

BOOK REVIEW

Sex Ratios and Sex Differences in Primatology

Review of *Female Primates: Studies by Women Primatologists*, edited by Meredith F. Small. New York, Alan R. Liss, Inc., 1984, 272 pp, \$58.00.

I have lost count of the number of times I have been asked: why are there so many women primatologists? The question needs rephrasing, of course, since there are not so *many* women primatologists, rather there are so *few* women scientists in other specialties. Nonetheless, given their generally poor representation in the biological and behavioral sciences, it could be argued that women have entered our discipline in "disproportionate" numbers; perhaps a future historian of primatology will tell us why. For women have indeed played a highly influential and visible role in the development of primatology as a discipline and in its recognition by the general public. So, when Meredith Small, the editor of *Female Primates*, writes that this volume "celebrates the fact that women have had a significant effect on the way in which we view primates and their behavior," the choice of a collection of papers on the behavior of female primates by (a "coalition" of?) women researchers, seems entirely justified.

The primary goal of *Female Primates* is to present original data on the behavior of females in a wide variety of primate species. This it does almost too well, for the book seems at times to suffer from a surfeit of research reports, similar in construction and style, which in spite of their individual merits, do not give the book a sense of unity or direction. This, I suspect, is a problem common to many books of collected papers, especially if the individual authors do not see the other contributions. In an effort to focus these papers, the book begins with a preface by Small, a short introduction by Lancaster, and then the 13 contributions are grouped into three topical sections, each of which is preceded by a short introduction.

Section I, entitled "Mothers, Infants and Adolescents," contains articles by Berman on rhesus mother-infant relations, Dolhinow and Krusko on langur female-infant care-giving patterns, Wright on parental behavior in two neotropical monogamous species, and Scott on reproductive behavior in adolescent female baboons. In her thoughtful introductory comments, Rowell suggests that these authors all have attacked the general problem of social development from diverse standpoints. Too diverse for me, for I feel that this section suffers from a certain lack of coherence. For example, Scott's careful delineation of the patterns by which adolescent female baboons interact sexually (and differently from adult females) seems out of place in a unit otherwise concerned with adult-infant interactions, and clearly belongs in the next section on "Female Reproductive Strategies." Further, no two of the papers address a common theoretical argument.

Still, all of the articles in this initial section do offer some new finding or perspective that makes each worthwhile reading. For example, Berman summarizes from earlier studies the "traditional" causal factors used to explain variation in mother-infant relations. She tests these, along with what she calls "nontraditional" factors, on her data set; coming to the conclusion that nontraditional demographic

factors may be more strongly associated with mother-infant patterns of interaction than the traditional variables. I would like to have seen more discussion of the intercorrelations between traditional variables such as parity, and nontraditional variables such as maternal age and experience. Dolhinow and Krusho follow with a review of 10 yr of data on a captive langur colony, from which they conclude that there is great individual variation in the relations between females and infants, and although some trends can be delineated, the variation is not adequately explained by the current theories of maternal investment and allomothering. Wright's paper on parental care in *Aotus* and *Callicebus* breaks the most new ground, both because these New World primates are little known, especially in their native habitats, and also because this is one of the first in-depth analyses of parenting in a monogamous species which is not specialized for twinning and dwarfed size, as are the callitrichids. Her analyses of food distribution, energetic costs, and differentiated behavioral profiles of the male and female parent make an important contribution to our understanding of monogamous systems in primates.

The second section of the book, "Female Reproductive Strategies," begins with an introduction by Blaffer-Hrdy which presents the most overt and cogent argument as to why and how a female perspective offers an essential key to the understanding of primate social systems. I felt a sense of relief in reading this contribution, not necessarily because I agreed with all of its conclusions, but because I thought that the implications of a book by women primatologists on female primates finally were being explicated. Perhaps in an effort to avoid questions that might seem tendentious or even polemical, both Small's preface and Lancaster's introduction to the book, though very different from each other in style, fail to give the reader (or rather this reader) a sense of the book. The editor's curiously abbreviated preface is terse to the point of seeming demure, and Lancaster's rather diffuse introduction, which does deal with the reevaluation of sex roles in recent theoretical formulations of behavior, is still framed in such generalities that one is left with little idea of what form the articles to follow will take, or what contributions the women focusing on female primates have made to science.

Not so with Blaffer-Hrdy, who states clearly and directly her perception of past and present research by and about females. She argues that early studies in primate behavior were missing any serious or empirical consideration of female activities, but that this omission is being currently corrected as a result of three major events: an impetus from the women's movement to reexamine social life from the female point of view; better methodological techniques which counteract the tendency to differentially observe the larger males in Cercopithecoid species; and the realization that evolutionary forces also act upon females. It is the last development which has led to an interest in female reproductive strategies, the subject matter of the five articles in Section II.

On the whole, the articles in this section cohere in a manner that those of the other sections do not. This is, in part, because the topic of reproduction has generated several related theoretical models to test and to challenge. Clarke and Glander analyze 11 yr of demographic data on mantled howlers in order to examine female reproductive success. These females have an unusual dominance system in that female rank decreases with age and in that primiparous mothers are top-ranking when their infants are born but suffer 100% infant mortality nonetheless. Midranking females have the greatest reproductive success; and timing of births as well as sex of offspring have an impact on a female's reproductive success. Although mantled howler females do change groups, female emigration seems to be even more prominent in the red howlers studied by Crockett in Venezuela, a study population in which females leave groups even when they are unable to join other established

groups. Crockett argues that females compete strongly for the few breeding positions available in each group, positions which are limited by food competition, and some females are inevitably excluded and forced to become "extratroup" individuals or to form new groups. Whitten's paper on female vervets also examines competition and she argues that, contrary to the popular wisdom, competition does have a significant impact on the differential fitness of females, but that long-term competition with the females in other groups may be more important for a female than her day-to-day competition with females in her own group. Whitten also offers a provocative argument about the different time constraints, incentives, and rewards of competition for males versus females.

In the only paper of this section to be concerned with proximate mechanisms, Wolfe provides a description of female sexual behavior in Japanese macaques, and offers several lines of evidence that these females seek sexual novelty. The concluding article of Section II, by Chism, Rowell, and Olsen, summarizes field and captive data on life history patterns in female patas monkeys, and contrasts these patterns to those of patas males. They conclude that many of the female *Erythrocebus* demographic patterns (seasonal births, rapid growth, early age at first birth) represent an adaptive ability to respond to an unpredictable environment with rapid reproduction.

The final section of the book, called "Patterns of Female Behavior," is introduced by Bishop, who bravely attempts to find a theme in the four disparate contributions. Nevertheless, Bishop's discussion of "patterns" left me unclear about the common intent, if any, of the articles in the final part of the book. This section contains the only and avowedly speculative piece in the volume, and as such was refreshing and welcome. Jolly, its author, attempts to explain why female dominance, in the form of feeding priority, might have evolved in some primate species, especially in Malagasy lemurs. Part of the resulting model, she admits candidly, may be "special pleading." Special pleading is not uncommon in such theorizing; the admission of it is, however. Unfortunately, I did occasionally lose the thread in Jolly's free-wheeling, multicausal argument, an argument that integrates several possible explanations and recent theoretical ideas about sexual dimorphism, sex ratios, and female reproductive patterns.

Galdikas follows with an article which argues that female orangutans are more social than we had thought, and female chimpanzees more solitary, so that the contrast between the two pongid species is not as striking as previously described, and may even show congruences resulting from similar selective pressures. Teas contributes a research report on rhesus macaques in Nepal, which is only obscurely related to the others in this section in that it includes consideration of sex differences in grooming and aggression. Finally, Small presents a concise report on age and reproduction in a large sample of colony rhesus females. She shows that reproductive success declines with maternal age in her sample (although older females have lower infant mortality rates, they also have longer interbirth intervals), and she argues that old female macaques provide a good model for the study of aging in human females.

In sum, the quality of the individual papers in this volume is generally high, but the book as a whole does not quite come together in terms of focus and structure. As it is, this volume will likely become a useful reference for researchers, to be consulted for specific studies rather than for its point of view—the cost alone, a whopping \$58.00, precluding its use as a text, and probably pricing it beyond the means of most students. Certainly, the book does provide an array of examples of research on female primates, which is its explicit aim. Many of these examples appear to have been summarized directly from dissertations and research reports;

for seminar use it would have been better had each author been asked to redescribe and evaluate her work in light of selected questions about theoretical models of female behavior.

Yet, each of the authors responsible for an introduction to the separate sections (Rowell, Blaffer-Hrdy, and Bishop) does attempt to pull some common themes out of the contributions and to address some higher-order questions about female primate behavior. Only Rowell speaks directly, if briefly, to the question that a book such as this will inevitably raise in the minds of many: do women scientists practice primatology differently? (That is, do they ask different questions, pay attention to different types of information, draw different inferences, etc.). Rowell argues that the women represented in this volume challenge accepted explanations and attempt to see the environment from the female's point of view because it is easier for females to empathize with females, and empathy is an accepted and productive part of primate studies. Blaffer-Hrdy's contribution makes it clear that women may also take the female point of view as part of a conscious ideology. While this volume does not convince me that a general sex difference in the practice of primatology yet exists, such distinctions in the thinking about primates could lead to one. Yet I do admit to some misgivings about the wider implications of female empathy. Rowell may be correct about our sense of identification with other female primates, but I will remember my dismay when, having put many hours of effort into learning to identify the individual female monkeys of a large group, my ability was dismissed as being inherent in my sex, by a respected and senior male colleague. Although normative questions about the place of women in science are clearly beyond the intent of *Female Primates*, this volume does demonstrate that women are responsible for much and varied primate research, both in the field and in the laboratory. I would suggest that where our numbers have not yet had the impact they warrant is in the realm of theory-making, as well as theory-testing and challenging. Perhaps in another decade this imbalance too will be rectified. Because of the widespread recognition in our discipline of the early bias toward overemphasizing male primates, both men and women have, in recent years, contributed to filling in the female part of the picture. As Rowell concludes: "We are fortunate that primatology has attracted students of both sexes."

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