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Children’s and Adults’ Predictions of Black, White, and Multiracial Friendship Patterns

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ABSTRACT

Cross-race friendships can promote the development of positive racial attitudes, yet they are relatively uncommon and decline with age. In an effort to further our understanding of the extent to which children expect cross-race friendships to occur, we examined 4- to 6-year-olds’ (and adults’) use of race when predicting other children’s friendship patterns. In contrast to previous research, we included White (Studies 1 and 2), Black (Study 3), and Multiracial (Study 4) participants and examined how they predicted the friendship patterns of White, Black, and Multiracial targets. Distinct response patterns were found as a function of target race, participant age group, and participant race. Participants in all groups predicted that White children would have mostly White friends and Black children would have mostly Black friends. Moreover, most participant groups predicted that Multiracial children would have Black and White friends. However, White adults predicted that Multiracial children would have mostly Black friends, whereas Multiracial children predicted that Multiracial children would have mostly White friends. These data are important for understanding beliefs about cross-race friendships, social group variation in race-based reasoning, and the experiences of Multiracial individuals more broadly.

Cross-race friendships (i.e., friendships between members of two different racial backgrounds) can play an important role in the development of positive racial attitudes (for a review, see McGlothlin, Edmonds, & Killen, 2007). These friendships teach us about within-group variation (two individuals of the same racial group need not share the same interests), the inaccuracy of stereotypes (because of within-group variation, judgments on the basis of racial group membership can be incorrect), and the wrongness of prejudice and race-based exclusion (not interacting with someone because of their racial group membership is unfair and unjust; Crystal, Killen, & Ruck, 2008). Indeed, research has shown that U.S. children from racially heterogeneous schools, compared with those from racially homogenous schools, are less likely to interpret ambiguous situations in terms of race (McGlothlin & Killen, 2010), and British children from racially heterogeneous kindergartens, compared with those from racially homogenous kindergartens, are less likely to make trait attributions on the basis of race (Rutland, Cameron, Bennett, & Ferrell, 2005). Thus, cross-race friendships decrease race-based biases and distance between racial groups; increase close, collaborative, and supportive intergroup
relationships; and foster beliefs about social fairness and equity (see also Graham, Munniksma, & Juvonen, 2014).

Despite the importance of cross-race friendships, they are relatively uncommon and their prevalence declines as children grow older. For example, during first grade, children have more same-race friends than cross-race friends (Aboud, Mendelson, & Purdy, 2003; Finkelstein & Haskins, 1983), and by sixth grade, the already low number of cross-race friendships declines even further (Graham & Cohen, 1997). Furthermore, the cross-race friendships that do develop are often less intimate and long-lasting compared with same-race friendships (Aboud et al., 2003; Fletcher, Rollins, & Nickerson, 2004).

Given that cross-race friendships are rare and decline with age, it is important to understand what expectations children hold about them, which could provide critical information regarding the extent to which children see these kinds of relationships as likely and also the extent to which they themselves are likely to engage in them. In one study, Kinzler, Shutts, Dejesus, and Spelke (2009; see Experiment 3) examined children’s use of race when making friendship predictions. They showed a sample of White U.S. children (aged 5 years) photos of Black children and White children and asked them to indicate which child they themselves wanted to be friends with. Children were more likely to select White friends than Black friends. Similarly, Shutts, Pemberton Roben, and Spelke (2013) presented White U.S. preschoolers with a series of photos of Black children and White children. Each target child was introduced by name and was described as engaging in a certain activity (e.g., “This is Jessica. She is playing hide-and-seek today with all her friends”). Next, two response images were presented—one image of a Black child and one of a White child—and the preschoolers were asked to indicate which response image was a friend of the child. Four-year-olds predicted that children would be friends with children of their same race, demonstrating that they inferred more same-race friendships than cross-race friendships.

Critically, though, previous studies have focused on the dichotomous categories of “Black” and “White” to assess children’s friendship predictions. Although this method was useful, given that it provided careful experimental control and a maximally distinctive task that young children could use, it was nevertheless limiting because it oversimplified race, which may therefore have oversimplified our understanding about race-based concepts (see Dunham & Olson, 2016; Kang & Bodenhausen, 2014). By giving children clear-cut racial exemplars, previous researchers may have made race maximally salient and therefore overestimated the extent to which children used race to predict friendships. Thus, as a critical next step toward furthering our understanding of children’s friendship predictions, research that goes beyond dichotomous and clear-cut notions of race to include greater perceptual variation is needed, as it more closely reflects real-world variation.

**Friendship predictions for multiracial children**

Children with both Black and White parentage (henceforth referred to simply as Multiracial children) are one of the youngest and fastest-growing demographic groups in the United States (Pew Research Center, 2015; U.S. Census Bureau, 2011). They challenge the dichotomous notion that one is either Black or White and represent a weakening of race-based social boundaries and an increase in cross-race relationships (Lee & Bean, 2007; Liebler, 2016; Morning, 2009; Rockquemore, Brunsma, & Delgado, 2009; Young, Sanchez, & Wilton, 2013). Research has shown that social relationships have important implications for
Multiracial individuals’ racial identity development and psychosocial well-being, and thus, exploring the nature of such relationships is essential for understanding the Multiracial experience (Khanna, 2011; Lusk, Taylor, Nanney, & Austin, 2010; Remedios & Chasteen, 2013; Rockquemore & Brunsma, 2008; Tran, Miyake, Martinez-Morales, & Csizmadia, 2015). For instance, Franco and colleagues (Franco & Franco, 2015; Franco, Katz, & O’Brien, 2016) asked Multiracial individuals to self-report their most stressful race-based experiences. Participants reported that other people often expected them to socially affiliate with Black people and that they were condemned when those expectations were not met. Subsequently, these experiences led Multiracial individuals to feel confused, excluded, and socially isolated (see also Salahuddin & O’Brien, 2011). Thus, people’s expectations for Multiracial individuals’ relationships are of psychosocial significance, but to date, research has not yet systematically examined the extent to which people engage in those expectations.

In contrast to the dearth of research regarding perceptions of Multiracial individuals’ social relationships, a number of studies have explored categorizations of Multiracial individuals. In the United States, White adults often categorize Multiracial individuals as Black more often than as White, a phenomenon known as “hypodescent” (e.g., Davis, 1991; Ho, Sidanius, Levin, & Banaji, 2011; Peery & Bodenhausen, 2008; Roberts & Gelman, 2015). For example, when White U.S. adults were presented with family trees that depicted four grandparents and one grandchild, they were more likely to categorize quarter-Black children as Black than quarter-White children as White, indicating a tendency to weigh Black ancestry more heavily in their categorizations (Ho et al., 2011). As a result of this phenomenon, White U.S. adults may expect Multiracial children to have more Black friends than White friends. Consistent with this theorizing, Chesley and Wagner (2003) found that White U.S. adults reasoned that it was socially more acceptable for a Multiracial child to be friends with a Black child than with a White child. The authors speculated that White adults may have reasoned that friendships among outgroup children, which for them included both Multiracial children and Black children, would be more normative than friendships that crossed the ingroup–outgroup boundary.

In contrast to White adults, White children’s categorization of Multiracial children varies as a function of how much disambiguating information is presented. Roberts and Gelman (2015) found that when images of Multiracial children were shown without parentage information, White adults and children categorized them as Black more often than as White (revealing a perceptual bias to overweight minority features). However, when those same images were shown with parentage information (i.e., one Black parent and one White parent), White adults, but not White children, still categorized them as Black more often than as White (consistent with the hypodescent pattern). These findings suggest that when Multiracial children’s racial backgrounds are unknown, both White adults and children tend to categorize them as more Black than White and may therefore predict them to have more Black friends than White friends. However, when Multiracial children’s racial backgrounds are known, White children (unlike White adults) may no longer show the hypodescent pattern.

The present studies

The present research provided the first empirical test of how White, Black, and Multiracial children and adults predicted the friendship patterns of White, Black, and Multiracial children.
Studies 1 and 2 tested U.S. White participants, Study 3 tested U.S. Black participants, and Study 4 tested U.S. Multiracial participants. As a whole, these studies aimed to further our understanding of children’s and adults’ concepts of cross-race friendships, which, as mentioned earlier, are important for reducing negative racial attitudes (McGlothlin et al., 2007). Moreover, Multiracial individuals often feel pressured to befriend individuals who match only one of their racial backgrounds (Franco et al., 2016; Rockquemore & Brunsma, 2008), and the present studies explored the source of this pressure across ages and social groups.

Additionally, whereas previous research has often focused on predominantly (and often exclusively) White samples (e.g., Kinzler et al., 2009; Shutts et al., 2013), the present studies aimed to elucidate non-White samples’ race-based friendship predictions, thereby providing a more nuanced, diverse, and inclusive understanding of race-based cognition (see Rowley & Camacho, 2015). Doing so also helps tease apart different theoretical accounts of children’s friendship predictions. For example, if children’s friendship predictions are driven primarily by positive ingroup biases, they should infer that Multiracial children are friends with their ingroup (e.g., White children should infer that Multiracial children are friends with White children, whereas Black children should infer that Multiracial children are friends with Black children). However, if children’s friendship predictions are driven by an ideological adherence to hypodescent, all child groups should infer that Multiracial children are friends with Black children. If children are using the racial demographics of their environment, they may choose mostly White friends for all target children, because there are more White children to befriend or because they observe more White children as friends than they do Black children as friends (the city in which the data were collected was predominantly White). Children could also believe that people befriend others who are similar (e.g., on the basis of several social dimensions, such as race, gender, age, or language), or they could use their real-world observations of same-race friendships to expect same-race friendships to be most likely.

**Study 1**

Study 1 investigated White children’s and adults’ friendship predictions for Black, Multiracial, and White children. Using a methodology similar to Shutts et al. (2013), participants were asked to indicate whether other children (henceforth referred to as “targets”) would be more likely to have Black friends or White friends. We expected to replicate previous research showing that participants would reason that Black children and White children would be friends with children of the same race. We also predicted that both White children and White adults, by virtue of perceiving Multiracial children as more Black than White, would predict Multiracial children to have mostly Black friends.

**Method**

**Participants.** White U.S. children and adults (N = 59) participated in this study. There were 32 4- to 6-year-olds (56% female; Mage = 5;6, range = 4;1–6;9) and 27 adults (43% female, Mage = 25 years, range = 18–39 years). Parents reported their children’s race. Adults reported their own race. Children were recruited in the Midwestern United States at a museum that was affiliated with a university lab. Adults were given an online version of the task and were recruited through Amazon’s MTurk, which has been shown to
provide high-quality data (Peer, Vosgerau, & Acquisti, 2014) and comparable results to data collected in person (Casler, Bickel, & Hackett, 2013). Across all studies, children were recruited in a city in which 73% of the population was White and 8% of the population was Black/African American.

Our a-priori goal was to include roughly 24 children and 24 adults in each study, which is common in this area of research (e.g., Kinzler & Dautel, 2012; Roberts & Gelman, 2016a; Shutts et al., 2013). Data collection was stopped on the day this number was achieved. However, due to an administrative error, we slightly exceeded this sample size in Studies 1 and 2.

Materials and procedure. Images consisted of 36 child faces. Half of the targets were girls and half were boys, and images within each trial were matched by gender. Images were drawn from online sources and the Child Affective Facial Expression Set (LoBue & Thrasher, 2014), which is fully available at databrary.org. All images were forward-facing, smiling faces and were pretested with a sample of U.S. adults (N = 55, none of whom participated in the primary study) of which the majority categorized the images as intended: Black (M = 99%, range per image = 96%–100%), White (M = 100%), and Black and White (M= 74%, range per image = 66%–84%). The task was presented using PowerPoint for children and Qualtrics for adults.

All participants saw 12 consecutive trials, presented in random order, which consisted of half female faces and half male faces. For each trial, trained experimenters introduced the target child (Black, Multiracial, or White) by providing the target’s name and the fact that the target’s parents were allowing her/him to engage in an activity (e.g., “This is Sabrina. Her dad and mom are letting her have a birthday party today with all of her friends”). Four trials depicted a Black child, 4 trials depicted a Multiracial child, and 4 trials depicted a White child. Next, two response images appeared at the top left and right corners of the screen, joining the target. The experimenter then pointed to the two response images and asked the participant to choose the target’s friend (e.g., “Here are two other girls. Which of these girls is friends with Sabrina?”). Participants indicated their response in a forced-choice manner by pointing to one of the two response images. On each trial, one response image was a Black child and one was a White child. In an effort to prevent a simple color-matching strategy and to assess beliefs regarding racial boundaries, no Multiracial response option was given. Pairings of activities and names to particular target images were counterbalanced across participants. Additionally, the left–right positions of the response images were counterbalanced both within and across participants. We tallied the number of Black-friend choices and White-friend choices across trials for a given target race. On a given trial, selecting both images (or saying “both”) was coded as intermediate (i.e., .5). Notably, across all studies, fewer than 8% of children ever volunteered a “both” response, and all effects held even when these children were excluded from the data analysis.

Data analysis plan. To enable a comparison across all three target racial groups, responses were summed on the same scale. We selected how often participants selected Black friends (i.e., Black-friend choices) as the dependent variable. Note that we could instead have selected White-friend choices as the dependent variable because they were the inverse of Black-friend choices. To test the extent to which participants selected Black
friends for Black, Multiracial, and White targets, we conducted 3 (target race: Black, Multiracial, White) × 2 (age group: children, adults) repeated-measures analyses of variance with the number of Black-friend choices as the dependent variable (scores could range from 0 to 4). All significant effects were probed by Bonferroni-corrected comparisons. We then conducted one-sample t tests to compare the categorization rates of each target type (i.e., Black, Multiracial, White) against the chance level (i.e., 2; see Table 1 for all data and statistics). Finally, we conducted nonparametric Wilcoxon signed-rank tests to examine, for each target type, the number of children and adults who selected mostly Black friends, mostly White friends, or both Black friends and White friends equally (see Table 2 for all data and statistics). Across all studies, there were no effects of participant or target gender, so the data were collapsed over these variables.\(^1\)

**Results and discussion**

A main effect of target race showed that participants were significantly more likely to select Black friends for Black targets \(M = 2.83, SE = .17\), followed by Multiracial targets \(M = 2.36, SE = .15\), followed by White targets \(M = 1.12, SE = .16\), \(F(2, 114) = 26.64, p < .001, \eta_p^2 = .32\) \((ps < .04\) for all comparisons\), thereby revealing different friendship patterns for all three target groups. There was no significant effect of age group and no significant interaction involving age and target race. These results were further supported by chance comparisons: Both children and adults selected Black friends above chance for Black targets (though notably, this effect was marginal for children, \(p = .062\)), at chance for Multiracial targets, and below chance for White targets (see Table 1). Nonparametric tests revealed similar patterns. Regarding Black targets, most children and adults selected Black friends most often, and regarding White targets, most children and adults selected White friends most often. Regarding Multiracial targets, there was no response option that most children or adults selected most often, though adults were marginally likely to select Black friends most often (see Table 2).

Study 1 showed that both children and adults expected Black children to have Black friends and White children to have White friends, which is consistent with previous research showing that at an early age, White children expect same-race friendships more often than cross-race friendships (Shutts et al., 2013; see also Footnote 1). Critically, though, Study 1 showed that White children and adults expected Multiracial children (i.e., children with Black and White parentage) to have both Black and White friends (though nonparametric tests indicated that White adults were marginally likely to select Black friends most often, which is consistent with the hypodescent pattern; Ho et al., 2011).

\(^1\)A pilot study validated the study further and ensured that the data yielded patterns similar to those detected in previous research (Shutts et al., 2013). White children \((N = 25, 56\% = \text{female}, M_{\text{age}} = 5;1, \text{range} = 4;1–6;6)\) were asked to predict the friendship patterns of Black targets and White targets; no Multiracial targets were shown. Replicating previous research, children selected Black friends above chance for Black targets, \(M = 2.83, SE = .25, t(23) = 3.39, p = .003, d = 0.69\), and below chance for White targets, \(M = 1.04, SE = .25, t(23) = -3.81, p = .001, d = 0.78\).
Study 2

Study 2 examined whether and to what extent we might find similar results when targets were presented with parentage information. White children do not categorize Multiracial targets as Black more often than as White when parentage information is provided, but adults do (Roberts & Gelman, 2015; see also Skinner & Nicolas, 2015). We therefore predicted that when Multiracial targets were shown with one Black parent and one White parent, thereby highlighting their racial background, adults, but not children, would infer that Multiracial children would have more Black friends than White friends (i.e., the hypodescent pattern). To test this, in Study 2, we investigated White U.S. children’s and adults’ friendship predictions for Black, Multiracial, and White targets in the presence of parentage information. The materials and design were identical to those in Study 1, with the exception that all targets were presented with two parents.

Method

Participants. Study 2 included 24 White U.S. 4- to 6-year-olds (57% female; Mage = 5;6, range = 4;3–6;8) and 31 White U.S. adults (48% female; Mage = 25 years, range = 18–39 years). Parents reported their children’s race. Adults reported their own race. Children and adults were recruited from the same sources as those in Study 1.

Materials and procedure. The materials and procedure were identical to those in Study 1, with an additional 24 parent faces retrieved from online sources and previous research (Roberts & Gelman, 2015; Langner et al., 2010). All images consisted of forward-facing,
smiling faces, and all were pretested with the same U.S. adults described in the Method section of Study 1. All parent images were racially categorized as intended by at least 95% of participants. Each target image was randomly assigned two parent dyads: Half of the participants saw the targets with one set of parents, and the other half saw the targets with another set of parents. Black targets were always shown with two Black parents, and White targets were always shown with two White parents. The race of the Multiracial parent dyads was counterbalanced within and across participants, such that two dyads always consisted of a Black mother and a White father, and the other two always consisted of a White mother and a Black father. For each participant, each target had a different set of parents. For each trial, the targets were introduced along with two parent images located at the bottom corners of the screen. Across Studies 2, 3, and 4, there were no effects of parent set or race of the Multiracial parent dyads (i.e., Black mother and White father compared with White mother and Black father), so the data were collapsed over these variables.

### Results and discussion

A significant main effect of target race, $F(2, 106) = 58.77, p < .001, \eta_p^2 = .53$, showed that participants were most likely to select Black friends for Black targets ($M = 3.15, SE = .15$), followed by Multiracial targets ($M = 2.16, SE = .15$), followed by White targets ($M = 0.74, SE = .15$).

### Table 2. Number of participants who most often selected Black friends, White friends, or Black friends and White friends equally (tie), as a function of study, age group, and target, with nonparametric tests of target differences within each study/age group.

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*Note.* The nonparametric tests focused exclusively on the relative frequency of “Black” and “White” responses across all eight trials, with the majority response as the basis of the coding. Saying “both” was counted toward both responses, and only when “Black” and “White” responses were equal (across all trials) was a participant categorized as a “tie.” For example, if within a target type (e.g., Multiracial) a participant said “both” on two trials and selected Black for the remaining two trials, they were coded in accordance with “Black,” or if they said “both” on two trials, Black on one trial, and White on another trial, they were coded in accordance with “tie.”
.14), all $p < .001$. There was no significant main effect of age group, nor was there a significant interaction of age group and target race. Consistent with Study 1, children selected Black friends above chance levels for Black targets, at chance levels for Multiracial targets, and below chance levels for White targets. Also consistent with Study 1, adults selected Black friends above chance levels for Black targets and below chance levels for White targets. Notably, though, and as predicted, adults selected Black friends above chance levels for Multiracial targets (see Table 1 for data and statistics derived from the chance comparisons). Moreover, nonparametric tests showed that regarding Black targets, most children and adults selected Black friends, and regarding White targets, most children and adults selected White friends. Regarding Multiracial targets, as in Study 1, there was no response option that most children selected most often, whereas most adults selected Black friends (see Table 2).

Using a task that included parentage information, we again replicated previous research (e.g., Kinzler et al., 2009; Shutts et al., 2013), as well as our own data from Study 1, showing that White children and adults made same-race predictions when reasoning about White targets and Black targets. However, when reasoning about Multiracial targets, who were explicitly described as having one Black parent and one White parent, adults, but not children, selected Black friends more often than White friends. There was no significant main effect or interaction involving age group, and thus, this effect must be viewed with caution. However, this age group difference was supported by the chance comparisons and the nonparametric tests. The data thus further suggest that White adults’ (but not White children’s) perceptions of Multiracial individuals is influenced by an ideological adherence to hypodescent (e.g., Ho et al., 2011; Krosch, Berntsen, Amodio, Jost, & Van Bavel, 2013; Peery & Bodenhausen, 2008; Roberts & Gelman, 2015).

**Study 3**

Because previous research on children’s friendship predictions was conducted with predominantly White samples (including Studies 1 and 2 in the present research), our understanding of how children from different racial backgrounds make race-based friendship predictions is less clear. Exploring how Non-White children think about race is important because group membership plays a critical role in social-cognitive development and because a more inclusive developmental science expands our theoretical framework of social cognition (Dunham & Olson, 2016; Rowley & Camacho, 2015). For example, extending the present task to Non-White samples is needed to determine whether the race-matching strategy obtained in Studies 1 and 2 reflects an expectation specific to racial-majority children (perhaps as a means of maintaining racial group boundaries) or whether instead it applies more broadly to racial-minority children as well. For these reasons, we conducted a third study that examined Black children’s and adults’ friendship predictions.

Because Black children live in a predominantly White U.S. context in which they are racial minorities and thus there are more White children to be friends with, they may be especially likely to predict cross-race friendships. However, research suggests that Black children may expect negative interactions with White children, which may make them less likely to expect cross-race friendships. For example, Margie, Killen, Sinno, and McGlothlin (2005) showed first- and fourth-grade minority children picture cards involving various ambiguous
situations. In one scenario, children were presented with an image depicting a Black child on the ground with a White child standing behind them. In a second scenario, they were presented with an image of a White child on the ground with a Black child standing behind them. The scenarios were meant to depict an ambiguous situation in which a transgression may or may not have occurred (e.g., the child standing may have pushed the other child to the ground). They found that Black participants evaluated the first scenario, in which a White child was standing over a Black child, as worse than the second scenario, suggesting that they may have perceived the White children as more antagonistic. Furthermore, other research suggests that Black children’s efforts to have cross-racial friendships are often not met by their White peers (McGlathlin et al., 2007) and that experiences with racial discrimination influence them to self-segregate and avoid cross-racial friendships (Tatum, 1997). Thus, by virtue of negative perceptions and negative experiences with White children, Black children may not readily expect cross-racial friendships.

How Black participants predict the friendship patterns of Multiracial children is also not clear, but previous research on Multiracial person perception suggests several possibilities. Chesley and Wagner (2003) found that Black adults reasoned that it was socially more acceptable for Multiracial children to be friends with White children than with Black children (the opposite response pattern of White adults), and they speculated that this reasoning stemmed from Black adults perceiving both Multiracial children and White children as outgroup members and expecting friendships among outgroup members to be more normative than friendships among racial ingroup and outgroup members. Thus, one possibility is that Black adults would predict Multiracial children to have more White friends than Black friends. However, other work suggests that Black adults categorize Multiracial targets as more Black than White, likely as a way to strengthen and increase membership within the Black community (Davis, 1991; Roberts & Gelman, 2015), and they expect them to socially affiliate with Black people (Franco & Franco, 2015; Franco et al., 2016). Thus, an alternative possibility is that Black adults would perceive Black targets and Multiracial targets as belonging to the same community and would therefore predict that Multiracial targets would have more Black friends.

Of particular interest was how Black children would reason about Multiracial friendship patterns. Roberts and Gelman (2015) found that Black children were less likely than Black adults to categorize Multiracial targets as Black (though these effects varied somewhat as a function of participant context), and Black 4- to 6-year-olds were more likely than older Black children and Black adults to categorize Multiracial targets as White. Thus, one possibility is that young Black children may predict Multiracial children to have more White friends than Black friends. To date, however, this possibility has not been empirically tested.

**Method**

**Participants.** Participants included 24 Black U.S. 4- to 6-year-olds (54% female; Mage = 5;2, range = 4;0–6;9) and 24 Black U.S. adults (58% female; Mage = 25 years, range = 18–39 years) recruited from the same sources as those in Studies 1 and 2. Parents reported their children’s race, and adults reported their own race.
Materials and procedure. To provide maximally informative trials that would highlight the racial background of the targets, Study 3 included parentage information. Thus, the materials and procedure were identical to those in Study 2.

Results and discussion

We obtained a significant main effect of target race, $F(2, 92) = 28.19, p < .001, \eta^2 = .38$, showing that participants were most likely to select Black friends for Black targets ($M = 2.90, SE = .16$), followed by Multiracial targets ($M = 1.99, SE = .16$), followed by White targets ($M = 1.02, SE = .16$), $ps < .01$. There was no significant effect of age group and no significant interaction involving age and target race. Chance comparisons showed that both children and adults selected Black friends above chance for Black targets (though notably, this effect was marginal for children, $p = .056$), at chance for Multiracial targets, and below chance for White targets (see Table 1). Nonparametric tests showed that most children and adults selected Black friends most often for Black targets and White friends most often for White targets and that there was no response option that children or adults selected most often for Multiracial targets (see Table 2).

In many respects, the findings in Study 3 were similar to those in Studies 1 and 2. Like White children in Studies 1 and 2, Black children in Study 3 reasoned that Black children would have Black friends and that White children would have White friends. Thus, these data suggest that Black children, like their White peers, expect more same-race friendships than cross-race friendships, showing that Non-White samples also do not readily expect cross-race friendships. Additionally, like their White peers, Black children predicted that Multiracial children would have both Black friends and White friends. An important difference, though, was that unlike White adults in Study 2, who expected Multiracial children to be friends with Black children, Black adults expected Multiracial children to be friends with both Black children and White children. This last finding is interesting in light of previous work suggesting that Black adults (like White adults) categorize Multiracial individuals as more Black than White (Roberts & Gelman, 2015). One explanation for this result may be that Black adults perceive Multiracial individuals as social liaisons between Black and White people and as capable of navigating and bridging two seemingly discrete groups. That is, Black adults may perceive Multiracial individuals as being categorically Black given the history of race categorizations in the United States, but they may nonetheless expect them to foster partnerships between Black and White communities in an effort to reduce group-based inequalities (see Davis, 1991). Certainly, additional work is needed to test this possibility more systematically.

Study 4

Study 4 examined Multiracial participants’ friendship predictions, which are of both theoretical and social significance. Multiracial individuals have concepts of race that differ from those of their Monoracial peers (Dunham & Olson, 2016; Gaither, Chen, Corriveau, Harris, & Sommers, 2014; Roberts & Gelman, 2016b), and they constitute a growing but under-researched demographic group within the United States (Shih & Sanchez, 2009; U. S. Census Bureau, 2011).
We were primarily interested in Multiracial children’s and adults’ friendship predictions for Multiracial targets, as it allows us to understand Multiracial individuals’ attitudes and perceptions about their own friendship patterns. In the United States, Multiracial children and adults are often categorized in accordance with their racial-minority background (e.g., Black, Asian; Ho et al., 2011; Roberts & Gelman, 2015) and are pressured to identify with it (Khanna, 2011). As a result of these experiences, they often identify with their racial-minority background (Rockquemore & Brunsma, 2008) and categorize other Multiracial individuals in accordance with their racial-minority background (Roberts & Gelman, 2016b). Consequently, they may predict that Multiracial children have more racial-minority friends than White friends. However, other work suggests that Multiracial individuals, particularly young children, have pro-White biases (Johnson, 1992; Neto & Paiva, 1998), which could motivate them to predict that Multiracial children will have more White friends. Another possibility is that because of their personal experiences (participants simply had more White people to befriend, because in the city in which the data were collected, 73% of the population was White), Multiracial children predict that other Multiracial children have more White friends. Yet another possibility is that Multiracial children will predict that other Multiracial children have both Black and White friends, which would align with work showing that Multiracial children and adults often embrace both of their racial backgrounds (Morrison, 1995; Rockquemore & Brunsma, 2008). Using the same methodology as in Studies 2 and 3, in Study 4, we investigated these possibilities.

**Method**

**Participants.** Given our reasoning that Multiracial participants may be influenced by experiences with being categorized by others as minorities more often than as White, we included Multiracial/ethnic participants who had both minority and White parentage, although 8 children and 4 adults in our sample were identified as Multiracial, without a specified racial background. Participants included 24 U.S. 4- to 6-year-olds (50% female; Mage = 5;9, range = 4;1–6;11; 8 Multiracial, 4 Arabic/White, 3 Asian/White, 3 Black/White, 3 Latino/White, 2 Native American/White, 1 Indian/White) and 24 U.S. adults (50% female; Mage = 25 years, range = 18–40 years; 6 Latino/White, 5 Black/White, 4 Asian/White, 4 Multiracial, and one of each of the following labels: Arabic/White, Black/Hispanic/White/Native American, Black/White/Asian, Black/White/Hawaiian, Indian/White). Parents reported their children’s race, and adults reported their own race. Participants were recruited from the same sources as those in Studies 1, 2, and 3.

**Materials and Procedure.** The materials and procedure were identical to those in Studies 2 and 3.

**Results and discussion**

A significant main effect of target race, $F(2, 92) = 28.63, p < .001, \eta_p^2 = .38$, showed that participants were most likely to select Black friends for Black targets ($M = 2.82, SE = .18$), followed by Multiracial targets ($M = 1.77, SE = .12$), followed by White targets ($M = 0.99, SE = .16$), all $ps < .001$. There was also a main effect of age group, $F(1, 46) = 5.86, p = .019,$
η_p^2 = .11, showing that overall, adults (M = 2.03, SE = .10) selected Black friends more often than did children (M = 1.69, SE = .10). There was no significant interaction involving age and target race. Chance comparisons showed that children and adults selected Black friends above chance for Black targets and below chance for White targets. In contrast to all the previous studies, for Multiracial targets, Multiracial children selected Black friends below chance, showing that they expected Multiracial targets to have mostly White friends, whereas adults selected Black friends at chance, showing that they expected Multiracial targets to have both Black friends and White friends (see Table 1 for data and statistics derived from chance comparisons). Nonparametric Wilcoxon signed-rank tests showed that most children and adults selected Black friends for Black targets and White friends for White targets. Regarding Multiracial targets, however, most children selected White friends, whereas there was no response option that adults selected most often (see Table 2).

Because there was no Target Race × Age Group interaction, Multiracial children’s judgments that Multiracial targets would have more White friends than Black friends should be interpreted with caution. With that being said, however, children’s judgments could reflect a pro-White bias (Johnson, 1992; Neto & Paiva, 1998), such that they perceived friendships with White children more favorably. However, Multiracial children did not expect Black children to have White friends, which one would expect if Multiracial children were guided by pro-White biases. Another possibility is that Multiracial children selected White friends because of their personal experiences with racial demographics. Additional research is needed to more systematically test these possibilities. Until then, these data demonstrate further that friendship predictions vary across age and social groups, and they suggest that Multiracial children, unlike their Monoracial peers, expect Multiracial children to have more White friends than Black friends.

**General discussion**

Cross-race friendships are relatively uncommon and their prevalence declines with age (Aboud et al., 2003; McGlothlin et al., 2007). This is unfortunate, given that such interactions reduce stereotyping, prejudice, and discrimination and encourage collaboration, fairness, and equality (e.g., Crystal et al., 2008; McGlothlin & Killen, 2010; Rutland et al., 2005). Thus, the infrequency of cross-race friendships may have negative consequences as U.S. society becomes increasingly diverse and interracial contact becomes increasingly likely (Pew Research Center, 2015; U.S. Census Bureau, 2011). Work is therefore needed to further understand whether children believe race factors into friendship development. In the present research, we examined children’s (ages 4–6 years) and adults’ predictions for Black, White, and Multiracial children’s friendship patterns to gain insight into the extent to which they saw cross-race friendships as likely. We replicated previous research with White samples (e.g., Kinzler et al., 2009; Shutts et al., 2013), both in the absence (Study 1) and presence (Study 2) of parentage information and also with Black (Study 3) and Multiracial (Study 4) participants. We hypothesized that participants may have used any of the following to guide their race-based friendship inferences: a) ingroup biases by which all target children would be expected to be friends with children of the participants’ own racial group (e.g., Black participants might report that Black, White, and Multiracial children would be friends with Black children); b) the racial demographics of their predominantly White neighborhood, thereby reporting that friendships with White
children would be most likely; or c) an expectation that children would be most likely to befriend children of the same race, resulting from an expectation that people befriend those who are similar (e.g., on the basis of race, gender, age, or language) or from real-world observations of same-race friendships. Consistent with the last possibilities, all participant groups reported that Black targets would have Black friends and that White targets would have White friends. These data demonstrate that in the United States, the use of race as a predictor of friendships transcends participants’ age and racial background and is a widely used mode of social inference.

Of course, additional research is needed to more systematically test why same-race friendships are predicted more frequently than cross-race friendships. One possibility is that children may have a broad expectation that people are more likely to befriend those who are similar to one another (not only in race, but also along other social dimensions). This possibility would be consistent with the proposal that children view social categories as coalitions and use them to guide their social interactions and social expectations (Rhodes, 2013). Alternatively, these predictions may simply reflect real-world observations, such that in the United States, people are more likely to see same-race relationships than cross-race relationships (Finkelstein & Haskins, 1983; Graham & Cohen, 1997; Tatum, 1997). Indeed, cross-race relationships may be particularly rare in communities that are predominantly one race or the other, given the relatively scarce opportunities to engage in them. In the city in which these data were collected, 73% of the population was White, while only 8% of the population was Black/African American. Therefore, White children may be particularly unlikely to have cross-race friendships and thus may perceive such friendships as unlikely for others. This finding could have downstream and cyclical consequences. That is, if children rarely see cross-race friendships, they may not expect or engage in them, which would ultimately make them less likely to see cross-race friendships. Interestingly, though the racial demographics of their environment may be one measure children use to predict friendships, it only partially explains children’s responses. Note that participants did not predict that Black targets would have mostly White friends, although White children being more numerous could have generated this inference. Thus, reasoning about race and social relationships, rather than demographic probabilities per se, are important for understanding the present data.

We were also interested in the friendship predictions of Multiracial children, who a) are a rapidly growing demographic group (Pew Research Center, 2015), b) challenge the notion that one is either Black or White (Dunham & Olson, 2016; Young et al., 2013), and c) are often deeply affected, psychologically and socially, by their relationships with others (Franco et al., 2016). We tested whether an ideological adherence to hypodescent guided such friendship predictions for Multiracial children. Most participant groups believed that Multiracial children would be friends with both Black and White children, whereas White adults predicted that Multiracial children would have more Black friends than White friends (though White adults’ response patterns, as analyzed through non-parametric tests, were marginal in Study 1). This developmental difference may have stemmed at least in part from White adults’ ideologies (e.g., wanting to exclude Non-White individuals from their ingroup; see Roberts & Gelman, 2015). For example, White adults high in racial essentialism (i.e., the belief that racial categories represent hidden, inborn, and stable “essences”) and racial prejudice are especially likely to categorize
Multiracial individuals as Black (Chao, Chen, Roisman, & Hong, 2007; Ho, Roberts, & Gelman, 2015). White children, on the other hand, essentialize race to a lesser degree and show less anti-Black prejudice than adults (Aboud, 2003; Kinzler & Dautel, 2012; Rhodes & Gelman, 2009; Roberts & Gelman, 2016a) and may therefore be less likely to be influenced by such ideologies.

To develop a more representative understanding of how friendship predictions of Multiracial children varied across social groups, we examined Black (Study 3) and Multiracial (Study 4) U.S. children’s and adults’ predictions. Like White children, Black children reasoned that Multiracial children would have Black and White friends. Unlike White adults, however, Black adults reasoned that Multiracial children would have Black and White friends. As mentioned previously, Black adults may have conceptualized Multiracial targets as social liaisons between White individuals and Black individuals—capable of navigating both “worlds” (Davis, 1991). We encourage additional research to test this speculation empirically.

Multiracial children’s and adults’ response patterns provided useful theoretical and methodological insights. Multiracial children predicted that Multiracial targets would have more White friends than Black friends—the only group to do so—whereas Multiracial adults, like Black adults, predicted that Multiracial children would have both Black friends and White friends. These patterns suggest that Multiracial individuals’ beliefs about being Multiracial change across development (see also Roberts & Gelman, 2016b). Multiracial children may expect more White friends as a result of pro-White biases and/or consideration of White children being more numerous (in the United States and in the city in which the data were collected), whereas adults may be more likely to perceive themselves as connected with both the Black and White communities (see Johnson, 1992; Neto & Paiva, 1998; Rockquemore & Brunsma, 2008). As noted previously, however, consideration of White children being more numerous cannot fully account for these data, as children did not select more White friends for Black targets. Of course, our data do not distinguish among these possibilities, so we encourage additional research to examine them more systematically. For example, asking parents or children about the racial demographics of their school, their rates of cross-race friendships, or the quality of their interactions with outgroup members could yield important insights into the mechanisms that contribute to their perceptions of cross-race friendships. Notably, Multiracial children’s response patterns also demonstrated that children’s responses cannot be attributed to a simple color-matching strategy, as there were no color matches for Multiracial targets.

An important additional point for future research is that differences in how participants predict the friendships of Multiracial children may be influenced by exposure to and familiarity with Multiracial individuals. Although the U.S. Multiracial population has increased in recent years, it makes up less than 5% of the total population; additionally, the majority of Multiracial individuals are young children (Pew Research Center, 2015). Thus, participants, especially adult participants, may have relatively little opportunity to observe Multiracial individuals’ friendship patterns. Children, especially those who themselves are Multiracial, may make friendship predictions that are based on their personal experiences, whereas people with fewer experiences may rely on other concepts, such as hypodescent, to guide their predictions. Thus, friendship predictions toward Multiracial children could vary as a function of real-world observations, and we therefore encourage
additional research that explores the attitudes and experiences that predict beliefs about Multiracial children’s friendships.

Another open question is whether children and adults believe that same-race friendships reflect the way the world is (descriptively) or how the world should be (prescriptively). Roberts, Ho, and Gelman (2016) demonstrated that once children, particularly 4- to 6-year-olds, learned that a social group was characterized by a descriptive regularity (e.g., played with a certain kind of toy), they negatively evaluated those who failed to conform to the regularity (thus, an individual who did not play with that kind of toy was judged to have behaved badly; see also Hardecker, Schmidt, Roden, & Tomasello, 2016; Riggs & Young, 2016). Children make such prescriptive inferences with regard to gender (Liben, Bigler, & Krogh, 2001; Taylor, Rhodes, & Gelman, 2009), but to the best of our knowledge, no research has systematically tested whether they additionally do so with regard to race. Because we did not directly test whether participants’ responses were descriptive or prescriptive, future research would do well to distinguish between the two, which would more directly speak to children’s flexibility and tolerance toward cross-race friendships and to the extent to which they view them as normatively correct.

**Limitations**

Although this study provides important new evidence regarding how children and adults use race to predict friendship patterns (e.g., Finkelstein & Haskins, 1983; Shutts et al., 2013), we note four primary limitations. First, because we focused on just two age groups (young children and adults), it is unclear when friendship predictions regarding Multiracial targets change across development. Second, because this study only included targets of three racial backgrounds (i.e., Black, Multiracial, White), additional research that includes targets from other racial backgrounds (e.g., Asian, Latino) should be considered, as it would yield a fuller and more nuanced understanding of children’s race-based beliefs about friendship development. Third, given that the current research was conducted in a city that was predominantly White, we had difficulty obtaining large and representative Black and Multiracial samples. Undoubtedly, additional work with larger sample sizes in more diverse areas will increase this study’s generalizability. Fourth, our Multiracial sample consisted of individuals of a variety of backgrounds (more than 10 unique combinations, such as Multiracial [not further specified], Black/White, Black/Latino/Native American/White), which did not permit us to examine variation within the Multiracial population. We hope additional work examining larger Multiracial samples will explore within-group variability. On a similar note, we also hope that additional work will attend to variation within Black samples, as the term “Black” does not capture important within-group heterogeneity (e.g., African, African American, Caribbean, African Latino).

**Conclusion**

Although cross-race friendships are important for various developmental and social outcomes, they are rare within the United States, particularly among older cohorts, and the present studies indicate that both children and adults, White, Black, and Multiracial, expect cross-race friendships to be significantly less likely than same-race friendships. At the same time, we obtained important variation across age and racial
groups. This work therefore contributes to our understanding of how children factor race into their expectations about social relationships and how those expectations vary as a function of one’s own group membership. Additionally, given the increasing Multiracial population, exploring how children perceive Multiracial friendship patterns has important implications for the sense of belonging that Multiracial children feel across various contexts. Finally, studying children’s and adults’ use of race in their friendship patterns can afford a better understanding of racial essentialist attitudes and concepts, including the tendency toward discrete racial categorization. Thus, these studies add to a burgeoning literature exploring racial concepts and social relationship patterns and how children and adults use those concepts and patterns to make judgments about the likelihood of cross-race friendships.

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