

First observation of fellatio by a wild non-estrus adult female chimpanzee on an adult male, and subsequent meat sharing in Mahale

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ABSTRACT

Sociosexual behaviors such as mounting and genital touch have been extensively reported in chimpanzees. However, there are a small number of reported cases of fellatio, with only a few cases between captive juveniles or adult males. In this study, fellatio from a non-estrus adult female to an adult male holding bushpig meat were observed for the first time. After a series of sociosexual behaviors including fellatio, the meat was shared through begging behavior from the female to the male, suggesting that the series of displayed sociosexual behaviors may have occurred to reduce tension, so that the female could then make a smooth transition to begging behaviors. In addition, the fact that fellatio displayed between male and female in a context similar to previously reported cases of fellatio between adult males suggests that the social bond-strengthening effect of fellatio can also function between an adult male and female.

Keywords: *Pan troglodytes schweinfurthii*, Mahale Mountains National Park, sociosexual behaviors, fellatio, meat sharing

INTRODUCTION

In primates, sociosexual behaviors without mating have been observed in both opposite-sex and same-sex partners. Some of these examples include mounting without penile penetration in the olive baboon (*Papio anubis*) (Owens 1976) and in the Japanese macaque (*Macaca fuscata*) (Takahata 1982), and anal penetration between males in the Geoffroy's spider monkey (*Ateles geoffroyi*) (Busia *et al.* 2018) and in the snub-nosed monkey (*Rhinopithecus roxellana*) (Fang *et al.* 2018).

Although the forms and frequencies of sociosexual behaviors may vary among taxa, they appear to serve social functions. Such behaviors can appear in a variety of contexts, such as mating practices (the Japanese macaque: Gunst *et al.* 2013), negotiation of dominance relations (the snub-nosed monkey: Huang *et al.* 2017), and reducing social tension after aggression or during food sharing (the bonobo [*Pan paniscus*]: de Waal 1990; Hohmann & Fruth, 2000).

Although chimpanzees (*Pan troglodytes*) engage in sociosexual behavior less frequently than bonobos (Woods & Hare 2011; Gruber & Clay 2016), it has been extensively reported (Crawford 1942; Kutsukake & Castles 2004; also see a review by Sandel & Reddy 2021). The frequently reported behavioral types in chimpanzees are mounting and touching of genitals (including mutual touching). However, there are few reported cases of fellatio, or mouthing of the male penis by another individual. Some acts of fellatio are directed to still immature males as reported by Malick & Savage (1977) and Savage-Rumbaugh & Wilkerson (1978) who noted oral-genital contacts among captive juvenile chimpanzees in the con-

text of play. Nishida (1981) reported that an adult female at Mahale mouthed her weaning male offspring's penis as means of appeasing his frustration. Only two reported cases of fellatio were performed on adult males, and both were by other males to reduce tension, one among captive chimpanzees in Primate Foundation of Arizona in the USA (Shefferly & Fritz 1992) and the other among sanctuary-living chimpanzees in Chimfunshi Wildlife Orphanage in Zambia (Brooker *et al.* 2020). To the best of my knowledge, there have been no reports of fellatio by an adult female chimpanzee on an adult male.

This study reports the first such case and describes other accompanying sociosexual behaviors, the context, and subsequent meat sharing.

METHODS

This case was observed between chimpanzees of the M group in the Mahale Mountains National Park, Tanzania, on September 20, 2019 (see Nakamura *et al.* 2015 for details of the study site). The case was recorded first on a field note and subsequently with a video camera (Panasonic HC-W585M). An adult male named Darwin (DW) and an adult female named Fawn (FW) were the participants in this event. FW had borne an infant that year and thus was non-estrus.

OBSERVATIONS

At 08:35 h on September 20, 2019, a large party of the M-group chimpanzees ranged southeast of the area called K1, less than 1 km from the researchers' camp, and DW was followed. At 08:53 h, DW was holding a fresh carcass of a bushpig (*Potamochoerus larvatus*) piglet. At

08:54 h, after climbing a nearby tree, he started eating meat from the bushpig. At 08:58 h, FW with the infant attached to her belly appeared from an unknown location, climbed the same tree, and sat on a lower branch in front of DW. No other individuals were observed in the vicinity. Because a clear view of the subjects was not possible, at 08:58 h the observation location was changed and video recording begun at 09:01 h (Video 1 available online at <http://mahale.main.jp/PAN/2021/005.html>; hereinafter, times in descriptions from video footage are given in hours:minutes:seconds).

At 09:02:04 h, FW touched the erect penis of DW with her left hand for 3 s. Her face was not visible as her back was turned to the camera, but judging from the direction of the head, it is assumed that her gaze was not on DW's penis but on his hand holding the piglet. DW continued to eat without any significant reaction. At 09:02:07 h, FW mouthed DW's penis for 3 s (Figure 1). She touched DW's penis again for 3 s, this time pinching it with her left thumb and index finger. At 09:02:22 h, FW presented her rump to DW and pressed her non-swollen sexual skin against DW's erect penis for 4 s (Figure 2). No penile penetration occurred. FW reached toward DW's hand holding the piglet at 09:02:27 h, but he moved it away from her. At 09:02:31 h, DW turned his back completely on FW. Then, at 09:02:40 h, FW moved to face DW, and at 09:02:51 h, she reached for his mouth and hand holding the meat while peering into his face. At 09:03:22 h, FW loosely grabbed DW's hand holding the meat. At 09:03:34 h,

FW grinned, pant-screamed slightly, and then reached for the meat. FW eventually obtained a small amount of meat which DW had removed from his mouth. DW then climbed further up the tree and left FW, ending the interaction, at 09:03:51 h.

DISCUSSION

In the present case, a non-estrus female, FW, after several types of sociosexual behaviors, such as touching the penis, fellatio, and genito-genital contact without penile insertion, begged DW for bushpig meat by extending her hand to the mouth of DW. This is the first such report of fellatio between opposite-sex adult chimpanzees and is also the first report of fellatio in the context of food sharing.

Sociosexual behaviors during food sharing have been reported in wild chimpanzees and have been interpreted as actions performed to reduce social tension (Sandel & Reddy 2021). Thus, it can be assumed that the series of sociosexual behaviors in this report also served to reduce tension. Alternatively, such behavior may function as begging, because typical begging behaviors, such as peering into the face and reaching for the mouth, also occurred. Gilby (2006), who studied begging behaviors during meat sharing, classified them according to their intensity, from milder to more intense: (1) sitting close to the meat holder and peering at him, (2) reaching out to the meat holder (no contact), (3) touching the meat holder, and (4) reaching a hand near to the meat holder's mouth and mak-



Figure 1. Fellatio between FW (right) and DW (left)



Figure 2. FW (right) pressing her sexual skin to DW's (left) erect penis

ing contact with it. The series of sociosexual behaviors observed in this study, if they were considered begging behaviors, would be classified as category (3). However, several behavioral elements observed in this study were not reported in Gilby's behavioral repertoire of begging. In addition, according to Gilby's definition of harassment during meat-eating, the observed behaviors were not considered harassment, because there was no contact with DW's mouth or hands, nor was his behavior restricted. Although it is difficult to conclude from just one case, the series of displayed sociosexual behaviors may have occurred to reduce tension, so that FW could then make a smooth transition to begging behaviors.

The connection between meat sharing and sexual behavior in these observations may seem relevant to the meat-for-sex hypothesis (Stanford 1996), especially regarding reciprocation on a long-term basis (Gomes and Boesch 2009). In this case, however, it is unlikely that there was an immediate reciprocal exchange of meat sharing and mating opportunities for two reasons. The first is that the female was non-estrous and lactating, which means copulating with her would not lead to pregnancy. The second is the negative responses of DW, such as turning away after a series of sociosexual behaviors. In this case, even though meat sharing occurred after the begging behaviors, it appeared unlikely that DW gave meat in immediate return for the sociosexual behaviors of FW.

Fellatio is considered rare because males are at high risk of exposing their vital organs to other chimpanzees' mouths. It has been proposed that such high-risk behaviors can be used to test and strengthen alliances between same-sex partners (Kirkpatrick 2000). For chimpanzee males, forming alliances with other males is crucial. Thus, for a rare case of male–male fellatio, such a function of strengthening male–male relationships was emphasized (Brooker *et al.* 2020). However, as reported in this study, fellatio can occur between a female and a male in the probable context of tension reduction. Thus, the function that is used to test social bonds may also apply to opposite-sex partners.

This report describes a very rare case of heterosexual fellatio observed in the wild. However, it is difficult to know why such behaviors are rare and why this case occurred in this context. More such observations are needed to gain a deeper understanding of sociosexual behaviors as well as the function of fellatio in chimpanzees.

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REFERENCES

- Brooker JS, Webb CE, Clay Z 2020. Fellatio among male sanctuary-living chimpanzees during a period of social tension. *Behaviour* **158**: 77–87. <https://doi.org/10.1163/1568539X-bja10053>
- Busia L, Denice AR, Aureli F, Schaffner CM 2018. Homosexual behavior between male spider monkeys (*Ateles geoffroyi*). *Arch Sex Behav* **47**: 857–861. <https://doi.org/10.1007/s10508-018-1177-8>
- Crawford MP 1942. Dominance and the behavior of pairs of female chimpanzees when they meet after varying intervals of separation. *J Comp Psychol* **33**: 259–265. <https://doi.org/10.1037/h0060471>
- de Waal FBM 1990. Sociosexual behavior used for tension regulation in all age and sex combinations among bonobos. In: *Pedophilia*. Feierman JR (ed) Springer, Berlin, pp. 378–393. https://doi.org/10.1007/978-1-4613-9682-6_15
- Fang G, Dixon AF, Qi XG, Li BG 2018. Male–male mounting behaviour in free-ranging golden snub-nosed monkeys (*Rhinopithecus roxellana*). *Folia Primatol* **89**: 150–156. <https://doi.org/10.1159/000487004>
- Gilby IC 2006. Meat sharing among the Gombe chimpanzees: harassment and reciprocal exchange. *Anim Behav* **71**: 953–963. <https://doi.org/10.1016/j.anbehav.2005.09.009>
- Gomes CM, Boesch C 2009. Wild chimpanzees exchange meat for sex on a long-term basis. *PLoS ONE* **4**: e5116. <https://doi.org/10.1371/journal.pone.0005116>
- Gruber T, Clay Z 2016. A comparison between bonobos and chimpanzees: a review and update. *Evol Anthropol* **25**: 239–252. <https://doi.org/10.1002/evan.21501>
- Gunst N, Leca JB, Vasey PL 2013. Development of sexual and socio-sexual behaviours in free-ranging juvenile male Japanese macaques, *Macaca fuscata*. *Behaviour* **150**: 1225–1254. <https://doi.org/10.1163/1568539X-00003088>
- Hohmann G, Fruth B 2000. Use and function of genital contacts among female bonobos. *Anim Behav* **60**: 107–120. <https://doi.org/10.1006/anbe.2000.1451>
- Huang P, He X, Zhang E, Chen M 2017. Do same-sex mounts function as dominance assertion in male golden snub-nosed monkeys (*Rhinopithecus roxellana*)? *Am J Primatol* **79**: e22636. <https://doi.org/10.1002/ajp.22636>
- Kirkpatrick RC 2000. The evolution of human homosexual behavior. *Curr Anthropol* **41**: 385–413. <https://doi.org/10.1086/300145>
- Kutsukake N, Castles DL 2004. Reconciliation and post-conflict third-party affiliation among wild chimpanzees in the Mahale mountains, Tanzania. *Primates* **45**: 157–165. <https://doi.org/10.1007/s10329-004-0082-z>
- Malick C, Savage E 1977. Play and socio-sexual behaviour in a captive chimpanzee (*Pan troglodytes*) group. *Behaviour* **60**: 179–194. <https://doi.org/10.1163/156853977X00324>
- Nakamura M, Hosaka K, Itoh N, Zamma K (eds) 2015. *Mahale Chimpanzees: 50 Years of Research*. Cambridge University Press, Cambridge.
- Nishida T 1981. [*The World of Wild Chimpanzees*]. Chuko Shinsho, Tokyo, in Japanese.
- Owens N 1976. The development of sociosexual behaviour in free-living baboons, *Papio anubis*. *Behaviour* **57**: 241–258. <https://doi.org/10.1163/156853976X00541>
- Sandel AA, Reddy RB 2021. Sociosexual behaviour in wild chimpanzees occurs in variable contexts and is frequent between same-sex partners. *Behaviour* **158**: 249–276. <https://doi.org/10.1163/1568539X-bja10062>
- Savage-Rumbaugh ES, Wilkerson BJ 1978. Socio-sexual be-

- havior in *Pan paniscus* and *Pan troglodytes*: a comparative study. *J Hum Evol* **7**: 327–344.
[https://doi.org/10.1016/S0047-2484\(78\)80074-8](https://doi.org/10.1016/S0047-2484(78)80074-8)
- Shefferly N, Fritz P 1992. Male chimpanzee behavior in relation to female ano-genital swelling. *Am J Primatol* **26**: 119–131.
<https://doi.org/10.1002/ajp.1350260206>
- Stanford C 1996. The hunting ecology of wild chimpanzees: implications for the evolutionary ecology of Pliocene hominids. *Am Anthropol* **98**: 96–113.
<https://doi.org/10.1525/aa.1996.98.1.02a00090>
- Takahata Y 1982. The socio-sexual behavior of Japanese monkeys. *Z Tierpsychol* **59**: 89–108.
<https://doi.org/10.1111/j.1439-0310.1982.tb00332.x>
- Woods V, Hare B 2011. Bonobo but not chimpanzee infants use socio-sexual contact with peers. *Primates* **52**: 111–116.
<https://doi.org/10.1007/s10329-010-0229-z>

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