PROJECT TITLE: The costs and benefits of intergroup relationships in gorillas

Project Science Theme: Evolution and Biodiversity
Project keywords: Sociality, Networks, Evolution, Behaviour, Animal

Lead Institution: University Bristol
Lead Supervisor: Dr Robin Morrison, Bristol, Biological Sciences
Co-Supervisor: Lauren Brent, University of Exeter, Psychology
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Project description

Extensive research on the costs and benefits of social relationships within animal groups has provided critical insights into the evolution of sociality. However, in many species, individuals consistently interact with those in other groups through behaviours that range from violent aggression to cooperative resource-sharing. While much is known about behaviour during individual intergroup interactions, little is understood about how repeated interactions develop into long-term intergroup relationships or how these relationships affect fitness.

Through this PhD, you will implement new technological approaches for recording, tracking and extracting wild gorilla behaviour during intergroup interactions. With support from experts at the University of Bristol and the Dian Fossey Gorilla Fund in Rwanda, you will design new fieldwork protocols to be carried out by yourself and our field collaborators. You will analyse the video and audio collected, using machine learning to assist behavioural coding. Moreover, you will work with University of Exeter researchers at the forefront of animal social network analysis to model relationships between gorillas in neighbouring groups. You will then develop and test your own hypotheses on the costs and benefits that these relationships provide, using physiological data quantifying stress, immune function and energy balance, as well as long-term data on reproduction and survival. This will allow you to examine the fitness consequences of intergroup relationships, shedding light on the processes through which they have evolved. The work will also inform gorilla conservation by improving our understanding of the intergroup dynamics that impact population stability and growth.

This project harnesses expertise in animal behaviour, social relationships and intergroup dynamics across the Universities of Bristol and Exeter, and a history of close collaboration between supervisors. Through their support, you will develop skills in fieldwork, behavioural data collection, video and acoustic analysis, social network modelling, primate physiology and Bayesian statistics.

Useful recruitment links:

For information relating to the research project please contact the lead Supervisor via: robin.morrison@bristol.ac.uk

Bristol NERC GW4+ DTP Prospectus:
https://www.bristol.ac.uk/study/postgraduate/research/great-western-four-doctoral-training-partnership-nerc/

How to apply to the University of Bristol:
http://www.bristol.ac.uk/study/postgraduate/apply/

The application deadline is Thursday 7 January 2027 at 2359 GMT