

New Research From Psychological Science

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Read about the latest research published in *Psychological Science*:

[The Emergence of an Abstract Grammatical Category in Children's Early Speech](#)

Stephen C. Meylan, Michael C. Frank, Brandon C. Roy, and Roger Levy

The extensive debate about the origins of early language in children has involved two competing theories. The generativist view suggests that children's comprehension and language production is guided by adult-like abstractions from very early in development. Conversely, the constructivist view proposes that representations emerge over time as children's experiences grow. In this study, researchers used a Bayesian model to analyze corpus samples (i.e., voice recordings of children) with the goal of determining language productivity over time. Eight corpora from a total of 26 children were used in the analysis. Although the results were marginally consistent with the constructivist view — children initially lacked rich grammatical knowledge before rapidly gaining the ability to generalize — it was also suggested that the available data may not have allowed for a proper test of the generativist view. These findings indicate a need for denser data sets to provide stronger evidence about the roots of early language development.

[The Development of a Cross-Modal Sense of Body Ownership](#)

Elena Nava, Nadia Bolognini, and Chiara Turati

One way that researchers have studied multisensory integration and sense of self is through the rubber-hand illusion (RHI). In one version of this paradigm, a person's hand and arm are concealed and a life-sized rubber hand takes their place. A researcher then simultaneously stimulates the rubber hand and the person's concealed hand. If the procedure is successful, people come to perceive the rubber hand as their own. To examine the development of cross-modal sense of body ownership, researcher induced the RHI in 4- to 5-year-olds, 8- to 9-year-olds, and adults. Sense of body ownership in the illusion, as

assessed by explicit survey measures, was present by age 4, but effects of the illusion, as measured by a pointing task, were present only in the 8- to 9-year-olds and adults. According to the authors, one reason for these findings may be that very young children lack the ability to effectively integrate tactile and proprioceptive cues, preventing the tactile effect of the illusion on the sense of hand position.

[Adaptable Categorization of Hands and Tools in Prosthesis Users](#)

Fiona M. Z. van den Heiligenberg, Nick Yeung, Peter Brugger, Jody C. Culham, and Tamar R. Makin

In this study, the researchers examined factors that influence how tools become incorporated into the neural representation of the hands. Participants who were born without a hand, who were missing a hand because of amputation, or who had two functioning hands completed a visual-priming task. In the task, participants were shown a prime stimulus (an image of a tool, hand, or prosthesis) followed by a target stimulus (an image of a hand or a tool). In some of the trials, the prime and target stimuli were from the same category (congruent); in others, they were from different categories (incongruent). Participants were instructed to indicate whether the target image depicted a hand or a tool. The researchers found that participants' categorization of hands and tools — and their representation of prostheses as hands — depended on the age at which they lost their hand (i.e., the amount of experience they had with a natural hand) and the amount of prosthesis usage in their daily lives.