
<NOTE>**Bird in the Hand: Bossou Chimpanzees (*Pan troglodytes*)
Capture West African Wood-owls (*Ciccaba woodfordi*) but Not
to Eat**

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Fig. 1. Adolescent male PL after capture of the owl, carrying it in right hand.

INTRODUCTION

Chimpanzees rarely capture an animal without eating it, but this puzzling pattern occurs in both nature and captivity, mostly by youngsters¹⁻⁶. At Bossou in Guinea, chimpanzees rarely hunt for meat; their home range presents few suitable prey⁷. From 1976 to 2008, only one bird (West African wood-owl, *Ciccaba woodfordi*) capture was recorded, and it was consumed⁷. In 2009, we saw two captures of this species, which were not followed by consumption. Instead, both raptors were used as toys, as previously observed at Bossou with tree hyrax, *Dendrohyrax dorsalis*³. Here we describe the captures and discuss the implications of this behavior from an evolutionary perspective.

METHODS

Site and Subjects

Bossou is a long-term chimpanzee (*Pan troglodytes verus*) study-site in Africa⁸. Its chimpanzees range over 15 km², dominated by primary and secondary forest and surrounded by cultivated fields, abandoned fields and

shrub forest. The chimpanzees are fully habituated to human observers. The bird captures occurred between November 2008 and November 2009, during (mostly) nest-to-nest follows totaling 690 hours. These combined focal and scan sampling, and we videotaped and photographed events to supplement direct observations. Rare or unusual events were recorded *ad libitum*. Both episodes were at nearly the same location, on the eastern slope of Guein Hill (N 7.38.698; W 8.30.102).

RESULTS

Case 1: On 21 February 2009, S.C., G.Y. and two field assistants (J.D., G.Z.) followed a party of seven individuals (JR, JY, PL, JJ, TA, FF, YL), eating fruits. At 0941hr, we heard the alarm call of a bird nearby, about 20m away. Upon approaching the site, we saw an adult owl swooping over the head of an 11-year-old adolescent male chimpanzee (PL), apparently trying to “mob” him. PL descended a short distance, carrying in his mouth a motionless owl, apparently dead, and then placed the chick in a groin pocket. He had feathers in his mouth. From 0945hr to 1021hr: PL made a tree nest, then moved to another tree nearby and made two large tree nests, lay

down in each, and rested supinely with the bird on his belly. At 1027hr PL tapped his feet on the nest and feathers fell to the ground. Two minutes later, he left the third nest, but then returned to enlarge it and began to play with the carcass, balancing it on his feet while lying supine. At 1034hr, he again left the nest, carrying the owl in hand (Fig. 1). From 1037hr to 1102hr: PL moved to another tree and carrying the owl in his groin pocket, while eating fruits. He built a fourth nest at 1044hr, where he again played with the owl, balancing the carcass on his arm (Fig. 2) and grooming it. He left the nest and descended carrying the bird (now featherless) (Fig. 3). From 1102hr to 1229hr: On the ground PL carried the carcass dorsally, on his shoulder, while eating leaves. He inspected the dead bird, touched it with index finger and put the finger into his mouth, then moved away to eat fruits. He then rested on



Fig. 2. Playing in large day nest, balancing dead bird with one hand, while lying supine.



Fig. 3. Balancing the owl, after plucking its feathers.



Fig. 4. End of event 1: "toy" broken in pieces and PL is resting after 4hr of play.

the ground, with the owl lying on his belly; in this position, he touched alternately his genitals and the owl with his hand. Next, PL made a ground nest and balanced the carcass with both hands while lying supine. From 1229hr to 1346hr: PL pulled off the bird's wings. He enlarged his ground nest and rested, whisking away flies circling the carcass (Fig. 4). At 1346hr PL emerged from his ground nest, leaving the carcass behind. No other chimpanzees showed interest in PL's activities throughout the events.

Case 2: On 22 October 2009, Y.Y. and a field assistant (J.D.) followed PL in the Guein area. At 0855hr, they suspended observations for about an hour, then at 1003hr, resumed focal sampling on him. He sat on the ground next to the alpha male, holding a dead owl in his hand. From 1008hr to 1011hr: PL travelled and fed carrying the bird in his hand. An infant male (FL) approached him and peered closely, as PL groomed the carcass. After the infant departed, PL continued examining the bird for

about 10 seconds, then abandoned it. The researcher immediately collected the carcass and verified that feathers had been plucked and part of the viscera had been extracted.

DISCUSSION

These are the first observed bird captures at Bossou not followed by prey consumption. Nishida *et al.*⁹ noted at Mahale, Tanzania, that parts of the carcass sometimes were abandoned without consumption. As at Bossou, these events involved young solitary individuals who opportunistically encountered prey by chance. Bonobos (*Pan paniscus*) showed similar exploration and grooming after capturing infant monkeys, which were handled like dolls¹⁰.

Our observations echo previous reports from Bossou: Prey was found by chance, without active pursuit, and adults showed little or no interest in the prey⁷. Bossou's chimpanzees eat few vertebrate prey¹¹, including only one species of bird, this one. Owls may be relatively easy to catch, as they roost during the day in the canopy. A recent report from Mahale¹², on some of the very few bird predations by chimpanzees, differs somewhat from the Bossou events, for example, birds at Mahale are captured and consumed. However, several behavioral similarities emerge: catching of birds is solitary and opportunistic, does not require group hunting, the targeted birds are nestlings, and idiosyncrasies may explain why some chimpanzees tend to repeat this behavior.

Availability (or lack) of resources and distribution and abundance of prey may explain the lack of emergence of pursuit-hunting at Bossou. Or, some of the behavioral patterns seen rarely at Bossou, or seen only in the early years of research, may not have spread or persisted, due to the migration or disappearance of key members of this small group, or to too few potential extra innovators arriving through immigration. If prey-capture is sporadic and unpredictable, opportunities to watch a *hunter* are rare, and so observational learning and cultural transmission is hindered. Further research is needed to assess systematically the abundance and availability of prey and of learning opportunities.

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REFERENCES

1. Teleki G 1973. Notes on chimpanzee interactions with small carnivores in Gombe National Park, Tanzania. *Primates* 14: 407-412.

2. Goodall J 1986. *The Chimpanzees of Gombe: Patterns of Behaviour*. Cambridge, MA, Harvard University Press.
3. Hirata S, Yamakoshi G, Fujita S, Ohashi G, Matsuzawa T 2001. Capturing and toying with hyraxes (*Dendrohyrax dorsalis*) by wild chimpanzees (*Pan troglodytes*) at Bossou, Guinea. *Am J Primatol* 53: 93-97.
4. Goldberg TL, Gillespie TR, Rwego IB, Kaganzi C 2006. Killing of a pearl-spotted owlet (*Glaucidium perlatum*) by male red colobus monkeys (*Procolobus tephrosceles*) in a forest fragment near Kibale National Park, Uganda. *Am J Primatol* 68: 1007-1011.
5. Videan E, Fritz J, Murphy J 2007. Hunting and occasional consumption of prey items by chimpanzees at the Primate Foundation of Arizona. *Int J Primatol* 28: 477-481.
6. Ross SR, Holmes AN, Lonsdorf EV 2009. Interactions between zoo-housed great apes and local wildlife. *Am J Primatol* 71: 458-465.
7. Sugiyama Y 1989. Description of some characteristic behaviors and discussion on their propagation process among chimpanzees of Bossou, Guinea. In *Behavioral studies of Wild Chimpanzees at Bossou, Guinea* (Sugiyama, Y., ed.), pp. 43-47. Inuyama: Kyoto University Primate Research Institute.
8. Sugiyama Y, Koman J 1979. Social structure and dynamics of wild chimpanzees at Bossou, Guinea. *Primates* 20: 323-339.
9. Nishida T, Uehara S, Nyundo R 1979. Predatory behavior among wild chimpanzees of the Mahale Mountains. *Primates* 20: 1-20.
10. Sabater Pi G, Bermejo M, Illera G, Vea JJ 1993. Behaviour of Bonobos (*Pan paniscus*) following their capture of monkeys in Zaire. *Int J Primatol* 14: 797-804.
11. Sugiyama Y, Koman J 1987. A preliminary list of chimpanzees' alimentations at Bossou, Guinea. *Primates* 28: 133-147.
12. Fujimoto M, Shimada M 2008. Newly observed predation of wild birds by M-group chimpanzees (*Pan troglodytes schweinfurthii*) at Mahale, Tanzania. *Pan Afr News* 15: 23-26.

