



Book Review

The Chimpanzees of the Taï Forest. Behavioural Ecology and Evolution.

By Christophe Boesch and Hedwige Boesch-Achermann, Oxford University Press, Oxford, UK. 2000, x + 316 pp., \$39.50 (paperback).

Much of our understanding of wild chimpanzee behavior derives from the pioneering research of Jane Goodall and Toshisada Nishida. Their long-term field studies at Gombe and Mahale were conducted at the easternmost edge of the geographical distribution of chimpanzees in mosaic woodland – forest habitat. Most chimpanzees, however, live in rain forest environments. Given the well-known effects of ecology on the behavior of primates and an emerging consensus regarding the existence of cultural differences between populations of chimpanzees, the extent to which we can generalize from the findings at Gombe and Mahale has been unclear. To fill a major gap in knowledge about the behavior of forest-dwelling chimpanzees, Boesch and Boesch-Achermann initiated a long-term field study on chimpanzees in the Taï National Park, Ivory Coast. In *The Chimpanzees of the Taï Forest*, they chronicle the results of 16 years of research.

Chapter 1 opens by outlining two goals of the book: to provide data regarding Taï chimpanzee behavior and to use them to make intraspecific comparisons between chimpanzees in different populations and interspecific comparisons between chimpanzees and humans. This initial chapter sets the stage for subsequent comparisons by also including brief, instructive overviews of the Taï chimpanzee project and research conducted at other study sites. The authors quickly follow with what is arguably the highlight of the book, two chapters containing new data regarding Taï chimpanzee demography and life history. Social behavior can only be interpreted within the specific demographic context in which it occurs, and in chapter 2, they outline demographic changes that have occurred at Taï. Here we learn of the drastic decline in the Taï chimpanzee community over 16 years, from a high of 82 individuals to a low of 29. Given this dramatic decrease, the Boeschs take pains to describe sources of mortality, including hunting by humans, sickness, falling from trees, leopard predation, and most importantly, two devastating

Ebola epidemics. Chapter 3 presents newly compiled information regarding immigration, emigration, and female reproductive parameters. Of special interest are the similarities and differences that exist between study sites. Age at first parturition and interbirth intervals are similar among females at Tai and those at Gombe and Mahale. In contrast to the situation elsewhere, however, high-ranking female chimpanzees at Tai appear to invest more in sons than in daughters.

Chapter 4 on male reproductive strategies includes what will undoubtedly be the most controversial aspects of this book. Using what has now been acknowledged as faulty genetic data, the Boesch argue that female chimpanzees at Tai regularly seek matings with males that live outside their group and that extragroup males sire most infants. As a consequence, the authors downplay any link between male dominance rank and reproduction, stressing instead the importance of female choice. An additional contention likely to generate further study involves the authors' discounting the roles of short-term coalitions and long-term alliances among males in the acquisition and maintenance of dominance rank. Here the Boesch alternatively suggest that mothers play a significant role in helping males to establish their ranks. This suggestion would be more compelling if it were based on more than the single anecdote that is offered and if a theoretical argument could be made for why mothers should trouble themselves given the lack of any apparent reproductive payoff.

The two ensuing chapters on social structure and relationships highlight some potentially intriguing intraspecific differences in behavior. After reviewing the multiple factors that affect variations in party size at Tai, the authors outline who associates with whom and at what frequencies. In keeping with findings from other studies, males at Tai associate more frequently with each other than females do with other females. But in contrast to what has been reported elsewhere, the Boesch allude to female friendships, based on long-term associations between specific pairs of females, which also share food and form coalitions. While these observations hint at a tantalizing populational difference in behavior, they are difficult to evaluate given the absence of quantitative data regarding the form and frequency of female social interactions. Chapter 7 on territoriality and intergroup aggression is another highlight of the book. It begins with a description of territorial use by Tai chimpanzees and goes on to describe the territorial strategies employed by them. Novel observations regarding patrolling behavior are presented along with descriptions of variable strategies employed during intergroup encounters. Chapters on hunting, tool use, and intelligence follow. All three chapters provide thorough summaries of the Boesch's previously published observations and speculations on these topics. The final chapter includes a discussion of the relevance of chimpanzee behavior to the study of human evolution.

In sum, *The Chimpanzees of the Tai Forest* represents an important achievement in the study of primate behavior. There is much to be lauded. With this book Boesch and Boesch-Achermann have provided a comprehensive review of virtually all aspects of chimpanzees and their behavior. Particularly impressive is that the data were collected entirely by the authors themselves. This is especially welcome at a time when senior investigators increasingly rely on field assistants to collect data and even beginning graduate students utilize others to an undue extent to gather observations. While few will quibble with the quantity of the data presented in this book, some may take issue with various aspects of presentation, analysis, and interpretation. With regard to the former, it is difficult to understand how Oxford University Press could publish this book with so many grammatical errors and editorial gaffes. With respect to analysis, some will remain skeptical of findings based on data that are problematic to collect, e.g. the amount of energy gained through meat-eating measured in kilojoules per minute, or to replicate, e.g. symbolic communication through drumming behavior. As for interpretation, it is unfortunate that this book went to press before the startling claim regarding the frequency of extragroup paternity at Tai was refuted. This widely publicized assertion colors the authors' interpretations throughout the book. The importance of female choice, the lack of infanticide at Tai, and the ultimate causation of intergroup interactions will all have to be re-evaluated now that we know extragroup paternity in chimpanzees occurs only rarely, both at Tai and elsewhere.

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