

Abstract of the Dissertation

Behavioral Ecology of the Pygmy Chimpanzee

by

Frances White

Doctor of Philosophy

in

Biological Sciences

(Ecology and Evolution)

State University of New York

at

Stony Brook

1986

The pygmy chimpanzee, *Pan paniscus*, is the most recently described and least studied species of ape. The aims of this thesis are to describe the social organization of *P. paniscus*, to relate the observed social organization to the ecology of this species, and to compare the behavioral ecology of *P. paniscus* with that of the common chimpanzee, *P. troglodytes*.

Three aspects of the social organization of *Pan paniscus* were examined: patterning of interactions among and between the sexes, choice of nearest neighbor, and composition of parties. Pygmy chimpanzees, unlike common chimpanzees,

exhibited high degrees of affiliation among females in each of the three aspects of social organization examined.

Pygmy chimpanzees took much of their food from large food patches, mainly large fruiting trees. The size of food patches used by pygmy chimpanzees was estimated by several parameters, including tree diameter at breast height, radius of the food patch, time spent in the patch, and total amount of food removed from the patch. The number of individuals feeding concurrently in a food patch depended on both party size and size of the patch. However, when patch size was held constant, the amount of food removed per individual was not dependent on party size. The total amount of food removed from the patch, therefore, was used as a measure of size and quality of patches. In pygmy chimpanzees, party size was related to size of food patches. The amount of food that the party removed from a patch explained the greatest amount of variance in party size.

The lack of affiliation among females in the common chimpanzee has been related to the small size of food patches. Pygmy chimpanzees, however, used larger food patches than common chimpanzees. This appears to have led, in *Pan paniscus*, to the evolution of a social organization that involves high levels of female affiliative behavior. I propose that female pygmy chimpanzees gain advantages from being more social, since their food occurs in high-quality patches that can be cost-effectively defended from conspecifics. I also suggest that female transfer occurs in pygmy chimpanzees, as in all other apes, because of correlates of large body size.