

## New View of Female Primates Assails Stereotypes

By ERIK ECKHOLM

**A**N explosion of knowledge about monkeys and apes is overturning long-held stereotypes about sex roles and social patterns among the closest kin to humans in the animal world.

Field studies have shown that the female influence on primate social structure is much stronger than previously believed and that the sexual behavior of female primates is much more diverse, according to leading primatologists.

"We've learned more about primate behavior in the last 10 years than in the previous 10 centuries," said Allison Jolly, a primatologist at The Rockefeller University.

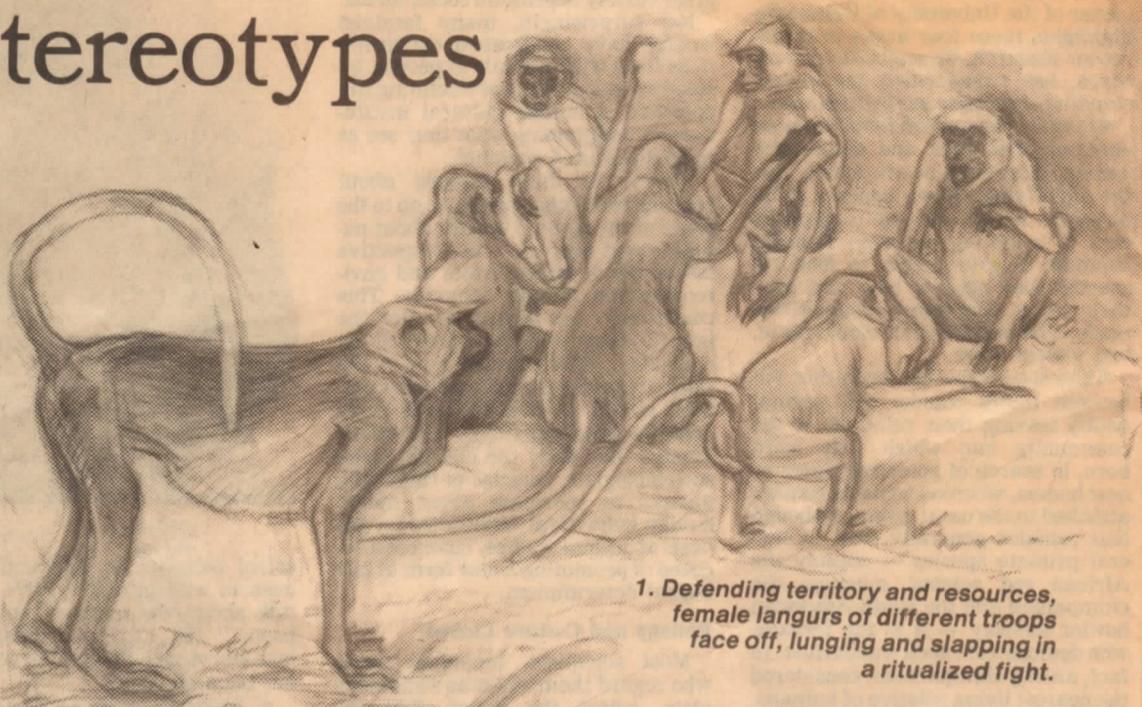
The new body of research has shown that, although male dominance of groups is common, females of many species are fiercely competitive, resourceful and independent, sexually assertive and promiscuous and, in some cases, more prone than males to wanderlust at puberty.

Soon after the advent of modern primate studies in the early 1960's, many scientists believed they had discovered the key to primate social systems when they described hierarchies of aggressive males competing for the right to mate with seemingly passive females, whose roles appeared limited to the bearing of the young.

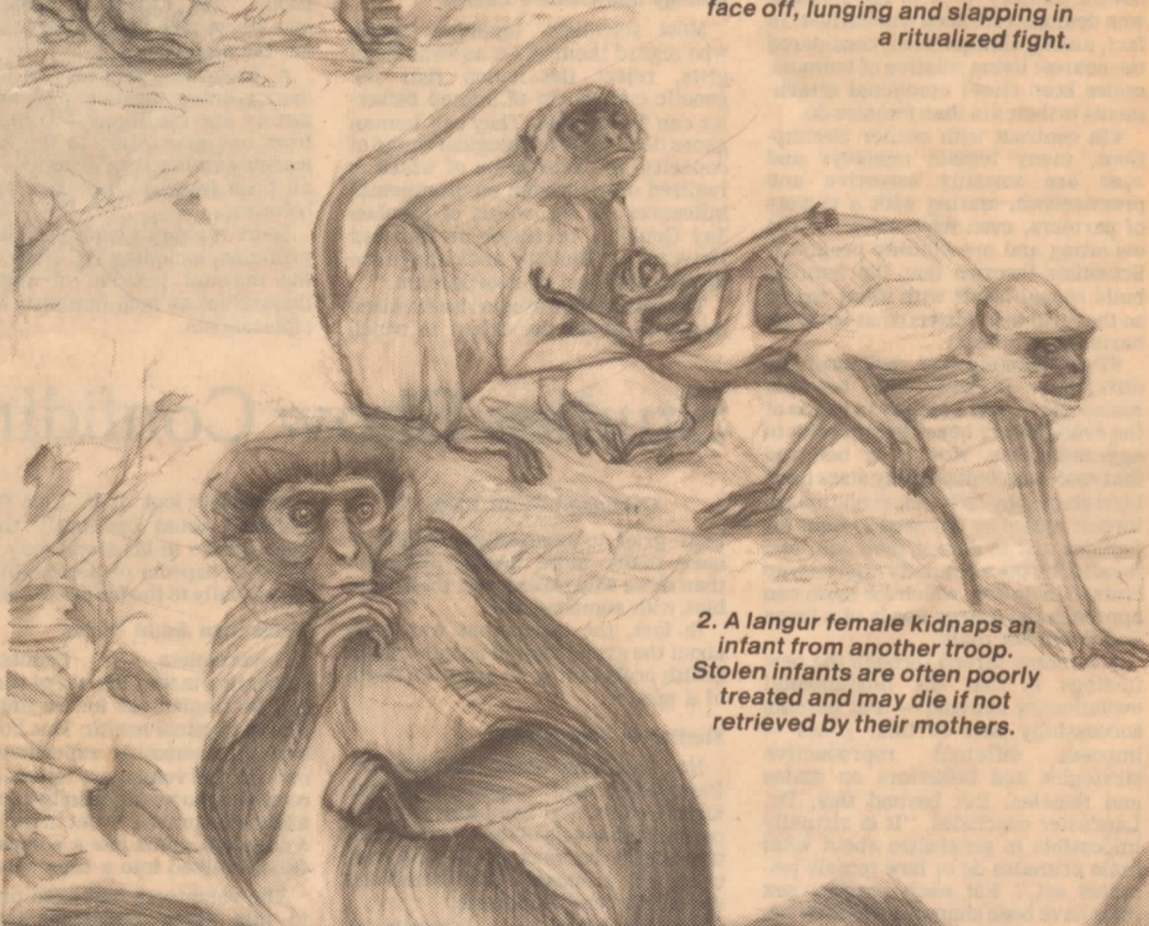
"It was as if scientists had projected onto primates a mirror image of the social structure of an American corporation or university," said Sarah Blaffer Hrdy of the University of California at Davis, a leader in the reappraisal of primate behavior.

Scientists and pop philosophers have long used or, in the view of many, abused apparent findings about nonhuman primates to draw conclusions about human beings. With old stereotypes about primates being shattered, scientists are now debating what, if anything, the new

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1. Defending territory and resources, female langurs of different troops face off, lunging and slapping in a ritualized fight.



2. A langur female kidnaps an infant from another troop. Stolen infants are often poorly treated and may die if not retrieved by their mothers.



3. Unlike the common pattern of primate migration, in which young males leave their troop of birth in search of new mates while females stay behind, female red colobus monkeys leave to find another troop where conditions appear conducive to successful childrearing.

findings imply about human origins and human nature.

A new book, "Female Primates: Studies by Women Primatologists," edited by Meredith F. Small (Alan R. Liss Inc.), pays homage both to the soaring knowledge about female primates and to the major contributions by scientists who are women. In the volume's introduction, Jane B. Lancaster of the University of Oklahoma highlights these four areas in which recent research, by scientists of both sexes, has transformed the understanding of primate sex differences:

¶ Females have been found to be as obsessed with rank and dominance among themselves as are males. But the underlying reason appears to be different. Males compete to gain access to ovulating females; females compete to gain access to food resources they need to bear and rear their young. And female competition tends to be expressed in more subtle, less violent ways.

¶ The stereotype has been that pubescent males wander off, permanently leaving their relatives or the community into which they were born, in search of potential mates or new homes, whereas females remain attached to the natal group. Although that remains generally true, in several primate species — notably the African red colobus monkey, the chimpanzee and the South American howler monkey — it is the females who demonstrate such wanderlust. In fact, among chimpanzees, considered the nearest living relative of humans, males keep closer emotional attachments to their kin than females do.

¶ In contrast with earlier assumptions, many female monkeys and apes are sexually assertive and promiscuous, mating with a variety of partners, even when they are not ovulating and are already pregnant. Scientists theorize that the females build sexual bonds with many males so they will help foster, or at least not harm, their infants.

¶ Past thinking had explained the differences in body size between males and females simply in terms of the evolutionary benefits for males of aggressiveness. Now it is believed that male and female body sizes have been shaped by different evolutionary forces: males by the need to fight for females and to defend their kin, and females by the extremely high energy costs of lactation, which for them can approach the energy needs of a large and dominant male.

A common thread through the new findings is that the fundamental evolutionary demand — that parents successfully pass on their genes — imposes different reproductive strategies and behaviors on males and females. But beyond this, Dr. Lancaster concludes, "It is virtually impossible to generalize about what male primates do or how female primates act." For each species, sex roles have been shaped differently according to its evolutionary history and ecological setting.

Most of the primate field studies undertaken over the last two decades have had the express purpose of shedding light on human evolution. Many leading primatologists have backgrounds in anthropology rather than zoology, and some have jumped between studies of living primates, ancient human ancestors and modern hunter-gatherer societies, whose life styles are believed to provide clues about those of prehistoric humans.

None of the involved scientists contend that the study of wild primates provides direct information about human nature. Rather, they are searching for underlying principles of adaptation that would have applied to evolving human beings.

As Glenn Hausfater of the University of Missouri said, "By studying baboons, we can help identify the right questions to ask about humans.

No matter how carefully they are

# of Female Primates Assails Stereotypes About Social Patterns

couched, efforts to draw lessons about people from primates touch raw nerves both within and without the scientific community. Some scientists and popular writers have cited now-outdated pictures of primate societies as evidence of an inborn human tendency toward male aggressiveness and social domination. The view now emerging is a good deal more complicated, stressing the great variety in primate social forms.

Not surprisingly, many feminist writers have condemned extrapolations from wild animals to people, instead stressing the overwhelming importance of human cultural institutions in maintaining what they see as male-dominated societies.

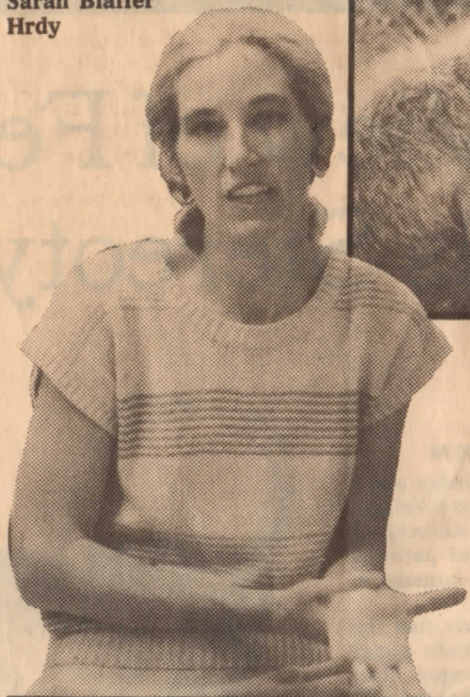
Efforts to draw lessons about humans from other primates go to the heart of the age-old debate about nature versus nurture — the respective influences of inborn traits and environment on human behavior. This controversy has heated up over the last 15 years with the advent of sociobiology, which studies how evolutionary pressures cause behavior patterns as well as physical traits to become encoded genetically in animals. Though they deny the charge, some sociobiologists, because of their willingness to speculate about innate human behavioral tendencies on the basis of animal studies, have been accused of promoting a new form of biological determinism.

## Biology and Culture Linked

Most scientists, including many who regard themselves as sociobiologists, reject the notion that the genetic component of human behavior can be isolated. They say human genes determine a biological range of capacity, the expression of which is realized only through environmental influences. In the words of Stephen Jay Gould, a professor at Harvard University, "Biology and culture are inextricable and co-determinant."

The recent field studies have raised questions about the extent to which

Sarah Blaffer Hrdy



Related female baboons in Amboseli National Park in Kenya cooperate as well as compete.

Jane B. Lancaster



The New York Times/Lynette ShurtJeff; Terrence McCarthy; Dr. Glenn Hausfater

social behavior is genetically fixed even in wild primates. "We used to talk about 'the monkey' or 'the baboon,'" Dr. Lancaster noted, "but now we've seen that all baboons don't act the same."

A group's ecological setting, its demographic makeup and even its history and traditions — transmitted from one generation to the next by learning rather than genetics — have all been found to influence primate behavior.

Some of today's leading students of primates, including Dr. Hrdy, are in the unusual position of regarding themselves as both feminists and sociobiologists.

In searching for the significance for humans of their studies, they see themselves as forging a treacherous path between biological determinism and what they regard as shortsighted attempts to ignore the biological heritage of humans.

"The fear of biology is an unfortunate aspect of the feminist movement," said Dr. Lancaster, who prefers not to be labeled but finds sociobiological theories extremely useful. "We need to look seriously at the evolutionary history of women; it has messages that are very constructive and positive, and can help us understand ourselves."

Dr. Hrdy holds the view, based on

her reading of the primate research, that evolution has predisposed human females, like males, not only to intelligence and assertiveness but also to competitiveness. Thus, while attacking old stereotypes that devalue the capacities of women, she also disputes, in her book "The Woman That Never Evolved," "countermyths that emphasize woman's natural innocence from lust for power, her cooperativeness and solidarity with other women."

## Gender and Science

But she also contends that the human development of reason and morality now means that, among all

primates, "the potential for freedom and the chance to control their own destinies is greatest among women."

The change in perceptions about primates has coincided with ferment in thinking about sex roles in human society and with the entry of women into primate studies in numbers unusually high for the sciences. In addition to the famous field studies of chimpanzees by Jane Goodall and gorillas by Dian Fossey, many women have made important theoretical contributions to primatology. Intriguing questions have been raised about whether social trends and the sex of scientists have affected the course of "objective" science.

Leading primatologists of both sexes agree that men have played key roles in the recent redefining of primate behavior. And the advances in understanding can be explained innocently enough.

Dr. Sherwood L. Washburn of the University of California at Berkeley, who is regarded as the father of modern primate studies, noted that serious field work began only in the early 1960's. "When you get in the field, the obvious creature is the big, dominant male," he said. "The behaviors that were easiest to see were exaggerated in the initial studies. But I don't think this was the result of any bias."

Still, questions about the possible effects on science of a changing social milieu persist. Dr. Hrdy believes that improved methodology, the broad questioning of sexual stereotypes by the women's liberation movement (influencing scientists of both sexes), and the infusion of female scientists have all contributed to the new understanding of primate societies. Thelma E. Rowell, a zoologist at the University of California at Berkeley, says, "I have a feeling it is easier for females to empathize with females, and that empathy is a covertly accepted aspect of primate studies — because it produces results."