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Children's Racial Categorization in Context

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Abstract

Research suggests that the ability to visually discriminate based on race emerges quite early in infancy: 3-month-olds can perceptually differentiate faces by race and 6-month-olds can perceptually categorize faces by race. Between 6 and 8 years of age, children can sort others into racial groups. But to what extent are these abilities influenced by context? In this paper we review the literature on children's racial categorization and discuss how our conclusions are affected by how we ask the questions (i.e., our methods and stimuli), where we ask them (i.e., the diversity of the child's surrounding environment), and who we ask (i.e., the diversity of our populations). Taken together, we suggest that despite a developmental readiness to categorize others by race, the use of race as a psychologically salient basis for categorization is far from inevitable and is largely shaped by the experimental setting and greater cultural context.

Children's Racial Categorization in Context

Racial prejudice remains one of the most pressing social issues of our time. Social and developmental psychologists have conducted extensive research to better understand when racial biases might first emerge in childhood. Despite the foundational role of racial categorization in stereotyping and prejudice, research with children has focused almost exclusively on the downstream consequences of racial categorization, rather than the process of racial categorization itself. Here, we review what is known about racial categorization from infancy into late childhood, with a focus on recent research advances. In addition, we argue that researchers need to devote greater attention to the experimental setting and the larger cultural context in order to advance our theoretical and practical understanding of the development of racial categorization.

When Can Children Categorize by Race?

The answer to this question largely depends on how *categorization* is defined. For example, does noticing differences between racial groups, sorting targets with similar skin color together, identifying physical features as typical of group members, and/or labeling members of different racial groups provide sufficient evidence of racial categorization? In this paper, we define racial categorization as the tendency for race to be perceived as a psychologically salient and meaningful basis for grouping others. In providing this definition, we build on the Developmental Intergroup Theory (DIT; 1). According to this theory, four main factors contribute to the psychological salience of social categories: 1) perceptual salience (i.e., whether categories are marked by discriminable visual features), 2) proportional group size (i.e., proportionally smaller groups, or minorities, tend to be more distinct), 3) explicit labeling by adults (e.g., “the Black child”), which suggests the dimension is worthy of attention and provides

a category label, and 4) implicit use in the environment (e.g., through racial segregation of neighborhoods), which may lead children to independently construct explanations regarding the importance of shared attributes (1). Measuring racial categorization involves administering tasks that map onto these factors and exploring how and when children consistently and spontaneously use the category to organize information and direct behavior. This definition of racial categorization highlights how multiple inputs (both perceptual and conceptual) integrate to inform children's categorizations, but also how context directs whether race is psychologically salient and thus habitually used in a psychologically meaningful way. Although outside of the scope of this review, one important conceptual input into children's categorizations is their intuitive theories, including beliefs that social categories are natural kinds (2). Yet, even these intuitive theories may be shaped by cultural context (2-4). While some factors contributing to the psychological salience of race can emerge quite early in infancy (e.g., perceptual discrimination) and other components are more dependent on linguistic skills that develop later in childhood (e.g., labeling by race), all are influenced by both the immediate (experimental) and broader (cultural) context.

Infants. While infants are not attuned to racial differences at birth (5), their ability to perceptually differentiate based on race develops early in homogeneous cultural contexts. By 3 months of age White, Black, and Asian infants from countries where their race is in the majority (i.e., White infants in the United Kingdom [U.K.], Black infants in Ethiopia, and Asian infants in China) presented with pairs of same- and other-race faces look longer at same-race faces (5-7). However, despite a general preference for looking at same-race faces, young infants do not show impaired recognition of other-race faces that is typically seen in adults (8). Instead, at 3 months of age, White and Asian infants from countries where their race is in the majority (i.e., White

infants in the U.K., Asian infants in China) are able to recognize different faces of their race as well as different faces of other races (9, 10). These infants demonstrate a decreasing ability to differentiate between other-race faces across multiple outgroups between 3 and 9 months, and by 9 months, they only maintain the ability to recognize same-race faces and have difficulty recognizing other-race faces (9, 10), similar to the impaired ability to recognize other-race faces seen in adults (8).

Thus, while 3-month-old infants raised in homogenous cultural contexts show sensitivity to distinctions *between* racial groups they still can individuate faces *within* racial groups. The ability to individuate *within* racial groups, however, appears to change with development and environmental input—becoming tuned to the faces they most frequently encounter as they age. Consistent with the strong connection found in adults between categorical processing of race and impaired recognition of other-race faces (8), this perceptual tuning also appears to coincide with infants' ability to categorize faces by race (11). Recent evidence indicates that infants can perceptually categorize some faces by race at 6 months (12). Specifically, White 6-month-old infants with limited exposure to other-race faces familiarized with multiple Black or Asian faces (i.e., faces belonging to a single racial category) distinguished between a new face from the familiarized racial category compared to a new face from a novel racial category (i.e., Asian or Black, respectively; 12). This design tests whether infants categorized a new face from the familiarized category as part of the same category and a face from the novel racial category as part of a different category. At 9 months, however, White infants no longer distinguished between multiple other-race categories. White infants instead formed a broader distinction between same-race (White = ingroup) and other-race faces grouped together (Asian and Black = outgroup; 12).

Stimuli in all of the infant studies reviewed consisted of color photographs of faces that used both facial features and skin tone as visual markers of race. From these findings we cannot therefore determine whether one or both of these visual cues are used by infants to process same- and other-race faces. However, the results of additional research (13) suggest that the ability to differentiate between same- and other-race faces is not necessarily based solely on low-level perceptual cues, such as skin color. When presented with computer-generated faces that depicted prototypical physiognomy and skin-tone (i.e., Eurocentric facial features with White skin-tone, Afrocentric features with Black skin-tone) or faces that isolated these aspects (e.g., Eurocentric features with Black skin-tone, Afrocentric features with White skin-tone), the neural responses of White majority 9-month-olds in the United States (U.S.) did not differ when viewing prototypical White faces in comparison to faces that isolated Black features (i.e., skin-tone or face shape), but did differ in comparison to prototypical Black faces (13). Thus, both facial shape associated with a racial group and skin-tone may provide key information for infants' ability to distinguish between same- and other-race faces.

It is important to consider whether these examples reflect the ability to perceptually differentiate between racial categories or merely between what is familiar versus what is not. Since studies often involve a comparison between familiar race faces and unfamiliar race faces, this effectively assesses whether children can separate their familiar group from a perceptually distinct group (e.g., 11). To build on this work, future research should present multiple groups of unfamiliar other-race faces to further examine infants' ability to perceptually differentiate and categorize faces based on race (cf. 12).

While it is unclear whether infants' racial categorization abilities reflect more than perceptual differentiation, the central role of cultural context in these effects deserves emphasis.

That biases in visual attention are not present at birth (5) suggests the possibility that limited exposure to other-race faces leads to the perceptual narrowing favoring same-race faces. Indeed, White and Black 3-month-olds in Israel with frequent exposure to faces from both of these racial groups did not demonstrate preferential looking toward faces of the same-race relative to other-race faces (6). Even minimal exposure to other-race in infancy facilitates the ability to recognize other-race faces (e.g., 14-16). Thus, from a very young age, infants display sensitivity to race that is driven by cultural context, such as the faces that they are exposed to in their environment.

Toddlers. Recent research raises questions about the extent to which young toddlers readily use perceptual cues to categorize new racial group exemplars, even if they appear to do so as 6-month-olds. Diesendruck and Deblinger-Tangi (17) found that 19-month-old Jewish-Israeli toddlers failed to match new exemplars to a category of exemplars they had just been familiarized with, including those high in perceptual (e.g., gender, race, shirt color) and cultural (e.g., ethnicity) salience, *unless* the category exemplars were paired with a novel category label (e.g., “Look, a Tiroli”) during familiarization. Older (26-month-old) toddlers, on the other hand, did match new race and gender exemplars with the expected category (i.e., selecting a Black target after being familiarized with color photographs of Black people), regardless of whether category exemplars were paired with a novel category label. Thus, younger toddlers’ representation of racial categories appears reliant on cultural input (e.g., category labels), rather than emerging solely based on visual cues.

It is important to consider whether being able to perceptually differentiate between racial categories corresponds with viewing race as a meaningful, psychologically salient category used to guide behavior (1). Emerging research suggests that early in development it does not, as there is a disconnect between looking preferences in infancy and social behavior. At 10 months, the

age at which infants in homogenous cultural contexts robustly recognize same-race compared to other-race faces, White-American infants do not prefer toys offered by video-recorded White compared to Black women (18). Even older toddlers fail to demonstrate race-based differences in behavior: White-American 2- to 3-year-olds are equally likely to give toys to White or Black women depicted in color photographs (18). Further, when the experimental context places social categories in competition, categories other than race may often be prioritized and used to predict behavior at this age (19). When presented simultaneously with color photographs of children or adults that vary systematically by gender and race, White-American 3- to 4-year-olds' friendship selections, inferences about shared preferences, allocation and acceptance of toys, and preference for novel activities and objects are determined more by gender than race (20, 21).

Children. While children may perceptually differentiate racial group members based on similar features, research suggests that when provided with category labels, White-Canadian children can identify the racial group membership of targets depicted in color photographs (in accordance with adult judgments) by 3- to 4-years-old (e.g., 22), and both Black and White children can consistently classify others by race by 6 to 8 years of age (23). However, research that involves other target groups beyond Black and White suggests that race might not be as psychologically salient as some findings suggest. For example, when explicitly asked to sort color photographs of children by racial label ('White', 'Black', 'Asian'), only a slim majority (60%) of White, Black, and Asian 3- to 5-year-olds from multiracial schools in the U.K. used the terms in a manner consistent with adult categorizations (24). Additionally, when research includes a wider range of stimuli, such as computer-generated faces that vary in their prototypicality (in both skin-tone and physiognomy), predominantly White-American 4- to 9-year-olds were more reliant on skin color than physiognomy when categorizing by race (25; see

also 26). That facial features were not used as category-diagnostic information in the same way that they are for adults suggests that children may not have an adult-like conceptualization of race. These results raise the possibility that past findings may be primarily dependent on children's directed attention to category labels and skin color.

Looking Forward: Bringing Context into Focus

While we know quite a bit about when children can categorize by race, we do not know a great deal about when they will spontaneously do so and what factors will impact these categorizations. Further, how much of our conclusion, that race is perceptually discernible by 3 months and explicitly identifiable around 6 years of age, is based on the stability or homogeneity of the tasks, populations, or environments in the current body of research? In other words, are the conclusions made about the development of racial categorization biased by the experimental and cultural contexts in which researchers have asked these questions? We believe they may well be.

As an illustration, we recently used an open-ended measure to capture how 8- to 12-year-olds in the continental U.S. and in Hawai'i categorized prototypical White and Black target children, depicted in color photographs, by race (27). While White, Asian, and Latino monoracials and multiracial children in the continental U.S. typically listed one racial label per target, consistent with adult categorizations (e.g., labeled the Black target as African-American), in Hawai'i White, Asian, and Black monoracials and multiracial children tended to perceive the monoracial targets as multiracial or belonging to multiple groups. Both White and Black targets were described on average by 3-4 racial/ethnic labels (e.g., labeling the Black target as Black, Chinese, and Native Hawaiian). Perhaps due to their experience with a large multiracial population (23.1% of the Hawai'i population identifies as multiracial), children growing up in Hawai'i may a) default to a multiracial prototype and b) be less likely to rely on perceptual cues

to racially categorize because they are less predictive in this environment. This example illustrates how expanding our methods (e.g., moving beyond forced choice or experimenter provided labels) and highlighting where research is conducted (e.g., a heterogeneous, highly multiracial environment) can provide new insights into racial categorization. Although such less structured tasks are not without limitations (e.g., reliance on children's verbal abilities, difficulties in scoring responses), results from these measures can provide further insight into how we interpret responses on more structured tasks that assess children's racial categorization and ensuing attitudes. Researchers should take a careful look at how both experimental and cultural contexts may impact our understanding of racial categorization across development. Specifically, we need to consider how we ask the questions (i.e., our methods and stimuli), where we ask them (i.e., the diversity of the child's surrounding environment), and who we ask (i.e., the diversity of our populations).

Methods and stimuli. Many of the tasks used to examine racial categorization increase the salience of race in the experiment by, for example, explicitly using racial labels, using racially prototypical targets, and/or making comparisons that differ only by race and not by other competing social categories (e.g., gender, age, etc.). In open-ended spontaneous description tasks (e.g., a child sees a target and is prompted, "tell me about this person; what do you see?"), White, Black, and Asian preschool and elementary school children in monoracial and multiracial cultural contexts rarely mention race (24, 28, 29). However, when children are asked to sort photos that vary along a variety of dimensions (e.g., race, gender, facial expression, age, clothing) into piles that "go together," children's use of race as a spontaneous sorting dimension increases with age (24, 30), becoming more reliably used around 6 years (30). How racial categorization is

assessed can therefore lead to differing conclusions about the extent to which children spontaneously categorize others by race.

Notably, attending to whether the experimental context makes race psychologically salient does not inherently value unstructured over structured tasks. Rather, it should help us expand our repertoire of experimental tasks, better interpret results that vary across experimental context, and provide further insight into the conditions under which others will be spontaneously or deliberately categorized by race. For example, attention to experimental context may affect the interpretation of valuable, highly structured measures, such as those that assess children's implicit racial biases. In tasks where targets are categorized by race (i.e., the Implicit Association Test), White-American participants display an implicit pro-White relative to Black bias at 6 years of age that remains stable into adulthood (31). But on measures that do not require overt racial categorization (i.e., the Affective Priming Task), a different developmental trajectory has been found. Among White-German children aged 9- to 15-years, implicit bias (in the form of outgroup negativity) emerged only in early adolescence (32; see also 33). Thus even among implicit measures, racial salience in the experimental context may affect researchers' conclusions. Experimental contexts that increase the salience of racial categories may over-estimate the extent to which children spontaneously use race during person perception.

Similarly, the focus on prototypical exemplars of various racial groups may artificially heighten children's attention to race. Not only does this drastically oversimplify the task that children face when they meet a new person in the "real world," but the representation of stimuli in most experiments reduces the within-race variation that actually exists and underestimates the dynamic nature of person perception (34). It is necessary to broaden the range of stimuli to include racially ambiguous and multiracial targets in order to further our understanding of the

categorization process (e.g., 35-37). Similar to adults, in samples with primarily majority, White-Americans, children exhibit considerable flexibility in how they categorize racially ambiguous faces, integrating both visual and top-down category cues (38) or using their intuitive understanding of race as distinct and immutable (i.e., essentialist reasoning) to guide their processing and memory of racially ambiguous faces (39). Examining racially ambiguous and multiracial targets can facilitate our understanding of how conceptual knowledge may bias the category judgments of perceptually identical stimuli. Future work should also examine the extent to which different social categories (e.g., race and gender) intersect to jointly inform perception and social categorization (see 40). Finally, recent work has begun to rely on more implicit measures of spontaneous categorization (e.g., 33, 41, 42), which is an important area to develop in future research.

Diversity of cultural contexts and populations. As a whole, most of the research on racial categorization has been conducted in relatively homogenous cultural contexts (often in the U.S.), primarily with White children. While this review includes research conducted in a variety of countries (e.g., Canada, China, Ethiopia, Israel, U.K., U.S.), it is essential to examine both racially homogeneous and heterogeneous cultural contexts and participants. Critically, we need to include more racial minority children in this research, including multiracial children who have almost entirely been excluded (but see 4, 43). Importantly, research that has explicitly examined more heterogeneous cultural contexts, where children have exposure to people from a variety of racial groups, shows that diversity can allow children to maintain greater flexibility in components of racial categorization. For example, infants with intensive cross-race experience do not exhibit preferential looking toward same-race faces (6) and older children in a more diverse city are *less* likely to view race as a natural kind compared to those in a rural community

(44). In addition, even within the same cultural context, minority group (e.g., Black) children may categorize others by race more readily (e.g., 24, 45) and integrate perceptual and conceptual knowledge about race earlier to inform category judgments (36).

In this paper we reviewed recent findings examining racial categorization in childhood and put these findings in context by highlighting that how, where, and to whom we ask our research questions can influence our conclusions. It is clear from this review that while race is perceptually discriminable early in infancy and used spontaneously by children as young as 6 years to sort others, racial categorization is dependent on the immediate (experimental) and broader (cultural) context. Through continued research it will be important to increase our understanding of how the context can influence the cues that children attend to when categorizing others in order to deepen our knowledge of the conditions under which children consistently and spontaneously categorize others by race.

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