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Why Did You Forget This Name? On Children's Failure to Generalize Novel Names: A Memory Account

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In the novel name learning task, young children are usually thought to perfectly segregate an object from the scene in which it is embedded in. They are also supposed to perfectly recognize, designate the correct object in a transfer phase and to generalize the association to new instances that differ from the original object according to various dimensions (see Bloom, 2001; Carey & Bartlett, 1978; Childers & Tomasello, 2002; Clark, 1993).

On the other hand, undergeneralization is quite common in early lexical learning. It is defined as a lexical use in which children extend a novel word to a subset of the referents to which the adults extend this word (e.g., the word "dog" used for small dogs only). The usual explanation is conceptual: preschool children fail to extend the novel word because they do not understand that the "other" entities belong to the same category as the ones to which they extend the word.

We test a memory hypothesis: some undergeneralizations are not conceptual but result from a weaker association in memory between the transfer referents and the word than with the learning referent and the word.

One way to show that undergeneralization is not conceptually-based would be to show that children (1) extend novel words less well to referents they have never seen before than to the learning referents; (2) understand that the transfer objects belong to the same category as the learning phase object. The paradigm: in a post-test, compare the performance obtained for the learning phase stimuli with the performance for new stimuli belonging to the same category.

Methods

Subjects:

Two groups of 22 children aged 3 (36 to 47 months).

Materials

In the learning phase, four pictures of unfamiliar novel stimuli (animals and tools such as plane) displayed on a background scene. In the transfer phase, one group received the same instance as in the learning phase (e.g., the same plane). The second group received new instances of the same categories (e.g., a new plane).

Procedure

In the learning phase, participants saw the stimuli four times and heard the name eight times. They had four opportunities to repeat each novel word. The two transfer phases were composed of a naming task (recall the name of the object) and a designation task (point to the "novel name" object in a

set of objects). The first one was immediately after the training phase; the second one was given 3-to-5 days later. After each post-test, children were to put the stimuli that belong to the same category together.

Results

A 2 x 2 x 2 ANOVA with type of item (same item vs. new item) as a between variable, delay (immediate vs. 3-to-5 days later, and task (naming vs. designation task) as within variables was performed on the data. They revealed a significant effect of task (designation task > naming task) and a significant effect of type of item in both tasks (there was no interaction with task). The "same items" were better associated with their name than the new items even though participants said that they both belonged to the same category. The delay had no significant effect.

General discussion

The worse performance for the new items (undergeneralization) cannot be explained by conceptual factors. We suggest that in the learning phase referents become associated with their name and act as memory cues in the transfer phase. By definition, the "same stimuli" have richer cues than "new stimuli" that differ from the new stimuli. Note that we got the same results in another experiment when the stimuli were displayed on a different scene in the transfer phase than in the learning phase.

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