

# The Search for the Object Begins at the Verb: Rapid Inferential Word-Learning by Two-year-old Children



*Research on early word learning has focused primarily on how infants learn words through direct labeling. But as children grow older, most of their word learning becomes indirect as they begin to use contextual cues to infer the meanings of new words. This study examined how infants use information from a familiar verb to infer the referent of a novel noun. The goal was to teach children the names for two new objects that were never labeled directly. By monitoring children's eye movements we tracked the time course of orientation to the novel object that corresponded to each of the verbs. Within milliseconds of hearing the verb - and before hearing the novel noun - children inferred which picture was being talked about and oriented themselves toward it. Moreover, children learned and remembered the names for the novel objects. When tested later in sentences without cues from the verb, children reliably looked at the correct picture. This is the first study to show that inferential learning of new words by young children happens very rapidly as the sentence unfolds.*

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As adults we take learning words for granted. However, for young children acquiring their native language it is a difficult task. A simple example illustrates the complexity of the word learning issue. Suppose a British businesswoman travels to Italy, having forgotten her pocket translator. While seated in a restaurant, she overhears someone at a nearby table say *Limoncella!* Looking around, she sees people enjoying their meals, surrounded by objects like food, utensils, tables, and chairs. How can she figure out what *limoncella* refers to? In essence, this is the “word-learning problem.” How can children listening to a stream of language make the correct sound-meaning correspondences? One possibility is that children use their existing linguistic knowledge to infer the meanings of new words. For example, assume our British businesswoman's bilingual friend then turns to her and comments *She's drinking limoncella.* Now when the businesswoman looks at the neighboring table and sees a woman

drinking from a glass, she can use her knowledge of the verb “drink” to infer that “limoncella” probably refers to the beverage. As children begin to acquire new vocabulary at a faster rate around the age of two years, they must also use existing linguistic knowledge in a similar way to figure out the meanings of novel words.

In this study we investigated whether or not 28- to 30-month olds could learn the names of unfamiliar objects using their knowledge of familiar verbs and cues from the visual context.

A previous study by Goodman, McDonough, and Brown (1998) showed that 24- and 30-month-old children can use information from a familiar verb to learn the name for an unfamiliar object. In their picture book task, the children heard sentences such as *Mommy feeds the ferret. Show me the ferret.* as they looked at pictures of four novel objects. In this example, only one of the pictures was

animate. Goodman et al. predicted that if children understood that the verb “feed” requires an animate recipient, they should infer that the novel word “ferret” refers to the animate picture, since none of the three inanimate distracter pictures was an appropriate match. They found that children used semantic information from the familiar verbs to identify the correct novel pictures.

While a picture book procedure can be used to demonstrate word learning, it offers little insight about how quickly children make such inferences. The experimental method used in the present study allowed us to pinpoint exactly when children made the connection between the novel word and its referent. We examined how children form sound-meaning correspondences as speech unfolds in a looking-while-listening task. This procedure let us identify at which point in the sentence children oriented themselves toward the correct picture.