Behavior of Carnivores

The Spotted Hyena. A Study of Predation and Social Behavior. HANS KRUUK. University of Chicago Press, Chicago, 1972. xvi, 336 pp. + plates. $15. Wildlife Behavior and Ecology.

Innocent Killers. HUGO and JANE VAN LAWICK-GOODALL. Houghton Mifflin, Boston, 1971. 222 pp. + plates. $10.

The study of the behavior of large carnivores has been nowhere more productive than in the plains of Central Africa. These plains not only allow observers easy access by motor vehicles to most localities and have little tall vegetation to obstruct the view, but also provide a diversity of predators. Here we find the spectrum from small insectivorous forms, such as bat-eared foxes, to group-hunting social forms, such as hyenas, lions, and hunting dogs, which live off the herds of large herbivores. The high productivity of the land provides the last example of a rich megafauna and permits us to gain insights into the intricate social and ecological fabric that characterizes the life of carnivores. In view of man's long history as a hunter and gatherer on the plains of Africa, such insights are not without interest. We are well aware that convergent evolution can shape the biology of organisms from different phylogenetic stocks into surprisingly similar end products. Studies of carnivores raise the hope that we can learn more about the nature and essence of the primate predator which we apparently are. What better way than to examine the lives of the large African carnivores, our former competitors?

Although this was not the central aim of Kruuk's study of the spotted hyena, it is nevertheless a point he raises in the introduction of his book, and it is a point raised by Tinbergen in the preface to the volume. It leaves us primed and expecting. Kruuk aimed at elucidating the ecological role of the spotted hyena in the Serengeti and Ngorongoro Crater. His is a well-written, objective account, which to some extent reflects the positive influence of studies done earlier or concurrently in the Serengeti on ungulate and predator ecology and behavior. Kruuk first and foremost demolishes myths about hyena biology. Contrary to earlier beliefs, hyenas are most capable predators in their own right, which provide a good amount of food for scavenging lions. He also shows that hyena predation is rather insignificant compared with the annual mortality of ungulates on the study areas. Kruuk gives a detailed account of the hyena's surprisingly complex biology. Some highlights: females dominate males; the animals live in clan territories which they defend against other clans, occasionally with some fatalities; hyenas compete with each other by eating fast rather than through displacement by aggression; young are raised in communal dens and cared for only by their mothers; cannibalism is found; clans may form opportunistically on a temporary basis, depending on available food supply; clans may have different food habits; hunting groups of hyenas may group themselves strategically to hunt a given species of ungulate *prior* to encountering the appropriate game. The hyena emerges from Kruuk's descriptions as a versatile generalist which makes good use of diverse foods, including bones and carrion, and has a behavior fitting that role. The hyena is compared with other "wolf-like" predators; the antipredator behavior of various ungulates is well described; there are many quantitative data to back up Kruuk's contentions. Kruuk's approach is sound; he describes well and in detail; but he does disappoint somewhat in his explanations of the observed phenomena. The recourse to motivation theory to explain postures in hyenas is less than fortunate, for such explanations are beyond verification. Even after we read the proposed explanation for the male-like genitalia in female hyenas we wonder why. Here Kruuk does not show what penalties hyenas incur if they fail to lift the hind leg in the mutual genitalia examination that is part of the greeting behavior. The explanation that an individual sniffing a familiar and complex and conspicuous structure during greeting gains an advantage over another individual not so behaving begs the question why the structure must be a penis rather than a vulva, or for that matter an ear or a leg. Furthermore, if it is the female that dominates, why do females have male-like genitalia?

Moreover, after whetting our appetites, Kruuk does not enlighten us as to why the study of carnivores is so desirable and important to an understanding of human evolution. Is the reader to form his own views? Surely, readers can expect a little insight into the author's thoughts if he himself raises the issue. It must be pointed out, however, that Kruuk's descriptions are detailed enough to allow the interested reader to form his own conclusions. Kruuk's book is a very good one indeed, and its contributions far outweigh its shortcomings.

The book by Hugo and Jane van Lawick-Goodall, which deals with observations on wild dogs, golden jackals, and spotted hyenas, is superbly illustrated, informative, easy to read, and filled with excellent descriptions and new information. I am enthusiastic about it. It conveys a richness of observation that comes from associating day in, day out with individual wild animals until one knows them well. The authors observed individuals, families, groups, or clans and did not diffuse their effort in a study of many nameless individuals. This is an approach rarely taken, apparently because of the unfortunate view that such a study is less representative than a study of many poorly known individuals, which supposedly gives a better statistical sample. The latter approach largely negates individual variation, and although a rose may be a rose may be a rose (I doubt it), a hyena most certainly is not a hyena or another hyena. The "average" hyena, hunting dog, or jackal is a myth, and the van Lawick-Goodalls bring home this point. The book is characterized by keen observations and interpretations, as well as by a keen awareness of the pitfalls of anthropomorphism. There are many surprises, which I will leave to the reader to discover. This is an excellent volume to read after Kruuk's book, as it complements that volume well.

To a student of carnivore biology and behavior, these superbly illustrated books are indispensable; to a student of human behavior and evolution, they make provocative reading. One can see that group territories, clan battles, cannibalism, close social bonds, cooperation in groups, and food sharing are quite certainly not only human inventions. To a student of science as a process these studies will be valuable, not only as a record of field studies at the beginning of the science of natural mammalian behavior, but also for their differences in approach which led them to complement each other admirably.

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