

Project Proposal
Vocalization patterns in free-ranging Chacma Baboons
Wildcliff Nature Reserve, South Africa
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Introduction

Baboons are Old World monkeys that shared a common ancestor with humans around 36 million years ago (Boyd & Silk 2000). They are terrestrial and inhabit open savannah, open woodland and hills across Africa. They live in multimale-multifemale troops of between 5-250 individuals, often averaging around 50 (Bergman *et al.* 2003). Most males emigrate to other groups as young adults whereas females remain in their natal groups throughout their lives, maintaining close social bonds with their kin (Silk *et al.* 2006).

Several species of primates engage in vocalizations to reinforce social structure, alarm troop members of the threat of a predator, ease social tension and communicate with other rival troops. Baboon's calls are individually distinctive and their various call types are predictable and exhibited in specific circumstances, therefore making them excellent subjects by which to research vocalizations and in turn social cognition (Seyfarth *et al.* 2005).

This study will be focused on two troops of semi habituated Chacma baboons, *Papio ursinus*, inhabiting Wildcliff nature reserve, located 17km north-east of Heidelberg, Western Cape. Wildcliff is a mountain wilderness reserve consisting of 955 hectares, deep kloofs with afro-montane forest, rocky mountaintops and high meadows of fynbos. One troop of baboons consists of 12-13 members and the other has in excess of 50 members, with many infants and juveniles (Fust, 2008).

Proposal

The purpose of this study is to investigate whether patterns of vocalization can be found to be displayed by baboons inhabiting Wildcliff nature reserve. Association between vocalization, time of day, and behaviour will be investigated and documented. This study aims to reveal whether baboons emit certain vocalizations during specific times of the day, and also whether certain behaviours are linked to specific vocalizations.

Objectives

- 1) To establish an ethogram recording the number of times vocalisations are heard. Data recorded will include the time of observation, the type of call given and behaviour exhibited at the time of call.
- 2) To determine whether there is a relationship between vocalisation and time of day.
- 3) To determine whether there is a relationship between vocalisations and behaviour exhibited.
- 3) Compile and complete field data within a two month period.
- 4) To continue to assist with the ongoing habituation of the baboon groups at Wildcliff.
- 5) Report results of study.

Null Hypothesis

- 1) There is no pattern between vocalisation and behaviour.
- 2) There is no pattern between vocalisation and time of day.
- 3) There is no pattern between behaviour exhibited and time of day.

Methodology

At random two minute intervals, six categories of baboon vocalisation will be documented, along with the behaviour being exhibited, time and any other ad lib behavioural data. The interval of two minutes has been chosen due to the semi habituated state of the baboons and the unpredictability of consistent troop time spent near the researcher (Harvill-Stoughton, 2008).

Six categories of vocalisation will be recorded:

1. Screeching – A response used to inhibit aggression which is performed by all members of the troop.
2. Two-Phase Bark – A low pitched, loud call repeated every 2-5 seconds. Used by males during within or between group aggression.
3. Muffled Growl - Mating call emitted by females during copulation, with the mouth closed and cheeks expanding and contracting to produce sound.
4. Grunting – A generally soft “uh uh” that may precede the two phase bark used by adult males.
5. Yacking – Call given by sub adult and adult baboons to signal a retreat from a threatening animal.
6. Non-Adult Male Vocalizations – Calls emitted by all members except adult males, including chattering, “ick-ooer” calls of infants and juveniles, and shrill barks given by infants, juveniles, and females (Primate Info Net, 2002).

Along with vocalization data, associative baboon behaviour will also be documented. Behaviour will be divided into 5 broad specific behaviours (King *et al* 2008):

1. Travelling - defined as brisk locomotion.
2. Resting - defined as baboons' sedentary state in which they are not foraging or travelling.
3. Feeding - defined as either travel foraging (slow locomotion whilst searching for, manipulating or ingesting food) or stationary foraging (searching for, manipulating or ingesting food whilst remaining in one location)
4. Grooming - defined as affiliative allogrooming.
5. Drinking - defined as drinking from a waterhole.

Summary

I propose a research project that will focus on baboon vocalisation patterns of the resident Chacma baboons found at Wildcliff Nature Reserve, and expand on the research carried out last year at the reserve (Harvill-Stoughton, 2008). With this information, relationships between time of day, behaviour and vocalizations can be tested and conclusions drawn as to why, or why not, patterns have been observed.

References

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