

# How iconic hand gestures can change children's memory representation of action events.

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## Abstract

It is difficult for young children to pinpoint what aspect of a complex scene a new verb refers to (e.g., Gentner, 1982; Gentner & Boroditsky, 2001; Imai et al., 2008). Imai, Haryu, and Okada (2005) showed that children are perfectly capable of encoding actions, and therefore they suggest that the difficulty children experience lies not within encoding a complex event. However, their study also revealed that children generally remember other aspects of a complex scene better than actions. In particular, three-year-olds remember actors much better than actions (Imai et al., 2005). This may contribute to children's difficulty in extending an action label to new situations in which the same action is shown, but the actor has changed. That is, it is difficult for children to understand that these situations include the same action as before when other aspects of the scene have changed.

One way for children to overcome this struggle is to attend to iconic gestures that often accompany verbs to illustrate what is said (Özçalışkan, Gentner, & Goldin-Meadow, 2013). Gestures are iconic when they represent actions or attributes associated with people, animals, or objects in the world (e.g., zigzagging the hands to represent a fish swimming). Our aim is to investigate whether seeing a complex event accompanied by an iconic gesture that maps onto the action in the event can alter children's memory representation.

We are planning to collect data from an experiment that presents three-year-old children with videos in which actors move across a scene in a novel manner. When children are watching a video the experimenter will say "Wow! Look at what s/he is doing!" and produce either an iconic gesture depicting the manner in which the actor moves, an interactive gesture not providing any information about the manner of moving (Bavelas, Chovil, Lawrie, & Wade, 1992), or no gesture at all. Several hours later, children will be required

to point out the video that they watched before in a forced-choice paradigm where previously shown videos are paired up with distractor videos that either present the same actor doing a different action, or a different actor doing the same action. If children choose the videos that they have seen before over the distractor videos in which the actor or action has changed, then this indicates they remembered the actions and actors, respectively. We predict that children in the iconic gesture condition have a better memory for actions and a worse memory for actors than children in the interactive gesture and no gesture conditions.

We aim to present the results of this experiment at the conference and discuss the implications of the role of gesture in memory and verb learning.

*Keywords:* Iconic gestures; action memory; actor memory; recognition task.

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