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Alloparental Care and Auntie Behaviour in a Male Kalahari Lion (*Panthera leo* Linnaeus, 1758)

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Abstract: Aspects of behaviour of a small pride of African lions (*Panthera leo*) consisting of a five year old male, a four year old male and female sibling pair and a male and female cub, held in a 500 ha enclosure, were investigated at Intu Afrika Kalahari Game Reserve, southwestern Namibia, during winter 2003 and summer 2004. Due to their continued contact since birth, the male and female sibling pair developed a strong bond and spent 57% of their time together, co-operating and sharing resources. At the arrival of the cubs, this association did not change and as a result, the male was included in all the activities between the female and cubs. He demonstrated great patience with them and took custody of them when darting procedures took place. On two separate occasions, he secured meat for them and defended the carcass while they fed. This type of egalitarianism, alloparenting and auntie roles has been described for females of the same pride, but males have never exhibited such behaviour. The behaviour may lie in kin selection or may be for agonistic buffering, reducing aggression from the older male.

Key words: *Panthera leo*, alloparental care, auntie behaviour, co-operation, kin selection, Kalahari desert

The behaviour of the African lion (*Panthera leo* Linnaeus, 1758) has been well documented since the early Sixties and has included studies of African lions in all their various habitats (Bertram, 1975; Eloff, 2002; Owens and Owens, 1984; Packer and Pusey, 1997; Schaller, 1972; Stander, 1992). The importance of behavioural studies cannot be overemphasized and according to Wilson (1976), take us closest to "true nature of the species encountered in the wild. If you know an animal's behaviour well, you know its essence". Fieldwork on aspects of behaviour of lions in an extreme environment was carried out in the southwestern Kalahari in Namibia at Intu Afrika Kalahari Game Reserve (24° 06' S; 17° 56' E) during winter (May to July 2003) and summer (February and March 2004). Continuous daytime and nighttime observations were limited to a small pride consisting of a five-year-old male, a four year old male and female sibling pair and a male and female cub, held in a 500 ha enclosure. Here we report on unusual behaviour, possibly as a result of the semi-captive holding facility, not previously recorded in literature.

The male and female sibling pair have had continued contact since birth and as a result, developed a very strong bond. Association data calculated for the pair showed that they spent an average of 57% of their time

together. They often co-operated in competing with the older male to gain ownership of a carcass and on several occasions when the female broke out of the enclosure, it was the calls of the younger male which lured her back. With the arrival of the cubs, sired by the older male, this association did not change and as a result, the male was included in all the activities between the female and the cubs. Male lions generally repulse the advances of the cubs in the pride (Bertram, 1975; Eloff, 2002; Schaller, 1972) and the older male conformed in this aspect. The younger male, however, demonstrated great patience with the cubs allowing them to clamber over him and play with his mane and tail. Furthermore, they allogroomed on a daily basis. The younger male was also known to react with aggression towards vehicles in the enclosure and during the darting procedure during winter, challenged the vehicles repeatedly and refused to leave the female after she had been tranquilised. However, during the subsequent summer darting procedure, once the female had been tranquilised, the younger male took custody of the cubs and moved away from the vehicles, calling the cubs and positioning himself between the cubs and the vehicles. On one occasion while the older male was feeding on a carcass, the younger male approached him, took ownership of the meat after a short scuffle and

waited for the female and cubs to feed. He did not feed or leave the carcass and when the older male tried to approach, defended it successfully. On another occasion, he waited for the cubs to complete their feed before he began to feed. This behaviour had implications for the respect the cubs held for both the males in the enclosure and on two occasions they persisted in trying to feed with the older male even after having been warned and chased away.

Under natural conditions, sub-adult and adult males may stay back with the cubs while the females hunt and although this may have ancillary cub-minding effects, it is most likely as a result of the females securing the food. The behaviour of the younger male in the Kalahari has not been previously recorded and may lie in kin selection. He was severely dominated by the older male and as a result of the holding conditions, had little chance of reproductive success. Association with the female and the cubs may have been a strategy to either raise his own inclusive fitness or may have been for the purposes of agonistic buffering, reducing aggression by the presence of the cubs (Wilson, 1976). Eloff (2002), as well as Packer *et al.* (2001), report that lionesses have egalitarian relationships with no discernable hierarchy at feeding and that they demonstrate alloparental care of the cubs, often permitting communal suckling and assisting primiparous mothers with parturition. Schaller (1972) coined the term Auntie for those females that assist in care and protection of cubs other than their own. Excluding the suckling, the above holds true for the behaviour demonstrated by the younger male towards the female and the cubs.

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