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Four Cases of Grooming Sessions between Chimpanzees and Guenons at the Kalinzu Forest Reserve, Uganda

Takumi Tsutaya[1,2], Natsumi Aruga[3], Hodaka Matsuo[3], & Chie Hashimoto[3]

1 *Graduate School of Science, Kyoto University, Kyoto, Japan*
2 *Department of Biogeochemistry, Japan Agency for Marine-Earth Science and Technology, Kanagawa, Japan*
2 *Primate Research Institute, Kyoto University, Aichi, Japan*
(E-mail: tsutayatakumi@gmail.com)

INTRODUCTION

Interactions between wild chimpanzees and other primates have mostly been studied in terms of hunting (*e.g.*, Boesch & Boesch 1989). On the other hand, affiliative interactions have been less studied. Although a few cases on affiliative interactions have been reported, evidence is mostly anecdotal and sporadic. Young chimpanzees frequently play with and sometimes engage in grooming with young baboons in Gombe, Tanzania (Goodall 1986; Teleki 1973). Grooming of a red-tailed monkey by a subadult female chimpanzee was observed in Budongo, Uganda (John & Reynolds 1997).

Here four cases of affiliative interactions (*i.e.*, grooming) between wild chimpanzees and sympatric guenons in the Kalinzu Forest Reserve, Uganda, are reported. One case is described in detail, and the other three other cases are succinctly described. Although these cases are anecdotal, they contribute to understand typical affiliative interactions between wild chimpanzees and sympatric guenons.

OBSERVATIONS

Kalinzu Forest Reserve

The Kalinzu Forest Reserve is located in western Uganda (30°07′E, 0°17′S) and covers an area of 137 km² (Hashimoto 1998). Ecological and behavioral studies on wild chimpanzees in the Kalinzu Forest Reserve have been conducted since 1992. Six sympatric primate species have been identified in the reserve: eastern chimpanzee (*Pan troglodytes schweinfurhii*), blue monkey (*Cercopithecus mitis*), red-tailed monkey (*C. ascanius*), L'Hoest's monkey (*C. lhoesti*), Abyssinian black-and-white colobus (*Colobus guereza*), and olive baboon (*Papio anubis*) (Hashimoto 1998). The two dominant tree species in the Kalinzu Forest Reserve are *Parinari excelsa*, a primary forest species, and *Musanga leo-errerae*, a secondary forest species, and several *Ficus* trees are also found (Hashimoto 1998). The fruits of *Musanga* and *Ficus* are important food sources for primates in the Kalinzu Forest Reserve (Tashiro *et al.* 1999).

The studied group of chimpanzees was the M-group (Hashimoto 1998), which has been continuously studied since 1997. There are approximately 100 individuals in this group, and most group members have been identified (Hashimoto *et al.* 2015).

Detailed Observation

On December 2, 2015, a chimpanzee mother (Ida) was the subject of focal animal sampling from 10:34 h at a *Musanga*-dominant secondary forest. Her offspring (Iku, a 10-year-old female; Iyo, a 5-year-old female; and Iliya, a 2-year-old male) were accompanied by Ida, but Iku was out of the observers' sight for most of the observation period. Other chimpanzees were not observed, and their voices were not heard during the observation period. After eating fruits of *Musanga*, Ida made day bed at 10:49 h and rested until the end of the observation period. Around noon, a solitary male red-tailed monkey (RT1) approached within 30 m and started feeding on the fruits of *Musanga*. Around 13:00 h, Iyo and Iliya moved to a *Funtumia africana* tree located 10 m away from Ida's tree and possibly started interacting with RT1. We estimated RT1 as a solitary (*i.e.*, individual who does not belong to a specific group) because we did neither see nor hear the presence of other red-tailed monkeys during the observation.

At 13:08 h, the first author observed RT1's tail next to Iyo and Iliya at the *F. africana* tree and started recording a video from 13:10:07 h (Video 1 available online at http://mahale.main.jp/PAN/2018/003.html). Iyo was on the adjacent branch (< 1 m away) with RT1, and Iliya was on a different branch, approximately 1 m above. RT1 seemed to request grooming by posing his shoulder, hip, cheek, tail, or back mostly to Iyo and sometimes to Iliya. Iyo groomed at least the hip, cheek, tail, and back of RT1 by hand and mouth (Figure 1). Iyo held RT1's tail and inspected it for more than 10 s. Iliya touched RT1 but did not groom him. Self-scratching was observed by both Iyo and RT1. After a sudden movement by RT1, Iyo and Iliya moved to another branch in the same tree at 13:15:04 h. No grooming from RT1 was observed.

After this grooming interaction, no grooming was observed, but Iyo and Iliya shook branches on which RT1 was sitting (see Video 2 from 13:18:21 h, Video 3 from 13:21:15 h, and Video 4 from 13:24:00 h available online at http://mahale.main.jp/PAN/2018/003.html). Iyo made day bed and rested in it (Video 3). Finally, RT1 moved 5 m from Iliya on the same tree, after Iliya shook a RT1's branch at 13:24:50 h (Video 4). From 13:24:49 h, Iyo and Iliya played with each other. At 13:26:15 h, RT1 moved to another tree and left the chimpanzees.

Throughout the interaction, Ida was observed by a

Figure 1. Iyo grooms a solitary male red-tailed monkey (RT1).

local research assistant. She was resting in her bed about 10 m away from the *F. africana* tree and was totally ignorant.

Other Three Cases

Although detailed data are not available, three additional cases of affiliative interactions between chimpanzees and solitary guenons were observed in the Kalinzu Forest Reserve. These guenons were estimated as solitary because we did neither see nor hear the presence of the other monkeys during the observation.

The second author observed that a chimpanzee mother (Nono) groomed her older offspring (Noe, an 11-year-old female). Her younger offspring (Nobita, a 5-year-old male) played alone within 2 m from Nono. A solitary male blue monkey (BM1) approached within 10 m to these chimpanzees at 13:42 h on June 30, 2015. BM1 approached within 2 m to Nono at 13:52 h and touched Nono by hand to groom her several times from 13:55 h to 13:58 h. Nobita swayed a branch behind Nono toward BM1, and Noe drove away BM1 at 13:59 h. No other chimpanzees were present within the observer's sight.

The third author observed a solitary red-tailed monkey (RT2) approaching a resting mother–infant pair of chimpanzees. Although RT2 posed his back to the infant within < 1 m, possibly to request grooming, the mother subsequently drove RT2 away. No other chimpanzees were present within the observer's sight.

The last author observed Minny (a juvenile female chimpanzee) grooming a solitary male blue monkey (BM2) on a *Ficus saussureana* tree for more than 1 h. Minny traveled with Gai (a nulliparous adult female) during the observation day. BM2 requested grooming by posing his back to Minny. BM2 did not groom the chimpanzees. No other chimpanzees were present within the observer's sight.

DISCUSSION

Most actors of chimpanzee side are mother and offspring, and all actor of guenon side is solitary male. Because adult chimpanzees tend to be aggressive to other species (Ross *et al.* 2009), guenons probably avoid groups of chimpanzees, especially groups of adult male chimpanzees (but see Hosaka & Ihobe 2015). However, immature chimpanzees have a relatively small body size, and thus guenons may be able to approach non-adult chimpanzees without fear of lethal aggression.

Solitary guenon males seem to spontaneously approach isolated mother–offspring pairs and small groups of female chimpanzees and request grooming from them. One possible reason for this behavior is hygiene. Freeland (1981) reported that a pet male red-tailed monkey gets 8.2 ticks per hour as a result of nine walks in the Kibale forest, Uganda. Because some parts of the body are difficult to reach and groom, grooming by other individuals is important to keep the whole body clean. Red-tailed and blue monkeys create one-male social group. Adult males are intolerant of each other and do not form "bachelor groups" in these species (Struhsaker 1980; Butynski 1982). Because of such social structures, solitary male red-tailed and blue monkeys need to be groomed by other species. It has been reported that solitary male red-tailed monkeys sometimes travel with groups of red colobus (*Colobus badius*) in the Kibale Forest, Uganda and are groomed by members of the group (Struhsaker 1981). The last author observed a solitary male red-tailed monkey travel with and be groomed by a group of Abyssinian black-and-white colobus in the Kalinzu Forest Reserve. It is possible that solitary male red-tailed and blue monkeys approach isolated mother–offspring chimpanzee pairs with the expectation of being groomed.

Because the observations reported here are anecdotal, collecting quantitative data on affiliative interactions will be crucial to further understand inter-species relationships between sympatric primates.

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