

New Study Shows That Infants Have “Mind-Reading” Capability

August 03, 2007

One of the unique characteristics of humans that distinguish us from the animal kingdom is the ability to represent others' beliefs in our own minds. This sort of intuitive mind-reading, according to experts, lays the cognitive foundations of interpersonal understanding and communication.

Despite its importance, scientists have yet to reach a consensus on how this psychological function develops. Some argue that this complex and flexible ability is acquired at the age of 3-4 years and only after prerequisites such as language grammar are fulfilled. Others suggest specialized developmental mechanisms are in place at birth, allowing infants to refine this ability very early in life.

Luca Surian, a psychologist at the University of Trento in Italy, and his colleagues believe they have made some progress in the debate. In a study published in the July issue of *Psychological Science*, a journal of the Association for Psychological Science, Surian found that 13-month-old infants were able to exhibit the ability to attribute mental content.

In two experiments, the researchers had the infants watch a series of animations in which a caterpillar went in search of food (either a red apple or a piece of cheese) that was hidden behind a screen. In some scenes, the caterpillar could see a human hand situating the food, but in others there was no hand to drop a hint. The caterpillar was either successful finding the preferred food behind the correct screen, or went behind an alternative screen with the other type of food behind it.

When the caterpillars didn't do what one would expect — going to one screen despite seeing the human hand place the desired food behind the other — infants tended to look at the animation longer, suggesting puzzlement about the caterpillar's actions. “This result,” says Surian, “Suggests the infants expected searches to be effective only when the [caterpillar] had had access to the relevant information.”

The findings indicate that the mental structures and the psychological reasoning skills allowing us predict other's behavior are in place at a very young age and their development does not entirely rely upon the environment or associative learning mechanisms. Surian proposes that “infants who expect agents' behavior to be guided by such internally available information thereby exhibit an ability to attribute mental content — and this is mind reading proper, however rudimentary.”