

## LATERALITY OF MANUAL ACTIONS IN SUBSTRATE USE BY CAPTIVE TUFTED CAPUCHIN MONKEYS (*CEBUS APELLA*)

Y. Sato<sup>1,2</sup>, Y. Fujimori<sup>3</sup>, M. Hayashi<sup>1</sup>

<sup>1</sup>Primate Research Institute, Kyoto University, Inuyama, Aichi, Japan, <sup>2</sup>Japan Society for the Promotion of Science, Chiyoda, Tokyo, Japan <sup>3</sup>Faculty of Applied Biological Sciences, Gifu University, Gifu, Gifu, Japan

Presenter's Email: [ysato@pri.kyoto-u.ac.jp](mailto:ysato@pri.kyoto-u.ac.jp)

Primate manual laterality has been discussed in relation to human handedness or their cerebral asymmetry and, in addition to macaques, chimpanzees, and humans, recent numerous studies have focused on manual laterality in capuchin monkeys. Tufted capuchins show a relatively wide range of exploratory behaviors and manipulatory skills including substrate use, e.g., banging a nut against a tree trunk. However, only two studies, one in the wild and the other in captivity, have focused on the laterality of manual actions in such a distinctive behavior of substrate use. The present study aimed to test five captive female tufted capuchins (*Cebus apella*, *sensu lato*) whether they show manual laterality during the substrate use. We provided walnuts (*Juglans regia*) to monkeys who could move freely in their square-shaped cage, equipped with perches and scaffolds to be used for banging them against. The result demonstrated that all of the participants showed more preference of either hand over the other, two of whom was biased to right and the remaining three to left. We also found that the strength of the laterality varies across individuals. One of them was prominently more biased to one side, three were moderately biased, and the other was less lateralized. Moreover, in two of the individuals, the changing in the strength of the laterality across the sessions is correlated with the changing in their performance across sessions. These results were discussed in terms of the underlying cognitive and motor process involved in the substrate-use behavior of capuchin monkeys.

Keywords: capuchin, laterality, hand, substrate use