

Semantic Retrieval in Children and Adults

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This experiment was designed to explore the question of how college-age adults and 8-, 11-, and 13-year-olds retrieve semantic information from long-term memory. The subjects were timed as they judged whether sentences pairing animal names and properties (e.g., "A lion has a mane") were true. Models of long-term memory hold that differences in the speed of judging various such sentences reflect differences in the organization of semantic memory. To assess theoretical conceptions, relationships between animal names and properties were varied in two ways: Properties were at one of three levels of "saliency" (rated association strength) and at one of three levels of specificity (e.g., *mane* is highly specific to lion, but *skin* is general to all animals). Closely comparable results were obtained at each age level. Sentences with highly salient properties were verified more quickly than were those with less salient properties, and statements with low-specificity properties were verified more quickly than sentences with more specific properties. This evidence on developmental similarity in semantic retrieval is discussed in relation to developmental differences in the use of semantic information in other cognitive tasks.

In order to produce and comprehend sentences, one must access information in long-term memory. To account for the success of children—even very young children—in processing sentences, it seems necessary to assume that children can rapidly and accurately retrieve some detailed information on word meaning from long-term semantic storage. However, the extent of developmental similarities and differences in the organization of semantic storage and retrieval has not been analyzed in previous research.

Many inferences about semantic memory in adults have been drawn on the basis of variations in the time that adult subjects take to confirm the truth of various sentences. Suppose, for example, that "A lion has a mane" is verified more rapidly than "A lion has a foot." Most theorists would assume that systematic differences in the organization of long-term memory make *mane* more

accessible than *foot*, when a relationship to *lion* must be verified. An extensive literature now exists concerning sentence confirmation by adults and possible models of long-term memory (e.g., Meyer, 1970; Rips, Shoben, & Smith, 1973) that could account for some of the findings. In contrast, there is little evidence from children that bears indirectly or directly on semantic retrieval in sentence verification.

In the present study we first determined that adults' sentence verification times were systematically related to the nouns in a set of sentences. We then extended the paradigm and same set of sentences to 8-year-olds, 11-year-olds, and 13-year-olds. Thus, we could determine whether the children at each age level show the same patterns of verification times as adults. The age range between 8 and 13 years was chosen because much previous research indicates that 7- to 8-year-olds are typically less systematic and accurate than older children and adults in their use of semantic information in a variety of conceptual tasks (e.g., Anglin, 1970; Bruner et al., 1966). The present work is a step toward determining if *retrieval* of semantic information shows similar developmental changes.

The basic paradigm was simple: Subjects

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