

GREAT APES AND ECONOMICS: EVIDENCE OF CALCULATION BEHIND RECIPROCAL TRANSFERS.

V. Dufour^{1,2}, M. Pelé¹, B. Thierry¹, J. Call³

¹*Département Ecologie, Physiologie & Ethologie, IPHC, CNRS, Université Louis Pasteur de Strasbourg, France.* ²*School of Psychology, University of St-Andrews, St-Andrews, United Kingdom.* ³*Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany*

Presenter's Email: Valerie.dufour@c-strasbourg.fr

Animals engage in reciprocal interactions, but they do not commonly exchange goods or services like humans do. Based on mental scorekeeping of given and received favors (de Waal & Luttrell, 1988) calculated reciprocity would approach the economic computations performed by humans. There is yet no clear evidence that reciprocal interactions in animals are based on weighing costs and benefits when giving or returning favours. We tested gorillas, orangutans, bonobos and chimpanzees in a token-exchange task involving two conspecifics and a human experimenter. Tested by pairs, subjects could exchange tokens with a partner to obtain food from the experimenter. We observed 4, 5, 264 and 328 transfers of tokens in gorillas, chimpanzees, orangutans and bonobos, respectively. The analysis showed no evidence of calculated reciprocity in most interactions. However, a high rate of gifts and begging gestures was recorded in one pair of orangutans. Both individuals were tested further. They actively transferred numerous tokens to the partner. One individual routinely used gestures to request tokens while the other complied with requests. Although initially the transfers were biased in one direction they became more balanced towards the end of the study. Reciprocity of transfers was found both between and within trials. An increase in the number and length of turn taking in bidirectional transfers was also observed. This study is the first experimental demonstration of the occurrence of direct transfers of goods based on calculated reciprocity in nonhuman-primates.

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