overview of the impact of disease on the population[12]. In addition to chimpanzees, Gombe is also the site of one of the longest running studies of baboons, which were represented in this symposium by Akiko Matsumata-Oda's talk on oestrus asynchrony in baboons[13]. Finally, drawing connections between this symposium and the previous one, Shadrack Kamenya presented a talk on conservation in the Greater Gombe Ecosystem[14].

Together, these talks showcased the value of long-term behavioral and ecological data. Because chimpanzees live long lives, reproduce slowly, and live in complex environments that change greatly from year to year depending on fluctuations in rainfall and the fruiting patterns of key food species, long-term data are essential for understanding chimpanzee behavior and ecology. Such large datasets, however, present an imposing obstacle for analysis, unless the data are computerized. Most of the findings reported in the symposium relied on the relational database that Anne Pusey and colleagues have developed from the long-term records. Additionally, many of the talks combined analyses of these long-term data with information available from new technologies on a range of scales, from the molecular (genetics, endocrinology, virology) and microscopic (parasitology) to landscapes (GIS and remote sensing). The findings presented in this symposium demonstrated how long-term datasets, focused on the behavior of individuals, yet also probing for data on scales large and small, provide powerful tools for answering key scientific questions.

**Soiree at Yoshida-Izumidono**

Following the two symposia, Tetsuro Matsuzawa hosted a soiree for Jane Goodall, current and former Gombe researchers, and other friends of Gombe at Yoshida-Izumidono.

## REFERENCES

The following are all talks given at the XXIII Congress of the International Primatological Society, Kyoto, Japan, 12–18 September, 2010. Abstracts of these talks are available at http://wwwsoc.nii.ac.jp/psj2/ips/:

1. Matsuzawa T 2010. Support for African/Asian Great Apes (SAGA): Efforts toward the care and conservation of chimpanzees.
2. Yamagiwa J 2010. Japanese primatology: Its unique scope and methodology.
3. Idani G 2010. From the bonobos' forest to the chimpanzees' woodland.
4. Wrangham RW, Ross E, Lloyd J, Pokempner AA 2010. Impacts of long-term research on conservation.
5. Goodall J 2010. My reasons for hope: What I learned from Gombe 50 Years.
6. Wilson ML, Mjungu DC, Pusey AE 2010. Causes of intergroup aggression among chimpanzees at Gombe.
7. Pintea L, Wilson ML, Gilby IC, Pusey AE 2010. Power relations among neighboring communities affect party size and composition in Gombe chimpanzees: A remote sensing and GIS analysis.
8. Gilby IC 2010. Alpha male chimpanzees at Gombe: Consequences of dominance style.
9. Wroblewski EE, Johnson L, Murray CM, Henderson J, Stanley A, Pusey AE 2010. Father-offspring relations among the Gombe chimpanzees (*Pan troglodytes schweinfurthii*).
10. Pusey AE 2010. Factors influencing number of sexual cycles in the Gombe chimpanzees.
11. Murray CM, Heintz MR, Santymire RM, Lipende I, Lonsdorf EV 2010. Stress and maternal behavior in wild chimpanzees at Gombe National Park, Tanzania.
12. Lonsdorf EV, Travis DA, Lipende I, Murray CM, Raphael J, Lonsdorf EV, Gilby IC, Gillespie TR, Terio KA, Kinsel MJ, Chosy J, Rudicell R, Hahn BH, Pusey AE, Goodall J 2010. The impact of disease on the Gombe chimpanzees—past and present.
13. Matsumoto-Oda A, Ihara Y, Oda R, Collins DA 2010. Female baboons adopt a mate strategy of oestrus asynchrony in Gombe.
14. Kamenya SM, Pintea L, Mtiti ER, Ndimuligo SA 2010. Conserving the Greater Gombe Ecosystem.

# <NOTE>
# Poke-type Social Scratching Persists at Mahale

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## INTRODUCTION

Social scratch is a grooming pattern observed consistently in Mahale, whereby one individual scratches the body of another individual[1]. A different type of social scratch is customarily observed at Ngogo[2]. Mahale chimpanzees employ stroke-type scratching, whereas Ngogo chimpanzees employ poke-type scratching[2] (Figure 1). Although Shimada[3] reported that three Gombe chimpanzees performed social scratch, there are no reports of this behavior from other study sites.

Although the dominant type of social scratching at

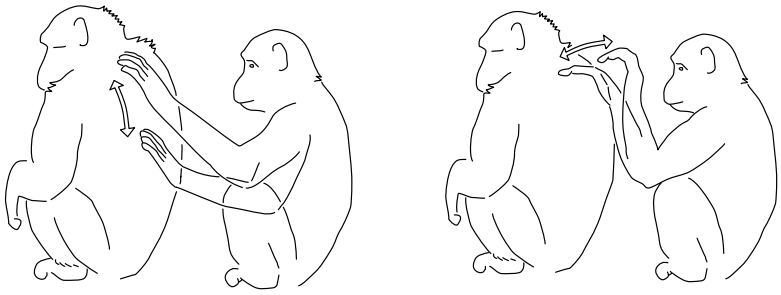


**Figure 1. Two types of social scratch: stroke-type and poke-type.**

Mahale is the stroke-type, one adult female *Ako* showed the poke-type scratch[2,4]: According to Nishida *et al.*[4], *Ako* was first seen to show this pattern in 1999, used both types equally (8 pokes vs 7 strokes) between 2002 and 2003, and ceased to show the poke-type in 2004. Nishida *et al.*[4] also stated that there was no evidence of social transmission in the different types of social scratch, because *Ako*'s daughter *Acadia* never showed the poke-type.

However, I observed several cases of poke-type social scratching by *Ako* and *Acadia* after 2004, as reported here.

## OBSERVATIONS

Between November 2005 and July 2010, I made 9 short visits to Mahale (each visit consists of about one to two months), during which I saw 22 cases of social scratch by *Ako* (Figure 2). Twelve of them were the poke-type and 10 were the stroke-type (Table 1). Although the data-set is small, it seems *Ako* has not changed her social scratching types over the years. On September 24, 2008, she showed 4 cases of poke-type and 4 cases of stroke-type intermittently within 10 min, directed to the same adult female *Abi*. Thus, *Ako* mixed both types even in the same grooming session.

I saw her show the poke-type during my last visit, in 2010.

In the same study period from 2005, I observed 9 cases of social scratch by *Ako*'s daughter *Acadia*. *Acadia* was the first offspring born to *Ako* in 1998; thus, she was in transition from juvenility to adolescence during my study period. She showed the poke-type twice and the stroke-type 7 times (Table 1). Although *Acadia*'s poke-type was first seen only in 2006 (in the same day), it is difficult to say whether or not she changed her type because she showed the stroke-type before and after 2006. *Acadia* was last seen by observers in September 2009, and because she had started to show adolescent estrous swelling and was in good health, it was assumed that she emigrated to another group.

*Ako* also has a son, *Agano*, born in 2004, but he was not seen to perform social scratching during the study period.

**Table 1. Two types of social scratch by *Ako* and *Acadia* at Mahale.**

| Year | *Ako* | | *Acadia* | | Source |
|---|---|---|---|---|---|
| | poke | stroke | poke | stroke | |
| 2002–2003 | 8 | 7 | – | – | Ref 4 |
| 2004 | 0 | 10 | – | – | Ref 4 |
| 2005 | 1 | 0 | 0 | 2 | This study |
| 2006 | 1 | 0 | 2 | 1 | This study |
| 2007 | 0 | 0 | 0 | 0 | This study |
| 2008 | 8 | 9 | 0 | 4 | This study |
| 2009 | 1 | 1 | – | – | This study |
| 2010 | 1 | 0 | – | – | This study |
| Subtotal of 2005–2010 | 12 | 10 | 2 | 7 | |

Opportunities for observing *Ako* and *Acadia* differ year-by-year (e.g., they were seldom seen in 2007 during my visit), so it makes no sense to compare the frequencies across years. *Acadia* emigrated to a different group by the 2009 study period.

**Figure 2. *Ako* (left) just after performing the poke-type scratch. *Ako*'s son, *Agano*, sits in front.**

## DISCUSSION

Contrary to the report by Nishida *et al.*[4], *Ako* did not cease the poke-type social scratch in 2004 but instead she continues to use both types equally. It is puzzling why she did not show any poke-type scratching in 2004, but it might be an observational bias, as she has kept showing this pattern every year, except for 2007. So, the poke-type scratch still survived in Mahale's M group.

It is notable that *Ako*'s daughter *Acadia* showed, although only twice, the same poke-type scratch. As so few individuals showed the poke-type scratch at Mahale[4], I suspect that *Acadia* somehow copied this pattern from her mother, the most frequent performer of the pattern, rather than surmise that *Acadia* invented this pattern by herself. Unfortunately, we cannot do a follow-up study of whether or not *Acadia* continues to use the poke-type, as she has emigrated.

As of 2010, I have not observed *Agano*, *Ako*'s son, performing social scratching. This is partly due to his young age and partly due to short observation periods, so he is not yet observed to groom others often. He should start soon to groom others, and perhaps he will show more social scratching when he enters adolescence. It will be interesting to see whether or not he will employ the poke-type in the near future, as he had many chances to

watch his mother doing the pattern and he also sometimes received the poke-type scratch from *Ako*.

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**REFERENCES**

1. Nakamura M, McGrew WC, Marchant LF, Nishida T 2000. Social scratch: another custom in wild chimpanzees? *Primates* **41**:237–248.
2. Nishida T, Mitani JC, Watts DP 2004. Variable grooming behaviours in wild chimpanzees. *Folia Primatol* **75**:31–36.
3. Shimada M 2002. Social scratch among the chimpanzees of Gombe. *Pan Afr News* **9**:21–23.
4. Nishida T, Matsusaka T, McGrew WC 2009. Emergence, propagation or disappearance of novel behavioral patterns in the habituated chimpanzees of Mahale: a review. *Primates* **50**:23–36.

# <NOTE>
# Two Observations of Galago Predation by the Kasakela Chimpanzees of Gombe Stream National Park, Tanzania.

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**INTRODUCTION**

Chimpanzees (*Pan troglodytes*) are known to prey on a variety of vertebrate prey across Africa[1]. By a wide margin, the most common prey for the Kasakela chimpanzees of Gombe Stream National Park, Tanzania are red colobus monkeys (*Colobus badius*), followed by bushpig piglets (*Potamochoerus larvatus**), bushbuck fawns (*Tragelaphus scriptus*) and young baboons (*Papio anubis*). Members of this community have occasionally been observed to capture and consume blue monkeys (*Cercopithecus mitis*) and red-tailed monkeys (*Cercopithecus ascanius*) as well as smaller mammals and birds[2].

In five decades of observation there have been no published reports of Gombe chimpanzees consuming galagos, though at least three species (*Otolemur crassicaudatus monteiri*, *Galago matschiei*, and *Galago senegalensis*[3]) are believed to be endemic to the park (Collins personal communication). Predation on galagos by chimpanzees has been observed (rarely) in the chimpanzees of the Mahale Mountains in Tanzania[4,5]. Galago remains were identified from chimpanzees fecal samples at Mt. Assirik, Senegal[6] and galago predation is regularly observed by chimpanzees at Fongoli[7], also in Senegal. Chimpanzees in the latter population usually (though not always) use long sticks to assist in capturing galagos from their nests in hollow trees or other cavities. Blue monkeys (*Cercopithecus mitis*) have been observed to prey on galagos in the Kibale Forest of Uganda[8], though chimpanzees there have not been reported to do so.

In this report I document two recent observations of predation on galagos by chimpanzees of Gombe Stream National Park, Tanzania.

**OBSERVATION #1:**

*February 21, 2008, 13:15.*

While following a mixed party of chimpanzees, I observed a 15-year old male (Zeus) visually investigating an upright dead tree trunk. After a few seconds he began systematically breaking off bark and wood around the tree bole with both hands, occasionally reaching down into the hollow log. After approximately 2 min of this activity, he successfully retrieved an adult galago (not conclusively identified, but probably *Galago senegalensis* based on body size) from the trunk. Zeus immediately killed it with a bite to the face, then quickly and quietly moved to a nearby tree and began consuming it.

Zeus' activities were closely observed by several juveniles in the party (including his 9-year old sister, Zella), some of whom investigated the hole after he had moved away. One juvenile (ID unknown) retrieved what seemed to be a large piece of loose fur or bedding material from the hole after Zeus had moved away, but discarded it after smelling it. None of the adults present showed any interest in Zeus' activities.

The majority of the group were resting and grooming while Zeus captured the galago. Zeus consumed the entire carcass without interference or apparent interest by other adults in the party over the next 90 min. The juveniles in the party watched Zeus closely but none approached closer than 3 m or attempted to beg for meat.

**OBSERVATION #2**

*October 21, 2009, 15:25.*

While following a large mixed party from a feeding session in a mango stand, Zella (now 10 years old) appeared with the freshly-killed body of a galago (*Galago senegalensis*). The actual predation event was not observed, though several pairs of human observers were present. Zella carried the galago in her mouth, occasionally stopping and tearing at the skin with her teeth (Figure 1). The flesh had already been stripped from the galago's tail and its gastrointestinal tract was hanging free. I observed her successfully bite off the left hind leg and begin to consume it. She was briefly approached by Fundi (9-year old male) who watched from <1 m away but did not attempt to beg for meat or steal the carcass, and who soon moved off.

Less than 3 minutes after appearing with the galago, Zella abandoned the carcass on a trail (Figure 2), directly in the path of two approaching adults and continued on with the group. Both Frodo (33-year old adult male) and Gremlin (39-year old adult female) stepped directly over the carcass with no hesitation or interest whatsoever. Following behind his mother Gremlin, Gimli (5-year old male) immediately seized the carcass and flung it over his shoulder as he continued after her. The group traveled