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Function composition in human infants: 15-month-olds spontaneoulsy combine two newly learned functions of a tool

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Abstract

The productivity of the human mind is rooted in the ability to flexibly combine concepts and computations. Developmental origins of this ability remain poorly understood. In two looking-time experiments, we investigated whether 15-month-olds (N = 48) can learn two distinct functions and compose them. We used a tool that transformed objects: it had two functions (i.e., it changed the kind of the object that went inside, or duplicated it), each triggered by a different handle. Experiment 1 showed that infants could learn both functions: at test, they looked longer when the outcome of the handle manipulation did not match the performed action than when it did. In Experiment 2, following a familiarization with individual manipulations and their outcomes, both manipulations were performed simultaneously at test. Infants displayed surprise when the outcome was inconsistent with a function composition. Infants readily learn two novel functions and spontaneously combine their outcomes.

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