

## Discovering Social Difference: The Role of Appearance in the Development of Racial Awareness

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Two experiments examined French preschoolers' memory for racial and other social information to test the claim, assumed in most previous research, that perceptual factors are integral to the derivation and representation of racial categories. Experiment 1 tested children's recall of social descriptions embedded in a verbal text. Experiment 2 examined children's social memory in a parallel visual narrative. Children recalled considerably more racial information after listening to the complex verbal narrative than after viewing the similarly complex visual one. Even when the link between the racial label and its referent were pointed out immediately before viewing the visual text, children rarely recalled racial labels. In contrast, memory for other kinds of social information was greater on the task using a visual narrative. Results cast doubt on the claim that perceptual information is a crucial component of racial categories. Instead, these data are more consistent with an alternative view that racial information is represented in two overlapping but separate categories, one perceptual and the other verbal. © 1993 Academic Press, Inc.

Cultural anthropologists' (Goodman, 1970) and social psychologists' (Aboud, 1988; Porter & Washington, 1989; Katz, 1983) accounts of the acquisition of racial and ethnic awareness have much in common with major theories of cognitive development (Piaget, 1929; Vygotsky, 1962; Flavell, 1985). In all three cases, children are seen as having to use obvious surface cues to sort exemplars into different categories; only later are they granted the ability to use "abstract" criteria. Further, all these theorists assume that general cognitive processes underlie the way people

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categorize social and nonsocial objects or phenomena. In particular, it is assumed that initial classifications are based on salient, surface cues. Thus, although there is considerable controversy about how to interpret the repeated reports of even quite young children's abilities to recognize, label, and evaluate different racial and ethnic groups, there is consensus about the source of this early sensitivity to racial differences. Young children are assumed to attend to "easily discernible" cues (Katz, 1982, p. 20) and group "people into categories on the basis of attributes perceived in common" (Vaughan, 1987, p. 91), including such indices of "concrete reality" as skin color (Clark & Clark, 1940, p. 168) and other external attributes such as costume, cuisine, and language (Aboud, 1988, p. 106, see also Whiting & Edwards, 1988, p. 8). In this respect, the initial knowledge of racial and ethnic categories is characterized much like it is for knowledge of any category, be it social or not.

Recently, another view of cognitive development has come to the fore. A variety of theorists argue that much of the young child's conceptual knowledge develops through domain-specific structures which direct the child's attention to certain sorts of data and guides the child's hypotheses about the nature of relations between category members (Gelman, 1990; Carey, 1985; Carey & Gelman, 1991; Hirschfeld & Gelman, *in press*). Of particular interest is that in a number of domains (including naive psychology, naive physics, and naive biology) children organize concepts around nonobvious, nonperceptual, and nonsurface cues (Wellman & Gelman, 1992).

One comprehensively studied contrast in conceptual organization involves the distinctive structures of living kind concepts, on the one hand, and artifact categories, on the other (Gelman, 1988; Keil, 1989). For example, several studies suggest that preschoolers respect the artifact/living kind distinction in that they tend not to project animal properties to inanimate objects, even ones that perceptually resemble humans (such as a mechanical monkey) (Carey, 1985; Dolgin & Behrend, 1984; Gelman, Spelke, & Meck, 1983).

With rare exception (Gelman & Spelke, 1981; Gelman et al. 1983; Turiel, 1983; Turiel & Davidson, 1986; Smetana, 1985; Nucci, 1981) developmentalists working in social cognition have as yet failed to consider the possibility that the emergence and early representations of different types of social categories may also be driven by a specific conceptual perspective or understandings sensitive to deeper differences and not merely appearances. Rather, to reiterate, it is still widely accepted that social categories generally emerge from observations of external and immediately perceptible attributes, and only later do children make inferences about less obvious qualities of persons (Aboud, 1987; Flavell, 1985;

Furth, 1980; Rosenberg, 1979).<sup>1</sup> In sum, although some attention has been paid to ways in which social and nonsocial categories may differ (Hirschfeld, 1989; Hoffman, 1981; Rothbart & Taylor, in press) most research has emphasized the continuity between social categorization and *general* processes (e.g., prototypicality, stereotypy) underlying object categorization (Dahlgren, 1985; Fiske & Taylor, 1991; Taylor, 1981).

Reluctance to explore whether social cognitive development is also shaped by domain-specific conceptual principles may reflect uncertainty about how best to characterize social categories. Some hold that social categories resemble human artifacts more than natural categories because social categories are often defined by stipulation, even when, as is the case for kinship categories, conceptual content is derived from an understanding of biological principles (Smith, 1988; Lakoff, 1987). However, Medin (1989) has suggested that natural categories (including some social ones) generally are conditioned by the belief that their members share an underlying nature or essence which makes them the sorts of things they are. Rothbart and Taylor (in press) and Boyer (1990) have specifically argued that many social categories are similarly essentialized, so that members of a particular social category are thought to share underlying natures which give rise to surface similarities of category members. A priori, it is not clear which expectation is more plausible; i.e., whether social categories developmentally resemble natural, biological ones or categories of human artifacts.

The studies reported below examine this question by exploring the sorts of data young children attend to when building and representing social categories which are generally believed to have rich physical correlates, biological implications, and stipulated definitions. Race and ethnicity, according to a universally encountered folk model, systematically segment the human world into biologically relevant groups on the basis of observable differences (see van den Berghe, 1967). On the other hand,

<sup>1</sup> This is true even in cases where the distinctive quality of a specific social domain is acknowledged. Kinship terms, for example, are frequently cited as an illustration of a well-bounded semantic domain whose member concepts are definable in terms of a small set of genealogical features (parent of, child of, etc.) (see Hirschfeld, 1986 for a review). Accounts of the development of kinship terms, however, have almost universally claimed that early representations of these terms are conditioned on the perceptual features of kinsmen and not on any constraints which initially guide the kinship-term-learner to the domain of kinship *per se*. Elsewhere I have argued that this account is not consistent with the robust finding that even very young children limit the attribution of kinship, and the use of kinship terms, to a universe of individuals not inferable from the perceptual correlates of kinsmen alone (Hirschfeld, 1989). That is, young children's emerging notion of kinship appears to be constrained by domain-specific conceptual organization.

recent work in social history has emphasized that racial categories are cultural constructions, reinvented and negotiated uniquely in different cultures and historical epochs (Sollors, 1989; Stoler, 1992). Racial categories thus share properties of both artifacts and living kind concepts. Investigating how racial and ethnic categories develop in young children should provide an informative assessment of the contribution distinct conceptual principles play in shaping social categories.

### *An Alternative Account of Race*

Although researchers have commonly argued that children first understand race in terms of perceptual criteria (namely, obvious surface cues), this claim rarely has been tested directly. Here I examine the idea that rather than being overly dependent on appearances, young children's racial concepts may involve encoding and retrieval processes less tied to perceptual factors than typically assumed. Instead young children's emerging racial beliefs may be based more on conceptualizations of the kinds of humans there are and the way language labels these kinds than on individuals' appearance. In this respect, racial categories would develop in manner similar to the way other natural categories have recently been shown to develop: the young child's acquisition of racial categories may involve an attempt to understand the social world in terms of underlying essence rather than physical commonalities per se (Hirschfeld, 1986, 1989).

This alternative view does not rule out young children's use of perceptual (i.e., observable) differences in constructing racial categories. It leaves open the possibility that preschool children develop overlapping but distinct perceptually oriented categories, on the one hand, and domain-oriented (or ontologically oriented) categories, on the other. Thus, children may build categories that discriminate individuals on the basis of perceptual criteria, but they also build categories around ontological criteria that sort types of persons.

Previous research has proceeded on the assumption that these two kinds of categories are the same, that racial terms name the physical correlates of race. I argue, in contrast, that the two sorts of categories are distinct. While both types contain information about physical appearance, the scope of such information in domain-oriented categories is limited. Specifically, I argue that racial concepts give rise to perceptual awareness rather than perceptual awareness giving rise to racial concepts. That is, children first understand that people come in "racially" different kinds, and may even believe that "racial" kinds encompass some sort of pertinent perceptual differences, before becoming committed to what specific surface cues are relevant. During the preschool and early school years what develops is the ability to calibrate and eventually combine the per-

ceptually oriented and domain-oriented categories. Previous studies of racial awareness, by focusing on what the child discovers rather than creates, may actually have assessed the increase in overlap between the perceptual category and the racial concept rather than exploring racial categories themselves.

The notion that young children's early categories belie a concern with forming a conceptual domain rather than detailing how individual exemplars of a domain are differentiated is evident in other areas of conceptual development. For example, even very young children can readily categorize objects based on color (Sugarman, 1983), yet there is reason to believe that the conceptual domain of color emerges sometime later. Carey (1978) found, while exploring initial mappings of novel color terms, that young children are better at picking out a domain of color than they are at pairing specific terms and specific colors. Recently several researchers have argued that much early conceptual development may similarly involve top-down processes in which superordinate levels of the conceptual hierarchy emerge before lower levels (Mandler, Bauer, & McDonough, 1991; Wellman & Gelman, 1992).

The alternative model of racial concepts also suggests that young children may attend more closely to verbal, discursive cues about race than to visual ones. Such a reliance on verbal information to form visual concepts is also not unique and is apparent in blind children's use of language to decipher words of sight (Landau & Gleitman, 1985). Thus, as a number of researchers concerned with constraints on conceptual development have argued, induction from observations alone is insufficient to account for young children's knowledge (Gelman, 1990; Keil, 1981; Landau & Gleitman, 1985; Markman, 1989). Understanding what and how children learn when they acquire racial concepts may require acknowledging that the vocabulary of experience is considerably richer than has typically been suggested.

#### *Empirical Support for the Alternative Model of Race*

Given the model outlined here children could show evidence of ontological commitment and early appreciation of the domain of race before they show evidence of attention to the physical criteria and surface cues adults find important for racial classification. A number of findings underscore this possibility.

First, the development of verbal classification of race appears to outpace one based on visual cues. A sizeable literature has sought to explain why many young minority children identify themselves with ethnic groups other than their own. Typically these findings have been interpreted as evidence that young minority children choose not to identify with their own racial group (see Cross, 1991 for a review). An alternative

interpretation is that young minority children do not sort themselves in terms of skin color. The question of whether they misidentify their own *racial* group depends on whether they link skin color with racial group. Yet, the misidentifications discussed in the literature have been documented almost exclusively with visual representations of race and not the verbal labels; "children rarely say yes to a label not descriptive of themselves and no to their own group label" (Aboud, 1987, p. 40). In other words, a child's verbal identification of his or her own race may run well ahead of their perceptual self-categorization and particularly their ability to pair the physical correlates adults associate with race with racial labels.

Evidence that there are overlapping perceptually and domain-oriented categories of race comes from studies meant to establish that race and gender are especially salient to young children's sortings precisely because of their perceptual features. A number of studies have shown that young children, when shown an array of individuals who can be classified along several dimensions, prefer to sort by race and gender over other social dimensions. These findings have generally been interpreted as demonstrating that race and gender are particularly attention-demanding *because* of the richness of their physical correlates (Aboud, 1988; Davey, 1983; Davey & Norburn, 1980; Katz, Sohn, & Zalk, 1975).

This preference, however, is not robust. While young children may favor race on certain experimental sorting tasks, they rely little on race in a normative sorting task, namely, choosing playmates. The exception to this is informative. Ethnic differences do predict children's interactions if accompanied by language differences (Doyle, Rappard, & Connolly, 1980; Finkelstein and Haskins, 1983). Thus, not all observable correlates of ethnicity are linked to playmate choice. Some are treated as relevant and some are not. Certain perceptual contrasts (such as language) but not others (such as skin color) do influence playmate choice.

Slight modifications in the sorting task can also produce significant shifts in a child's definition of relevant attributes. Davey (1983; Davey & Norburn, 1980), for example, found that race was "overwhelmingly" the most important cue in children's nondirected sortings. However, when instructed to sort pictures into pairs of children who played together, sex replaced race as the most salient factor. A similar finding was obtained in a study on identity constancy (Hirschfeld, in press). Young children were asked to judge the contribution race and several other social properties make to preserving identity over growth and inheritance. Although race made the most significant contribution to preserved identity, other social variables (particularly occupation) were also found to be relevant to judgments of identity constancy.

The modification to the sorting task that is pertinent in all three of these instances is essentially the same: children's reasoning is focused on a

social context (Milner, 1984). This contextual focus encourages judgments about the individual's *social status* rather than the individual's physical appearance per se. Everyday social contexts typically contain many competing dimensions of contrast; yet, as Dunn (1988) argues, few experimental studies involve contexts that assess the subtleties of young children's social understanding.

For example, in order to make the study of social judgments tractable, experimenters guide children's attention to a limited number of contextual features. Thus skin color might be pitted against age and style of dress. Results from such nondirected tasks involving very limited contextual contrast indicate that young children recognize that individuals *can* be sorted in terms of their skin color. But these performances do not imply that children attach the same meaning to the resulting sortings that older children and adults do. Natural sortings, such as playmate choice, by definition involve contrasts which are meaningful for the child. Perceptual cues *lacking in intrinsic meaning* may be less attention-demanding in these situations and thus less conditioning of children's choices.

The modality in which information about context is expressed may also affect the nature of children's judgments. In terms of racial categories, responses to visually represented contexts may reflect children's ability to articulate both racial and perceptual categories. In contrast, verbal descriptions of contexts may more reflect the child's capacity to reason about domain-oriented categories than perceptually oriented ones.

### *Predictions of the Alternative Model*

A number of empirical predictions follow from the model that children understand race in terms of discrete kinds, that is in a domain-relevant fashion. Moreover, these predictions differ from those following from the widely held or standard view that young children's racial categories are derived from observed differences.

First, according to the standard model, young children prefer to sort by race because (i) the physical correlates of race are particularly attention-demanding and (ii) young children's initial classifications are generally thought to be phenomenally guided. This suggests that young children will treat race much like other social categories, such as occupation, whose physical correlates are similarly attention-demanding for young children (e.g., obvious differences in dress and occupationally relevant tools of trade). The alternative model sketched here predicts that race is important to young children for ontological, not perceptual, reasons. Race, like gender but unlike other social categories relevant to young children, picks out the *kinds* of people there are (as opposed to the sorts of activities,

goals, or even mental states characteristic of a set of individuals). The model I propose suggests that young children's early attention to race is directed toward enhancing their understanding the ontological status of various racial groups. Thus, there is no reason to expect young children will treat racial categories in the same way they treat other social categories that are similarly relevant perceptually.

Second, there is agreement that young children's performances involving racial cognitions will vary depending on the nature of the stimulus. According to the standard view, racial cognitions should be better evoked by visual than verbal stimuli. In contrast, I predict that the salience of race will be higher on verbal than visual tasks because social ontologies are initially derived from narrative information.

Third, according to the standard view race links a verbal label to a visual cue. According to the alternative model, race initially links a verbal label to an ontological domain. Thus, I predict that verbal cues will not readily elicit visual information.

Finally, the standard view derives from studies in which there are few competing social descriptors vying for children's attention. I anticipate that by embedding race in a social narrative more closely paralleling the complexity of everyday interaction, race will not be as salient a social descriptor as previous studies have suggested.

Two experiments were conducted to test these predictions. In both studies, children were presented with racial and other social information embedded in complex narratives. The principal analysis explores variations in children's memories of these narratives.

The social descriptors chosen for examination are race, gender, occupation, nonracial physical feature (such as thin or fat body size), and behavior. Previous research indicates that the preschool child's social repertoire is quite rich. At approximately the same age young children's racial awareness and attitudes emerge, preschoolers become sensitive to variations in occupation (Blaske, 1984; Garrett, Ein, & Tremaine, 1977), body type (Lerner, 1973), and age over the life-span (Pope Edwards, 1984). As with racial categories, preferences for individuals are tied to category membership (thin people over heavy ones, doctors over dentists, older children over younger, etc.) and category membership is the basis for inferring nonobvious properties about persons (policemen are friendly, doctors are helpful, older brothers are nasty, etc.). Between the ages of 3 and 5 years, young children additionally begin to display an appreciation of the relationship between nonobvious psychological states and behavior (Wellman, 1990; Miller & Aloise, 1989), and young children appear to categorize people in terms of stable states closely resembling dispositions and traits (Eder, 1989, 1990). Accordingly, occupation, body type, relative age, and behaviors associated with specific mental states



are all appropriate contrasts in assessing the relative salience of race in young children's social descriptions: all emerge during the same period and all are paired with specific differences in appearance or behavior.

In the first study a verbal text is used. In the second study, the story is visually depicted. Both studies focus primarily on encoding and retrieval processes (although recognition and identification processes were also probed in supplementary tasks). Two rationales underlie this emphasis. The first is methodological. Previous research has demonstrated that narratives hold the interest of even quite young children and that memory for narratives provides evidence of those aspects of social behavior that young children find significant (Dunn, 1988). Preschool children are adept at encoding and retrieving complex texts (Denhière, 1988; Mandler, 1985; Poulsen, Kintsch, Kintsch, & Premack, 1979; Stein & Glenn, 1979), and these skills develop over a broad range of learning environments (Heath, 1982). The second rationale for using a narrative task was detailed in the discussion of context and embedding above: a more nuanced understanding of the conceptual content of social categories is achieved by examining category saliency in contexts that approximate the complexity of everyday life.

Experiment 1 investigates the social information preschool children extract from a detailed discursive narrative to see if various social categories are remembered differently. Since the task is entirely verbal, and immediate perceptual input plays no role, responses should reflect information about appearances already in memory.

Experiment 2 considers the social information preschool children recall from a parallel but *nonverbal* narrative. The central concern is whether memory for racial and other social information is affected by modality of narrative presentation; in particular, whether the pattern of recall for a visual story differs from that found for a verbal text.

Experiment 2 was also designed to explore the relationship between verbal labels and visual information in racial categories. Even if racial categories are less perceptually rich than previously thought, it seems implausible that they should contain *no* perceptual information. Given that most research has assumed that perceptual information is integral to the development of racial categories, it is not surprising that little attention has been paid to possible gradations in the relationship between labels and perceptual cues. Visual information and perceptual cues can be related in a number of ways, ranging from a direct association (seeing something brings to mind its label), to a mediated one (seeing something only brings to mind its label when verbally primed), to a tenuous one (even when primed, seeing something does not bring the label to mind). We conducted the narrative tasks in Experiment 2 under two conditions to test which of these best characterizes the relationship between racial

labels and perceptual cues. In the primed condition, the tasks described below in Experiment 2a were carried out before the visual narrative task. Thus, immediately prior to collecting narrative identifications and recall, children participated in several tasks which matched verbal labels to representations of their referents. In the unprimed condition, these tasks were performed following the narrative task.

## EXPERIMENT 1

The purpose of this experiment is to assess the conceptual importance of race to young children compared to other social descriptors such as occupation, gender, and behavior. Conceptual importance will be construed here in terms of the relative availability of these various social descriptors in children's memory for a short narrative. The main manipulation involved presenting children with characters whose social descriptions were irrelevant to the story's plot and structure. Differences in later recall of these various social descriptors would thus be attributable to differences in their conceptual importance.

## METHOD

### *Subjects*

Sixty-four French preschoolers participated in the study: 33 3-year-olds (3.3 to 4.2, mean age 3.9) and 31 4-year-olds (4.4 to 5.3, mean age 4.9) attending a public nursery school (*école maternelle*), located in an ethnically mixed Parisian neighborhood. All children were in classes with at least 1 Asian, 1 black, and 1 North African student, assuring a minimal level of direct encounter with racial variation.

No effort was made to include or exclude children on the basis of (our intuitions about) subjects' ethnicity or race. All were fluent French speakers. At least one was the child of recent immigrants and two others appeared to be black. Katz (1982, p. 18) argues that minority children "are more sensitive to racial cues and are more precocious with regard to them." Still, there is no compelling evidence that young minority children's racial awareness develops in a fundamentally distinct way (see Aboud, 1988 for a review). A major rationale for conducting this research in France is the rich ethnic and racial environment there. With few exceptions (Alejandro-Wright, 1985; Corenblum & Wilson, 1982; Durrett & Davy, 1979; Hunsberger, 1978; Morland, 1969; Vaughan, 1963), most previous research on racial awareness involves Euro-American and African-American children's performances on tasks assessing understanding of two racial categories, white and black. Situating this work in France permitted me to explore the processes underlying racial awareness in a considerably more complex environment.

But this context posed problems as well: contrary to many researchers' intuitions, a child's ethnicity is not self-evident, particularly in a complex society such as urban France. For the purposes of this study, the relevant question was whether particular children were "perceived" as members of a minority. In interviews with children it was clear that this was not an issue they could easily articulate, even if it could be shown that ethnic status influences behavior. A rough estimate of minority status was obtained by having the director of the school rate which students might be perceived as minority ("*perçu comme ethnique*"). Only 6 of 64 subjects in Experiment 1 and 4 of 32 in Experiment 2 were so classified. The

number is too small to permit statistical treatment, but descriptive statistics are consistent with the view that minority status has little effect on the emergence of ethnic and racial awareness.

### Materials

Each child was read a simple four-episode problem-solving story. There is evidence that this genre of story is efficiently parsed and well-recalled by young children (Mandler, 1985). The translated story is reproduced in Table 1 (the French language version is reproduced in the Appendix). In general story-grammar terms, the story consists of a setting, a complication, four developing episodes (each including a solicitation, a reaction, and an invitation to further action), and a resolution. More specifically, the story introduces a young protagonist (male or female corresponding to the sex of the subject) whose goal is to buy a scarf as a birthday present for his/her mother. The story's principal complication is that the child does not know where to find a store that sells scarves. Four episodes follow, in each of which the child encounters a different adult. Each episode begins with a solicitation in which the child asks the adult if s/he knows where to find a store that sells scarves. Each adult reacts differently. The first and third encounters are emotionally neutral, the adult simply responding that s/he does not know. The second episode is disagreeable, the adult yelling at the child for bothering him/her. The final episode is agreeable, the adult warmly providing the required information. Each episode ends with an invitation for further action (in episodes 1, 2, and 3 the adult suggests the child ask someone else, in episode 4, the adult asks if the child would like to be accompanied to the store). The story ends with a resolution in which the child successfully purchases the gift.

Each adult character is described twice in terms of race, occupation, and a nonracial physical feature (height, weight, or age). Specifically, the four adults were a tall black postman (*grand facteur noir*), an overweight Chinese green grocer (*grosse épicière chinoise*), an old North African taxi driver (*vieux chauffeur de taxi arab*), and a young saleswoman at

TABLE 1  
Experiment 1: Stimulus Story in Translation, Character Assignment 1

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Once upon a time there was a little boy who wanted to make his mother happy on her birthday. He decided to give her a beautiful scarf but he didn't know where he could buy one. He set out for a shopping center not far from his home. The first person he asked directions from was a tall black postman. "Excuse me sir, where can I find a store that sells scarves?" The tall black postman thought for a moment and responded, "I know there's one not far from here, but I don't know exactly where it is. Ask the young saleswoman in the newspaper kiosk." The little boy went up to the young saleswoman in the newspaper kiosk and asked, "Excuse me madame, where can I find a store that sells scarves?" "Do you think I have nothing better to do than to talk with you?" she responded in anger. "I'm not an information office. Go bother the old North African taxidriver over there and ask him." The little boy went up to the old North African taxidriver and asked him, "Excuse me sir, where can I find a store that sells scarves?" He looked at the little boy and said, "I know that there is one somewhere, not far from here, but I don't know exactly where it is. Ask the fat Chinese greengrocer." The little boy went up to the fat Chinese greengrocer and asked her, "Excuse me madame, where can I find a store that sells scarves?" "Why that's easy young man" she said smiling "It's very close by, just 50 feet behind you. I can take you there if you'd like." The young boy went into the store and bought a beautiful red scarf for his mother's birthday.

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a newstand (*jeune vendeuse de journaux*). The social descriptions of the characters were irrelevant to a story's plot and structure. Thus, variations in rates of recall can be attributable to the relative importance of social descriptors rather than to the story line.

Note that the race of the young saleswoman at the newstand was not mentioned. Given the pragmatics of talk about race, this implies that she is a member of the majority racial or ethnic group (in this case, white). Explicitly mentioning her race by describing her, for example, as "the young, white saleswoman at the newstand" would have violated conventions of everyday speech, possibly biasing recall (Bigler and Liben, 1985).

The assignment of characters to the four episodes was counterbalanced using Latin-square. Thus, across the four different assignments, each character appeared once in each episode. Each subject was presented with one of the four assignments with equal numbers of subjects in each.

### *Procedure*

Subjects were tested individually in a familiar room of the school by a native French-speaking female experimenter. Sessions were audiotaped and lasted approximately 20 min. A warm-up task, involving a similar but shorter narrative with a single episode was used. It related the story of a lamb en route to the house of its uncle. Children unable to recall at least three story elements were excluded from further testing.<sup>2</sup> Following the warm-up task, the experimenter read the test story. Immediately following subjects were asked to freely recall the story. Information remembered by the child was used by the experimenter to prompt further recall (e.g., after the child remembered that the story involved a little boy who went shopping, the experimenter would ask "Then, what did the boy do?"). Following this, the experimenter reread the story to the subject and again asked for free recall.

The use of two readings and two recalls was unusual, but not unprecedented. Earlier work by Denhière and his colleagues on narrative comprehension suggests that a second test and recall significantly enhances performance (Denhière, 1984, 1988; Denhière & Baudet, 1984; Denhière & Le Ny, 1980). They found that younger children's performance on a second reading and recall test was comparable to older children's performances on a first reading and recall test (Denhière, 1984). This led them to argue that differences in younger and older children's performances are attributable to differential access to information stored in memory rather than distinct, age-related strategies for encoding story information. Although my concern is with differential rates of recall of social information irrelevant to categories of story grammar, this methodology is useful. From previous studies I expected to find developmental differences in the first recalls of older and younger subjects. In order to provide a more sensitive measure of younger children's competence, and to assure that differences in younger and older children's performances could be attributed to differential salience of each social descriptor rather than differences in retrieval acuity, a second test and recall were used.

## RESULTS AND DISCUSSION

Tapes of the sessions were transcribed by the experimenter. The frequency with which each social descriptor was mentioned by the child was coded by the experimenter. In addition to race, occupation, and nonracial physical feature, the gender and behavior of the characters were also

<sup>2</sup> Ten children were excluded from further testing because of their performances on the warm-up task. Five additional children failed to finish sessions.

coded as social descriptors. Gender was only coded in the case the child referred to a character as either *le monsieur* or *la madame* without further detail. Behavior was coded when the child reported behavioral evidence of a character's state of mind, such as smiling, raising one's voice, offering assistance.

*Social descriptor index one.* For each subject and each social descriptor, two recall indices were calculated. The first index was computed by dividing the number of times the descriptor was mentioned by the child by the number of times the descriptor was mentioned in the story. For example, if a child mentioned race three times s/he would get a race score of .50 as race was mentioned a total six of times in the story. If a child mentioned occupation three times s/he would get an occupation score of .375 because occupation was mentioned eight times in the story.

The first social descriptor index was averaged over subjects and entered into a 2 (age)  $\times$  4 (assignment)  $\times$  2 (reading)  $\times$  5 (descriptor) mixed analysis of variance (ANOVA). Age (3-year-olds vs 4-year-olds) and assignment (four character orders) were between-subject factors and reading (1st reading vs 2nd reading) and descriptor type (race, occupation, nonracial physical feature, behavior, and gender) were within-subjects variables. The results are shown in Table 2. The analysis revealed three main effects: a main effect for age, with older subjects recalling more descriptors than younger subjects,  $F(1,56) = 28.494, p < .0001$ . There was a main effect for reading, children recalled more following the second reading than following the first,  $F(1,56) = 26.629, p < .0001$ . There was also a main effect for type of social descriptor,  $F(4,224) = 16.211, p < .0001$ . Post hoc comparisons indicated that children were more likely to recall descriptions of an individual's behavior ( $M = .24$ ) and occupation ( $M = .29$ ) than their gender ( $M = .12$ ), ( $p < .01$ ), nonracial physical

TABLE 2  
Experiment 1: Mean Percentage Rates of Recall of Social Descriptors for the Two Age Groups, Verbal Narrative Free Recall Task, Social Descriptor Index One

Social descriptor	Age level			
	3-year-olds		4-year-olds	
	First recall	Second recall	First recall	Second recall
Behavior	.159	.258	.197	.347
Occupation	.165	.295	.199	.475
Gender	.082	.152	.108	.166
Race	.073	.207	.127	.323
Nonracial physical feature	.056	.124	.082	.184

feature ( $M = .11$ ), ( $p < .01$ ), and race ( $M = .19$ ) ( $p < .05$ ), and that children recalled an individual's race more readily than the person's nonracial physical feature ( $p < .05$ ). There was no significant effect of assignment.

The analysis revealed a significant age by reading interaction,  $F(1,56) = 4.97$ ,  $p < .03$ . Simple effects analysis indicated that older subjects benefited significantly more from the second reading and recall than did younger children. There was also a significant reading by type of social descriptor interaction,  $F(4,224) = 2.47$ ,  $p < .04$ . Simple effects analysis revealed that, except for gender, children recalled more of each social descriptor following the second reading than following the first. Nonetheless, the relative order of the social descriptors remained the same across readings. Thus, the interaction seems to be primarily due to gender recall being flat.

An age by type of social descriptor interaction also emerged,  $F(4,224)$ ,  $p < .05$ . Simple effects analysis indicated that, with the exception of gender, older children's recall of each type of social descriptor was better than younger subjects' recall. A series of post hoc comparisons showed that, on the one hand, younger children's recall of a character's occupation ( $M = .182$ ) and behavior ( $M = .178$ ) did not significantly differ from each other. On the other hand, younger subjects' recall of each character's race ( $M = .10$ ), gender ( $M = .095$ ), and nonracial physical feature ( $M = .069$ ) also did not significantly differ. However, younger children were significantly more likely to recall each character's occupation and behavior than that character's race, gender, or nonracial physical feature,  $p < .05$ . In contrast, older subjects' recall of race ( $M = .265$ ) was marginally higher than their recall of gender ( $M = .159$ ),  $t(30) = 2.03$ ,  $p < .051$  and significantly greater than their recall of nonracial physical feature ( $M = .155$ ),  $t(30) = 3.36$ ,  $p < .05$ . Older children were significantly more likely to recall a character's occupation ( $M = .385$ ) than the character's race,  $t(30) = 4.36$ ,  $p < .01$ .

As expected, not all social descriptors were equally memorable. Younger children appear to form two clusters of social descriptors; the most salient cluster consisted of occupation and behavior, the less salient one contained race, nonracial physical feature, and gender. Older preschoolers, however, apparently group the social descriptors somewhat differently in that they distinguish three levels of salience; the most salient comprised of occupation and behavior, the next most salient consisted of race, and the least salient included nonracial physical feature and gender. Thus, in contrast to the prediction that social descriptors implicating differences in appearance would be similarly recalled, Experiment 1 suggests that different social categories are distinctively relevant to preschoolers. Moreover, older preschoolers appear to distinguish between

categories derived from corporeal appearances, viz., race and nonracial physical feature. Finally, no effect of character assignment was found, suggesting that recall of social descriptors is not attributable to narrative structure, but reflects factors of conceptual saliency.

*Social descriptor index two.* In the analysis reported above, the social descriptor index was computed by dividing the number of times the descriptor was mentioned by the child by the number of times the descriptor was mentioned in the story. By taking as its point of reference the story itself, this measure may not be sufficiently sensitive. For example, one child might remember only two of the story's characters, recalling their race in both instances. Another child might recall all four characters, but mention the characters' race only half the time. As calculated in the first index, rates of recall for both children would be the same. Accordingly, this measure would not be sensitive to the prima facie greater salience race has for the hypothetical first child. Thus, a second social descriptor index was devised to take into account this possibility. In this index, recall was calculated by dividing the number of times each child mentioned each descriptor by the total number of characters each child actually mentioned (rather than the number of times each descriptor was mentioned in the story). This provided a measure of recall sensitive to the overall performance of each child.

These proportions were entered into a 2 (age)  $\times$  4 (assignment) ANOVA with reading and descriptor type as the repeated measure variables. As shown in Table 3, a significant reading effect was again found, subjects' recall following the second reading ( $M = .21$ ) was significantly better than following the first ( $M = .14$ ). The analysis also revealed a main effect for type of social descriptor, just as the earlier analysis had. Post hoc comparisons indicated that subjects recalled the characters' occupation ( $M = .29$ ) significantly more often than race ( $M = .18$ ), gender

TABLE 3  
Experiment 1: Mean Percentage Rates of Recall of Social Descriptors for the Two Age Groups, Verbal Narrative Free Recall Task, Social Descriptor Index Two

Social descriptor	Age level			
	3-year-olds		4-year-olds	
	First recall	Second recall	First recall	Second recall
Occupation	.221	.302	.234	.392
Gender	.118	.214	.130	.141
Race	.108	.214	.148	.238
Behavior	.107	.151	.124	.178
Nonracial physical feature	.086	.112	.092	.157

( $M = .15$ ), behavior ( $M = .14$ ), and nonracial physical feature ( $M = .11$ ),  $p < .01$ . Race was also recalled significantly more frequently than nonracial physical feature,  $p < .05$ . No significant age effect was found in this analysis, suggesting that the developmental trend revealed in the initial analysis may be attributable to age-dependent increases in the number of story elements recalled rather than changes in the salience of social descriptors. There was no significant effect for assignment.

Results of the two analyses of Experiment 1 thus converge and are consistent with the claim that young children's social understanding is considerably more stable (and perhaps nuanced) than previous work suggests. The results of the two analyses suggest that different social descriptors are differently recalled. They do not, however, support the claim that race is more salient than other social descriptors. Occupation and behavior were found to be more salient than race, a pattern not predicted by previous researchers' claim that race and gender are the most salient social descriptors for preschool children. Nor is this pattern self-evidently attributable to differences in perceptual salience; it is not obvious that behavior and occupation are more perceptually salient than race or gender. In fact, just the opposite could have been predicted, and might have been expected, given prior research. We will return to this question in Experiment 2. The major difference between the two analyses is that the second analysis, which controls for differences in the number of story elements recalled, revealed that both younger and older children find race more salient than nonracial physical features, while still less salient than occupation and behavior.

These results are inconsistent with the standard account of young children's racial categorization, but fall short of allowing us to reject it. Several interpretations of the findings are possible. For example, it could be argued that Experiment 1 is not the strongest test of the hypothesis that information about surface cues is integral to all social categories inasmuch as Experiment 1 relied on a verbal task to assess the role of visual saliency. An alternative explanation for the results of Experiment 1 is that behavioral categories (such as smiling or yelling in anger) bring to mind the perceptual correlates of the categories more readily than do category labels for racial items (i.e., black, North African, Chinese). Thus, the perceptual-rich view would distinguish between performances involving the category labels alone and category labels directly linked with stimuli whose physical correlates are inescapably evident. To rule out this possibility we conducted a second experiment in which visual stimuli as well as verbal labels were used. If the conceptual saliency of racial categories is influenced by the sheer availability of physical exemplars, then performance levels in Experiment 2 should exceed those in Experiment 1.



Another alternative explanation of the findings in Experiment 1 might be task specific. Earlier studies indicate that race is a particularly salient social descriptor. I hypothesized that these studies may have overestimated the salience of race because they assess salience outside of social discourse. The results of Experiment 1 suggest that when there are competing social descriptors available, significant variation in conceptual saliency of social descriptors will be evident. In order to simulate judgments made in the course of normal social life, in Experiment 1 I assessed children's memory for social descriptions embedded in a narrative text. It might be that the results contrast with previous findings because of memory factors, not because of narrative ones. To rule out this possibility, we collected children's social descriptions in two tasks, one memory-based, in which children described from memory the characters they had just seen, and the other involving direct identification, in which children described the characters with the pictures in front of them.

Finally, it could be that some of the findings of Experiment 1 are attributable to factors of linguistic form. In the story used in Experiment 1, each character's occupation is the head noun of a descriptive phrase (e.g., *le grand facteur noir*, *la grosse épicière chinoise*). Occupation might be more readily recalled than either race or nonracial physical feature because its descriptor is a noun, not an adjective. We can rule out this possibility if the pattern of recall in Experiment 2 is similar to that found in Experiment 1 since the narrative in Experiment 2 is visual not verbal.

## EXPERIMENT 2

As in Experiment 1, conceptual importance is construed here in terms of the relative availability of social descriptors like occupation, gender, and behavior in children's descriptions of, and memory for, a short visual narrative. The main manipulation involves presenting children with characters whose social descriptions are irrelevant to the story's plot and structure. Differences in recall and identification will thus be attributable to differences in conceptual salience.

Experiment 2 consists of two parts. Experiment 2a comprises a series of label-to-picture pairings and match-to-sample tasks. The label-to-picture-pairing task functioned primarily as a priming condition for Experiment 2b, a visual narrative recall and identification task. The match-to-sample tasks helped resolve a question left open from Experiment 1. That study established that children are more likely to recall a person's occupation than their race. The findings, however, do not allow us to determine whether occupation is conceptually or perceptually more salient than race. The match-to-sample tasks address this issue by pitting

race to occupation on perceptually based (i.e., physical similarity) sortings.

Experiment 2b also comprised two tasks: a visual narrative identification task and a visual narrative recall task. Children were presented with a visual narrative paralleling the verbal narrative used in Experiment 1. Following Poulsen et al. (1979), two sets of responses were recorded. In the first, subjects were asked to describe the events portrayed in a storybook while viewing it. In the second set, the same children were probed about their memories of the story.

### EXPERIMENT 2a: METHOD

#### *Subjects*

Thirty-two preschoolers from the same French *école maternelle* (public preschool) participated in the study; 16 3-year-olds (3.2 to 4.2; mean age 3.9) and 16 4-year-olds (4.5 to 5.4; mean age 4.10). All children were drawn from classes with at least 1 Asian, 1 black, and 1 North African student, assuring a minimal level of direct encounter with racial variation.

#### *Materials*

Stimulus materials consisted of 10 color-wash line drawings, examples of which are shown in Fig. 1. The first 6 depicted several common, blue-collar and service occupations, as well as several races. The last 4 depicted a male physician, a female physician, a female nurse, and a male in a business suit. The male physician and nurse were black.



FIG. 1. Experiment 2a: sample line drawings depicting race, gender, and occupation.

### *Procedure*

Subjects were tested individually in a familiar room of the school by a native French-speaking, female experimenter. Sessions were audiotaped and lasted approximately 15 min. Half the subjects did 2a-tasks first, half the subjects did 2b-tasks first.

*Pairing task.* Previous research has demonstrated that young children readily pair occupational and racial labels to visual representations of the appropriate occupations and races. The main goal of this task was to use this competence as part of a priming condition for Experiment 2b. The first six drawings were placed in front of the subject who was then asked if there were any blacks in the group. The experimenter then asked if there were North Africans, Chinese, and whites, respectively, in the group. The experimenter then asked the subject to find the mechanic in the group. This was repeated for the remaining five occupations.

*Match-to-sample.* The remaining four drawings (the black male physician, the white female physician, the black female nurse, the white male in a business suit) served as stimuli in a series of match-to-sample tasks. The child was asked if s/he knew what a doctor and a nurse was. The experimenter then introduced the subject to the appropriate drawings, explaining that doctors worked in hospitals making people well and that nurses helped them but did different work. The subject was then successively presented with three triads and asked to put the target drawing with the member of the sample that it was most similar to (without specifying in what particular respect). The first triad consisted of the black male physician as target matched with the black female nurse and a white female physician; pitting race against occupation. The second triad consisted of the black female nurse as target matched with the black male physician and the white female physician, pitting gender against race. The third triad consisted of the white female physician as target matched with the black male physician and the black female nurse, pitting gender against occupation. The order of presentation of triads was randomly determined for each child.

## RESULTS AND DISCUSSION

*Pairing task.* Children's six responses on the pairing task were scored as correct or incorrect and one point was assigned to each correct answer. Since the base probability for all occupation labels was the same (one in six), the data were summed across occupational items. The data for racial label pairings were not combined since the base probability is not the same for all four racial labels. For the labels *black* and *white*, a child's response was scored as correct if all and only the black or white drawings, respectively, were chosen, a base probability of 1 in 64.<sup>3</sup> For the *North African* item, a child's choice was scored as correct if the subject paired

<sup>3</sup> This is a conservative criterion because skin tone does not unambiguously predict racial category; although generally not the case, it is possible that an individual with very light-colored skin would be categorized as black. In France, the North African category, in contrast, is analogous to the category *Hispanic* (as an ethnic not linguistic category) in American society. For example, a commonly posed questionnaire item on ethnic identity contrasts non-Hispanic whites and Hispanics. The implication is that white is a superordinate term. The same is true in France for North African, particularly when only phenotypic criteria are considered. While other perceptual, sartorial, and occupational cues are associated with North Africans in France, the stimuli used in Experiment 2a did not provide any of this nonphenotypic information.

the label with some but not all of the white drawings. We did so because the phenotypic differences *suggested* category differences but were not sufficient to reliably predict them according to French adults who informally reviewed the drawings. Thus the base probability for the North African item (7 in 64) was higher than those for white or black items.

Binomial tests were performed on the total number of correct choices for both occupational and racial labels for each age group. As shown in Table 4, both age groups reliably paired occupational and racial labels to the appropriate drawings. Thus, these pairings have the potential of serving as primes for subsequent identification and recall.

*Match-to-samples.* The three triads presented each subject with two opportunities to select race, occupation, or gender over each other. The number of times each subject chose race, occupation, and gender was calculated and the numbers entered into a two-way ANOVA with (2) age as the between-subjects factor and the number of times occupation, race, and gender were chosen as repeated measure. As shown in Table 5, the analysis revealed no significant effects.

This at-chance level of performance could mean one of two things. One possible interpretation is that both older and younger preschoolers believe that individuals of the same race go together as readily as individuals of the same occupation and as readily as individuals of the same gender. On this interpretation, these findings would not be consistent with the possibility that occupation is significantly more (or less) salient than race or gender. Instead they would support the conclusion that differences in the salience of occupation, relative to race and gender, uncovered in Experiment 1 cannot be attributed to a bias in perceptual factors.

A second interpretation is that the task did not engage the children's interest and so they chose at random. This is unlikely given results from another, parallel study. In that study (in which skin color was pitted

TABLE 4  
Experiment 2a: Number of Correct Choices (Percentage Correct in Parentheses) of  
Occupational and Racial Labels by Two Age Groups

Label	Age level	
	3-year-olds	4-year-olds
Occupation	66 (68.8)*	88 (91.7)*
Races: Total	27 (42.2)	40 (62.5)
Whites	7 (43.8)*	11 (68.8)*
Chinese	6 (37.5)*	8 (50)*
North Africans	8 (50)*	7 (43.8)*
Blacks	6 (37.5)*	14 (87.5)*

\*  $p < .0001$ .

TABLE 5  
Experiment 2a: Mean Number of Times Each Dimension Was Chosen (Out of 2)

Dimension	Age level	
	3-year-olds	4-year-olds
Sex	1.06 (.68)	.9375 (.77)
Occupation	1.00 (.54)	.9375 (.68)
Race	.9375 (.68)	1.125 (.72)

*Note.* Standard deviations are given in parentheses.

against occupation, on the one hand, and nonracial physical feature, on the other), I found that children of the same ages made clearly patterned choices (Hirschfeld, in press). The principle difference between the two tasks was that children in this second study were asked to determine which of the pictured individuals were related by kinship. In contrast, in the present study, children were asked to put together individuals that were most similar.

## EXPERIMENT 2b: METHOD

### *Subjects*

The same 32 preschoolers from Experiment 2a participated in this experiment.

### *Materials*

A storybook comprised 14 different color-wash line drawings bound together in a loose leaf binder was used to elicit social descriptions from the children. The book was designed to lay flat so that two frames were exposed at a time. All drawings were doubled so that a new frame was always introduced on the right-hand page, and the left-hand page reproduced the frame that had been on the previous right-hand page. This design ensured that subjects were always presented with a sequence of two scenes at a time, thus underscoring the narrative momentum of the text. The plot line paralleled that of the verbal narrative used in Experiment 1. In the picture narrative the protagonist was a dog separated from his master, a little boy. In trying to rejoin the little boy, the dog encounters four adults in succession: a tall black policeman (male), a plump white baker (female), a bald Chinese waiter (male), and an old North African fruit seller (female). As in the verbal narrative in Experiment 1, the first and third encounters were neutral while the second was disagreeable and fourth agreeable. The story ended with the little boy and dog reunited. Three frames, showing the boy walking the dog and the dog running away after a cat, introduced the story. Each adult character figured in two action sequences, so that the child saw four frames with each adult. Several frames are reproduced in Fig. 2.

### *Procedure*

Subjects were tested individually in a familiar room of the school by a native French-speaking, female experimenter. Sessions were audiotaped and lasted approximately 15 min.

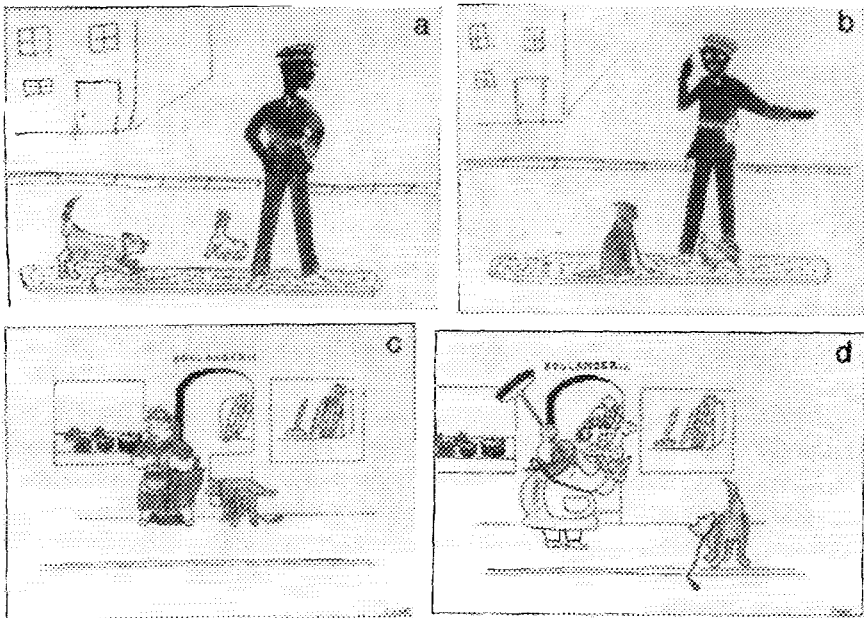


FIG. 2. Experiment 2b: sample frames from visual narrative.

Half the subjects first participated in the tasks described in Experiment 2a. The other half were given the narrative task first.

*Identification task.* The experimenter laid the picture-book flat on a table in front of the subject. The experimenter explained that the subject would be looking through a storybook. The experimenter then opened the picture-book to the first frame and asked the child to describe what was going on. As the child responded, the experimenter probed the subject about the actors depicted in the drawings, asking for example "Who was that who chased the dog away?" Children's initial descriptions overwhelmingly referred to the adult characters as "the man" or "the woman." In order to solicit more detailed descriptions, the experimenter asked "What man/woman?" Further information was sought by asking "What more can you tell me about this man/woman?" Questioning on each frame continued until no further information was forthcoming.

*Probed recall task.* After the subject had looked through and described the entire story-book, the experimenter put the book away and asked the child to remember the first person encountered by the lost dog. The experimenter then asked the subject to describe that person. After the child answered, the experimenter asked, "What else was the person like?" If the subject offered a description, the experimenter repeated the question soliciting further detail. This procedure was repeated for all four characters.

As with the verbal task in Experiment 1, the picture task was conducted twice.

## RESULTS AND DISCUSSION

The results of the identification and probed recall tasks will be discussed in turn.

*Identification task.* Each subject's descriptions were assigned to one of

four response categories: gender, occupation, race, and nonracial physical feature.<sup>4</sup> For each subject and each social descriptor, a social descriptor identification index was computed by dividing the number of times the descriptor was mentioned by the child by the number of frames containing that descriptor in the storybook. For example, all of the characters had their occupation depicted in the storybook so that there were eight possible descriptions of occupation. Thus, a child who mentioned occupation twice received an occupation index of .25. In contrast, race was depicted in only six frames since we did not expect children to consider the white character's race salient in description. Thus a child who mentioned race twice received a race index of .33.

The identification index was averaged over subjects and entered into a 2 (age)  $\times$  (priming: nonnarrative pairing tasks first vs non-narrative pairing tasks following) ANOVA with reading and social descriptor type as repeated measures. The analysis revealed a significant effect for social descriptor type,  $F(3,90) = 90.3$ ,  $p < .0001$ . Post hoc comparisons indicated that gender ( $M = .667$ ) was mentioned significantly more often than occupation ( $M = .373$ ), which in turn was mentioned significantly more often than race ( $M = .057$ ) and nonracial physical feature ( $M = .028$ ),  $p < .01$ . One significant interaction was obtained, reading  $\times$  type of descriptor,  $F(3,90) = 9.1$ ,  $p < .0001$ . Post hoc comparisons indicated that this was primarily due to mentions of gender dropping in the second reading. No effect for priming was obtained. These results are summarized in Table 6.

As in Experiment 1, this analysis suggests that occupation is a highly salient category for young children, one closely linked to appearances. The analysis further indicates that visual depictions of racial cues prompted virtually no mention of race, by either younger or older children. The analysis also revealed an absence of developmental trend which converges with results from the second analysis in Experiment 1. Rates of recall of gender in Experiment 2 increased relative to performance levels in Experiment 1, suggesting that perceptual information is closely tied to this category's representation.

Two interpretations of these data seem most compelling. I have proposed that racial categories are not (at first) perceptually rich and hence visual depictions of race would not elicit descriptions in terms of racial

<sup>4</sup> This study was conducted as part of research on racial attitudes as well as racial awareness. For purposes of the former research it was important that the subjects recognize the valence of each encounter. As a result, the experimenter drew children's attention to behaviors by asking whether each character was angry or friendly. This prompting contaminated data on this dimension for purposes of the present study because it drew children's attention to one dimension over others. Accordingly, behavior has been dropped from analysis of this task.

TABLE 6  
 Experiment 2b: Mean Percentage Rates of Identification of Social Descriptors for the  
 Two Age Groups, Visual Narrative, Identification Index

Social descriptor	Age level			
	3-year-olds		4-year-olds	
	First recall	Second recall	First recall	Second recall
Gender	.759	.688	.681	.539
Occupation	.234	.322	.426	.470
Race	.042	.062	.052	.073
Nonracial physical feature	.016	.016	.024	.055

labels. The results are consistent with this view. The findings are also consistent with the claim that race is *so* obvious that children would not think to describe the pictured individuals in terms of it. To do so would be to violate conversational rules.

There are two reasons to reject this second interpretation. First, gender is an obvious way to describe people, yet the fact that gender is an extremely conspicuous feature of a person's identity did not lead to a dispreference for gender descriptions on the task. In fact, just the contrary: as Table 6 shows, gender is the most common descriptor used. More importantly, if race is taken as shared knowledge, then we would expect race to be an especially memorable aspect of an individual's identity. Yet, subsequent questioning revealed that children were not particularly accurate at recalling whether the various ethnic groups had been depicted in the picture story. Following the probed recall, the experiment asked whether there had been any whites in the story. She then asked if there were any Chinese in the story, then North Africans, and then blacks. Children's recall was generally poor: 53% of the children correctly recalled that a white had been in the story; 37.5% correctly recalled that there had been a Chinese in the story; 15.6% recalled that there was a North African character; and 46.9% correctly remembered that a black was in the story. If race is such an obvious feature that children do not find it worth mentioning in the visual identification task, it is not clear why their recall for race is so poor.

Perhaps the most important finding is that priming had no effect on visual identification. Pairing verbal labels with depictions of their referents (pairing tasks) did not facilitate the labels' retrieval when the child encountered similar representations of the same referent in the identification task. Thus, pairing the picture of North African man with the label "North African" does not increase the likelihood that subjects will subsequently refer to a picture of a North African with the term "North African." This finding deserves comment.



According to the widely held view described in the introduction, children construct racial and other social categories by pairing perceptual information with ambient verbal labels. A number of studies show that preschool children match such labels with pictorial exemplars (Aboud, 1988; Blaske, 1984; Lerner, 1973; Pope Edwards, 1984). Although these studies indicate that some perceptual information is associated with the verbal category, they do not help us specify the scope of that association. This issue is not unique to racial categories. The amount of perceptual information associated with verbal categories varies considerably. The perceptual information associated with a verbal category, for example, might be relatively fragmentary. One might recognize a representation of the label's referent only if one's attention is directed toward a relevant domain of variation. Additionally, familiarity with the word might matter. Given "armadillo," for example, we might not be able to build a detailed mental image of the creature, although we might easily recognize a specimen from a photograph.

These possibilities can be rephrased in terms of the relationship between exposure to a perceptual cue and the retrieval of a verbal label. In the case of racial categories, recognizing that the verbal label and the perceptual cue go together could imply either that (i) the perceptual information is directly represented in the racial concept, such that observing the perceptual cue brings to mind a specific verbal label; (ii) the perceptual information is contained in the racial concept, although in a less direct way, such that the perceptual cue brings to mind the specific verbal label only under certain conditions; or (iii) only the *fact* that perceptual information is important (rather than any specific perceptual information per se) is represented in the racial concept. Hence observing the perceptual cues brings to mind the verbal label only when attention is drawn to a relevant and present perceptual contrast *and* the verbal label is provided.

If the first relation (i.e., the verbal label is directly brought to mind by the perceptual cue) typified young children's racial concepts, we would expect the results of Experiment 2 to parallel or exceed those of Experiment 1. That is, race should be at least moderately salient in social description on both tasks. Clearly this was not the case. If the second relation typified young children's racial concepts (i.e., the label is brought to mind by the perceptual cues only under certain attention-directing conditions), then we would expect that the results of Experiment 2 would parallel those of Experiment 1 under the priming condition, but they did not. Finally, if the third relation holds (i.e., the verbal label and the perceptual cues are associated only if the two are immediately conjoined *and* attention is drawn to the contrast), then priming should have no necessary effect and performance on the two tasks should not be related. This is the pattern obtained.

*Probed recall task.* Each subject's responses were assigned to one of six response categories: gender, occupation, race, nonracial physical feature, activity, and clothing. For each subject and each social descriptor, a social descriptor recall index was computed by dividing the number of times each child mentioned the descriptor by the total number of descriptions s/he offered. Six recall indices were computed by dividing these scores by the number descriptions the subject offered. The recall index was averaged over subjects and entered into a 2 (age)  $\times$  2 (priming) ANOVA with type of descriptor and reading as repeated measures. As shown in Table 7, a main effect for type of descriptor was obtained,  $F(5,150) = 15.5$ ,  $p < .0001$ . Post hoc analyses revealed that the rates of recall of gender ( $M = .27$ ), clothing ( $M = .24$ ), and behavior ( $M = .22$ ) were not different from each other but significantly higher than the rates of recall of occupation ( $M = .13$ ), race ( $M = .07$ ), and nonracial physical feature ( $M = .06$ ), which were also not different from each other. One interaction was found: reading by type of descriptor,  $F(5,150) = 3.37$ ,  $p < .007$ . Simple effects analysis indicated that this was primarily due to an increased number of clothing descriptions and a decreased number of gender descriptions on the second reading. No effects for priming were found.

Several features of these findings stand out. First, patterns of visual narrative identification and recall correspond closely. The major findings of the visual narrative identification task were replicated in the recall task: viz., (i) an absence of developmental differences, (ii) very low levels of mention of race and nonracial physical features, and (iii) an absence of a priming effect. This suggests that discrepancies between my results and previous findings are attributable to having embedded social judgments in complex contexts rather than to memory factors since results of memory-based and non-memory-based tasks closely converge.

TABLE 7  
Experiment 2b: Mean Percentage Rates of Recall of Social Descriptors for the Two Age Groups, Visual Narrative, Recall Index

Social descriptor	Age level			
	3-year-olds		4-year-olds	
	First recall	Second recall	First recall	Second recall
Gender	.285	.231	.329	.223
Behavior	.239	.224	.249	.188
Clothing	.222	.327	.164	.270
Occupation	.103	.113	.134	.173
Race	.086	.072	.047	.075
Nonracial physical feature	.056	.044	.078	.068

## GENERAL DISCUSSION

Taken together, the results of Experiments 1 and 2 cast doubt on the widespread view that simple surface cues are the most fundamental component of racial categories. Children recalled considerably more racial information after listening to a complex verbal narrative than after viewing a complex visual one. In contrast, the visual narrative led to recall of other kinds of social information in greater detail than did the verbal text. Variations in memory for social descriptors cannot be attributed to the medium of task. Instead they probably reflect different conceptual formats for different social properties. Even when the link between the racial label and its referent were pointed out immediately before viewing the visual text, children's use of racial labels was almost nonexistent. My results contrast with the widely documented finding that racial awareness undergoes marked development during the late preschool years. I found no developmental trends once memory factors were controlled for. Finally, I found that embedding judgments in a social context significantly decreased the salience of race as a factor in classifying people; children recalled considerably less information about peoples' race than information about their occupation or behavior.

Young children readily differentiate people on the basis of racially relevant perceptual cues. Preschoolers also have racial categories: they recognize the existence of named, enduring groups of humans. Virtually all previous work on racial concepts has assumed that these two phenomena compose a single system. We have argued that they represent two distinct, but overlapping conceptualizations.

The systems articulate in two ways. First, racial concepts contain some perceptual information, but it is extremely fragmentary, specifying only that certain kinds of perceptual differences are pertinent to group membership (young children probably realize that skin tone is a pertinent dimension, finger length is not).<sup>5</sup> Young children are adept at matching racial labels to individuals differing on relevant dimensions, but only when both label and referent are simultaneously made available. Thus, my argument is not that perceptual input is completely irrelevant to emerging racial categories. Rather, I propose that in building racial categories, obvious surface cues like skin color are not defining for young children.

A second way in which perceptual and verbal categories overlap is developmental. During early childhood a gradual calibration of the perceptually oriented and domain-oriented concepts is achieved. I contend

<sup>5</sup> Skin tone is the easiest racially relevant perceptual feature to discriminate for preschoolers, although it is not the most salient perceptual cue in racial recognition (Sorce, 1979).

that previous research has confounded this evolving articulation of perceptual and racial categories by interpreting the first stages of this calibration as developmental changes in racial awareness *per se*.

If learning ethnic and racial labels is not directly conditioned on surface cues for color and the like, another empirical paradox in the racial preference literature dissolves. Young children display pervasive racial prejudices, as measured on a variety of experimental tasks. Yet, generally race is a poor predictor of preschooler interaction, specifically playmate choice (Doyle, 1983; Finkelstein & Haskins, 1983; Lambert & Tachuchi, 1956; McCandless and Hoyt, 1961; Singleton & Asher, 1979). Moreover, studies comparing levels of prejudice with actual behavior in the same child have found the two phenomena to be unrelated, so that preschooler interaction with children of differing groups typically cannot be predicted from children's assessed racial preferences (Katz, 1982; Porter, 1971; Stevenson and Stevenson, 1960).

There are at least two interpretations of this lack of association between prejudice and behavior. First, it might be that young children's preferences generally do not influence behavior (at least in the way adult prejudice is thought to govern adult behavior). This is unlikely given that young children's attitudes about gender and body type do appear to directly condition the child's everyday behaviors, in much the same way that adult attitudes shape adult behaviors (Fagot, Leinbach, & Hagan, 1986; Lerner, 1973). Similarly, while race is a weak predictor of playmate choice, gender is a strong predictor (McCandless and Hoyt, 1961). A second interpretation of this lack of association between prejudice and behavior is that young children's racial beliefs *cannot* influence their behavior. If young children's representations of racial categories are not rich with perceptual information (and therefore directly associated with specific differences in appearance), preschoolers may be unable to translate their dispreferences for members of minority groups into behavior. In short, young children might have little difficulty expressing racial prejudice, but would experience some difficulty in *instantiating* racial categories.

The results obtained from the present experiments also allow us to speculate over the reason race and occupation have such different saliency for young children. Social descriptions are purposeful, they permit the child to pick out relevant aspects of actors and actions, so as to render events meaningful. Presumably this accounts for the heightened saliency of behaviors in children's descriptions. As we saw in Experiment 1, this is true even for behaviors that are (on the experimenter's account) irrelevant to the unfolding stream of events. Occupation may be particularly salient in recall because occupations represent recurring and purposeful behaviors (policemen protect people, doctors cure them when they are ill,

postmen deliver the mail, etc.) and are thus meaningful to the interpretation of events (see also, Hirschfeld, in press).

The concept of race performs a quite different job, one whose contribution to understanding may be less directly evident, and thus one whose salience may be attenuated relative to other social constructs. Race is part of the child's expanding social ontology, it is an early step in cataloging and discovering the relevance of human *groups* (Hirschfeld, 1988). Moreover, the fact that young children appear more concerned with developing a conceptual vocabulary for racial variation than a catalogue of physical differences suggests that this impulse to find racial types involves expectations about global concepts rather than the differentiation of specific ones (Hirschfeld, 1988; Mandler et al., 1991).

Races (on the folk-model) are not simply groups of individuals, they are *kinds of people*. Being a member of a particular race means (on the folk-model) sharing certain intrinsic, physical properties with other members of one's race. Previous research suggests that preschoolers have only a tenuous understanding of this aspect of racial categories, arguing that the inherent and unchanging quality of race is not appreciated before 7 years of age (Aboud, 1988; Clark, Hocevar, & Dembo, 1980). Similarly, it is claimed that preschoolers have a parallel lack of appreciation of the enduring and physical nature of gender categories (Stangor & Ruble, 1987). Recently Bem (1989) has suggested that this work may have underestimated young children's understanding of the relationship between gender categories and intrinsic physical features. Elsewhere (Hirschfeld, in press) I suggest that this may be the case for race as well, arguing that young children distinguish between the contribution race and nonracial physical features make to judgments of identity despite the fact that both equally dominate appearance. Racial categories thus seem to develop like biological categories in terms of the contribution intrinsic properties are thought to play in early representations of both types of category. Patterns of recall, particularly in Experiment 1, lend further support to this claim.

Together these findings suggest that a single learning strategy, dominated by attention to appearances, does not operate over the development of all social categories, even those for which physical correlates are available. Rather, young children's early representations of racial and other social categories seem to be guided by expectations about the relations between category members and the kinds of data relevant to these relations. Occupational and other behavioral categories are integral to finding meaning in everyday experience; racial and gender categories are integral to finding the sorts of things there are in everyday social experience. Social categories, like natural ones, have this sort of inductive richness because social categories are the product of domain-specific devices, not

because they are inferences from superficial differences. Children do not find races because they are there to be found. They find races because they are following an impulse to categorize the sorts of things there are in the social world. Increasingly social theorists have concluded that racial categories are historically constructed and relatively independent of the regularities in physiognomy adults often associate with them (Stoler, 1992). It is intriguing that most 3-year-olds seem to recognize this as well.

## APPENDIX

### *Experiment 1: Stimulus Story, Character Assignment 1, French Version*

Il était une fois un petit garçon qui voulait faire plaisir à sa maman pour son anniversaire. Il décida de lui offrir une belle écharpe mais il ne savait pas dans quel magasin acheter cette écharpe. Il se dirigea vers le centre commercial qui se trouvait près de chez lui. La première personne à qui il demanda un renseignement fut un grand facteur noir. "SVP, Monsieur, où se trouve le magasin qui vend des écharpes?" Le grand facteur noir réfléchit et dit: "Je sais qu'il y a un magasin, pas loin d'ici, mais je ne sais pas exactement où il se trouve. Demande à la jeune vendeuse de journaux." Le garçon s'approcha de la jeune vendeuse de journaux et lui demanda: "SVP, Madame, où se trouve le magasin qui vend des écharpes?" "Crois-tu que je n'ai que ça à faire?" répondit-elle en colère. Je ne suis pas un bureau de renseignements. Va plutôt embêter le vieux chauffeur de taxi arabe à côté et demande-lui." Le garçon s'approcha du vieux chauffeur de taxi arabe et lui demanda: "SVP, Monsieur, où se trouve le magasin qui vend des écharpes?" Il le regarda et lui dit: "Je sais que c'est quelque part, pas loin d'ici, mais je ne sais pas exactement où il se trouve. Va demander à la grosse épicière chinoise." Le garçon s'approcha de la grosse épicière chinoise et lui demanda: "SVP, Madame, où se trouve le magasin qui vend des écharpes?" "C'est facile, jeune homme!" dit-elle en souriant, "C'est tout près d'ici, juste derrière toi, sur ta droite, à une cinquantaine de mètres. Je t'accompagne jusqu'au magasin, si tu veux." Le jeune garçon entra dans le magasin et acheta une belle écharpe rouge pour l'anniversaire de sa maman.

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