

What is uniquely human? An answer from studies of chimpanzees

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Brief biography: Tetsuro Matsuzawa is Director of the Primate Research Institute, Kyoto University, Japan. He studies chimpanzee intelligence both in the laboratory and in the wild. The Ai project began in 1978 with research on language-like skills and number concepts in a single chimpanzee, and now focuses on cultural transmission of knowledge, skills, and values across generations. Research on behavior of wild chimpanzees in their natural habitat in Bossou, Guinea, West Africa, since 1986 has documented use of pairs of portable stones as hammer and anvil to crack open oil-palm nuts, and has examined hand preference, critical periods, education by master-apprenticeship, and cultural variation across adjacent communities. Prof Matsuzawa's many publications include such books as, "Primate origins of human cognition and behavior" (2001), "Cognitive development in chimpanzees" (2006), "The mind of the chimpanzee" (2010), "Chimpanzees of Bossou and Nimba (2011).

Abstract: I have studied chimpanzees both in the wild and in the laboratory. My talk aims to compare cognitive development in humans and chimpanzees to illuminate the evolutionary origins of human cognition. Comparison of morphological data and life history highlights the common features of all primate species, including humans. Upright posture and bipedal locomotion are important in human evolution, but it is stable supine posture that made us human, in terms of cognitive development. The human mother–infant relationship is characterized by the physical separation of mother and infant, and by the stable supine posture of infants, which enables vocal exchange, face-to-face communication, manual gestures, and object manipulation. The cognitive development of chimpanzees was studied using the participant observation method. Findings reveal that humans and chimpanzees show similar development until 3 months of age. However, chimpanzees have a unique type of social learning that lacks the social reference observed in human children. Moreover, chimpanzees have unique working memory capabilities. Taken altogether, my talk presents a plausible evolutionary scenario for the uniquely human characteristics of cognition.



Participant observation: the triadic relationship of human researcher, chimpanzee mother (Ai), and her infant (Ayumu)



Young chimpanzee (Ayumu) does the computer-controlled memory task.



Bossou chimpanzee uses a pair of portable stones to crack open nuts.