Can I eat that too? How toddlers learn about edible plants

Study investigates 18–month-olds' ability to identify edible plants

Berlin, 23 April 2019 – We eat the fruits of some plants, the leaves of others, the seeds or roots of others. Some plants can be eaten raw; others have to be cooked. Some skins are edible; others are not. Our knowledge of edible plants is highly complex. The "Naturalistic Social Cognition" research group at the Max Planck Institute for Human Development in Berlin investigates how humans acquire this knowledge in childhood. In a new study conducted in collaboration with Yale University, researchers have investigated an important aspect of this learning process: infants' ability to identify edible plants. The results have been published in the Appetite.

Before the days of supermarkets and packaged foods, humans lived in wild environments and were exposed to countless varieties of plants—some edible, some toxic, many simply unpalatable. Whereas the fruits of some plants can be picked from trees and eaten directly, other plants have to be dug up out of the ground and their roots cooked, or their seeds soaked and ground. It would be impossible and far too risky to acquire this knowledge by means of trial and error. Rather, humans learn from early childhood on, by watching the adults around them eat plants.

But are toddlers able to identify the type of plant they have seen adults eat in one situation when they encounter it again in another situation? Researchers from the Max Planck Institute for Human Development and Yale University have studied this important aspect of how human infants learn about food—the ability to generalize—in a sample of 40 participants aged 18 months.

The toddlers watched an adult pick and eat a piece of dried fruit from a realistic-looking artificial plant in a laboratory setting. The adult either ignored another, different-looking plant or, in another experimental set-up, picked the dried fruit, but then threw it on the ground. The two artificial plants looked different from each other, simulating two types of plant. One plant had narrow, pointed leaves; the other, broad, heart-shaped leaves. One had purple dried plums "growing" on it; the other, orange dried apricots. Which plant type was edible and which was non-edible was varied from participant to participant.

Subsequently, another adult presented the children with two new artificial plants that resembled the plants they had previously seen, but were not exactly the same. Now it was up to the toddlers to choose between the plants: About two-thirds reached for the plant that resembled the one the adult had eaten from before, and ate the same kind of dried fruit as the adult. "With these experiments, we found that children as young as 18 months old only have to watch an adult eating from a certain plant once to learn that similar-looking plants are also edible," says Annie E. Wertz, head of the Max Planck Research Group “Naturalistic Social Cognition” at the Max Planck Institute for Human Development and lead author of the study.
Further research will clarify whether and how even younger children are able to generalize information about edible plants, and which features children use to identify similar-looking plants.

**Original Publication**

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