

Sense of Self in Baby Chimpanzees

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Abstract

Philippe Rochat and his colleague tentatively proposed that young infants' propensity to engage in self-perception and systematic exploration of the perceptual consequences of their own action plays and is probably at the origin of an early sense of self: the ecological self. Rochat and Hespos (1997) reported that neonates discriminate between external and self-stimulation. Neonate tended to display significantly more rooting responses (i. e., head turn towards the stimulation with mouth open and tonguing) following external compared to self-stimulation. Rochat et al. (1998) also reported that 2-month-olds showed clear sign of modulation of their oral activity on the pacifier as a function of analog versus non-analog condition. Rochat and his colleague concluded that these observations are interpreted as evidence of self-exploration and the emergence of a sense of self-agency by 2-month-olds. We tried to replicate these findings in infant chimpanzees. We observed rooting responses of three baby chimpanzees in two condition, self-stimulation and external stimulation. In external stimulation condition, the index finger of the experimenter or small stick touched one of the infant's cheeks. In self-stimulation condition, the experimenter took infant's hand and touched hi or her cheek with their fingers. In Rochat and Hespos, they recorded and analyzed several measures such as state, head movement, mouth activity and so on. How ever, we analyzed only mouth activities tentatively. We found infant chimpanzees tended to show more rooting responses following external stimulation compared to self-stimulation as well as human infants (see Figure 1).

We also carried out sucking experiment with two baby chimpanzees. The experimenter held the pacifier and put the artificial nipple into the infant's mouth. A session started when the infant take the nipple inside the his or her mouth. Auditory stimulus, which was a complex tone comprised of six harmonics with equal intensity, was given to the chimpanzee according to the test condition during their sucking. There were four test conditions and each condition consisted with three types of feedback as follows: 1) silent baseline, contingent, and steady, 2) contingent baseline, 1-sec delay, and 3-sec delay, 3) contingent baseline, 6-sec delay, and 12-sec delay, 4) contingent baseline, 1/2 efficiency, and 1/4 efficiency. In test1, one infant chimpanzee showed decrease of the minimum pressure of sucking in the contingent condition. In test 2, one subject showed shorter intervals of sucking in 3-sec delay condition. This seems to be similar to human infant's We may be able to postulate ecological self in baby chimpanzees according to the self-exploration. In test 3 and 4, we did not obtain any effects of stimulus conditions. results of these studies. These studies were conducted as the parts of the chimpanzee development project in Primate Research Institute, Kyoto University, organized by Professor Tetsuro Matsuzawa.

References

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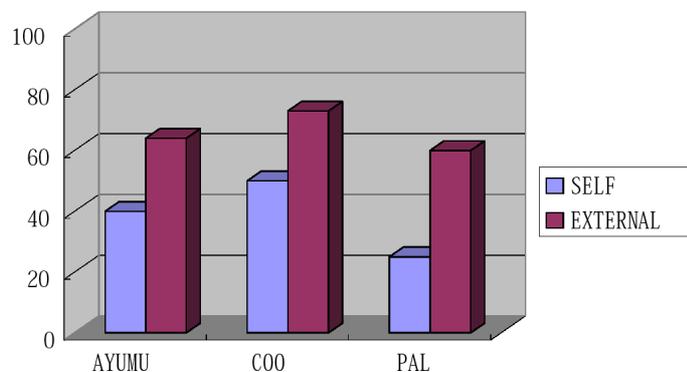


Figure 1: Percentage of each responses