

Gestures research suggests language instinct in young children

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Credit: Robert Kraft/public domain

Young children instinctively use a 'language-like' structure to communicate through gestures.

Research led by the University of Warwick suggests when [young children](#) are asked to use [gestures](#) to communicate, their gestures

segment information and reorganise it into language-like sequences. This suggests that children are not just learning language from older generations, their preference for communication has shaped how languages look today.

Dr Sotaro Kita from Warwick's Department of Psychology led the study with Dr Zanna Clay at the University of Neuchatel, Ms Sally Pople at the Royal Hampshire Hospital and Dr Bruce Hood at the University of Bristol.

In the paper, published in the journal *Psychological Science*, the research team examined how four-year-olds, 12-year-olds and adults used gestures to communicate in the absence of speech. The study investigated whether their gesturing breaks down complex information into simpler concepts. This is similar to the way that language expresses complex information by breaking it down into units (such as words) to express a simpler concept, which are then strung together into a phrase or sentence.

The researchers showed the participants animations of motion events, depicting either a smiling square or circle that moved up or down a slope in a particular manner (eg jump or rolling). Each participant was asked to use their hands to mime the action they saw on the screen without speaking. The researchers examined whether the upward or downward path and the manner of motion were expressed simultaneously in a single gesture or expressed in two separated gestures depicting its manner or path.

Dr Kita said: "Compared to the 12-year-olds and the adults, the four-year-olds showed the strongest tendencies to break down the manner of motion and the path of motion into two separate gestures, even though the manner and path were simultaneous in the original event.

"This means the four-year-olds miming was more language-like, breaking down complex information into simpler units and expressing one piece of information at a time. Just as young children are good at learning languages, they also tend to make their communication look more like a language."

Dr Clay said: "Previous studies of sign languages created by deaf children have shown that young children use gestures to segment information and to re-organise it into [language](#)-like sequences. We wanted to examine whether hearing children are also more likely to use gesture to communicate the features of an event in segmented ways when compared to adolescents and adults."

The researchers suggest the study provides insight into why languages of the world have universal properties.

Dr Kita added: "All languages of the world break down complex information into simpler units, like words, and express them one by one. This may be because all languages have been learned by, therefore shaped by, young children. In other words, generations of young children's preference for communication may have shaped how languages look today."

More information: The paper, 'Young Children Make Their Gestural Communication Systems More Language-Like: Segmentation and Linearization of Semantic Elements in Motion Events' is published in *Psychological Science*.

Provided by University of Warwick

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