

**Title:** Gender and Dominance Structures: A Study on Captive Hamadryas Baboons and Ring-tailed Lemurs

**Presenter:** Jonathan Broberg, MiraCosta College

**Mentor:** Lynn Miller

This study examined the consequences of gender bias in hierarchical systems of two primate species: hamadryas baboons, which are strongly male-dominant, and ring-tailed lemurs, which are the most female-dominant of all primates. Dominance hierarchies are usually a product of resource competition, and according to sexual selection theory, sex differences in behavior are often caused by males and females needing different resources in order to successfully reproduce. This study included five hours of observation of both species, housed at the San Diego Zoo. Acts of intersexual conflict were counted, as well as the sexes of the initiator and the “loser” of the encounter. The baboon males initiated and “won” 100% of their nine dominance interactions with females, while lemur females initiated and “won” 100% of their 19 dominance interactions with males. These results show that, even in captive settings, the dominance hierarchies of these two species are severely sex-dependent. Additionally, the hamadryas males used their rank to assert direct control over the females' location and behavior, while the ring-tail females used their rank to access food, warmth, or to refuse mating. In the wild, there are surprising adaptive benefits to submission for the subordinate sex of both species. Female hamadryas who appease their unit male gain his protection and food resources, both for herself and her young; male ring-tailed lemurs who defer to females gain mating priority, and thus produce more offspring. These dynamics exemplify how extreme gender hierarchies operate, and may provide clues as to how these systems evolve.

## Works Cited

- Kummer, Hans. *Primate Societies*. AHM Publishing Corporation, 1971.
- Polo, Pablo, and Fernando Colmenares. "Behavioural processes in social context: Female abductions, male herding and female grooming in hamadryas baboons." *Behavioral Processes*, vol. 90, 2012, pp. 238-245
- Sauther, Michelle L. "Resource Competition in Wild Populations of Ringtailed Lemurs (*Lemur Catta*): Implications for Female Dominance." *Lemur Social Systems and Their Ecological Basis*, edited by J. Ganzhorn and P.M. Kappeler, Springer, 1993, pp. 135-152. [http://dx.doi.org/10.1007/978-1-4899-2412-4\\_10](http://dx.doi.org/10.1007/978-1-4899-2412-4_10).
- Trivers, Robert L. *Parental Investment and Sexual Selection*. Aldine Publishing Company, 1972.
- White, Frances J., Deborah J. Overdorff, Timothy Keith-Lucas, Michele A. Rasmussen, W. Eddie Kallam, and Zoë Forward. "Female Dominance and Feeding Priority in a Prosimian Primate: Experimental Manipulation of Feeding Competition." *American Journal of Primatology*, vol. 69, 2007, pp. 295-304.