

Kayumbo (University of Dar es Salaam/ Chairman of MWCS) was screened.

After a coffee break, Michio Nakamura, Nobuko Nakazawa, and Takuya Matsumoto from Kyoto University/MMCRP gave talks titled “An Overview of 50 years



Figure 1. Participants in the International Workshop: 50 Years of Research on Wild Chimpanzees and Other Wildlife in Mahale, at Lake Tanganyika Beach Hotel, Kigoma, Tanzania, on 26 November 2015 (All photos in Figures 1–3 courtesy of Hiroko Sakuragi).



Figure 2. His Excellency Masaharu Yoshida, the Japanese Ambassador to Tanzania, gives a speech.



Figure 3. The whole participants practice “Grooming Hand-Clasp” known as a social custom of Mahale chimpanzees in Matsumoto’s talk.

of Chimpanzee Research at Mahale,” “Recent Research Advances in Mammals other than Chimpanzees,” and “Diversity of Chimpanzee Behavior,” respectively (Figure 3).

After the event, we enjoyed dinner and celebrated the 50th anniversary of Mahale Research into the night. Ramadhani Nyundo, who worked in the first two decades of MMCRP and later hired by TANAPA, made a toast and Hilali Kalunde expressed the history of Mahale in poetry or song (Shairi in Swahili) at dinner.

Mr. Yoshida commented, “I have seen in a new light that research in Mahale such as cultural behaviors of chimpanzees is not only important to biology, but also attractive to the public.” Mwami Rashidi, who had been an assistant of MMCRP and whose father had also belonged to MMCRP, commented that he would like to help research in Mahale for the next 50 years.

<NOTE>

A Case of Infant Carrying against the Mother’s Will by an Old Adult Female Bonobo at Wamba, Democratic Republic of Congo

Nahoko Tokuyama

*Primate Research Institute, Kyoto University, Japan
(E-mail: tokuyama.nahoko.47x@st.kyoto-u.ac.jp)*

INTRODUCTION

Kidnapping, one form of allomothering behaviors in which an infant is carried by a non-mother individual for a prolonged time without returning to its mother, has been observed in various primate species (Maestripieri 1994). In bonobos, it occurs rarely and all reported kidnapers were females (Neugebauer 1980; Hohmann & Fruth 2003; Vervaecke *et al.* 2003). Kidnapping can be fatal to the infant. In two cases of captive bonobos, the kidnapers were anesthetized in order to return the infants to their mothers (Neugebauer 1980; Vervaecke *et al.* 2003). In the case of wild bonobos in Lomako, the baby was observed to be dead one day after the kidnapping (Hohmann & Fruth 2003).

Here, I report a case of kidnapping behavior by an old adult female. The incident happened immediately after the infant had gone through a seemingly stressful and possibly fatal accident, falling from the tree canopy to the ground. The old adult female carried an infant for 51 min and kept ignoring the mother’s efforts to retrieve her infant, until the mother finally snatched the infant away.

BACKGROUND

The observation was made on 17th March 2015 at Wamba, Luo Scientific Reserve, Democratic Republic of Congo (DRC). A group of bonobos, PE group, has been followed on a daily basis since October 2010. The group had been observed between 1976 and 1991, and at that time, the group was called ‘P group’ (Idani 1990). The

group consisted of 26 individuals including nine parous females, five adult males and one adolescent male.

An infant female, Marina (Ma), was born in July 2014 as the first offspring of a young and low-ranking adult female, Marie (Mr), of 14 years old. At the time of the event, the infant had already started locomoting independently, though she had never gone beyond her mother's reach.

Bokuta (Bk) was estimated to be more than 50 years old. She was the oldest and high-ranking female in the group. Her existence in P group was confirmed by examining old pictures which had been taken between 1984 and 1988. She was called Yuba at that time, and gave birth in 1982 and 1986 (Idani 1990). When researchers started observation in 2010, she did not have any dependent offspring. Since 2010, she had not shown any obvious swelling cycle and she copulated only twice during the 1,989 h of my *ad libitum* observation between 2012 and 2015. Although I did not conduct any hormonal analysis, I assumed that she was too old for reproduction. She was not a social individual, in that she seldom engaged in grooming behavior with other group members. When other individuals were grooming, she often rested in a day bed. Also, she rarely engaged in social playing with immature individuals. Before the incident, she never showed apparent interest in Ma.

OBSERVATION

On 17th March 2015, at 0836 h, I was following a party of bonobos including eight adult females, three adult males, and one adolescent male. The behavioral context of the party was resting; most individuals were resting, and only three females were feeding.

Mr was feeding on the fruits of *Ochtocosmus africanus* at the canopy, which was approximately 20 m high. Suddenly, Ma fell from the canopy. Because there were no lower branches or vegetation below her, she could not grab anything before her body slammed against the ground with a thud. An unusually loud scream from Ma resonated through the forest. Other bonobos started to vocalize sharply. Mr rapidly descended from the canopy. However, before she reached her infant, Bk ran to Ma and picked her up. When Mr approached Bk, she started walking with Ma. Ma was carried ventrally and she clung Bk's body without any support. Mr was walking close behind Bk. Other individuals also started traveling on the ground.

The bonobos seemed slightly more excited than usual. At 0838 h, Bk dragged a branch (a display behavior of bonobos, but it is also used as a way of proposing a direction of travel; Ingmanson 1996). An adult male drummed the buttress of a tree. At 0848 h, Bk sat on the ground. Ma screamed. Mr peered (gazing behavior within 30 cm by an animal toward another; Idani 1995) at Bk and Ma, and Bk started traveling. Bk dragged a branch again.

At 0853 h, Ma screamed again. Bk climbed about 2 m up a tree. Mr followed her. A 3-year-old male infant came and touched Ma. Bk made him move away by stretching her leg toward him. After 2 min, Bk and another female climbed up to the canopy to feed on the *Grewia pinnatifida* fruits. Mr followed them and sat about 1.5 m away from Bk. Ma screamed and Mr peered at her. At 0858 h, Mr solicited and engaged in genito-genital rubbing with

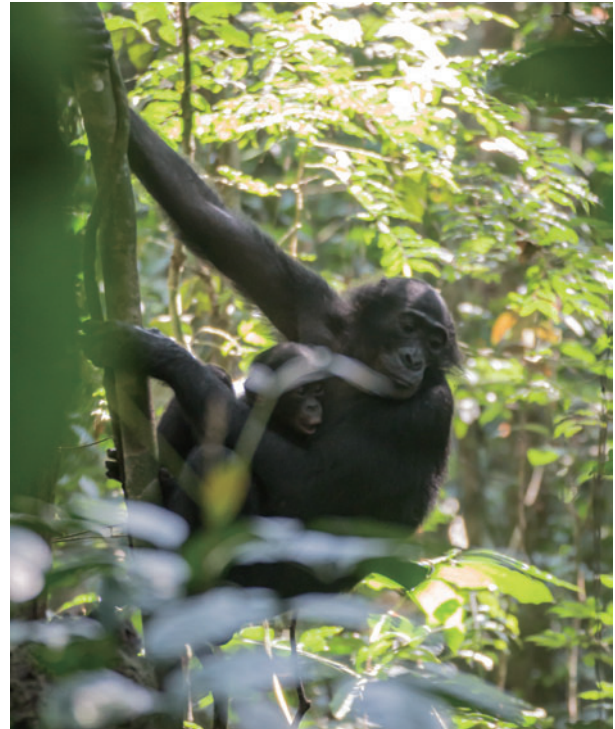


Figure 1. Ma clinging to Bk's body and screaming.

Bk. After this, Mr peered at Bk, but Bk ignored her. From 0901 to 0902 h, Ma was clinging to Bk's body and screaming intermittently (Figure 1). She was pouting her lips. From 0904 to 0905 h, Bk and Mr were feeding on *Grewia pinnatifida* fruits.

At 0905 h, Bk descended to the ground with Ma. Mr followed them. Until 0921 h, Bk traveled on the ground. She sometimes stopped shortly to feed on piths of *Ataenidia conferta* and young leaves of *Cola bruneelii*. Mr walked close behind Bk. Ma was still carried ventrally. She screamed several times (at 0910, 0911, 0913 and 0915 h).

At 0921 h, Bk and Mr climbed onto a fallen tree. Five adult females and one adult male were grooming or resting on the same fallen tree. Other adult individuals did not show interest in Bk and Ma. Mr approached and groomed Bk for less than 30 s. Bk did not groom Mr back and descended from the fallen tree. Mr followed Bk, and two individuals sat on the ground about 1.5 m apart from each other.

At 0925 h, a 6-year-old female approached Bk, and started to pull Ma's leg. Ma screamed intensely, then Mr ran to her and snatched her up. Mr rapidly climbed up, possibly to get out of Bk's reach. The bonobos vocalized and started traveling. In total, Bk carried Ma for 51 min.

After this incidence, Bk never showed interest in Ma until the end of my study period (June 2015).

DISCUSSION

I described a rare behavior of bonobos that a very old female carried a non-kin infant for a prolonged time, and ignored the mother's effort to retrieve the infant. Interestingly enough, Bk was one of the least friendly individuals in the group toward immatures, and often seemed to avoid them to seek a quiet place. The trigger of

her kidnapping behavior must have been the fall of the infant from the high tree. The scream was serious and other bonobos seemed to perceive that Ma was in a critical situation. Bk, who was a mother many years ago, might have taken her up and carried her as she did in the past. Bk did not treat Ma roughly; she even behaved protectively when other infant came to touch her. Thus, she might not have intended to harm Ma. However, if Mr did not have enough courage to snatch her back, Ma might eventually have died of starvation.

It was interesting that the low-ranking mother refrained from retrieving her infant from the high-ranking kidnapper since bonobos were considered to have more egalitarian dominance relationship than chimpanzees (de Waal & Lanting 1997). Mr followed Bk nervously and asked her to return her infant only modestly by peering and genito-genital rubbing. Also, she fled from Bk after she retrieved Ma. It appeared that Mr was aware that she should have difficulty in retrieving her infant if Bk kidnaps Ma again. The ease with which mothers can retrieve their infants from other individuals might be influenced by the strictness of dominance relationship among females (McKenna 1979; Maestripieri 1994). This kidnapping case and the previous case in Lomako (Hohmann & Fruth 2003) might suggest that there is a considerable degree of strictness in dominance relationships among wild female bonobos.

ACKNOWLEDGEMENTS

I sincerely thank the Research Center for Ecology and Forestry and Ministry of Scientific Research, DRC for helping my field research. I especially thank Dr. Sakamaki for his great contribution to continuous observation and camp management at Wamba. I thank Prof. Furuichi, Dr. Garai and Ms. Graham for their helpful comments and English editing. This study was supported by GLTP program of United Nations University.

REFERENCES

- Hohman G, Fruth B 2003. Intra- and inter-sexual aggression by bonobos in the context of mating. *Behaviour* **140**: 1389–1413.
- Idani G 1990. Relations between unit-groups of bonobos at Wamba, Zaire: Encounters and temporary fusions. *Afr Stud Monogr* **11**: 153–186.
- Idani G 1995. Function of peering behavior among bonobos (*Pan paniscus*) at Wamba, Zaire. *Primates* **36**: 377–383.
- Ingmanson EJ 1996. Tool-using behavior in wild *Pan paniscus*: Social and ecological considerations. In: *Reaching Into Thought: The Minds of the Great Apes*. Russon AE, Kim AB, Sue TP (eds), Cambridge University Press, Cambridge, pp. 190–210.
- Maestripieri D 1994. Social structure, infant handling, and mothering styles in group-living old world monkeys. *Int J Primatol* **15**: 531–553.
- McKenna JJ 1979. The evolution of allomothering behavior among colobine monkeys: Function and opportunism in evolution. *Am Anthropol* **81**: 818–840.
- Neugebauer W 1980. The status and management of the pygmy chimpanzee *Pan paniscus* in European zoos. *Int Zoo Yearb* **20**: 64–70.
- Vervaecke H, Stevens J, van Elsacker L 2003. Interfering with others: female–female reproductive competition in *Pan paniscus*. In: *Sexual Selection and Reproductive Competition in Primates: New Perspectives and Directions*. Jones CB (ed), American Society of Primatologists, Oklahoma, pp. 1235–1246.
- de Waal FBM, Lanting F 1997. *Bonobo: The Forgotten Ape*. University of California Press, Berkeley.

<NOTE>

Savanna Chimpanzees (*Pan troglodytes schweinfurthii*) Consume and Share Blue Duiker (*Philantomba monticola*) Meat in the Issa Valley, Ugalla, Western Tanzania

Sebastian Ramirez-Amaya¹, Edward McLester¹, Fiona A. Stewart^{1,2}, and Alex K. Piel^{1,3,*}

¹ Ugalla Primate Project

² Department of Archaeology and Anthropology, University of Cambridge, UK

³ School of Natural Sciences and Psychology, Liverpool John Moores University, UK

* Corresponding author (E-mail: a.k.piel@ljmu.ac.uk)

INTRODUCTION

Meat eating is pervasive across chimpanzee populations in Africa, with red colobus monkey (*Piliocolobus* spp.) being the most common prey (Boesch & Boesch 1989; Stanford *et al.* 1994a; Watts *et al.* 2012; Hosaka 2015) if sympatric in the same habitat. Besides colobus monkeys, chimpanzees consume a variety of other primates, including olive and yellow baboons (*Papio* spp.) and bushbabies (*Galago* spp.). In the forest habitats of western Tanzania chimpanzees have been reported to consume numerous different mammalian species: 18 at Mahale Mountains National Park (Uehara 1997; Hosaka 2015) and eight at Gombe National Park, whilst in the miombo woodland dominated Ugalla Region no direct observations have been recorded to date (Table 1). In West Africa, chimpanzees from Taï Forest, Ivory Coast consume eight different mammal species, all primates (Boesch & Boesch 1989). Wherever chimpanzees consume meat, it is almost always via hunting, as they rarely scavenge (Watts 2008).

Habitat and wildlife diversity clearly influence potential prey for chimpanzees. In Fongoli, Senegal for example, chimpanzees live in a mosaic savanna landscape and prey on patas monkey (*Erythrocebus patas*) (Pruetz & Marshack 2009), a species that is rarely sympatric with otherwise mostly forest-dwelling chimpanzees. In Ugalla, two recent studies on the diet of wild chimpanzees each found only a paucity of animal tissue in over 1,200 combined samples. Yoshikawa and Ogawa (2015) reported a single case of bird bones and another of unidentified mammalian tissue in over 450 samples analyzed between 1995–2011 from the Nguye area, whilst Piel *et al.* (under revision) reported no mammalian tissue in over 800 samples collected from 2009–2014 from the Issa Valley. A reliance of faecal analysis to infer dietary behavior has well-discussed limitations (Boesch & Boesch 1989; McGrew *et al.* 2009; Phillips & McGrew 2013) and so direct observations are critical to revealing items that may be otherwise fully digested or rarely consumed.

Where chimpanzees do capture prey, researchers have long been interested in meat-sharing (reviewed in Mitani & Watts 2001). Initial hypotheses described how