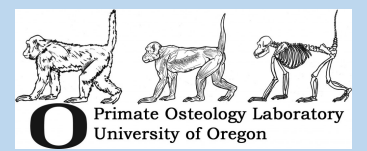




The social cost of reproduction to female *Lemur catta*

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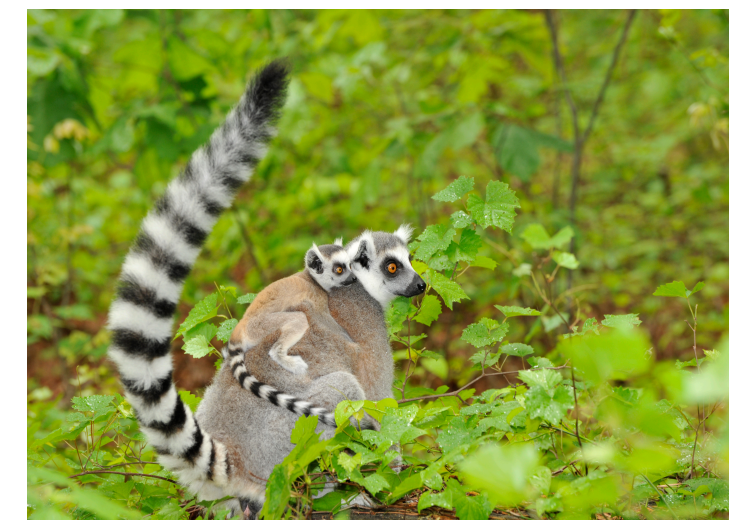
Introduction

Unlike most primates, ring-tailed lemurs (*Lemur catta*) exhibit a strong hierarchy with females holding higher ranks than males¹. Studies have suggested that this is due to the high cost of reproduction in a seasonal resource availability environment. This is typically viewed as a species-level adaptation, but the same evolutionary principles should hold on the individual level. As such, females with infants should experience higher reproduction-related costs than do females without infants, and therefore females may show different behavioral strategies that reflect this cost differential².

Question and Hypothesis

Do females with infants and without infants show behavioral differences that are consistent with higher reproductive costs?

Females with higher costs are expected to be more aggressive and less affiliative.



An adult individual with an infant
Photo credit: Duke Lemur Center

	AM	AFI	AF	JA	I
Group 2	10	4	2	2	4
Group 4	7	5	2	4	6

Table 1. Number of individuals within each group that interaction data was collected from. A=Adult, M=Male, F=Female, FI=Female with Infant, JA=Juveniles and Adolescents, I=Infants

Methods

Data on affiliative and aggressive social behaviors were collected during focal sampling in 1996 from two semi-free ranging *Lemur catta* groups at the Duke Lemur Center in Durham, North Carolina³. Information regarding these groups is shown in Table 1. We compared interactions involving females with infants at the time (N=5) to interactions that involve females without infants (N=4). Infants were defined as any individuals present in the group during this time period under the age of one year. Vocalizations, chasing, food stealing, and physical attacks were labeled as aggressive interactions. Affiliative interactions included playing with, sitting with, grooming, leaving, and affiliative vocalizing. We calculated rates based on the observation time (28.25 hours).

Results

- Females with infants were involved in more aggressive interactions than those without.
- Females without infants performed more affiliative behaviors than those caring for infants
- Variation in these rates is reflected in Figure 1



Individuals participating in an affiliative interaction
Photo credit: Duke Lemur Center

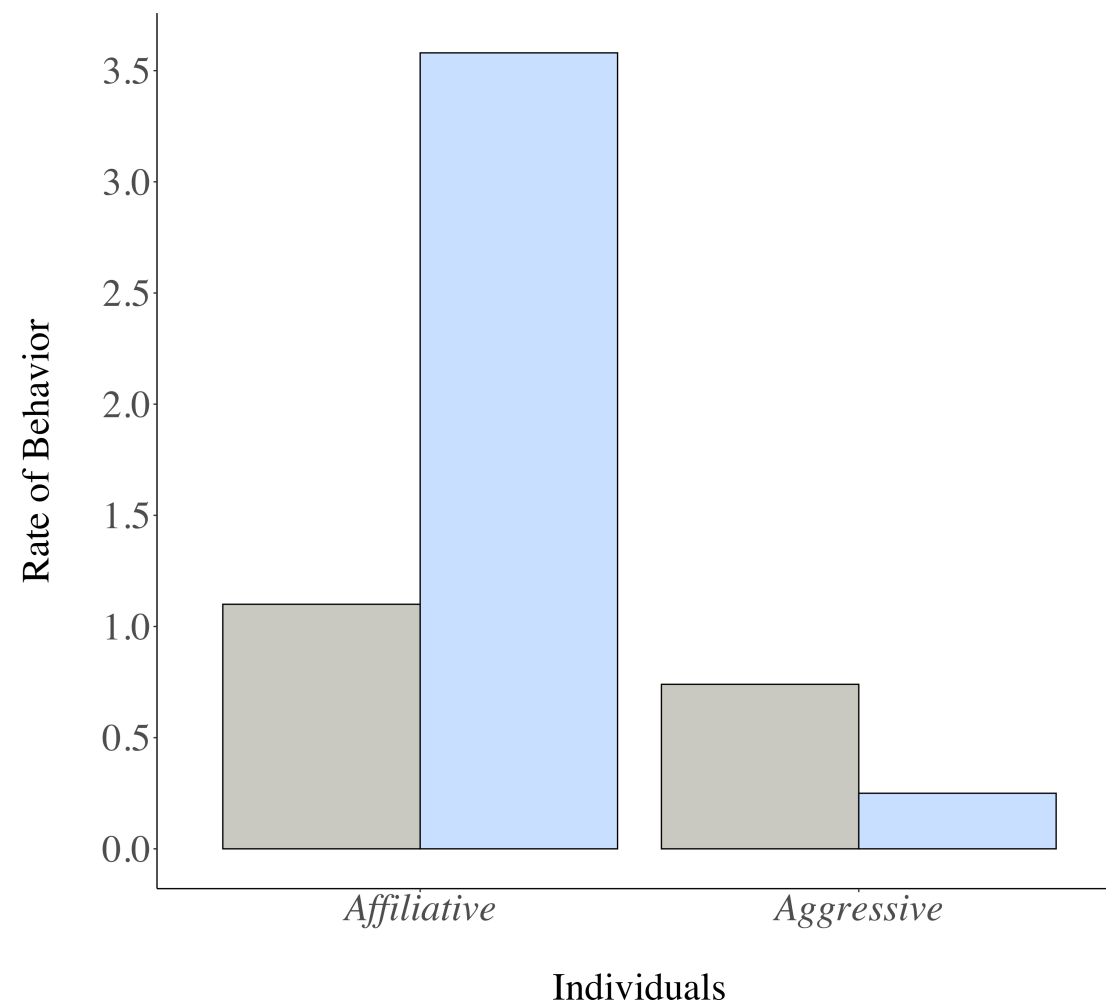


Figure 1. Rates of Interaction Type (per hour) among *Lemur catta* females with and without infants

Discussion

These findings point to potential different behavioral strategies based on reproductive status within this species. These results are consistent with the hypothesis that females with infants suffer higher costs and have less ability to invest in social bonds. The social structure and behavior of *Lemur catta* may explain these patterns and offer insight into how they compare to other primates⁴.

Future Directions

These findings raise questions regarding ontogeny, dominance, and social interactions that should be further analyzed. Infants play a unique role in developing social bonds and influencing behavior⁵. Directed research concerning these topics may prove useful in understanding numerous observed behaviors.

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