

UNUSUAL PLANT CONSUMPTION BY CAPTIVE CHIMPANZEES (*PAN TROGLODYTES*), GORILLAS (*GORILLA GORILLA*) AND ORANGUTANS (*PONGO SP.*): LEARNING MECHANISMS INVOLVED

E. Gustafsson, M. Saint Jalme, M-C. Bomsel, S. Krief

National Museum of Natural History, Paris, France

Presenter's Email: erik.gustafsson@yahoo.fr

Great apes sometimes feed on potentially toxic plants with low nutritive value, but with bioactive properties. Investigating how apes acquire their diet and learn to consume plants with medicinal properties may be crucial to understand how these endangered species could react to habitat changes. This study aims to investigate factors affecting ontogeny of plants consumption in the great apes. We presented four different categories of plants ($n_{\text{species}}=7$) to captive groups of chimpanzees ($n_{\text{individual/group}}=14-9$), gorillas ($n_{\text{individual/group}}=7-5-3$) and orangutans ($n_{\text{individual/group}}=7-10-4$): 1) appetent-familiar item, 2) less appetent-familiar, 3) appetent-unfamiliar and, 4) less appetent-unfamiliar. We recorded all inspecting behaviours, food consumption and sharing with continuous sampling. Chimpanzees sniffed plants and observed closely their conspecifics manipulating food more frequently than the other apes, Close observations and food sharing were very rare in gorillas in comparison to orangutans and chimpanzees. These results suggest that individual learning, allowed by low neophobia levels, may be linked to adaptation to the unpredictable habitats (orangutans) and to physiological features of a species (the gorilla digestive system able to detoxify plants). Furthermore, social learning may be favoured by a social system that allows moderate levels of tolerance and interactions among the individuals (chimpanzees). In contrast with their semi-solitary nature, the numerous interactions recorded in the orangutans are difficult to explain and deserve a more accurate investigation. Ecological factors, social and physiological systems need all to be taken into account to gain a better understanding of species' predispositions towards individual or social learning mechanisms involved in the discovery of unknown plants.

Keywords: neophobia, ontogeny, zoopharmacognosy, plant selection