

# Monoracial and Biracial Children: Effects of Racial Identity Saliency on Social Learning and Social Preferences

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Children prefer learning from, and affiliating with, their racial in-group but those preferences may vary for biracial children. Monoracial (White, Black, Asian) and biracial (Black/White, Asian/White) children ( $N = 246$ , 3–8 years) had their racial identity primed. In a learning preferences task, participants determined the function of a novel object after watching adults (White, Black, and Asian) demonstrate its uses. In the social preferences task, participants saw pairs of children (White, Black, and Asian) and chose with whom they most wanted to socially affiliate. Biracial children showed flexibility in racial identification during learning and social tasks. However, minority-primed biracial children were not more likely than monoracial minorities to socially affiliate with primed racial in-group members, indicating their in-group preferences are contextually based.

At a young age, children are sensitive to social group information, demonstrating clear social preferences when choosing among informants. Thus, preschool children are more likely to request and endorse information from familiar teachers over unfamiliar ones (Corriveau & Harris, 2009; Harris, 2012), as well as from speakers with familiar accents over those with foreign accents (Corriveau, Kinzler, & Harris, 2013; Kinzler, Corriveau, & Harris, 2011). Children's learning preferences are also affected by the racial groups to which the informants belong (Chen, Corriveau, & Harris, 2011, 2013), and they

consider informant age and gender when indicating preferences for various objects and activities (Shutts, Banaji, & Spelke, 2010). In sum, children are attentive to social group information and can adjust their learning and social preferences toward someone depending on whether they share a social group with that person. But how do these preferences apply to children who can identify with more than one in-group—for example, biracial children?

Although there is considerable literature on how identification with a single in-group affects children's learning and social preferences, little research has examined how belonging to two groups in the same social domain (e.g., race) impacts children's learning and social preferences. In the current study, we address this issue by examining how monoracial and biracial children's learning and social preferences can be impacted by the race or racial groups to which they belong. We use the term *race* to refer to a specific group that is distinguished by physical or other observable traits, such as skin color (e.g., Maddox & Gray, 2002).

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To date, studies on children's race-based, learning preferences have only examined monoracial children. The exclusion of biracial children is surprising because among Americans under the age of 18, the biracial population—those who are born to two monoracial parents belonging to different racial groups—has increased by 46% since 2000, making biracial children the fastest growing youth group in the United States (U.S. Census, 2010). Therefore, it is important to understand how learning and social preferences (i.e., social affiliations) for both adults and peers from racial in-groups and out-groups may differ for monoracial and biracial populations.

Previous work has shown that children prefer to learn from those who are similar to themselves, such as their peers (Vanderborght & Jaswal, 2009); however, other work has also shown that children sometimes prefer to learn from adults rather than children (e.g., Jaswal & Neely, 2006), highlighting variation in learning preferences depending on the age of the informant. Children also prefer to learn from accurate informants starting from age 3 (Birch, Vauthier, & Bloom, 2008; Pasquini, Corriveau, Koenig, & Harris, 2007), but these issues have not been fully examined in biracial populations.

Social preferences based on race are very apparent in childhood, directly affecting children's friendship choices (e.g., Aboud, 1988; Katz & Kofkin, 1997; Kircher & Furby, 1971; Kowalski & Lo, 2001). Therefore, because both learning and social preferences are key aspects of child development, we compared those preferences for children belonging to three monoracial groups, White, Black, and Asian, and two biracial groups, Black/White and Asian/White.

By age 3, monoracial children are able to recognize people of different races and to identify with members of their racial in-group (e.g., Aboud, 1988; Hirschfeld, 1995; Van Ausdale, 2002). That is, not only are children able to categorize various racial groups but they also consider themselves to be members of a particular group and can be impacted by this group membership (Ellemers & Haslam, 2012). But unlike their monoracial counterparts, biracial children have the possibility of identifying with more than one racial in-group. As a result, the impact of racial group membership on biracial children's learning and social preferences may be complex. On one hand, because biracial children have two potential racial in-groups, it is plausible that they are willing to view members of both races as members of their social in-group, thereby leading to less selectivity and greater willingness to learn from members of both racial in-groups. On the other

hand, because monoracial individuals may not resemble biracial children in appearance, biracial children may be less likely to view monoracial informants as members of their own social group, thereby restricting the number of trusted informants from whom they may choose to learn (e.g., Roccas & Brewer, 2002). The impact of belonging to two racial groups can be further complicated if one of these groups is considered a minority or lower status relative to the other. Given the relatively limited literature on biracial children, we first review how the privileging of social in-groups develops among monoracial White (the "racial majority" in the United States) children before turning to the more complicated cases of minority and biracial children.

### *The Preferences of Racial Majority Children*

Children are able to recognize their own racial in-group and demonstrate a preference for it as early as 3 years of age (Dunham, Chen, & Banaji, 2013). This is especially the case for children who identify with the racial majority, such as White monoracial children in the United States. In-group preferences among White American children can be further strengthened by a societally learned "White is good" bias and increased exposure to positive White exemplars in the media (e.g., Clark & Clark, 1947; Hirschfeld, 1993). By the age of 5, children possess a basic ability to apply generally positive stereotypes and associations to the in-group as well as more negative associations to the out-group, demonstrating clear racial in-group preferences (e.g., Ambady, Shih, Kim, & Pittinsky, 2001; Cameron, Alvarez, Ruble, & Fuligni, 2001).

Social identity theory (SIT) states that discrimination toward out-group members is the driving force behind identification with in-group members, so that people view those who are similar to themselves as positive and good (Tajfel & Turner, 1979). Although research on SIT has focused primarily on adult populations, there is some work suggesting that SIT may also explain some of the prejudice that young children display. For example, even 3-year-olds are aware of which groups are higher in status than others and, in turn, develop a preference for peers from those groups (e.g., Nesdale & Flessler, 2001; Milner, 1996; Vaughan, 1987).

Children's identification with, and their perception of, both their racial in-group and out-group are learned through observation of the social statuses associated with those particular racial groups (e.g., Aboud, 1988; Cameron et al., 2001; Milner, 1984; Nesdale & Flessler, 2001; Tajfel & Turner, 1979).

Relatedly, Leman and Lam (2008) showed that children often prefer playmates from higher status groups (i.e., White), highlighting how race and perceived status affect children's social behaviors and directly guide social preferences for majority race children.

*The Preferences of Racial Minority Children, Biracial Children, and Adults*

The formation of a racial identity can be more complex for minority children compared to their majority counterparts. Young minority children show decreased levels of identification with their racial in-group, oftentimes because they must consider the views from the dominant, mainstream society (Bernal, 1993; Ocampo, Knight, & Bernal, 1997; Spencer, 1984; Spencer & Markstrom-Adams, 1990). Minority children are also less likely to show an in-group preference at an early age (Dunham, Baron, & Banaji, 2007; Dunham et al., 2013).

However, other work has demonstrated that compared to majority race children, minority race children may have greater cognitive flexibility (i.e., the ability to willingly and easily shift their identifications or perspectives at a given moment) concerning racial group preferences, and are able to identify either with the views of their own minority group or with the views of the majority group. In comparison to majority race children, minority race children are also better able to understand the social features associated with race, such as skin tone differences, allowing them to identify more flexibly in racial categorization and identification tasks (Alejandro-Wright, 1985). In addition, minority children vary greatly in their visual preferences for White and Black stimuli because conflicting levels of racial identification with both their Black in-group and the majority White out-group sway those preferences (Cross, 1985).

To our knowledge, no empirical work has examined how biracial children's flexibility in identifying with multiple racial groups may predict learning and social preferences. There are data highlighting biracial children's enhanced cognitive flexibility in racial identification—especially those who are born to a majority race (e.g., White) parent and a minority race (e.g., Black) parent. For instance, in an interview study with mothers of biracial children, Morrison (1995) found that family environment and discussions about race helped biracial Black/White children in flexibly choosing or acknowledging different racial identities. Similarly, biracial Black/White children often do not have difficulty in

identifying with more than one racial in-group, based on the varying definitions they hear concerning their mixed racial background (Chiong, 1998). As they age into adulthood, Black/White biracial individuals continue to show sensitivity and understanding about the views and cultures of their two racial in-groups (Kerwin, Ponterotto, Jackson, & Harris, 1993). More generally, biracial adults are able to identify with both of their racial groups, regardless of the perceived social status of their in-groups (Daniel, 2002; Rockquemore & Brunson, 2001; Yancey, 2003). In sum, there has been some research showing that biracial children and adults can identify with their two racial in-groups flexibly. In the current study, we examine to what degree this flexibility predicts their learning and social preferences.

Cognitive flexibility among biracial children can be attributed to a number of factors. By age 4, biracial children begin to understand the social implications of skin color (Jacobs, 1992), worry about identifying with only one of their racial groups out of fear of offending or rejecting one of their parents (Sebring, 1984), show a pro-White bias similar to that of monoracial children (Johnson, 1992; Neto & Paiva, 1998), and face the added pressure of constantly having to choose between their racial identities (Herring, 1995). In addition, as biracial children get older, they learn that their racial group membership is based on a combination of skin color, parentage, social norms, and their own personal choice (Jacobs, 1992; Poston, 1990). Because of this complex web of social identity constructs, biracial children must learn to navigate between those identities based on the social contexts in which they find themselves, similar to children of bicultural backgrounds (Chuang, 1999). Thus, biracial children may be more flexible or willing to identify with either of their racial identities when one of those identities is activated or made salient. In turn, this could lead to an increased flexibility in learning and social affiliation preferences.

Contextual factors, such as the environment in which a biracial individual lives and the racial makeup of his or her friends and family, can also sway how that person chooses to self-identify, often leading to different, self-selected, racial category labels (e.g., Herman, 2004; Porter & Washington, 1993; Rockquemore & Brunson, 2001; Root, 1997). In order to avoid possible cognitive dissonance and lack of loyalty to one of their racial in-groups, biracial Black/White individuals may choose to label themselves as Black when in the presence of Black peers and as White when in the presence of White

peers (Morrison, 1995; Root, 1997). In sum, biracial individuals actually can—and often do—switch between their two racial identities, suggesting that they may be more sensitive to social context than their monoracial peers, but this question has yet to be examined.

To test for this flexibility in racial identity, we primed biracial children with one of their racial in-groups, examining whether they are more likely to identify with the primed in-group over the non-primed racial group. We compared these findings with those obtained for three groups of monoracial children, who were also primed with their racial in-group. We used a simple priming mechanism, which has been previously used to prime both racial and gender identity. In the original study, Ambady et al. (2001) asked Asian American girls (grades kindergarten to 8) to color either a picture of a girl with a doll to prime their female identity or a picture of Asian children eating with chopsticks to prime their racial identity in order to examine stereotype threat effects on math testing outcomes. They found that priming an Asian American girl's female identity (which is stereotypically associated with poorer math abilities) versus priming their Asian identity (which is stereotypically associated with increased math abilities) led to those respective outcomes, suggesting that this simple prime is effective in activating group membership identity and behavior.

Relatedly, other work has shown that priming ethnic Greek children (ages 9–12) living in the Netherlands with their Greek identity (i.e., by presenting them with pictures of Greek icons such as the Acropolis) led them to adopt a more collectivistic stance—to identify more with their friends and feel closer to their family—compared to those who were primed with their Dutch identity (Verkuyten & Pouliasi, 2002). To summarize, the relatively sparse literature on racial identity in biracial children indicates that they may display more flexibility than their monoracial counterparts, but to date, no work has directly investigated the effects of racial priming on learning and social preferences in biracial children.

### *The Current Study*

To measure learning and social preferences in relation to racial group membership, we recruited five groups of children: children from the majority White group; children from two monoracial minority groups, Black and Asian; and children from the two largest biracial groups, Black/White and Asian/White. All children were between the ages of

3 and 8 years—the age range in which racial identities and group preferences are shaped and become fixed for children (Black-Gutman & Hickson, 1996; Gaither, Schultz, et al., 2013; Pauker, Ambady, & Apfelbaum, 2010). Research has shown that racial bias peaks early on in childhood (Aboud, 1988; Raabe & Beelmann, 2011). By age 3, children can categorize and sort by race (e.g., Dunham et al., 2013; Nesdale, 2001); by age 8, children show a more mature understanding of racial group membership and racial identity; and as they continue to age, children become more racially conscious and talk less explicitly about race than younger children (Apfelbaum, Pauker, Ambady, Sommers, & Norton, 2008), although implicit preferences for their in-group can remain robust (Dunham et al., 2013). There is also evidence that as children move through the elementary school years, their racial attitudes generally become more flexible (Cameron et al., 2001; Raabe & Beelmann, 2011) and more dependent on contextual cues (Raabe & Beelmann, 2011; Rutland, Killen, & Abrams, 2010). Therefore, by focusing on children ages 3–8, we were able to investigate how children's increasingly fixed racial understanding and identification may affect their preferences when learning from and socializing with others.

### *Study Design*

Children first completed a short coloring task to prime their racial group membership. Biracial children were primed with either their minority or their majority racial in-group identity. This allowed us to compare biracial children's learning preferences with that of their monoracial counterparts. Next, children completed a learning preferences task in which conflicting functions of novel objects were demonstrated by two informants, one from a child's primed racial in-group and the other from a different racial background (see Corriveau & Harris, 2009; Kinzler et al., 2011, for similar methods). Children were asked to demonstrate with the object which function they preferred. Finally, participants completed a social preferences task, in which they were shown two children of various races (White, Asian, and Black) and were asked various preference questions, such as with whom they would prefer to play and share (see Shutts et al., 2010, for similar methods).

### *Study Predictions*

Across both learning and social preference tasks, we expected biracial children to exhibit malleable



preferences based on identity activation or saliency—notably a preference for members of their primed racial in-group (e.g., a preference for the Black informant on the part of Black-primed biracial Black/White participants). Past work has shown that biracial individuals often identify with both of their racial groups and navigate flexibly between the two identities (e.g., Herman, 2004; Rockquemore & Brunnsma, 2001; Root, 1997). In addition, other work has demonstrated that racial priming can temporarily alter the extent to which biracial adults identify with one of their racial in-groups, which subsequently affects both their visual preferences and their social behavior (Chiao, Heck, Nakayama, & Ambady, 2006; Gaither, Sommers, & Ambady, 2013). Thus, we predicted that biracial children would be sensitive to either racial prime and would therefore be willing to learn from, and socially affiliate with, multiple racial groups.

We also expected White participants to prefer White informants, but for the two monoracial minority racial groups (i.e., Black and Asian), we expected those children to show less consistent preferences for their in-group members (see Bernal, 1993; Ocampo et al., 1997; Spencer, 1984; Spencer & Markstrom-Adams, 1990). Because preschool-aged children are guided more by gender than by race in both learning and social preference contexts (e.g., Rhodes & Gelman, 2008; Shutts et al., 2010), we matched our stimuli by participant gender to ensure that this bias was equivalent across both tasks.

Given that learning preferences and social preferences are qualitatively different from one another, it is plausible that some variation between the two tasks would appear. For example, children from more negatively stigmatized or lower status groups (i.e., Black children in comparison to White and Asian children) show lower levels of racial in-group peer preferences compared to other children (e.g., Clark & Clark, 1947; Powell-Hopson & Hopson, 1992) due to out-group peer preferences for “being White” (Phinney, 1989). Furthermore, when children are learning new information, nonracial cues, such as perceived accuracy and group consensus, affect learning preferences (e.g., Harris, 2012). Indeed, some research indicates that for preschool children, the prior accuracy of an informant trumps social group membership in novel learning situations (Corriveau & Harris, 2009; Corriveau et al., 2013). Thus, we reasoned that children’s social in-group preferences might be especially marked when making prosocial decisions (such as with whom to share a resource), but might be less evident when learning novel information. These ques-

tions have not yet been empirically examined for biracial Black/White and Asian/White children, but we reasoned that being part Black versus part Asian also could lead to different in-group social preferences because the Black racial identity is stereotyped more negatively than the Asian racial identity and this could sway peer preferences.

## Method

### *Participants*

Two hundred and forty-six native English-speaking children were recruited from schools and a local museum in the greater Boston area, and through online postings. Parents were informed about the study either through a letter sent home by the school administration, an in-person invitation to participate at the museum, or e-mail after they responded to online postings. Although we were not permitted to collect socioeconomic status information, extrapolation from parent-reported demographics from the schools and from the museum’s data on visitors to their center would suggest that approximately two thirds of our participants were from families earning \$75,000 or more a year, and approximately three fourths were from families whose parents had at least a college degree. To determine racial group, we confirmed that both parents identified either with the same race (White, Black, or Asian) for monoracial participants; in the case of biracial participants, we confirmed that one parent identified as White, whereas the other parent identified as Black or as Asian. This determination was done either in person for museum-recruited participants by asking parents verbally or via a parent demographic form that was either sent home to parents for school-recruited participants or was completed in the laboratory for online-recruited participants.

It is important to note that biracial children primed with their White identity were recruited during a separate recruitment period after recruitment of biracial children primed with their minority identity was completed; therefore, biracial children were not randomly assigned to priming condition. Recruiting the second set of biracial children involved the same school recruitment as the earlier recruitment period, but also included online postings; all of the newer participants were also from the greater Boston area. These children were tested in an identical fashion to the children previously recruited. We used an a priori exclusion criterion to remove children who did not watch the videos

fully and therefore could not mimic the demonstrated tasks because they did not see both functions. The breakdown for each participant racial group was as follows.

#### *White Children*

Ninety-six White children were recruited. Using the exclusion criterion, data from 5 participants were excluded, resulting in a final sample of 91 White children (56 female,  $M_{\text{age}} = 5.15$  years,  $SD_{\text{age}} = 1.51$  years, age range = 3–8 years).

#### *Monoracial Black and Biracial Black/White Children*

Sixty-four children were recruited. Data from 1 participant was excluded, resulting in a final sample of 63 children (17 Black, 13 female,  $M_{\text{age}} = 5.35$  years,  $SD_{\text{age}} = 1.84$  years, age range = 3–8 years; 46 biracial Black/White, 24 female,  $M_{\text{age}} = 5.31$  years,  $SD_{\text{age}} = 1.70$  years, age range = 3–8 years; 26 primed with their Black identity and 20 primed with their White identity).

#### *Monoracial Asian and Biracial Asian/White Children*

Ninety-four children were recruited; data from two participants were excluded. This exclusion resulted in a final sample of 92 children (26 Asian, 13 female,  $M_{\text{age}} = 5.40$  years,  $SD_{\text{age}} = 1.41$  years, age range: 4–8 years; 66 biracial Asian/White; 28 female,  $M_{\text{age}} = 5.15$  years,  $SD_{\text{age}} = 1.57$  years, age range: 3–8 years; 36 primed with their Asian identity, 30 primed with their White identity).

### *Materials*

Each participant completed three tasks in a fixed order: (a) a racial identity priming manipulation, (b) a learning preferences task, and (c) a social preferences task.

#### *Racial Identity Priming Manipulation Materials*

Black-and-white cartoon images were created of three boys and three girls (one White, one Black, and one Asian) based on images from online coloring books. The boys were shown playing soccer and the girls were shown jumping rope. The male pictures had identical bodies but different faces and hairstyles based on race (i.e., White, Black or Asian). The same was true for the female pictures. In other words, only the face of the child pictured differed by race. To confirm that the line drawings

were good exemplars of the racial categories, these images were pretested by 10 adults and all six images were categorized by adults as the appropriate race at least 95% of the time (see online Appendix S1 for the pictures created).

#### *Learning Preferences Task Materials*

Twelve actors (six females, six males; four White, four Black, four Asian) were recorded as stimuli. In all videos, actors sat at a table, faced forward, and remained neutral in affect. All actors wore bright solid-colored t-shirts and were filmed against a solid white background. Each actor silently performed two functions for each of eight novel objects (e.g., listening to or shaking a white tube; see Table 1 for a full list of objects and functions and online Appendix S2 for sample screen shots of the videos). All function pairs were pretested by 10 adults, such that each function was equally likely for the novel objects (see Kinzler et al., 2011, for similar materials and methods).

#### *Social Preferences Task Materials*

Twelve color photos of children (six female, six male; four White, four Black, four Asian) were pretested for age and attractiveness by 10 adults. Interracial, gender-matched pairs were then created based on these ratings, resulting in six White–Black, White–Asian, and Black–Asian pairings of each gender. All pairings were shown with various

Table 1  
*Novel Objects and Functions*

<b>Yellow plastic attachment</b>	
<i>Function 1:</i> Look through like a telescope	<i>Function 2:</i> Hold to mouth and blow
<b>Wooden juicer</b>	
<i>Function 1:</i> Roll on hands	<i>Function 2:</i> Slap or hammer on hands
<b>Black and gray knee pad</b>	
<i>Function 1:</i> Snap like a slingshot	<i>Function 2:</i> Pat on head/use as a hat
<b>Black plunger piece</b>	
<i>Function 1:</i> Spin like a top	<i>Function 2:</i> Squish in and out
<b>White pool pipe</b>	
<i>Function 1:</i> Listen to it	<i>Function 2:</i> Shake like a rattle
<b>Teal garlic peeler</b>	
<i>Function 1:</i> Twist it	<i>Function 2:</i> Squeeze it up and down
<b>Blue and white toiler topper</b>	
<i>Function 1:</i> Spin end piece	<i>Function 2:</i> Flap up and down
<b>Metal sprinkler attachment</b>	
<i>Function 1:</i> Use as an eye patch	<i>Function 2:</i> Fly like a plane

social preference questions based on those used in Shutts et al. (2010). Consistent with Shutts et al., there were two types of social preference questions: Participants were asked whether they would prefer to play the novel game endorsed by the in-group member versus the out-group member (e.g., “She likes to play Babber and she likes to play Kazoop. Would you rather play Babber or Kazoop?”), as well as whether they would prefer to share with the in-group member versus the out-group member (e.g., “If you had your favorite book, which one of these children would you share your book with?”). Both question types have been shown to measure general social preferences, as they ask a child to make a decision associated with one of the pictured children—either through the selection of a game (Babber or Kazoop) or through the selection of a sharing partner (see Shutts et al., 2010, for similar methods).

#### *Procedure*

##### *Racial Identity Priming Procedure*

To examine how identification with a particular racial group may influence children’s learning and social preferences, racial identity was primed. Children were first invited to color a black-and-white line drawing picture of a same-gendered character (see Ambady et al., 2001, for a similar priming method; see online Appendix S1 for pictures used). White children colored a picture of a White child; Black and biracial Black/White children primed with their Black identity colored a picture of a Black child; Asian and biracial Asian/White children primed with their Asian identity colored a picture of an Asian child. Both biracial Black/White and Asian/White children primed with their White identity colored a picture of a White child. Therefore, biracial participants either had their minority or their majority racial in-group primed to allow for comparisons with their monoracial counterparts.

The experimenter handed the child the picture and a set of multicultural crayons and said, “Can you color this picture so it looks like you do?” There was no time limit to this given individual differences in coloring abilities. Immediately following the racial identity priming, children were presented with the learning preferences task.

##### *Learning Preferences Task Procedure*

To introduce the task, the experimenter pointed to the computer screen and said,

See these two people? This one is wearing a yellow shirt and this one is wearing a blue shirt. They are each going to show you different ways to play with a toy I bet you’ve never seen before. Let’s watch them and then I will give you the toy and you can show me how you would use it based on those videos.

The gender of the two adult informants was matched to each participant. The identity of the adult informants varied across the eight videos pairs. In each informant pairing, the two informants always represented two respective racial groups: One informant from the participants’ primed racial in-group (i.e., White for monoracial White participants, Black for monoracial Black and biracial Black/White participants primed with their Black identity, Asian for monoracial Asian and biracial Asian/White participants primed with their Asian identity, White for biracial Black/White or Asian/White children primed with their White identity) and one informant from a nonprimed racial group (i.e., Black or Asian for monoracial White or White-primed biracial Black/White and Asian/White participants, White or Asian for monoracial Black and Black-primed biracial Black/White participants, and White or Black for monoracial Asian and Asian-primed biracial Asian/White participants). Therefore, across the eight trials, participants always had an option of learning from an informant who matched their primed racial in-group. Two different exemplars from their primed racial in-group were used during these trials to ensure generalizability. For example, in one block of four trials, White participants chose between a White informant and a Black informant; for the other block of four trials, participants chose between a second White informant and an Asian informant. In short, all participants were exposed to informants from White, Black, and Asian backgrounds. Block order and the position of the informants (i.e., whether they appeared on the left or the right) were counterbalanced across all participants (see Table 2).

In each video, participants saw both informants demonstrate conflicting functions for novel objects (see Table 1). For example, participants would see one informant shake a novel object like a rattle, followed by the second informant who would blow on it like a flute. After both functions for a given object were demonstrated, participants were handed the object and asked how to use it, and their response was recorded. If a participant demonstrated an action that was not performed by one of the informants, the experimenter would repantomime the

Table 2  
*The Order of Pairs of Informants Shown by Participant Race for Both Tasks*

Participants	Learning/social task pairs	
	Order 1	Order 2
White, White-primed biracials	White or Black; Asian or White	White or Asian; Black or White
Black	Black or White; Asian or Black	Black or Asian; White or Black
Black/White	Black or White; Asian or Black	Black or Asian; White or Black
Asian	Asian or White; Black or Asian	Asian or Black; White or Asian
Asian/White	Asian or White; Black or Asian	Asian or Black; White or Asian

two conflicting functions. Nonverbal (e.g., demonstrating the function themselves or pointing at one of the two informants) and verbal (e.g., “What the girl in the yellow shirt did”) responses were accepted (see Kinzler et al., 2011, for similar methods).

#### *Social Preferences Task Procedure*

Immediately following the learning preferences task, participants were shown eight slides with pairs of children who were matched to participant gender and who were from different racial backgrounds (i.e., White, Black, and Asian). As in the learning preferences task, the pairs of children shown on each slide always represented two racial groups: One child from the primed racial in-group (i.e., White for White children, Black for monoracial Black and biracial Black/White children primed with their Black identity, Asian for monoracial Asian and biracial Asian/White children primed with their Asian identity, White for biracial Black/White or Asian/White children primed with their White identity) and one child from a racial out-group (i.e., White for the monoracial Black and Asian children, Black for the White and the Asian/White children, and Asian for the White and the Black/White children). Therefore, across the eight pairs, participants always had an option of choosing to socially affiliate with a child who matched their primed racial in-group. For example, in half of the trials, White participants chose between a White child and a Black child; for the other half, White participants chose between a second White child and an Asian child. Therefore, all participants were exposed to children from White, Black, and Asian

backgrounds. The order of presentation for racial out-group and the position of the children presented (i.e., whether they appeared on the left or the right) were counterbalanced across all participants (see Table 2).

On four of the slides, each child pictured was shown with an unfamiliar game. The experimenter showed the slide and read the captions beneath each child pictured (i.e., “I like to play Kazoop” or “I like to play Babber”). Next, the experimenter asked the participants, “Would you rather play Kazoop or Babber?” Participants’ responses were recorded. All games and game labels were counterbalanced across participants. During the other four trials, new pairs of photos were presented with hypothetical social preference questions. For example, a participant would see a White child on one side of the screen and a Black child on the other side of the screen, and the experimenter would read the question aloud to the participant (e.g., “If you had your favorite book, which one of these children would you share your book with?”) and their responses were recorded. Although these sets of trials represent two types of questions, they both measured social preferences because both types of questions asked the child which child they preferred either for playing the game or sharing the book (for similar methods, see Shutts et al., 2010).

## **Results**

Across all results, there were no gender differences or order effects for any of the analyses. Although our sample size was underpowered for statistical comparisons regarding age differences, separate analyses both controlling for age as a covariate on all interaction effects and group comparisons and comparing 3- to 5-year-olds and 6- to 8-year-olds suggest that our results did not vary by age (see Figure 1 for a summary of all means across participants groups and tasks).

#### *Learning Preferences Results by Participant Race*

As there were no differences between participants’ relative preferences for the in-group when they were paired with one racial out-group versus another, we collapsed across these two blocks of trials. Therefore, the scores for the learning preferences tasks represent the percentage of time children chose the object function demonstrated by their primed racial in-group member in the video (maximum score = 100%, or 8 of 8 times).



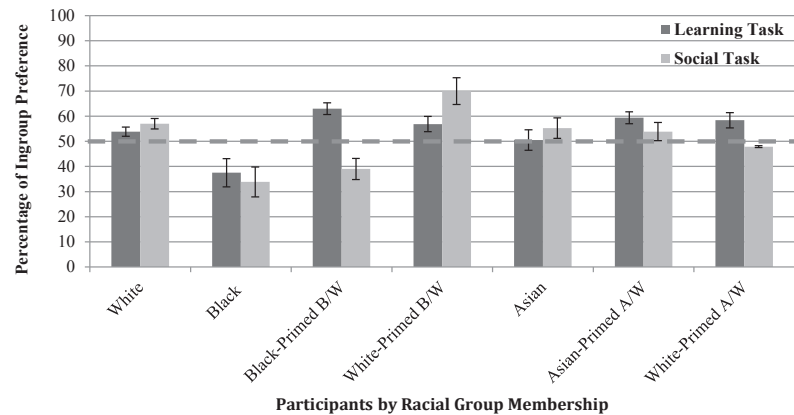


Figure 1. Summary of mean percentages of primed racial in-group preferences by participant race. Higher numbers reflect greater endorsement of primed racial in-group member's object function (max = 100%), error bars represent standard error, and the dotted line designates chance levels.

### White Children

Children were significantly above chance in endorsing the function demonstrated by the member of their in-group over a racial out-group member ( $M = 53.88\%$ ,  $SD = 17.50$ ),  $t(90) = 2.10$ ,  $p = .038$ ,  $r = .22$ .

### Black and Biracial Black/White Children

Monoracial Black children were significantly below chance ( $M = 37.50\%$ ,  $SD = 23.00\%$ ),  $t(16) = 2.24$ ,  $p = .039$ ,  $r = .48$ , in endorsing the function demonstrated by the member of their primed racial in-group. By contrast, both biracial Black/White children primed with their Black identity ( $M = 63.00\%$ ,  $SD = 12.00\%$ ) and biracial Black/White children primed with their White identity ( $M = 56.88\%$ ,  $SD = 13.75\%$ ) were significantly above chance in endorsing the function demonstrated by the member of their primed racial in-group,  $t_s < 2.24$ ,  $p_s < .04$ . There were no significant differences in the number of times White-primed or Black-primed biracial children chose to learn from a member of their primed racial in-group,  $t(44) = 1.61$ ,  $p = .12$ .

Next, we compared the preference of biracial Black/White children (collapsed across racial prime) for learning from the in-group member with that of monoracial Black children. Biracial Black/White children overall ( $M = 60.38\%$ ,  $SD = 13.00\%$ ) selectively endorsed the function demonstrated by their primed racial in-group significantly more than did monoracial Black children,  $t(61) = 4.96$ ,  $p < .01$ ,  $r = .54$ . Finally, to examine the out-group positivity bias toward White individuals, a comparison of the

percentage of times that White-primed biracial Black/White children versus monoracial Black children chose to learn from a White informant failed to reveal any significant differences,  $t(35) = 1.31$ ,  $p = .20$ .

### Asian and Biracial Asian/White Children

Monoracial Asian children did not significantly differ from chance ( $M = 50.50\%$ ,  $SD = 20.75\%$ ) in choosing to learn from a member of their primed racial in-group,  $t(25) = .12$ ,  $p = .91$ , *ns*. However, both biracial Asian/White children primed with their Asian identity ( $M = 59.38\%$ ,  $SD = 14.13\%$ ) and with their White identity ( $M = 58.38\%$ ,  $SD = 16.50\%$ ) performed significantly above chance in endorsing the function demonstrated by the member of their respective primed racial in-groups,  $t_s > 2.76$ ,  $p_s < .01$ . Biracial Asian/White children did not differ, depending on racial prime, in the number of times they chose to learn from a member of their primed racial in-group,  $t(64) = .28$ ,  $p = .78$ .

Next, we compared the preference of biracial Asian/White children (collapsed across racial prime) and monoracial Asian children for learning with the in-group member. Biracial Asian/White children overall ( $M = 58.88\%$ ,  $SD = 15.13\%$ ) selectively endorsed the function demonstrated by their primed racial in-group significantly more than monoracial Asian children,  $t(90) = 2.15$ ,  $p = .034$ ,  $r = .22$ . Finally, to examine the out-group positivity bias toward White individuals, a comparison of the percentage of times White-primed biracial Asian/White children versus monoracial Asian children chose to learn from a White informant failed to

reveal any significant differences,  $t(54) = 1.43$ ,  $p = .16$ .

### Group Comparisons

To investigate the traditionally studied monoracial participants, a one-way analysis of variance (ANOVA) was conducted, with participant race (White, Black, Asian) as the between-subjects factor and the number of in-group learning preferences as the dependent variable. This showed a significant effect of participant race on in-group learning preferences,  $F(2, 131) = 5.40$ ,  $p < .01$ ,  $\eta_p^2 = .08$ . Planned contrasts highlighted three additional findings: (a) White children ( $M = 53.87\%$ ,  $SD = 17.50\%$ ) preferred to learn from their racial in-group more than Black children did ( $M = 37.50\%$ ,  $SD = 23.00\%$ ),  $t(131) = 3.28$ ,  $p < .01$ ,  $r = .28$ ; (b) Asian children ( $M = 50.50\%$ ,  $SD = 20.75\%$ ) preferred to learn from their racial in-group more than Black children did,  $t(131) = 2.21$ ,  $p = .029$ ,  $r = .19$ ; and (c) White and Asian children did not differ from each other in the number of times they chose to learn from their racial in-group,  $t(131) = .80$ ,  $p = .42$ .

Next, we explored potential differences between biracial children who had their minority racial in-group identity primed and their monoracial minority counterparts (i.e., Black and Asian). We conducted a two-way ANOVA (omitting White participants) of Primed Race (Black or Asian)  $\times$  Racial Status (biracial or monoracial). This analysis showed no main effect of primed race,  $F(1, 101) = 1.82$ ,  $p = .18$ , *ns*; a main effect on racial status,  $F(1, 101) = 24.50$ ,  $p < .01$ ,  $\eta_p^2 = .20$ ; and a significant Primed Race  $\times$  Racial Status interaction  $F(1, 101) = 5.70$ ,  $p = .019$ ,  $\eta_p^2 = .05$ .

To explore the interaction further, planned contrasts compared primed race and racial status. Of those primed with their Black identity, biracial Black/White children ( $M = 63.00\%$ ,  $SD = 12.00\%$ ) chose to learn from their racial in-group more than monoracial Black children did ( $M = 37.50\%$ ,  $SD = 23.00\%$ ),  $t(41) = 4.77$ ,  $p < .01$ ,  $r = .60$ . Of those primed with their Asian identity, biracial Asian/White children ( $M = 59.38\%$ ,  $SD = 14.13\%$ ) preferred to learn from their racial in-group more than monoracial Asian children did ( $M = 54.88\%$ ,  $SD = 20.75\%$ ),  $t(60) = 2.01$ ,  $p < .05$ ,  $r = .25$ . For biracial children primed with their minority identity, there were no differences between biracial Black/White children primed with their Black identity ( $M = 63.00\%$ ,  $SD = 12.00\%$ ) and biracial Asian/White children primed with their Asian identity ( $M = 59.38\%$ ,  $SD = 14.13\%$ ) in how much they

preferred to learn from a member of their primed racial in-group,  $t(60) = 1.06$ ,  $p = .30$ . For monoracial children, those primed with their Asian identity ( $M = 50.50\%$ ,  $SD = 20.75\%$ ) preferred to learn from their racial in-group more than those primed with their Black identity did ( $M = 37.50\%$ ,  $SD = 23.00\%$ ),  $t(41) = 1.92$ ,  $p = .06$ , but this effect only approached significance.

Finally, we explored differences in learning preferences between biracial children who had their majority White racial in-group identity primed and their monoracial majority White counterparts. A one-way ANOVA, with participant race (White, Black/White, Asian/White) as the between-subjects factor and the number of in-group learning preferences as the dependent variable, did not show a significant effect of participant race on in-group learning preferences,  $F(2, 140) = .92$ ,  $p = .40$ . Planned contrasts revealed no differences between White-primed biracial Black/White and Asian/White children,  $t(48) = .33$ ,  $p = .75$ . In addition, there were no differences between monoracial White children and White-primed biracial children overall ( $M = 57.75\%$ ,  $SD = 15.37\%$ ),  $t(139) = 1.33$ ,  $p = .19$ .

### Social Preferences Results by Participant Race

With the exception of monoracial Asian participants, there were no differences between participants' relative preferences for the in-group when it was paired with one racial out-group versus another, so we collapsed across these two blocks of trials. Thus, scores for the social preferences task represent the percentage of times (maximum = 100%, or 8 of 8 times) that children chose to socially affiliate with a child from their primed racial in-group.

#### White Children

White children were significantly above 50% chance ( $M = 57.00\%$ ,  $SD = 20.00\%$ ),  $t(90) = 3.34$ ,  $p < .01$ ,  $r = .33$ , in choosing to play and affiliate with White children.

#### Black and Biracial Black/White Children

Monoracial Black ( $M = 33.87\%$ ,  $SD = 24.50\%$ ),  $t(16) = 2.72$ ,  $p = .015$ ,  $r = .56$ , and Black-primed biracial Black/White children were significantly below chance ( $M = 39.00\%$ ,  $SD = 21.38\%$ ),  $t(25) = 2.65$ ,  $p = .014$ ,  $r = .47$ , in choosing to socially affiliate with a member of their primed racial in-group,

whereas White-primed biracial Black/White children were significantly above chance ( $M = 70.00\%$ ,  $SD = 23.75\%$ ,  $t(19) = 3.76$ ,  $p < .01$ ,  $r = .65$ ).

When comparing in-group preferences by racial status, Black-primed biracial Black/White children did not differ from monoracial Black children in their social preferences or affiliations for members of their primed racial in-group,  $t(41) = .73$ ,  $p = .47$ . By contrast, White-primed biracial Black/White children chose to affiliate with a member of their primed racial in-group significantly more often than did Black-primed biracial Black/White children,  $t(44) = 4.66$ ,  $p < .01$ ,  $r = .58$ , or monoracial Black children  $t(35) = 4.55$ ,  $p < .01$ ,  $r = .61$ . Finally, to examine the out-group positivity bias toward White individuals, a comparison of the percentage of times White-primed biracial Black/White children versus monoracial Black children chose to socially affiliate with a White partner failed to reveal any significant differences,  $t(35) = 1.77$ ,  $p = .25$ .

#### *Asian and Biracial Asian/White Children*

Although biracial Asian/White children were equally willing to affiliate socially with both of their racial out-groups (White, Black),  $t_s < 1.58$ ,  $p_s > .13$ , monoracial Asian children chose to affiliate more with a White child than with a Black child,  $t(25) = 2.84$ ,  $p < .01$ ,  $r = .49$ . This was the only group and task to show a significant difference in social affiliation for two different racial out-groups.

Neither monoracial Asian ( $M = 55.25\%$ ,  $SD = 20.75\%$ ),  $t(25) = 1.31$ ,  $p = .20$ , nor Asian-primed biracial Asian/White children ( $M = 53.88\%$ ,  $SD = 21.50\%$ ) differed significantly from chance,  $t(35) = 1.07$ ,  $p = .29$ , in choosing to socially affiliate with a member from their primed racial in-group. By contrast, White-primed biracial Asian/White children ( $M = 66.25\%$ ,  $SD = 23.63\%$ ) did choose to socially affiliate with a member of their primed racial in-group significantly above chance,  $t(29) = 3.79$ ,  $p < .01$ ,  $r = .58$ . Overall, when comparing in-group preferences by racial status, Asian-primed biracial Asian/White children did not differ from monoracial Asian children in their preferences,  $t(60) = .27$ ,  $p = .79$ . However, White-primed biracial Asian/White children chose to socially affiliate significantly more with their primed racial in-group than did Asian-primed biracial Asian/White children,  $t(64) = 2.24$ ,  $p = .03$ ,  $r = .27$ , and marginally more than did monoracial Asian children,  $t(53) = 1.84$ ,  $p = .07$ . Finally, to examine the out-group positivity bias toward White individuals, a comparison of the

percentage White-primed biracial Asian/White children versus monoracial Asian children chose to socially affiliate with a White partner failed to reveal any significant differences,  $t(54) = .17$ ,  $p = .87$ .

#### *Group Comparisons*

To explore results among the monoracial participants, a one-way ANOVA, with participant race (White, Black, Asian) as the between-subjects factor and the number of in-group social affiliation preferences as the dependent variable, showed a significant effect of participant race on in-group social affiliation preferences,  $F(2, 131) = 9.05$ ,  $p < .01$ ,  $\eta_p^2 = .08$ . Planned contrasts highlight three additional findings: (a) White children ( $M = 57.00\%$ ,  $SD = 13.25\%$ ) preferred to affiliate with their primed racial in-group more than did Black children ( $M = 33.88\%$ ,  $SD = 24.50\%$ ),  $t(131) = 4.23$ ,  $p < .01$ ,  $r = .35$ ; (b) Asian children ( $M = 55.25\%$ ,  $SD = 20.63\%$ ) preferred to affiliate with their racial in-group more than did Black children,  $t(131) = 3.32$ ,  $p < .01$ ,  $r = .28$ ; and (c) White and Asian children did not differ from each other in the number of times they chose to socially affiliate with their primed racial in-group,  $t(131) = .37$ ,  $p = .71$ .

Next, we explored differences between biracial children who had been primed with their minority racial in-group identity and their monoracial minority counterparts (i.e., Black and Asian). A two-way ANOVA of Primed Race (Black or Asian)  $\times$  Racial Status (biracial or monoracial) revealed no main effect of racial status,  $F(1, 101) = .17$ ,  $p = .68$ , and no interaction of Racial Status  $\times$  Primed Race,  $F(1, 101) = .56$ ,  $p = .46$ . However, there was a main effect of primed race,  $F(1, 101) = 24.50$ ,  $p < .01$ ,  $\eta_p^2 = .20$ . Children primed with their Asian identity ( $M = 54.50\%$ ,  $SD = 21.00\%$ ) preferred to affiliate socially with their racial in-group more than children primed with their Black identity ( $M = 36.88\%$ ,  $SD = 22.50\%$ ; see Figure 1 for a summary of means across all participant groups).

Finally, we explored differences in social affiliation preferences between biracial Black/White and Asian/White children who had their majority White racial in-group identity primed and their monoracial majority White counterparts. Note that all three groups were primed with their White identity. We conducted a one-way ANOVA, with participant race (White, Black/White, Asian/White) as the between-subjects factor and the number of in-group social affiliation preferences as the dependent variable. Analyses revealed a significant effect of participant race on in-group affiliation

preferences,  $F(2, 140) = 4.28$ ,  $p = .02$ ,  $\eta_p^2 = .06$ . Planned contrasts revealed no differences between White-primed Black/White and Asian/White children,  $t(48) = .55$ ,  $p = .59$ . Overall, however, White-primed biracial children ( $M = 67.75\%$ ,  $SD = 23.50\%$ ) affiliated more with members of their primed racial in-group than did monoracial White children,  $t(139) = 2.87$ ,  $p < .01$ ,  $r = .24$ .

### General Discussion

Overall, the results from this study support the hypothesis that the identity preferences of biracial children can be adjusted depending on the saliency of their respective racial identities. Biracial children are influenced by those identity preferences when they determine with whom to interact across two domains: an epistemic (learning) domain and a prosocial (social affiliation) domain. We first review the findings for the two tasks separately, and then consider the overall implications of these findings.

#### *Learning Preferences Summary and Implications*

##### *Monoracial Children*

White children chose to learn from a member of their primed racial in-group more often than from a racial out-group member, demonstrating an in-group bias in a learning context. This in-group bias has been found in past research highlighting implicit biases toward the in-group (e.g., Aboud, 1988; Baron & Banaji, 2006; Clark & Clark, 1947; Dunham et al., 2013). On the other hand, both groups of monoracial minority children showed no such preference for their in-group; monoracial Black children were below chance levels in choosing to learn from a member of their primed racial in-group, and monoracial Asian children were at chance in choosing to learn from a member of their primed racial in-group.

Our findings are consistent with past work in underscoring the difficulty that monoracial minority children in the United States face in developing robust racial in-group preferences, in that preferences for their in-group can conflict with preferences for the dominant, White racial group (e.g., Bernal, 1993; Ocampo et al., 1997; Spencer, 1984; Spencer & Markstrom-Adams, 1990). Specifically, Black and other minority children have been shown to exhibit lower levels of implicit bias toward their racial in-group in comparison to the levels shown

by other racial groups (e.g., Clark & Clark, 1947; Dunham, Baron, & Banaji, 2004, 2008). We extend this body of research by including an empirical measurement of racial identity within a learning environment. In sum, these findings emphasize for the first time the significant role that racial identification can play for racial minority children with respect to learning preferences.

#### *Biracial Children and Monoracial Comparison*

Biracial Black/White and Asian/White children were above chance in choosing to learn from a member of their primed racial in-group, no matter which of their two in-groups were primed; they also chose to learn significantly more often from a member of the primed racial in-group than did their respective monoracial counterparts (i.e., Black and Asian). Priming either racial identity for a biracial child increased learning preferences for those respective in-groups, supporting the notion that biracial children are flexible in learning from members of their minority identity when this identity is made salient, even if this identity can be negatively stereotyped and is not reflective of the dominant group in society (e.g., Erikson, 1968; Powell, 1985; Spencer, 1982; Spencer & Markstrom-Adams, 1990). This willingness to learn from a minority in-group is striking in comparison to the stance of both monoracial Black and Asian children, who showed no preference for members of their in-group in the learning task. In addition, White-primed biracial Black/White and Asian/White children did not differ from each other or from their monoracial White counterparts in their learning preferences. However, comparing White-primed biracial Black/White and Asian/White children's learning preferences for a White informant to that of their monoracial minority counterparts did not reveal any significant differences. This suggests that the White-prime results for biracial child may simply reflect the same levels of out-group positivity bias toward Whites that we see in monoracial children rather than the prime itself explicitly causing this White primed in-group selection bias. Therefore, future research should further investigate if out-group positivity biases toward Whites work in the same way for biracial children as they do for monoracial children. Regardless, our results highlight for the first time how identity saliency and flexibility may benefit the learning decisions of biracial children.

Taken together, these findings highlight the significant influence of racial priming on learning



preferences for biracial children. Interestingly, it was only the priming of a biracial child's minority identity that led to stronger in-group preferences in comparison to their monoracial counterparts. By contrast, priming a biracial child's majority (i.e., White) identity did not yield stronger in-group preferences in comparison to monoracial White children. Although it only included biracial Black/White children, one study showed that the assumed identity for these biracial children is more often Black (Morrison, 1995). On the basis of those results, we argue that being biracial may support the development of in-group preferences for both of biracial children's identities, thereby making it easier for them to identify with their minority in-group. This supports our results showing that biracial children having stronger minority in-group preferences in comparison to their monoracial minority counterparts. Future research should more fully investigate this interpretation.

Overall, these results show that biracial children can identify more easily with racial minority informants than do monoracial minorities and just as easily with White informants as do monoracial White children in an experimental setting. The results support the claim that biracial individuals (specifically, children) are flexible in being able to identify with both their "higher status" and "lower status" racial groups (Daniel, 2002; Rockquemore & Brunσμα, 2001; Yancey, 2003), but extend that identification to a learning outcome that, based on previous educational findings, would likely affect real-world school outcomes as well. Effectively, biracial children have a fluid racial identity that can shift depending on the context (e.g., Bonam & Shih, 2009; Gaither, Schultz, et al., 2013; Gaither, Sommers, et al., 2013; Herman, 2004; Rockquemore & Brunσμα, 2001). This is the first time these flexible cognitive and behavioral strategies have been studied empirically with children in both learning and prosocial contexts. By implication, biracial children and biracial adults can function effectively within both minority and majority environments because they have more than one racial in-group with which to identify—a distinct benefit in an increasingly diverse society. However, it is important to emphasize that the present study primed only one identity for monoracial children, and so it remains unclear whether biracial children are actually more flexible overall or if priming other types of identities could also affect learning and social preferences—especially for monoracial minority children—in similar ways. This question is worthy of future research.

### *Social Preferences Summary and Implications*

#### *Monoracial Children*

As expected, White children were significantly above chance in choosing to socially affiliate with a child from their racial in-group and also chose to do so significantly more often than did monoracial Black children. Asian children also chose to socially affiliate with a child from their in-group more than Black children; White and Asian children did not differ from each other in the number of times they chose to socially affiliate with a child from their primed racial in-group. These results suggest that, at least in the social affiliation context, being Black is viewed as being more negative than being either White or Asian, which are considered higher status racial groups.

#### *Biracial Children and Monoracial Comparison*

The particular in-group with which biracial children were primed impacted their preferences differently. Black-primed biracial Black/White children were below chance, Asian-primed biracial Asian/White children were at chance, and both White-primed biracial Black/White and Asian/White children were significantly above chance levels when choosing to socially affiliate with a member of their primed racial in-group. The two groups of minority-primed biracial children behaved differently from each other in that the Asian prime for biracial Asian/White children led to more positive in-group social affiliation behavior when compared to the Black prime for biracial Black/White children. When primed with their White identity, however, biracial Black/White and Asian/White children did not differ in the number of times they socially affiliated with a member of their White in-group. Monoracial Black and Black-primed biracial Black/White participants did not differ in their preferences, and neither did monoracial Asian and Asian-primed biracial Asian/White children. In contrast to the results found in the learning preferences task, White-primed biracial Black/White and Asian/White children both chose to socially affiliate more with their primed racial in-group than did monoracial White children. Moreover, as seen with the learning preferences results, comparing White-primed biracial Black/White and Asian/White children's social affiliation preferences for a White informant with that of their monoracial minority counterparts did not reveal any significant differences. These results underline the need for future work examining how the out-group positivity bias

toward Whites may function similarly or differently for the growing biracial demographic.

One possible explanation for these findings is that for both monoracial Black and Black-primed biracial Black/White children, there may be a learned stigma that leads these children to avoid interacting socially with a similarly aged peer from their minority in-group. This stigma may not be present for biracial Asian/White, monoracial Asian, and monoracial White children, all of whom performed at or above chance on the learning and social preferences task.

#### *General Task Comparisons and Implications*

Our study demonstrates the intersection of racial identity saliency, racial group membership, and context. The results show that this intersection is different for monoracial and biracial children, affecting both their learning and social preferences in distinct ways. Our findings support the existence of a divide not only between two types of biracial children, whose racial identities are composed of one versus two positively stereotyped identities (i.e., Black/White vs. Asian/White), but also between minority and majority race children. Our results also suggest that as far as social preferences are concerned, minority-primed biracial children tend to act more like their monoracial minority counterparts, while majority-primed biracial children tend to resemble—and even surpass—their monoracial White counterparts in their in-group preferences. In fact, other researchers have found a strong pro-White bias to be already present in biracial children, even without priming, compared to monoracial children (Neto & Paiva, 1998). Therefore, when primed, biracial children might actually identify more strongly with being White than their monoracial White peers within a social context, demonstrating that racial identity saliency may operate differently for biracial children.

Why might there be a lack of preference among the other groups (both monoracial minority and the minority-primed biracial children) in the expression of social preferences? First, there is empirical evidence that children across different races tend to endorse a “White is good” approach toward their social preferences (e.g., Alejandro-Wright, 1985; Clark & Clark, 1947; Cross, 1985; Dunham et al., 2013; Johnson, 1992; Neto & Paiva, 1998; Spencer, 1988; Spencer & Markstrom-Adams, 1990; “Study: White and Black Children,” 2010) and perhaps priming a biracial child’s White identity leads toward a stronger endorsement of this view. Sec-

ond, minority children have lower overall preferences for their own racial group (Aboud, 1988; Dunham et al., 2013; Morrison, 1995; Spencer & Markstrom-Adams, 1990). In comparison to children who belong to the majority race, they more strongly believe that peers from racial out-groups can be friends, often due to parent and family socialization at home (Margie, Killen, Sinno, & McGlothlin, 2005). As stated previously, past work has also shown that minority children actually desire a peer from a higher status group (Leman & Lam, 2008); this preference for high-status playmates can also explain the strong in-group social preference for monoracial White children and an even higher in-group social preference for White-primed biracial children. Finally, the perceived age of the informants may have played a role in the differences between the learning and social preferences task. Recall that in the learning preferences task, the informants were all adults, whereas in the social preferences task, the stimuli were peers. The difference in ages and perceived authority may have led to different outcomes. In the future, it would be informative to investigate the impact of informant age further.

#### *Limitations and Future Directions*

Due to recruiting limitations, our sample sizes across the five groups were not balanced. In order to reach more biracial participants, we recruited widely in the local museum and schools; as a result, we were approached by and recruited a high number of monoracial (especially White) participants. We acknowledge that the imbalance in participant numbers by group prevents us from drawing definitive conclusions from our results. We hope that future work, ideally with higher numbers of biracial and minority participants, will allow for a more equal, comprehensive comparison across the racial groups examined within this study and will ensure that the effects that we found do generalize to more balanced sample sizes.

Further investigation into the exact mechanism behind the priming effects in children warrants further analysis as well (Ambady et al., 2001; Gaither, Sommers, et al., 2013). Although we have demonstrated that priming does have an impact on children’s learning and social preferences, the strength of its impact on children within learning or social contexts, especially over time, should be empirically measured in the future. In addition, the existing literature does not indicate whether biracial adults or children have the ability to knowingly and autonomously activate one racial identity over

another, and so we do not know if these results could occur without external priming. It would also be important to investigate the individual factors (e.g., amount of racial exposure encountered in childhood, parent socialization) that may affect priming outcomes, as well as to vary the task order. The present study also matched the stimuli to participants' gender, and so future work should study whether the gender of a biracial child's parent plays a role in identification choices.

Additional research is still needed to examine children from other racial and cultural demographics in order to gain a deeper understanding of how racial identification might influence the learning and social preferences of monoracial minority and biracial children. Groups of children to examine include other types of minority children (e.g., those from Hispanic or Middle Eastern origin and from immigrant families) as well as other types of biracial children who are a mix of two racial minority in-groups (i.e., Black/Hispanic or Black/Asian) since they represent children who cannot identify with the dominant, majority White race. For example, perhaps dual-minority biracial children would perform more similarly to monoracial minority children because both groups are unable to directly identify with the majority race. For the first time in U.S. history, there are more non-White children being born than White children (U.S. Census, 2010), highlighting the demand for research on how minority children from all racial and ethnic backgrounds learn best within our society. It should also be noted that the majority of our participants were from upper-middle to upper-class families, pinpointing the need to extend this research to children from different socioeconomic statuses as well.

### Conclusions

To summarize, our findings expand on previous research by demonstrating that priming either the majority or minority racial identity of a biracial child can significantly affect both their learning and social preferences and that the racial identity primed directly affects those outcomes. Drawing from work with biracial adults, we believe that the racial priming altered biracial children's current levels of racial identification and connectedness with their respective racial in-groups (Gaither, Sommers, et al., 2013; Good, Chavez, & Sanchez, 2010). Although we do not have direct measurements of children's level of racial identification, we were able to mimic the fluidity of biracial behavior seen in adults with our participants, suggesting that the

same racial identification mechanism shown previously to significantly alter biracial adults' social behavior (Gaither, Sommers, et al., 2013) is at play with children in the present study. Therefore, our study is the first to offer evidence that the racial identity malleability known to exist for biracial adults is also present and developing early in childhood. In addition, our findings extend past work showing that the use of race as a meaningful category by monoracial children affects interracial perceptions and behavior beyond the simple noticing of race (Aboud, 1988; Bigler, Brown, & Markell, 2001; Pauker et al., 2010) to a biracial sample.

In conclusion, biracial children have considerable flexibility both in learning from informants and in socially affiliating with others, shifting the strength of their identification to one in-group or the other, depending on the context. That is, the racial identification of biracial children appears to be malleable and susceptible to situational and psychological factors, highlighting the potentially important role that school and classroom contexts play in shaping a biracial child's learning outcomes. We argue that this malleability in racial identification and susceptibility to context could provide biracial children with helpful tools when learning in academic settings and meeting new peers, although more work is needed to understand the various learning pathways and academic outcomes that biracial children may experience, particularly those who identify with socially disadvantaged minority racial groups. With the growing number of children hailing from biracial backgrounds, understanding the impact of these flexible identity preferences and activations on their learning and social outcomes is critical for more fully understanding both educational and social outcomes for mixed-race individuals.

### References

- Aboud, F. E. (1988). *Children and prejudice*. Oxford, UK: Blackwell.
- Alejandro-Wright, M. N. (1985). The child's conception of racial classification: A socio-cognitive developmental model. In M. B. Spencer, G. K. Brookins, & W. R. Allen (Eds.), *Beginnings: The social and affective development of Black children* (pp. 185–200). Hillsdale, NJ: Erlbaum.
- Ambady, N., Shih, M., Kim, A., & Pittinsky, T. L. (2001). Stereotype susceptibility in children: Effects of identity activation on quantitative performance. *Psychological Science*, 12, 385–390. doi:10.1111/1467-9280.00371
- Apfelbaum, E. P., Pauker, K., Ambady, N., Sommers, S. R., & Norton, M. I. (2008). Learning (not) to talk about race: When older children underperform in social cate-

- gorization. *Developmental Psychology*, 44, 1513. doi:10.1037/a0012835
- Baron, A. S., & Banaji, M. R. (2006). The development of implicit attitudes evidence of race evaluations from ages 6 and 10 and adulthood. *Psychological Science*, 17, 53–58. doi:10.1111/j.1467-9280.2005.01664.x
- Bernal, M. E., & Knight, G. P. (Eds.). (1993). *Ethnic identity: Formation and transmission among hispanics and other minorities*. Albany: State University of New York Press.
- Bigler, R. S., Brown, C. S., & Markell, M. (2001). When groups are not created equal: Effects of group status on the formation of intergroup attitudes in children. *Child Development*, 72, 1151–1162. doi:10.1111/1467-8624.00339
- Birch, S., Vauthier, S., & Bloom, P. (2008). Three- and four-year-olds spontaneously use others' past performance to guide their learning. *Cognition*, 107, 1018–1034. doi:10.1016/j.cognition.2007.12.008
- Black-Gutman, D., & Hickson, F. (1996). The relationship between racial attitudes and social-cognitive development in children: An Australian study. *Developmental Psychology*, 32, 448–456. doi:10.1037/0012-1649.32.3.448
- Bonam, C. M., & Shih, M. (2009). Exploring multiracial individuals' comfort with intimate interracial relationships. *Journal of Social Issues*, 65, 87–103. doi:10.1111/j.1540-4560.2008.01589.x
- Cameron, J. A., Alvarez, J. M., Ruble, D. N., & Fuligni, A. J. (2001). Children's lay theories about ingroup and outgroups: Reconceptualizing research on prejudice. *Personality and Social Psychology Review*, 5, 118–128. doi:10.1207/S15327957PSPR0502\_3
- Chen, E. E., Corriveau, K. H., & Harris, P. L. (2011). Children are sociologists. *Anales de Psicología*, 27, 625–630.
- Chen, E. E., Corriveau, K. H., & Harris, P. L. (2013). Children trust a consensus composed of outgroup members—but do not retain that trust. *Child Development*, 84, 269–282. doi:10.1111/j.1467-8624.2012.01850.x
- Chiao, J. Y., Heck, H. E., Nakayama, K., & Ambady, N. (2006). Priming race in biracial observers affects visual search for Black and White faces. *Psychological Science*, 17, 387–392. doi:10.1111/j.1467-9280.2006.01717.x
- Chiong, J. (1998). *Racial categorization of multiracial children in schools*. Westport, CT: Bergin and Garvey.
- Chuang, Y. (1999). Fusion: The primary model of bicultural competence and bicultural identity development in a Taiwanese-American family lineage. *Unpublished doctoral dissertation*, Stanford University, Palo Alto, CA.
- Clark, K. B., & Clark, M. K. (1947). Racial identification and preference in Negro children. In T. Newcomb & E. Hartley (Eds.), *Readings in social psychology* (pp. 602–611). New York, NY: Holt.
- Corriveau, K. H., & Harris, P. L. (2009). Choosing your informant: Weighing familiarity and past accuracy. *Developmental Science*, 12, 426–437. doi:10.1111/j.1467-7687.2008.00792.x
- Corriveau, K. H., Kinzler, K. D., & Harris, P. L. (2013). Accuracy trumps accent in children's endorsement of object labels. *Developmental Psychology*, 49, 470–479. doi:10.1037/a0030604
- Cross, W. E. (1985). Black identity: Rediscovering the distinction between personal identity and reference group orientation. In M. B. Spencer, G. K. Brookins, & W. R. Allen (Eds.), *Beginnings: The social and affective development of Black children* (pp. 155–171). Hillsdale, NJ: Erlbaum.
- Daniel, G. R. (2002). *More than Black? Multiracial identity and the new racial order*. Philadelphia, PA: Temple University Press.
- Dunham, Y., Baron, A. S., & Banaji, M. R. (2004, September). *Exploring the relationship between self-identity, self-esteem, and intergroup attitudes in Hispanic-American children*. Poster presented at the annual meeting of the New England Social Psychological Association, Storrs, CT.
- Dunham, Y., Baron, A. S., & Banaji, M. R. (2007). Children and social groups: A developmental analysis of implicit consistency in Hispanic Americans. *Self and Identity*, 6, 238–255. doi:10.1080/15298860601115344
- Dunham, Y., Baron, A. S., & Banaji, M. R. (2008). The development of implicit intergroup cognition. *Trends in Cognitive Sciences*, 12, 248–253. doi:10.1016/j.tics.2008.04.006
- Dunham, Y., Chen, E. E., & Banaji, M. R. (2013). Two signatures of implicit intergroup attitudes: Developmental invariance and early enculturation. *Psychological Science*, 24, 860–868. doi:10.1177/0956797612463081
- Ellemers, N., & Haslam, S. (2012). Social identity theory. In P. M. Van Lange, A. W. Kruglanski, & E. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 2, pp. 379–398). Thousand Oaks, CA: Sage.
- Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: Norton.
- Gaither, S. E., Schultz, J. R., Pauker, K., Sommers, S. R., Maddox, K. B., & Ambady, N. (2013). Essentialist thinking predicts decrements in children's memory for racially ambiguous faces. *Developmental Psychology*, 50, 482–488. doi:10.1037/a0033493
- Gaither, S. E., Sommers, S. R., & Ambady, N. (2013). When the half affects the whole: Priming identity for biracial individuals in social interactions. *Journal of Experimental Social Psychology*, 49, 368–371. doi:10.1016/j.jesp.2012.12.012
- Good, J. J., Chavez, G. F., & Sanchez, D. T. (2010). Sources of self-categorization as minority for mixed-race individuals: Implications for affirmative action entitlement. *Cultural Diversity and Ethnic Minority Psychology*, 16, 453–460. doi:10.1037/a0020128
- Harris, P. L. (2012). *Trusting what you're told: How children learn from others*. Cambridge, MA: Belknap Press/Harvard University Press.
- Herman, M. (2004). Forced to choose: Some determinants of racial identification in multi-racial adolescents. *Child Development*, 75, 730–748. doi:10.1111/j.1467-8624.2004.00703.x
- Herring, R. D. (1995). Developing biracial ethnic identity. *Journal of Multicultural Counseling and Development*, 23, 29–38. doi:10.1002/j.2161-1912.1995.tb00264.x
- Hirschfeld, L. A. (1993). Discovering social difference: The role of appearance in the development of racial awareness.



- Cognitive Psychology*, 25, 317–350. doi:10.1006/cogp.1993.1008
- Hirschfeld, L. A. (1995). Do children have a theory of race? *Cognition*, 77, 1298–1308. doi:10.1016/00010-0277(95)91425-R
- Jacobs, J. H. (1992). Identity development in biracial children. In M. P. P. Root (Ed.), *Racially mixed people in America* (pp. 190–206). Newbury Park, CA: Sage.
- Jaswal, V. K., & Neely, L. A. (2006). Adults don't always know best: Preschoolers use past reliability over age when learning new words. *Psychological Science*, 17, 757–758. doi:10.1111/j.1467-9280.2006.01778.x
- Johnson, D. J. (1992). Racial preference and biculturalism in biracial preschoolers. *Merrill-Palmer Quarterly*, 38, 233–244.
- Katz, P., & Kofkin, J. (1997). Race, gender, and young children. In S. S. Luthar, J. A. Burack, D. Cicchetti, & J. Weisz (Eds.), *Developmental psychopathology: Perspectives on adjustment, risk, and disorder* (pp. 51–74). New York, NY: Cambridge University Press.
- Kerwin, C., Ponterotto, J. G., Jackson, B. L., & Harris, A. (1993). Racial identity in biracial children: A qualitative investigation. *Journal of Counseling Psychology*, 40, 221–231. doi:10.1037//0022-0167.40.2.221
- Kinzler, K. D., Corriveau, K. H., & Harris, P. L. (2011). Children's selected trust in native-accented speakers. *Developmental Science*, 14, 106–111. doi:10.1111/j.1467-7687.2010.00965.x
- Kircher, M., & Furby, L. (1971). Racial preferences in young children. *Child Development*, 42, 2076–2078. doi:10.2307/1127610
- Kowalski, K., & Lo, Y. (2001). The influence of perceptual features, ethnic labels, and sociocultural information on the development of ethnic/racial bias in young children. *Journal of Cross-Cultural Psychology*, 32, 444–455. doi:10.1177/0022022101032004005
- Leman, P. J., & Lam, V. L. (2008). The influence of race and gender on children's conversations and playmate choices. *Child Development*, 79, 1329–1343. doi:10.1111/j.1467-8624.2008.01191.x
- Maddox, K. B., & Gray, S. A. (2002). Cognitive representations of Black Americans: Re-exploring the role of skin tone. *Personality and Social Psychology Bulletin*, 28, 250–259. doi:10.1177/0146167202282010
- Margie, N., Killen, M., Sinno, S., & McGlothlin, H. (2005). Minority children's intergroup attitudes about peer relationships. *British Journal of Developmental Psychology*, 23, 251–269. doi:10.1348/026151005X26075
- Milner, D. (1984). The development of ethnic attitudes. In H. Tajfel (Ed.), *The social dimension: European developments in social psychology* (Vol. 1, pp. 89–110). Cambridge, UK: Cambridge University Press.
- Milner, D. (1996). Children and racism: Beyond the value of the dolls. In W. Peter Robinson, (Ed.), *Social groups and identities*. Developing the legacy of Henri Tajfel. (pp. 249–268). Oxford, UK: Butterworth Heinemann.
- Morrison, J. (1995). Developing identity formation and self-concept in preschool-aged biracial children. *Early Child Development and Care*, 111, 141–152. doi:10.1080/0300443951110110
- Nesdale, D. (2001). The development of prejudice in children. In M. A. Augoustinos & K. J. Reynolds (Eds.), *Understanding prejudice, racism, and social conflict* (pp. 57–73). London, UK: Sage.
- Nesdale, D., & Flessler, D. (2001). Social identity and development of children's group attitudes. *Child Development*, 72, 506–517. doi:10.1111/1467-8624.00293
- Neto, F., & Paiva, L. (1998). Color and racial attitudes in White, Black and biracial children. *Social Behavior and Personality*, 26, 233–244. doi:10.2224/sbp.1998.26.3.233
- Ocampo, K., Knight, G., & Bernal, M. (1997). The development of cognitive abilities and social identities in children: The case of ethnic identity. *International Journal of Behavioural Development*, 21, 479–500. doi:10.1080/016502597384758
- Pasquini, E. S., Corriveau, K. H., Koenig, M. A., & Harris, P. L. (2007). Preschoolers monitor relative accuracy of informants. *Developmental Psychology*, 43, 1216–1226. doi:10.1037/0012-1649.43.5.1216
- Pauker, K., Ambady, N., & Apfelbaum, E. (2010). Race salience and essentialist thinking in racial stereotype development. *Child Development*, 81, 1799–1813. doi:10.1111/j.1467-8624.2010.01511.x
- Phinney, J. (1989). Stages of ethnic identity development in minority group adolescents. *Journal of Early Adolescence*, 9, 34–49. doi:10.1177/0272431689091004
- Porter, J., & Washington, R. (1993). Minority identity and self-esteem. *Annual Review of Sociology*, 19, 139–161. doi:10.1146/annurev.soc.19.1.139
- Poston, W. S. C. (1990). The biracial identity development model: A needed addition. *Journal of Counseling & Development*, 69, 152–155. doi:10.1002/j.1556-6676.1990.tb01477.x
- Powell, G. J. (1985). Self-concepts among Afro-American students in racially isolated minority schools: Some regional differences. *Journal of the American Academy of Child Psychiatry*, 24, 142–149. doi:10.1016/S0002-7138(09)60439-8
- Powell-Hopson, D., & Hopson, D. S. (1992). Implications of doll color preferences among Black preschool children and White preschool children. *African American Psychology: Theory, Research, and Practice*, 14, 183–189. doi:10.1177/00957984880142004
- Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences. *Child Development*, 82, 1715–1737. doi:10.1111/j.1467-8624.2011.01668.x
- Rhodes, M., & Gelman, S. A. (2008). Categories influence predictions about individual consistency. *Child Development*, 79, 1270–1287. doi:10.1111/j.1467-8624.2008.01188.x
- Roccas, S., & Brewer, M. B. (2002). Social identity complexity. *Personality and Social Psychology Bulletin*, 6, 88–106. doi:10.1207/S15327957PSPR0602\_01

- Rockquemore, K. A., & Brunsma, D. L. (2001). *Beyond Black: Biracial identity in America*. Thousand Oaks, CA: Sage.
- Root, M. P. (1997). Biracial identity. In G. G. Bear, K. M. Minke, & A. Thomas (Eds.), *Children's needs II: Development, problems, and alternative* (pp. 751–759). Bethesda, MD: National Association of School Psychologists.
- Rutland, A., Killen, M., & Abrams, D. (2010). A new social-cognitive developmental perspective on prejudice: the interplay between morality and group identity. *Perspectives on Psychological Science, 5*, 279–291. doi:10.1177/1745691610369468
- Sebring, D. L. (1984). Considerations in counseling interracial children. *Journal of Non-White Concerns, 13*, 3–9. doi:10.1002/j.2164-4950.1984.tb00308.x
- Shutts, K., Banaji, M. R., & Spelke, E. S. (2010). Social categories guide young children's preferences for novel objects. *Developmental Science, 13*, 599–610. doi:10.1111/j.1467-7687.2009.00913.x
- Spencer, M. B. (1982). Personal and group identity of Black children: An alternative synthesis. *Genetic Psychology Monographs, 103*, 59–84.
- Spencer, M. B. (1984). Black children's race awareness, racial attitudes and self-concept: A reinterpretation. *Journal of Child Psychology and Psychiatry, 25*, 433–441. doi:10.1111/j.1469-7610.1984.tb00162.x
- Spencer, M. B. (1988). Self concept development. In D. T. Slaughter (Ed.), *Black children in poverty: Developmental perspectives* (pp. 59–72). San Francisco, CA: Jossey-Bass.
- Spencer, M. B., & Markstrom-Adams, C. (1990). Identity processes among racial and ethnic minority children in America. *Child Development, 61*, 290–310. doi:10.1111/j.1467-8624.1990.tb02780.x
- Study: White and Black children biased toward lighter skin. (2010). CNN. Retrieved from <http://edition.cnn.com/2010/US/05/13/doll.study/index.html?hpt=C2>
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- U.S. Census. (2010). *Overview of race and Hispanic origin: 2010*. U.S. Department of Commerce. Retrieved from <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>
- Van Ausdale, D., & Feagin, J. (2002). *The first R: How children learn race and racism*. Langham, MD: Rowman & Littlefield.
- Vanderborght, M., & Jaswal, V. K. (2009). Who knows best? Preschoolers sometimes prefer child informants over adult informants. *Infant and Child Development, 18*, 61–71. doi:10.1002/icd.591
- Vaughan, G. M. (1987). A social psychological model of ethnic identity development. In J. S. Phinney & M. J. Rotheram (Eds.), *Children's ethnic socialisation* (73–91). London, UK: Sage.
- Verkuyten, M., & Pouliasi, K. (2002). Biculturalism among older children: Cultural frame switching, attributions, self-identification, and attitudes. *Journal of Cross-Cultural Psychology, 33*, 596–609. doi:10.1177/0022022102238271
- Yancey, G. (2003). *Who is White? Latinos, Asians, and the new Black/nonBlack divide*. Boulder, CO: Rienner.

### Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's website:

**Appendix S1.** Pictures Colored for Racial Priming Identity Task

**Appendix S2.** Sample Screen Shots From Learning Preferences Task Demonstrating Functions for White Tube

**Appendix S3.** Sample Screen Shots From Social Preferences Task