ .

*Non-sports-related interest.* Only a significant main effect for activity,  $F(1, 142) = 87.99, p < .01$ , was found for using reasons beyond the dyads' interest in sports as a rationale for friendship. Participants cited reasons for friendship, such as 'They probably would like to play lots of games together', that went beyond sports interest more often for the dyads that did not share activity interests ( $M = 0.49$ ) than for dyads that did share activity interests ( $M = 0.13$ ).

### Regression analyses

#### Testing relations between children's perceptions of similarity and implicit biases

In order to examine whether children's implicit biases (as measured by the ambiguous situations task) and perceptions of similarity (as measured by the similarity task) were related, simple regressions were conducted using the similarity ratings of dyads with different interests in the similarity task to predict the ratings of the potential transgressors' initial actions in the ambiguous situations task. For these analyses, two new variables were created: one that combined the initial ratings of all four ambiguous situations in which the potential transgressor was Black, and one that combined the initial ratings of all four ambiguous situations in which the potential transgressor was White. For all regressions, we first examined the relations between these variables for the sample as a whole, and then for the African-American and non-African-American minority participants separately.

First, participants' ratings of the Black potential transgressors' initial actions were regressed on ratings of similarity for the cross-race peer dyad with different activity interests. Overall, higher similarity ratings predicted more positive ratings of the potential transgressors' behaviours ( $r = -.174, p < .05$ ). When this finding was examined for African-American and non-African-American minority participants separately, non-African-American minority participants alone showed a significant relationship between higher similarity judgments and more positive ratings of Black potential transgressors' initial actions ( $r = -.223, p < .05$ ).

Next, participants' ratings of the White potential transgressors' initial actions were regressed on participants' ratings of similarity for the cross-race peer dyad with different activity interests. As predicted, higher ratings of similarity for the cross-race peer dyads that did not share an activity were predictive of more positive ratings of the White potential transgressors' actions in the ambiguous situations ( $r = -.253, p < .01$ ). In other words, participants who rated two characters that did not have race or activity interests in common as very similar were also likely to view the actions of the White potential transgressors as positive. As before, when the regression was conducted for the African-American and non-African-American minority participants separately, the relation was still significant for non-African-American minority participants ( $r = -.263, p < .05$ ). However, in this case, the relation approached significance for African-American participants ( $r = -.213, p = .077$ ).

Participants' ratings of the Black potential transgressors' initial actions were also regressed on participants' ratings of similarity for the White peer dyad with different activity interests. Higher ratings of similarity for the White dyad that did not share an activity were predictive of more positive ratings of Black potential transgressors' actions in the ambiguous situations, for the whole sample ( $r = -.223, p < .01$ ), and for African-American participants ( $r = -.243, p < .05$ ) and non-African-American minority participants ( $r = -.228, p < .05$ ) separately. In other words, children who viewed majority children as similar even though they did not share an activity (i.e. they attributed homogeneity to the outgroup) were also more likely to evaluate the Black potential transgressor positively. However, when participants' ratings of the White potential transgressors' initial actions were regressed on ratings of similarity for the White characters with different activity interests, the results were not significant ( $r = -.105, ns$ ).

We next conducted a simple regression that predicted participants' ratings of the Black potential transgressors' initial actions from participants' ratings of similarity for the Black peer dyad with different activity interests. Higher ratings of similarity for the Black dyad that did not share an activity were predictive of more positive ratings of Black potential transgressors' actions in the ambiguous situations, for the whole sample ( $r = -.200, p < .05$ ), and for non-African-American minority participants ( $r = -.228, p < .05$ ).

Finally, participants' ratings of the White potential transgressors' initial actions were regressed on participants' ratings of similarity for the Black peer dyad with different activity interests. Higher ratings of similarity for the Black dyad that did not share activity interests were predictive of more positive ratings of White potential transgressors' actions in the ambiguous situations, for the whole sample ( $r = -.195, p < .05$ ), but not when African-American and non-African-American minority participants were analysed separately.

#### *Testing relations between children's perceptions of similarity and their judgments of friendship potential*

In order to examine whether children's perceptions of similarity were related to their evaluations of cross-race friendships, simple regressions were conducted. Specifically, ratings of similarity for the peer dyads with different activity interests were used to predict friendship judgments for the peer dyad. Similar to the relations between children's implicit bias and their ratings of similarity, we first ran the regressions for the whole sample, and then for the African-American and non-African-American minority participants separately.

First, friendship judgments for the cross-race peer dyad with different interests were regressed on ratings of similarity for the cross-race peer dyad with different interests. Higher ratings of similarity between White and Black characters that did not share activity interests predicted positive judgments of friendship potential between the pair ( $r = .228, p < .01$ ). In other words, children who viewed Black and White characters as similar were also more likely to consider cross-race friendship between the characters as possible. This significant finding was found for the whole sample, but there was no significant relation between perceptions of similarity and friendship potential for African-American or non-African-American minority participants separately.

Next, the friendship judgments for the White dyad with different activity interests were regressed on participants' ratings of similarity for this dyad. Higher ratings of

similarity again predicted positive judgments of friendship potential ( $r = .167, p < .05$ ). This relationship was significant for the whole sample but not distinct by ethnicity of the participant.

Finally, the friendship judgments for the Black dyad with different activity interests were regressed on ratings of similarity for this dyad. Again, higher ratings of similarity for Black characters that did not share activity interests predicted positive judgments of friendship potential between the pair, but only for African-American participants ( $r = .243, p < .05$ ).

## Discussion

The purpose of the current study was to expand the literature on minority children's intergroup attitudes by examining implicit biases, perceptions of similarity, and judgments concerning cross-race friendship potential in the context of everyday peer interactions. Specifically, the goals of the study were to determine whether: (1) minority children perceived negative intentions in the behaviour of outgroup characters, (2) race was an important factor in minority children's perceptions of similarity, (3) minority children viewed cross-race friendship possible, and (4) minority children's perceptions of similarity were related to their implicit biases and judgments about cross-race friendship.

Concerning implicit biases, first and fourth grade African-American students generally showed minimal bias in peer situations. As predicted by aversive racism theory (Dovidio & Gaertner, 1998), though, African-American and non-African-American minority children in our study did evidence some bias in their initial ratings of the children's actions in the ambiguous situations. In particular, for the context of potential stealing, African-American and non-African-American minority participants rated the White potential transgressor's actions as more negative than the Black potential transgressor's actions, thereby displaying a negative bias about the White potential transgressor's motives. These findings, combined with the finding that African-American participants showed a trend towards rating White potential transgressors' actions as more negative than Black potential transgressors' actions overall, provide evidence of African-American children's ingroup favouritism or outgroup bias. In addition, these findings may be evidence of non-African-American minority participants' outgroup bias combined with an identity with the minority (African-American) child in the picture. Interestingly, European-American children attending the same schools did not show any implicit bias in response to this part of the measure (McGlothlin *et al.*, 2005).

McGlothlin *et al.* (2005) did find some bias, however, when European-American children attending racially and ethnically heterogeneous schools were asked to assess the possibility of cross-race friendship in the ambiguous situations task. Moreover, McGlothlin (2004) found significant bias in the cross-race friendship judgments of European-American children in racially and ethnically homogeneous schools. In contrast, minority children did not evidence bias in their judgments of cross-race friendship potential. Therefore, while minority children showed some bias in their evaluations of peer actions in potential transgressions, this bias was not reflected in their judgments concerning friendship.

These findings parallel earlier research, which found that European-American children were more likely than children of other races/ethnicities to prefer same-race friends (Aboud *et al.*, 2003; Clark & Ayers, 1992; Levy, 2000; Newman *et al.*, 1983; Ramsey & Myers, 1990). This may be one reason that cross-race friendships are less

frequent than same-race friendships. If European-American children have negative implicit biases concerning cross-race friendships, then the likelihood of cross-race friendships that involve a European-American child is reduced. Bias on the part of the majority group can be quite influential. In addition, because cross-race friendships are effective in reducing prejudice and negative racial attitudes (Pettigrew & Tropp, 2000), implicit bias resulting in decisions against forming an interracial friendship prevents children from experiencing the benefits of these important relationships. This is particularly problematic as it is European-American children, as members of the majority group, who could benefit the most from the positive influence of cross-race friendships.

As we predicted, African-American and non-African-American minority children did not evidence the outgroup homogeneity effect in their ratings of similarity of the same-race peer dyads. In addition, minority children focused on shared activities to a greater extent than race/ethnicity or non-racial physical characteristics when judging similarity between characters. This finding is similar to what was found with a majority sample (McGlothlin *et al.*, 2005). It is interesting that the children rarely mentioned race or skin colour when judging similarity, even though previous research has indicated that race/ethnicity is important to children's perceptions of similarity and that similarity of race/ethnicity is an important factor in friendship choice (Rubin *et al.*, 1998). In addition, when making judgments concerning the potential for friendship between cross-race and same-race dyads, our findings were similar to those found with European-American children; namely, race was not as important a factor as shared interests. It is encouraging that this sample of children looked beyond the physical features of peers to the more substantive aspects of children's characters, such as shared interests, to make judgments about friendship. It also provides a basis for encouraging cross-race friendships through ensuring that activities include children from a variety of races and ethnicities (see Aboud & Amato, 2001).

Most significantly, our expectations about the relations between children's perceptions of similarity and their evaluations of potential friendship were confirmed. We predicted that children who used ethnicity as a reason for similarity would be less likely to judge that the cross-race dyads could be friends. In addition, because similarity has been found to be an important factor in friendship choice, we hypothesized that children who rated cross-race dyads as more similar would also be more likely to say that the dyad could be friends. This was found to be the case for all minority children in this study in situations in which the characters depicted in the cards were Black and White and in situations where the characters were both White. For the scenarios in which there were two Black characters, this relation was found only for Black participants. These findings indicate that focusing on race when making judgments about the similarity of two children is related to a reduction in the expected potential for cross-race friendships. Therefore, these findings may be further evidence of the relation between cross-race friendships and the corresponding reduction in prejudice proposed by intergroup contact theory (Pettigrew & Tropp, 2000).

In the current study, outgroup homogeneity was not significantly tied to negative outgroup bias. In particular, for African-American participants, outgroup homogeneity (attributions of similarity of two White peers) was related to positive ingroup bias (positive ratings of Black potential transgressors' actions), not to negative outgroup bias (attribution of negative ratings of White potential transgressors' actions). In other words, the more similar the African-American participants perceived two White characters that did not share activity interests (and, therefore, are only similar in

appearance) to be, the more positively they rated the potential Black transgressors' actions as opposed to more negatively rating the potential White transgressors' actions.

The findings were similar for non-African-American minority participants, for whom both White and Black characters depicted in the cards were members of the outgroup. Non-African-American minority participants who rated cross-race peer dyads as similar even when they did not share a sports interest were also more likely to perceive White and Black potential transgressors' actions as positive (i.e. not see them as perpetrators of transgressions). Given these findings, and in contrast to the findings for the ambiguous situations task alone, it appears that, as expected, non-African-American minority participants view both the White and Black characters as members of outgroups, instead of associating with one or the other of the two groups.

Overall, these findings contribute to the social cognitive domain model, which predicts that multiple factors contribute to children's intergroup judgments, both explicit and implicit (Killen *et al.*, 2005). Regarding explicit judgments, research has found that there are significant differences as a function of the age, gender, and ethnicity of the participants, as well as the context of racial exclusion (i.e. evaluations of friendship exclusion are judged differently from exclusion from peer groups, and societal institutions; Killen *et al.*, 2002). With respect to implicit responses, we have found that there are significant differences depending on the age and ethnicity of the participants. Further, different patterns of implicit intergroup biases were found as a function of attributions of intention (as measured with the ambiguous situations task), judgments of similarity, and decisions about cross-race friendship. In keeping with social cognitive domain theory, these findings suggest that intergroup attitudes are not simply dichotomous (i.e., someone has negative intergroup biases or they do not), but instead, that multiple indices contribute to the emergence and display of implicit and explicit racial biases. It is this complexity that needs to be taken into account in future research on intergroup attitudes.

While this study contributes to the literature on minority children and intergroup attitudes, there were several limitations. For instance, while we had theoretical reasons for grouping Asian-Americans and Latin-Americans together in one category, it is also important to acknowledge that these groups are different, and that possible differences in their intergroup attitudes were not investigated in this study. Future studies, therefore, are needed in which implicit bias, perceptions of similarity, and cross-race friendship judgments are systematically examined in a range of ethnic groups. In addition, we sampled from racially and ethnically heterogeneous schools. A recent study by McGlothlin (2004) employing these measures with European-American children attending racially and ethnically homogeneous schools found ingroup bias in the ambiguous situations task as well as biases regarding cross-race friendships. We interpret these findings as support for the view that intergroup contact plays a role in the emergence of children's implicit and explicit biases (Pettigrew & Tropp, 2000), and this dimension should be incorporated into future research designs.

The relations between implicit biases, perceptions of similarity, and views on cross-race friendship need to be explored further to determine the exact nature of the relation. Which source of cognition (implicit biases, perceptions of similarity, or judgments about friendship) comes first? Do implicit biases and perceptions of similarity influence each other directly, or is this relation a manifestation of another underlying mechanism? Can we change one type of response by influencing the other? In other words, by teaching children that two people of different races can be similar because

they share similar interests, will we then impact how children interpret interactions between people of different races?

Researchers studying minority children often adopt a deficits perspective and focus on issues of social adjustment and at-risk factors (see a review by Fisher, Jackson, & Villarruel, 1998). The findings from this study make a positive contribution to our knowledge about minority children's social cognition and social development by demonstrating that minority children attending racially and ethnically heterogeneous schools generally lack a negative bias towards the outgroup, and have a positive view about the potential for cross-race friendships, even more so than demonstrated by majority children. Nonetheless, we found that, in some contexts, race does play a role in minority children's evaluations of similarity between peer dyads and interpretations of peers' intentions in ambiguous situations. These findings call for further work to understand the complex relationships between different types of intergroup attitudes in children. These attitudes have the potential to directly influence the quality of children's peer relationships by contributing to patterns of social exclusion, rejection, and isolation. Children who are excluded by others due to group memberships, such as race and ethnicity, often experience victimization and discrimination. To the extent that we can understand how intergroup attitudes manifest developmentally, and what this looks like for children in the minority as well as the majority, we can begin to systematically promote positive social experiences for all children.

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