

Sex Differences in the Social Behaviour of Wild Brown Spider Monkeys (*Ateles hybridus*) in a forest fragment in the Magdalena River Valley, Colombia

Laura Alejandra Abondano Franco

Departamento de Ciencias Biológicas
Universidad de Los Andes, Bogotá – Colombia
Carrera 1 No. 18A-10, Edificio J, Laboratorio J-103
Laboratorio de Ecología de Bosques Tropicales y Primatología

la.abondano50@uniandes.edu.co

Awarded a PSGB grant in August 2009

We studied a group of brown spider monkeys (*Ateles hybridus*) in a forest fragment in the Magdalena Middle Valley (Colombia) to determine if individuals are flexible in their social behaviour when stressful conditions are increased due to reduced resource availability. We collected behavioural data from June 2009 to July 2010, in the private farm San Juan del Carare, located at the east bank of the Magdalena River, in Santander department of Colombia, in the Municipality of Cimitarra (6°50'N, 74°18'O). The forest fragment (60 ha) is within a matrix of pastures for cattle ranching and seasonally flooded savannas. Although two groups of brown spider monkeys (SJ-1 and SJ-2) are found in the fragment, this study focused on only one of them (SJ-1).

We followed spider monkeys 6 days a week from dawn to dusk, collecting ecological and behavioural data. We used twenty-minute focal animal samples recording activity patterns (movement, resting, feeding and social), as well as a detailed description of their social behaviour (approaches, embraces, grooming, aggressions, and arm-wrappings). Focal animals were chosen randomly, including adults and sub-adults of both sexes. In each focal sample, we recorded two-minute instantaneous records on their behaviour, the activity and distance of the nearest neighbour. In between point samples we recorded all social interactions involving the focal animal through an all-occurrence sampling and based on a detailed ethogram developed for the multi-site study of spider monkeys. Finally, data on sub-group composition were recorded for each focal sample. No focal animal was repeated within one hour, and all individuals of the subgroup were sampled before repeated samples of the same individual were attempted.

A total of 1448 focal samples were collected, distributed in 815 samples of six females and 633 samples of five males, corresponding to 272 and 211 observation hours respectively. We found that females tend to spend more time feeding than males, but no significant differences were found in moving, resting and social behaviours. Higher percentages of feeding time found in females are probably due to their higher energetic demands, essential for the costs of nursing, carrying and lactation of the infants and juveniles, given that males are not involved in any parental

care activities. We found that affiliative behaviors are predominant amongst males, and there is a clear pattern of male-to-female directed aggressions. These affiliative behaviors help males to reinforce their bonds in intergroup encounters for territorial defense, and female-directed aggression may be acting as a mechanism of “social control” as part of an indirect form of sexual coercion (Link et al, 2009). Female affiliative social behaviours are higher than those observed for other species of *Ateles* in undisturbed forests (Slater et al., 2009), suggesting that stressful conditions due to low resource availability is forcing them to employ stress release mechanisms.

The fact that there are very few differences between fragmented and continuous forests, imply that spider monkeys have high flexibility in their social behaviour to respond to low resource availability.