

THE VARIABILITY OF DIANA MONKEYS' CONTACT CALLS: SOCIAL AND PHYSICAL ENVIRONMENT DETERMINANTS

A. Candiotti^{1,2}, K. Zuberbühler², A. Lemasson¹

¹*Ethologie animale et humaine, UMR 6552 – C.N.R.S., Université de Rennes 1, Rennes, France,* ²*School of Psychology, University of St Andrews, St Andrews, United Kingdom*

Presenter's Email: agnes.candiotti@univ-rennes1.fr

In contrast to humans, non-human primates are famously unable to control their vocal behavior, learn new utterances, and combine existing ones in creative ways. However, recent studies have shown that, despite strong genetic control, acoustic plasticity exists in several primate calls. For example, many forest dwelling species rely strongly on vocal signals, with calls used to regulate social behavior showing considerable degrees of acoustic flexibility. Our ongoing research with free-ranging Diana monkeys (*Cercopithecus diana diana*) of Taï National Park, Ivory Coast, is designed to examine the influences of various social and environmental factors on the evolution of acoustic flexibility in these monkeys' vocal repertoire. Diana monkeys are known for their ability to produce referential alarm calls but little is known about females' close-range vocalizations. A first field study conducted in 2009 has revealed that adult females emit several acoustically and contextually distinct subtypes of contact calls. Social and environmental factors, such as group activity, proximity to neighbors, or general visibility, were significantly related to a structural classification based on acoustic parameters. We are currently investigating the potential function of the different subtypes. Data are collected at the individual level using focal sampling on adult females of two fully habituated free-ranging Diana monkey groups. We will examine a number of potential social and environmental functions (e.g. spatial cohesion, social bonding, habitat visibility) to investigate which ones have led to the evolution of acoustic flexibility and which ones have had no impact.

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