



influence how female reproductive success depends upon their dominance rank, group size, and mate choices. The long term demographic and behavioral database of Karisoke, dating back to 1967, has enabled us to test predictions of these models by examining many factors that may influence female reproductive success including: age, dominance rank, group size, group type (one male versus multimale groups), and dispersal patterns. Results have shown that despite being classified as a 'dispersal-egalitarian' species, female dominance relationships may be stronger and more stable over time than previously reported and that rank positively influences reproductive success. Group size does not appear to influence female reproductive success, despite the study groups varying dramatically in size, but multimale groups do confer some benefits to females. By making a thorough investigation of female reproductive success, our results question whether mountain gorillas fit into the socioecological model as neatly as initially thought, as well as illustrate the need for additional studies on topics such as long-term changes in food availability, refined measures of feeding competition, and the influence of non-socioecological factors on reproductive success. This research stresses the importance of long term study sites for both research and conservation.

ABSTRACT # 229

**MULTICOMPONENT AFFILIATIVE SIGNALLING IN CRESTED MACAQUES (*MACACA NIGRA*)**

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Primates' communicative signals are often dynamic and composed of multiple components. Such multi-component signals are of crucial importance in the study of communication: the addition of additional features to a signal has the potential to modulate or change the meaning and message of the specific signal. Despite this, each component is traditionally studied in isolation from each other, or communicative displays are studied as an invariant set of components. Both approaches may not accurately reflect the function of the signals. In crested macaques, the lipsmack (a display mainly used in affiliative interaction) can be produced alone or combined

with other visual and acoustic communicative features. We investigated whether the composition of the lipsmack influences the pattern and outcome of social interaction. Preliminary analyses suggest that both the number of composite signals and the presence of an accompanying acoustic signal has an effect on the occurrence of subsequent affiliative interaction. By analysing lipsmacking behaviour as a composite, dynamic display, we were able to reveal a level of complexity that is not apparent when looking at each component separately. The results highlight the importance of a more integrative, multimodal approach to the study of animal communication.

ABSTRACT # 230

**A REVISION OF FIELD METHODS FOR CAPTURING AND MARKING FREE-RANGING SADDLEBACK TAMARINS (*SAGUINUS FUSCICOLLIS*) AND EMPEROR TAMARINS (*SAGUINUS IMPERATOR*)**

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Long-term demographic studies of primates benefit greatly from reliable location and identification of individuals, including consistent and quick recognition. Tamarins are particularly difficult to identify in that they are arboreal, small, sexually monomorphic, and relatively morphologically homogenous. A safe capture-and-release program can allow for the placement of identification markers on individuals, providing opportunities for health monitoring, radiotelemetry and hemo- and ectoparasite detection. I review a successful capture-and-release program conducted on two sympatric tamarin species (*Saguinus fuscicollis* and *S. imperator*) in the Madre de Dios Department of southeastern Peru. We successfully captured 63 tamarins of both species across two years using multi-compartment baited traps modified to be exceptionally lightweight and durable. We typically captured full groups at a time (size 1 - 6 animals), decreasing capture duration and increasing processing efficiency by working with animals singly via a novel two-phase anesthesia protocol. Processing was conducted directly at the trap site, reducing stress on the animals by minimizing processing time and time spent within the traps. This capture protocol was tested across multiple years with no observed negative effects on long-term health or habituation of the individuals, evidenced by 100% survival and greatly increased trapping efficiency in the second year. Reduced processing times result in less stress overall and the protocol is reported to allow other researchers considering capture and release to evaluate alternative protocols.