



... On the basis of this belief Washburn erects a
superstructure of theory about the morphogenetic

Southwick, C.H. An Experimental Study of Intragroup
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Different species of primates exhibit widely different patterns of agonistic behavior. Most primates have a low frequency of agonistic behavior in natural free-ranging situations. For example, baboons, chimpanzees, and gorillas, species which were popularly thought to be very aggressive based on observations of captive animals, have been found to show peaceful and well-integrated social behavior in natural groups with relatively rare agonistic encounters. When agonistic interactions do occur in these species, they are most often in the form of ritualized threat display, as, for example, the chest beating display of the adult male gorilla. Ratas monkeys (*Erythrocebus patas*) are another species of ground-dwelling primate with an even more striking lack of agonistic behavior. These animals are well adapted to a terrestrial woodland-

savannah habitat, and might be expected to have a social pattern much like that of baboons and macaques. But they have been found to have small group sizes (15 animals per group in Murchison Falls Park), usually only one adult male per group, and a virtual absence of overt aggressive behavior within groups. In over 500 hours of field observation, Hall did not see a single threat attack by a male within a group. No animals were seen with visible scars or injuries. Aggressive threats were observed between males of different groups, but these were never seen to result in fights.

In other species of primates, agonistic interactions may occur frequently, but almost always in the form of ritualized threat. Howler monkeys (*Alouatta palliata*), for example, engage in frequent threat vocalizations and displays, but they have not been seen to fight. Gibbons (*Hylobates lar*) also engage in frequent threat vocalization, but rarely become involved in overt fighting.

In most species of primates, the form and frequency of agonistic behavior is related to environmental and



social conditions in which the animals are living. ~~This point is emphasized~~ by the late K.R.L. Hall in a recent review of aggressive behavior in monkeys and apes. Hall concludes, "... it is now obvious that the characteristic expressions and frequencies of aggression within and between groups cannot be meaningfully considered without detailed reference to their ecological context." At an earlier point in the same paper, he emphasizes, "In reviewing the evidence that is available, one cannot fail to be impressed by the apparent regional variability in aggressiveness shown by Bapio groups, and it is necessary to be very careful in evaluating these differences. In the light of ecological variants that may determine them."

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Rhesus Monkeys

Southwick, C.H. An Experimental Study of Intragroup Agonistic Behavior in Rhesus Monkeys (*Macaca mulatta*) Behavior 28: 1967, 182-209 p.207/8.

A balanced social group of 17 rhesus monkeys, wild-trapped in northern India, was established in a colony cage of 1000 square feet in Calcutta. Quantitative data were obtained on behavioral repertoire, activity patterns and social interactions. Experiments were conducted to study the effect of certain environmental and social variables on the expression and intensity of intragroup agonistic behavior.

A 25% food reduction resulted in no change in agonistic interactions, whereas a 50% food reduction and starvation regime resulted in a significant decrease in agonistic behavior. Investigative behavior increased, but grooming, sexual behavior, play, and aggressive behavior decreased. The monkeys became lethargic. The behavior of the monkey resembled human behavior in famine and experimental starvation.

A significant increase in agonistic behavior occurred when the distribution of the food was restricted,¹ but the amount of food remained normal.

Highly significant increases in the frequency and intensity of agonistic behavior occurred with the introduction of new monkeys who were social strangers. These results agree well with those of Bernstein et al on rhesus and Kawai on Japanese macaques. The age and/or sex class corresponding to that of the introduced monkeys was the one which initiated most of the threat and attack behavior.

A significant increase in agonistic behavior also occurred with a space reduction from 1000 square feet to 500 square feet.

In general, social changes (i.e., changes in group membership) had a far greater impact on levels of intragroup aggression than did environmental changes such as starvation and crowding.

1. (the distribution was restricted to a few places in the cage)
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