

Hunter L, Skinner JD. 1995. Cannibalism in male cheetahs. *Cat News*:13-15.

Keywords: 1ZA/Acinonyx jubatus/cannibalism/cheetah/ecology/Felidae/lion/Natal/Panthera leo/Phinda/project/re-introduction/research/reserve/territorial behaviour

Abstract: Large felids defend their territories rigorously from conspecifics of the same sex. Occasionally such encounters result in the death of combatants but cannibalism in these clashes appears to be rare. The research on cannibalism in male cheetahs is part of an ongoing project examining the behavioural ecology of re-introduced cheetahs and lions in the Phinda Resource Reserve in northern Natal Province, South Africa.

Cannibalism in Male Cheetahs

by L.T.B. Hunter and J.D. Skinner*

Among large felids, individuals appear to establish territories which may be rigorously defended from conspecifics of the same sex (see Packer, 1986 and Gittleman, 1989 for references). Contests over these territories can be fierce and occasionally result in the death of combatants (Schaller, 1967, 1972; Caro & Collins, 1987a,b). Although the consumption of a killed conspecific after such an encounter would possibly benefit the victor/s by replenishing energy expended during the fight, cannibalism in these clashes appears to be rare. In the incident described, the victorious pair of cheetahs [*Acinonyx jubatus* (Schreber)] utilized the carcass of a killed male in the manner of a typical kill.

Study Site and Subjects

The research is part of an ongoing project examining the behavioural ecology of reintroduced cheetahs and lions *Panthera leo* (L.) in the Phinda Resource Reserve, a privately owned reserve of 17,600 ha in northern Natal Province, South Africa. The area is within the historical range of cheetahs, the last of which were extirpated in 1941 (Rautenbach *et al.*, 1980). Between March 1992 and May 1993, Phinda released five male and seven female cheetahs wild caught in Namibia and Botswana. Two of the males (representing all five males by their association in coalitions) and

a single female have been radio-collared (Telonics, Arizona) and monitored since their release).

Results

The observations are presented here as a detailed case history. A resident two-male coalition of cheetahs was located at 0650 h well within the borders of their territory pursuing some impalas [*Aepyceros melampus* (Lichtenstein)]. They were lost for 15 min and then relocated 1700 m away where they had caught another male cheetah which they were attacking with savage throttling and repeated mauling of the hindquarters. No movement or response was seen by the third male from the moment of arriving at the scene and it was possibly already dead. Nonetheless, both of the attacking males bore bite wounds to the cheeks and ears, indicating that the third male had attempted to defend itself. Two game guards witnessed the actual attack and reported that, after an initial brief skirmish lasting only 2-3 min, they had lost sight of the cheetahs in the long grass, most probably the point at which the intruding male was overcome by the two attackers.

Both males maintained their respective holds on the third animal without rest for 15 min from first contact, before moving 5 m away from the third cheetah which was clearly dead at this stage. After resting for less than a minute, they approached the dead cheetah aggressively and then attacked the carcass again, savagely throttling the throat and repeatedly tearing at the hindquarters and genitals. The throttling motion at the throat was performed in the same way with which a prey animal is killed; however, the action was much more aggressive and prolonged than observed during the killing of ungulates (Hunter, pers. obs.). The pattern of a brief rest followed by renewed attack on the carcass was repeated for 45 min during which the carcass was 're-attacked' five times.

At 0802 h, one of the males began lapping blood from the wounds and then proceeded to open the carcass at the right flank and fed on it for 25 min. The second male then approached the carcass and fed for 10 min before also moving off to rest. At this point, the carcass was removed for identification purposes. The entire muscle mass of the right hind leg had been eaten and the abdominal cavity opened. The intestines had not been eaten. In normal feeding patterns, cheetahs intersperse feeding periods with short rests close to the kill until it is finished (Hunter, pers. obs.) which probably would have occurred here if there had been no intervention.

Discussion

The behaviour presented here is interesting as cannibalism is rarely observed in large felids, except in cases of infanticide (Packer & Pusey, 1984). The motivation for the consumption of the killed male in this incident is unclear. Pienaar (1969) mentions records of cannibalism in cheetahs in the Kruger National Park, suggesting that these stem from fights over carcasses. This does not appear to be the reason in this case as the attacking animals were hunting before encountering the third male and there were no carcasses in the area. Although fights over a resource such as territory or an oestrous female have been known to result in the death of competing cheetahs (Stevenson-Hamilton, 1947; Kuenkel, 1978; Caro & Colling, 1987b; Skinner & Smithers, 1990), such instances have not been recorded resulting in cannibalism. Similarly extreme hunger does not appear to be the likely cause here as the victorious males had together consumed a subadult impala killed less than 48 hours prior to the incident.

Although the resident pair were hunting when they encountered the third male, there seems little doubt that the intruding cheetah was attacked as a competitor rather than a prey item. The repeated mauling of the animal long after it was dead and the

aggression of the attackers are behaviours not seen when cheetahs deal with prey (Eaton, 1970; Hunter, pers. obs.). Accordingly, the possibility of the cheetah pair actually hunting their own species (as appears to occur occasionally in some primates, see Goodall 1986) seems very unlikely. This is particularly so when one considers that observed interactions between these two males and females (including a female with large dependent male cubs) were devoid of any atypical aggression. Accordingly, the possibility that the reintroduction process contributed to the cannibalistic behaviour seems unlikely. The two attacking males had been resident in their territory for 15 months at the time of the incident and during this time had displayed no behaviour indicating disturbance or trauma resulting from the reintroduction.

It is possible that the extensive nature of the wounds inflicted on the hindquarters stimulated the cheetahs to begin feeding. In normal cheetah feeding patterns, the carcass is almost always opened at the hindquarters (Leyhausen, 1979). The mauling of the hindquarters had left large tears in the skin and muscle layer from which blood was flowing freely. Just prior to initiating feeding, one of the males had begun to lap the blood, which may have then stimulated him to open the carcass. Unfortunately, no records exist on the extent and location of wounding in other male cheetahs killed in intraspecific fighting, so one cannot make a comparison between this case and others in which cannibalism has not occurred. Until these data become available, the motivation for this behaviour will remain unclear.

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