

RELATIVE CONTRIBUTIONS OF KINEMATICAL INFORMATION AND GOAL REPRESENTATION FOR THE PERCEPTION OF SELF-AGENCY IN CHIMPANZEES AND HUMANS

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We investigated possible differences between humans and chimpanzees underlying the perception of self-agency. Humans distinctly recognize an event which caused by the self from other events observed in an environment. Such cognitive function is called as the perception of self-agency which allows us to establish the concept of self. It is known that chimpanzees have difficulties in copying of other's motor action but they could reproduce goal of other's action. These difference may reflect the differences in the perception of own voluntary action, however, this issue have rarely been addressed. Here we show that the chimpanzees have a difficulty in self-other distinction when goal of action was insufficient information. In experiments, two cursors were shown on the monitor and one of which was moved by the computer and the other was controlled by the participants. The participants were required to detect the cursor which they could move, and to hit either target shown on the monitor. The chimpanzees spent more time to detect the self cursor when the target which chimpanzees try to hit was accidentally correspond with the target which the distractor moved toward than when distractor moved toward different targets. However we didn't observe such effect in human participants. These results indicate chimpanzees were more dependent on the goal of action rather than kinematic motion for the self-other distinction, and suggest chimpanzees and humans may employ different strategies for the perception of self-agency. This work adhered to the ethical guideline of our institute.

Keywords: Comparative cognition, self recognition, voluntary action, goal of action