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PAPER

Children's essentialist reasoning about language and race

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Abstract

Across four studies, we directly compared children's essentialist reasoning about the stability of race and language throughout an individual's lifespan. Monolingual English-speaking children were presented with a series of images of children who were either White or Black; each face was paired with a voice clip in either English or French. Participants were asked which of two adults each target child would grow up to be – one who was a 'match' to the target child in race but not language, and the other a 'match' in language but not race. Nine- to 10-year-old European American children chose the race-match, rather than the language-match. In contrast, 5–6-year-old European American children in both urban, racially diverse, and rural, racially homogeneous environments chose the language-match, even though this necessarily meant that the target child would transform racial categories. Although surprising in light of adult reasoning, these young children demonstrated an intuition about the relative stability of an individual's language compared to her racial group membership. Yet, 5–6-year-old African American children, similar to the older European American children, chose the race-match, suggesting that membership in a racial minority group may highlight children's reasoning about race as a stable category. Theoretical implications for our understanding of children's categorization of human kinds are discussed.

Introduction

Research from psychology and philosophy proposes that children apply an *essentialist* mode of construal to reasoning about natural kinds; namely, children think about certain categories as being 'real' or 'natural'. Children see these categories as determined by birth and immutable across the lifespan, and use an individual's category membership to support inferences about her properties and behaviors (Medin & Ortony, 1989; Gelman, 2004). Empirical research suggests that essentialist reasoning about categories may extend to reasoning about human social categories such as race, ethnicity, and gender (Diesendruck & haLevi, 2006; Gil-White, 2001; Hirschfeld, 1995, 1996; Rothbart & Taylor, 1992; Taylor, 1996). For example, Hirschfeld (1995, 1996) presented preschool-aged children with pictures of one adult and two children who varied in terms of racial group membership, and asked which child's image represented the adult as a child. Participants reliably chose the image of the child who matched the adult's skin color as being her former self, regardless of other perceptual variables that differentiated the individuals. Furthermore, when presented with a switched at birth paradigm (Gelman & Wellman, 1991), preschool-aged children reported that a child is likely to share the racial group of their birth parents, rather than their adoptive parents (Giménez & Harris, 2002; Hirschfeld, 1995; Rhodes, Brickman & Gelman, 2009; but see also Solomon, 2002). These findings suggest that young children view skin color as stable across the lifespan, and endowed by inheritance.

Might children hold similar essentialized beliefs about language? As adults, we know that the ability to learn a particular language over another is not specified in the genome; learning a language requires experience in an environment in which that language is spoken. Likewise, theoretical accounts of the development of essentialist reasoning about social categories posit that a category's physical discriminability facilitates essentialist reasoning (Prentice & Miller, 2007). Thus language – as compared to categories like race or gender – is an unlikely candidate category for early essentialist reasoning.

From a child's perspective, though, language offers many of the characteristics of a biologically determined and inherited category. Children usually speak the same language as their families, and they likely do not remember the time as infants that they spent learning a native language. Furthermore, empirical research provides initial evidence that young children may (perhaps surprisingly) think of language as being fixed at birth, and impermeable to environmental influences. When presented with vignettes of a child who was born to parents who spoke one language, and adopted at birth and raised by parents who speak another, 5-year-old

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children hypothesized that the child would speak the language of his birth parents, rather than his adoptive parents (Hirschfeld & Gelman, 1997). Though ostensibly at odds with an adult understanding that language is learned via one's environment, these findings are potentially consistent with a naïve theory of language that posits that language – like other social categories – is a stable and potentially natural category. Nonetheless, we do not know the extent of children's essentialist reasoning about language, and in particular, how children's essentialist reasoning about language and race compare.

Past research suggests that infants' and young children's social preferences are guided by language and accent. Infants selectively take toys from individuals who previously spoke to them in a native, rather than a foreign language (Kinzler, Dupoux & Spelke, 2007), and 5–6-year-old children selectively choose native-accented speakers as friends (Kinzler, Shutts, DeJesus & Spelke, 2009). In each of these cases, social preferences based on language can surpass those based on race. Though young infants perceive differences in skin color (Bar-Haim, Ziv, Lamy & Hodes, 2006; Kelly, Quinn, Slater, Lee, Gibson, Smith, Ge & Pascalis, 2005), they do not selectively take toys from own-race individuals (Kinzler & Spelke, 2011). Moreover, though 5–6-year-old children select both native-language speakers and own-race individuals as friends when each variable is tested in isolation, when accent is pitted against race, children choose to be friends with native-accented individuals, regardless of those individuals' racial group membership (Kinzler *et al*., 2009). These studies suggest that children's early social preferences are not based solely on a general preference for individuals who have properties that are relatively familiar to them in any dimension, but rather may be based on a specific preference for members of their native community (Kinzler, Shutts & Correll, 2010).

The present research aims to directly compare children's essentialist beliefs about the relative stability of an individual's race and language. Adults might logically reason that skin color is relatively stable, while languages can be learned. Yet, children's reasoning about the relative stability of language and race may not be so clear-cut. As detailed above, previous research suggests that young children think of language as inherited and impervious to environmental influences (Hirschfeld & Gelman, 1997). Furthermore, past research provides evidence that children's reasoning about race as a meaningful social category can vary across development and social context. Though preschool-aged children may begin to view skin color as a stable property of an individual (Hirschfeld, 1995), children's spontaneous categorization of others based on their ethnic group membership continues to develop throughout the school years (Pauker, Ambady & Apfelbaum, 2010; Degner & Wentura, 2010). Moreover, children's racial attitudes differ among children in racially homogeneous and heterogeneous schooling environments (McGlothlin & Killen, 2010), and children who are members of a minority racial group in the US report a greater awareness of ethnic and racial stereotypes and discrimination than do majority-race children (Dulin-Keita, Hannon, Fernandez & Cockerham, 2011; McKown & Weinstein, 2003; Rivas-Drake, Hughes & Way, 2009). Thus, early social context may influence children's reasoning about the relative stability of social categories.

To investigate children's essentialist reasoning about language and race across development and social context, we presented children with a series of trials in which they first saw an image of a child who was White or Black, and spoke in English or French. Children were asked which of two adults (one who matched the target's race but not language, and one who matched the target's language but not race) the target child would grow up to be. Four populations of children participated: predominantly European American 5–6-year-old children from urban and rural settings (Experiments 1 and 2), European American 9–10-year-old children (Experiment 3), and African American 5–6-year-old children (Experiment 4).

Experiment 1

Method

Participants

Predominantly European American, monolingual English-speaking 5–6-year-olds from the greater Chicago area participated (N = 16; seven male; Mean = 6 years, 1 month; Range = 5;1–6;10; 81% White; one child was White/Asian; one child was Asian; one child's parent did not report).

Materials

Faces included eight children's faces and 16 adult faces (half male/female; half White/Black). Voice clips consisted of 3-second neutral phrases (e.g. 'There are three meals: breakfast, lunch, and dinner') spoken in either French or English. Native speakers of English or French recorded children's voices. Bilingual adults recorded voices in both languages.

On each of eight trials, one child and two adult faces (same gender) were displayed on a computer screen, each paired with a voice clip. Voice/face pairings were created such that one adult had language but not race in common with the child, and the other adult had race but not language in common with the child (e.g. a White child speaking English paired with a White adult speaking French and a Black adult speaking English). (See Figure 1). All possible pairings of language to race were presented. To equate the perceptual availability and presentation times of language and race during each

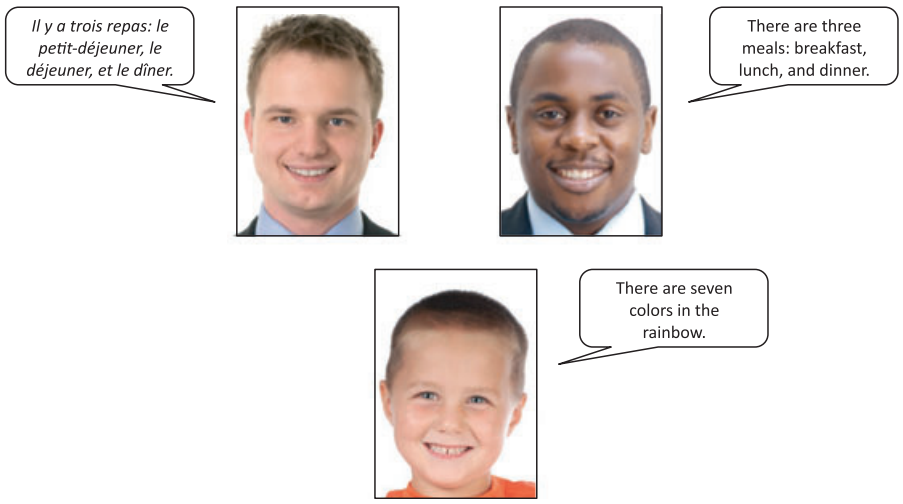

Figure 1 *Example stimuli.*

trial, a screen initially masked each of the three faces. As the experimenter pointed to each image, the screen raised for a duration of 4 seconds to reveal the face and the accompanying voice clip, and then returned to cover the image before the test question was asked.

Design and procedure

Children first participated in two practice trials depicting animals. During each of eight following test trials, the experimenter first pointed to the screen occluding the image of the child and said, 'Here is a child [pointing], he/she sounds like this.' The screen raised, a voice clip played, and then the screen lowered. The experimenter next repeated this procedure for each adult, and then asked, 'Which adult does this child grow up to be?' Pairings of voices to faces were counterbalanced across participants; the language and race of the child on each trial were counterbalanced within and across participants, as were the adults' lateral location on screen.[1]

Results

Across eight trials, children consistently chose the adult whose language matched the target child's more often than would be predicted by chance (M = 6.38, Chance = 4, SE = 0.66, $t(15)$ = 3.61, p = .003, d = 1.87, see Figure 2, left). A non-parametric Wilcoxon signed-ranks test confirmed this result: 13 children chose more language-than race-matches, and three children chose more race-than language-matches (Z = 2.65, p < .01, r = 0.66).

Discussion

As discussed above (footnote 1), a pilot study revealed that when each variable was tested in isolation, children reported that both language and race were stable across an individual's lifespan. Nonetheless, when the two variables were put in conflict, participants chose the language-match over the race-match. Though potentially counterintuitive in light of adults' understanding that languages can be learned, yet skin color is relatively stable, the results of Experiment 1 provide additional support for the idea that young children think of an individual's language as fixed early on, and impervious to environmental influences (Hirschfeld & Gelman, 1997). Children's prioritization of language over race is further consistent with past studies demonstrating children's relative reliance on accent over race in guiding their friendship preferences (Kinzler *et al*., 2009).

Though children's choices of language over race on this task were robust, it is conceivable that these results are limited to the particular population of children we tested. Children were tested in Hyde Park, Chicago, a notably diverse and racially integrated urban environment (Slevin, 2008). Given that children's social judgments based on race are influenced by their environments (McGlothlin & Killen, 2010), it seems possible that the population of children we tested may overlook racial distinctions to a greater degree than would children in more homogeneous settings. To explore the generalizability of the above findings to children in other contexts, Experiment 2 presented European American 5–6-year-old children living in a racially homogeneous, rural environment, with the same experimental paradigm.

[1] A pilot study first tested race and language in isolation to validate the stimuli for use in this paradigm (e.g. a White child grows up to be White versus Black, or an English-speaking child grows up to speak English versus French). When race and language were tested separately, children reliably attended to both race (M = 7.81, chance = 4, SE = 0.19, $t(15)$ = 20.33, p < .001, d = 10.50) and language (M = 6.81, chance = 4, SE = 0.36, $t(15)$ = 7.90, p < .001, d = 4.08) as being consistent across the lifespan.

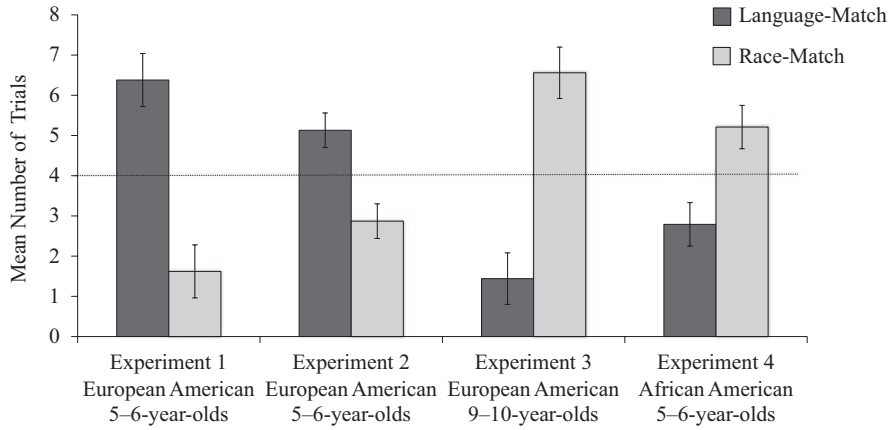

Figure 2 *Children's choices of language- and race-matches across four experiments.*

Experiment 2

Method

Participants

Five- to 6-year-old children in northern Wisconsin participated (N = 24; 11 male; Mean age = 6 years, 3 months, Range = 5;5–6;11; 100% White).

Materials and procedure

The materials and procedure were identical to Experiment 1.

Results

Children again chose the language-match more often than would be predicted by chance (M = 5.13, Chance = 4, SE = .43, $t(23) = 2.64$, $p = .015$, $d = 1.10$, see Figure 2, left center). A non-parametric Wilcoxon signed-ranks test confirmed children's choices of language-matches: 14 children chose more language- than race-matches, five children chose more race- than language–matches, and five children chose an equal number of each ($Z = 2.35$, $p < .05$, $r = .48$).

The responses of children tested in Experiment 1 and Experiment 2 did not differ ($F(1, 38) = 2.79$ p = *ns,* $\eta p^2 = 0.07$). Collapsing across Experiments 1 and 2, and thus providing a larger N to test for effects of trial type on children's responses, the only significant effect observed was that children more robustly chose the language-match when the target child spoke in English rather than in French ($F(1, 38) = 14.42$, $p < .01$, $\eta p^2 = 0.27$). Nonetheless, analyzing only the subset of trials in which the target child spoke in French, participants still responded above chance at choosing the language-match rather than the race-match (M = 2.52, Chance = 2, $t(39) = 2.48$, $p < .02$, $d = 0.79$).

Discussion

Viewed together, Experiments 1 and 2 provide evidence that young, European American children in both diverse and homogeneous settings consider language to be a more important marker of an individual's identity than race. Children's choices of language-matches were most robust for trials in which the target child spoke in English rather than French (though analyses of only French trials also revealed a significant pattern of results favoring the language-match). Children's more robust responses on English-target trials may reflect an assessment that children (particularly those living in the US) would be more likely to learn to speak English than to learn to speak a different language. Research on children's meta-linguistic reasoning is needed to explore this possibility.

Children's beliefs about language as being less mutable than race are ostensibly surprising. Nonetheless, past research provides evidence that children's spontaneous categorization of ethnic categories continues to develop throughout middle childhood (Degner & Wentura, 2010). Experiment 3 thus compared the responses of 9–10-year-old children to those of the younger children tested in Experiments 1 and 2.

Experiment 3

Method

Participants

European American, monolingual English-speaking 9–10-year-old children in Chicago participated (N = 16; eight male; Mean age = 9 years, 11 months, Range = 9;1–10;7; 100% White). These participants were drawn from the same demographic population as Experiment 1.

Materials and procedure

The materials and procedure were identical to Experiments 1 and 2.

Results

Nine- to 10-year-old European American children reliably chose the race-match (M = 6.56, Chance = 4, SE =

0.64, $t(15) = 4.01$, $p = .001$, $d = 2.07$, see Figure 2, right center). A Wilcoxon signed-ranks test confirmed this analysis: 14 children chose the race-match more often than the language-match, and two children chose the language-match more often than the race-match ($Z = 2.82$, $p < .01$, $r = .71$). There were no effects of trial type on children's responses.

Discussion

Nine- to 10-year-old children chose the race-match over the language-match, evidencing a pattern of responses that differed dramatically from the responses of younger children tested in Experiments 1 and 2. This age difference provides further evidence that young children's beliefs about the relative importance of language and race differ from the beliefs of older children and adults – young children may see language as stable across the lifespan and predictive of an individual's identity. Reasoning about race as a relatively more stable social category than language appears to develop throughout childhood. This observation generates the prediction that children who are exposed to race as a meaningful social category early on may begin to see race as relatively more stable than language earlier in childhood.

We tested primarily European American children in Experiments 1–3, yet this population sample is not representative of the diversity of the United States. Children's experiences with race-based categorization and socialization may not be the same for children across all social groups. In particular, racial group membership may be a more meaningful variable in African American children's early social environments than it is for European American children, in part due to differences in minority/majority status (Harrison, Wilson, Pine, Chan & Buriel, 1990; Hughes, Smith, Stevenson, Rodriguez, Johnson & Spicer, 2006). Moreover, children may encounter differing socialization experiences concerning race. For instance, research suggests that African American parents discuss racial identity with their children more than European American parents (Hughes *et al.*, 2006; Lesane-Brown, Brown, Tanner-Smith & Bruch, 2010). Experiment 4 thus presented 5–6-year-old African American children with the same task as presented in the first three experiments.

Experiment 4

Method

Participants

Participants included 5–6-year-old African American, monolingual English-speaking children from Chicago ($N = 24$; 14 male; Mean age = 6 years, 2 months, Range = 5;0–6;11; 96% African American, one child identified as African American/other).

Materials and procedure

The materials and procedure were identical to Experiments 1 through 3.

Results

Children chose the race-match more often than would be predicted by chance ($M = 5.21$, Chance = 4, $SE = 0.54$, $t(23) = 2.23$, $p = .036$, $d = 0.93$, see Figure 2, right). A non-parametric Wilcoxon signed-ranks test confirmed this analysis: 15 children chose the race-match more often, six chose the language-match more often, and three children chose race- and language-matches equally often ($Z = 2.13$, $p < .05$, $r = .43$). Children were also relatively more likely to choose the race-match when the target child spoke in French than in English ($F(1, 22) = 4.98$, $p < .05$, $\eta p^2 = 0.19$).

Critically, 5–6-year-old African American Chicagoan children's responses differed significantly from European American 5–6-year-old Chicagoan children tested in Experiment 1 ($F(1, 38) = 17.63$, $p < .001$, $\eta p^2 = 0.32$), and did not differ significantly from European American 9–10-year-old Chicagoan children tested in Experiment 3 ($F(1, 38) = 2.57$, $p = .12$, $\eta p^2 = 0.06$).

Discussion

African American 5–6-year-old children responded that race is relatively more stable than language. This pattern of results differed dramatically from that of European American children of the same age, tested in the same location, who responded that language is more stable than race. This finding is particularly striking given the ostensible similarities between the populations. Yet, as described above, children of different racial groups may have different experiences with race as a meaningful social category, which could contribute to their performance on this task. For instance, past research provides evidence that among children tested in a multicultural city (San Francisco), those who are members of minority racial groups expressed greater knowledge of ethnic prejudice and stereotypes than those who are members of majority racial groups (McKown & Weinstein, 2003). Research on parents' attitudes about race suggests that African American parents often feel that it is important to discuss race, in part to protect children against the possibility of racial discrimination (Hughes *et al.*, 2006). This can be the case even in very diverse environments: one study reported that African American mothers in neighborhoods that are half White and half Black report stronger beliefs that socialization about racial identity is important than do African American mothers in neighborhoods that are mostly Black (Thornton, Chatters, Taylor & Allen, 1990). To conclude, the results of this study provide evidence that young African American children reason about race as

more stable than language at an earlier age than do European American children. Nevertheless, as discussed further below, understanding the precise mechanism underlying differences in children's reasoning about race – and in particular, race as it compares to language – requires further investigation.

General discussion

Taken together, the present research provides evidence that – in some circumstances – young children express a surprising intuition about the stability of an individual's language as compared to her race; yet, this reasoning differs across development and social group context. Across four experiments, we presented children with a situation in which they had to choose whether a child was more likely to grow up and maintain the same racial identity, or to speak the same language. Though 9–10-year-old European American children (Experiment 3) chose race over language, 5–6-year-old European American children (Experiments 1 and 2) chose language over race. Five- to 6-year-old African American children tested on the same task, in the same location, chose race. These results reveal two captivating patterns: the difference observed between the responses of 5–6-year-old and 9–10-year-old European American children, and the difference observed between the responses of European American and African American 5–6-year-old children. We discuss each set of findings, as well as its limitations, in turn.

First, when asked whether an individual was more likely to maintain his or her race or language across development, 5–6-year-old European American children tested in Experiments 1 and 2 chose the adult speaking the same language, even though that individual then necessarily transformed racial categories. Yet, by age 9–10, European American children responded that race was relatively more stable than language. What accounts for children's differential beliefs at each developmental time point? The young children tested here seemed to endorse a naïve theory of language that differs from a later adult-like understanding. These young children designated linguistic group membership as a particularly critical aspect of an individual's identity – an identity feature so important that it was assumed to remain constant even across a change in physical appearance. Though surprising in light of adult intuitions, this finding accords with previous research suggesting that young children reason about language as biologically rather than environmentally determined and stable across developmental time (Hirschfeld & Gelman, 1997), as well as studies suggesting that accent can trump race in guiding young children's social preferences for others (Kinzler *et al*., 2009).

Given that the current research tested children's reasoning about language *in relation to* race, it is limited in the claims it can make about the development of children's reasoning about language as a stable category. Future research might investigate the developmental path by which a child who endorses a theory of language as stable from birth (Hirschfeld & Gelman, 1997) transitions to endorsing a theory of language as malleable based on the environment. Might exposure to multiple languages in early childhood facilitate children's reasoning about languages as learned? Clearly, by adulthood individuals from diverse social groups come to think that language is more malleable than racial group membership. Yet, might there be circumstances under which even adults could espouse an intuition that languages are relatively immutable? One recent study using a 'who said what' paradigm (Taylor, Fiske, Etcoff & Ruderman, 1978) observed that adults encode others' ethnic identities based on their accent more robustly than they do based on their visual appearance (Rakic, Steffens & Mummendey, 2011). Though this study did not test race *per se* (the ethnicities depicted were German vs. Italian), it nonetheless provides initial evidence that in some contexts, language-based cues to an individual's group membership may predominate in adulthood. Cross-cultural research with children and adults who are exposed to diverse social and linguistic environments may be particularly useful in investigating children's and adults' reasoning about the relative importance of language and race, and how this reasoning can change across development.

Second, the difference between European American and African American children of the same age highlights the potential role of experience in facilitating children's reasoning about the stability of different social categories. Presumably, infants in all social groups are born viewing their earliest social worlds in the same way. Nonetheless, children's early experiences may shape their reasoning about the relative importance of race compared to language. In providing an account for the differences between African American and European American children's reasoning, several potential group distinctions might be relevant: differences in numerical minority/majority relationships and familiarity with different groups (Cameron, Alvarez, Ruble & Fuligni, 2001; Katz & Kofkin, 1997), differences in status minority/majority relationships (Bigler, Averhart & Liben, 2003; Harrison *et al*., 1990), differences in awareness of prejudice and direct experiences of discrimination (Dulin-Keita *et al*., 2011; McKown & Weinstein, 2003; Rivas-Drake *et al*., 2009), and differences in exposure to race-related discussion and socialization (Hughes *et al*., 2006; Pahlke, Bigler & Suizzo, in press; Lesane-Brown *et al*., 2010). Future research investigating potential differences in social context across populations of children may help explain the findings presented here. Furthermore, it should be noted that the current study does not investigate stereotypes or prejudice; nor do we make claims about the relationship between parenting styles, essentialist reasoning and social attitudes. Future

research that teases apart the factors that contribute to developmental changes in children's essentialist reasoning about social categories (including race, language, and their relationship to each other) would be particularly fruitful, as would research that investigates the potential relationship between essentialist reasoning and social attitudes (see Pauker *et al*., 2010).

Together, these findings make a theoretical contribution to our understanding of the development of essentialist reasoning about social categories more generally. Some theories of psychological essentialism of social kinds propose that reasoning about social categories as real and stable kinds may stem directly from, or function in a manner analogous to, reasoning about natural kinds such as animal species (Gil-White, 2001; Hirschfeld, 1996). According to these theories, children's essentialist reasoning about social categories would be relatively independent of cultural influence. Other hypotheses suggest that essentialist reasoning about social categories is malleable based on the cultural beliefs and practices of a child's community (Diesendruck & Haber, 2008). The results presented here provide some support for both ideas. First considering cultural relativity, the difference observed between European American and African American children of the same age suggests that social environments can affect children's priorities when reasoning about the stability of social category membership. Nevertheless, the finding that young European American children's beliefs about prioritization of social categories (Experiments 1 and 2) *differs* from adults and older children (Experiment 3) raises the possibility that intuitive beliefs about social categories can initially form independently of cultural experience, and later be shaped by cultural knowledge (see Astuti, Solomon & Carey, 2004). Taken together, these studies provide evidence in favor of a third, hybrid proposal on the nature of essentialist reasoning about human kinds (see Rhodes & Gelman, 2009). This third proposal posits that some categories (particularly those whose distinctions were relevant throughout our evolutionary history) are more likely to be essentialized early in childhood, and less dependent on cultural input than are distinctions that were not valid markers of group membership throughout our evolutionary past (e.g. race, which was not likely a relevant marker of group membership prior to the onset of long-distance migration; Cosmides, Tooby & Kurzban, 2003). Extrapolating further, this third hypothesis generates the prediction that children's essentialist reasoning about race may be highly variable across cultures. Future research with diverse populations of children is needed to test this hypothesis.

Children's changing beliefs about the relative stability of language and race across development and social context leave open interesting questions for future research. Given that we tested children, not infants, the present study is limited in the extent to which it can make claims about children's initial state of reasoning about the stability of language in relation to race. Nonetheless, it is our presumption that infants in all social groups enter the world viewing social categories in the same way. One potential hypothesis that would be consistent with the data presented here is that infants and young children view language as an important and stable category early on. With experience, children come to learn that skin color is relatively stable and that languages are learned – and children in different social environments acquire this adult-like understanding at different ages. Nonetheless, direct experiments with infants would be needed to test this hypothesis. One interesting study with young infants finds that they see 'internal' properties of an individual as being more meaningful predictors of behavior than are 'external' characteristics (Newman, Herrmann, Wynn & Keil, 2008). Might language be seen as one such 'internal' property early in development? Would young children rely on language to inform not only their intuitions about individuals' identity, but also about others' behaviors, or even their psychological and biological characteristics? Research with younger children from diverse groups is needed to explore these possibilities, and would provide further insight into the nature of the development of essentialist reasoning about human kinds.

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