

HAND PREFERENCE BY BLACK-AND-WHITE SNUB-NOSED MONKEYS (*RHINOPITHECUS BIETI*) IN CAPTIVITY: INFLUENCE OF TASKS AND SEXES

J. Pan^{1,2,3}, W. Xiao¹, Q-K. Zhao⁴

¹Dali University, Dali, Yunnan, China, ²University of Georgia, Athens, GA, USA, ³University of Science and Technology of China, Hefei, Anhui, China, ⁴Kunming Institute of Zoology, Kunming, Yunnan, China.

Presenter's Email: ustcpanjing@gmail.com (preferred) or pan@uga.edu

Degree of task complexity (Fagot and Vauclair 1991) and bimanual complementary role differentiation (Uomini 2009) have been proposed to explain why hand preferences in non-human primates are task specific. We examined how tasks (reaching, carrying, extractive foraging and object manipulation) and gender influenced hand preference in 11 adult black-and-white snub-nosed monkeys (*Rhinopithecus bieti*) out of a total of 13 known adult captive individuals of this species. This is the first study on hand preference in *R. bieti*. A logistic regression was used to analyze 2556 bouts of binary left- vs. right- hand use data. For extractive foraging and object manipulation, the primary acting hand was coded. The explanatory variables are tasks, gender, and the interaction of tasks and gender. Hand preference is influenced by tasks (Wald Chi-squared = 16.554, d.f. = 3, P = 0.001), in that subjects used the right hand significantly more often for extractive foraging and object manipulation than for reaching and carrying. We also found a significant interaction of sex and task (Wald Chi-squared = 13.919, d.f. = 3, P = 0.003): males used the left hand significantly more often than females for reaching and carrying, respectively, but not for extractive foraging or object manipulation. As predicted, the hand preference in *R. bieti* is not a fixed property of the species or sexes but depends on the task. This study was approved by the Ethics Committee of Kunming Institute of Zoology, Chinese Academy of Sciences and the Department of Animal Management of Kunming Zoo.

Keywords: laterality; handedness; reaching; object manipulation