

BRIEF REPORTS

Fatal Intragroup Kidnapping in Yellow Baboons

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The fatal kidnapping of a 5-day-old baboon (*Papio cynocephalus*) in Amboseli National Park, Kenya, is described. Although pulling and rough handling of primate infants by nonmothers are frequently observed, records of fatal intragroup kidnappings are rare. In the instance described here, the mother, a healthy, primiparous female, did not retrieve the infant from the kidnaper, a higher-ranking juvenile female of the same group, until he died 3 days later, presumably from starvation or dehydration. This incident is compared with other fatal intragroup kidnappings in nonhuman primates and related to adaptive interpretations.

Key words: *Papio cynocephalus*, allomothering, infanticide

INTRODUCTION

Interest in infants, especially very young ones, by group members other than the mother is widespread among nonhuman primates [reviewed in Hrdy, 1976; McKenna, 1981]. In some primate species, eg, siamangs [Chivers, 1974] and some callitrichids [eg, chapters in Kleiman, 1978], fathers or siblings carry young infants and provide most of these infants' nonnutritional care. In addition, in some colobines, eg, hanuman langurs (*Presbytis entellus*) and black-and-white colobus (*Colobus guereza*), an infant is often transferred from the mother to individuals other than close relatives for extended periods during its first few days of life [Jay, 1963; Horwich & Manski, 1975; Hrdy, 1977; McKenna, 1981]. In contrast, among most cercopithecines infant transfer is usually limited to shorter periods and ordinarily does not occur until the infant is at least several days old [Rowell et al, 1964; Lancaster, 1971; Altmann, 1980]. In many studies, nulliparous females, particularly juveniles, have been disproportionately involved, relative to other age-sex classes, in the handling of infants by nonmothers [Rowell et al, 1964; Spencer-Booth, 1968; Lancaster, 1971; Hrdy, 1977; Nishida, 1983; Uehara & Nyundo, 1983; Meaney et al, 1985].

Many observers have suggested that this infant carrying and other such interactions have adaptive value for the carrier, the infant, or the mother. Young females may gain experience in handling infants [Lancaster, 1971; Riedman, 1982; Meaney

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et al, 1985], contact with adult females otherwise inaccessible, or an increase in social status [Cheney, 1978]. Infants may gain social experience or status [Hrdy, 1976] and an increased probability of being cared for if their mothers become incapable of caring for them [Rowell et al, 1964; Lancaster, 1971; Horwich & Manski, 1975; Dolhinow, 1980]. Mothers may obtain more time for foraging or greater foraging efficiency without the encumbrance of a clinging infant [Lancaster, 1971; Hrdy, 1976; Whitten, 1982].

Empirical data documenting these hypothesized benefits are scarce. Attention to infants by nonmothers does not always appear to be beneficial to the mother-infant pair and may represent a form of reproductive competition rather than aid. Pulling and rough handling of infants have been frequently observed in colobines and cercopithecines [Horwich & Manski, 1975; Altmann 1980; Silk, 1980]. "Kidnappings," in which the infant is separated from the mother for a long period, are less common but have been reported for several species of primate [Hrdy, 1976, 1978; Silk, 1980; Collins et al, 1984]. In the present report we describe the fatal kidnapping of a very young infant by a juvenile female within a group (Alto's Group) of yellow baboons (*Papio cynocephalus*) in Amboseli National Park, Kenya. Demographic, agonistic, and genealogical data on Alto's Group have been collected since 1971 [eg, Hausfater, 1975; Altmann et al, 1977; Walters, 1980].

OBSERVATIONS

On October 30, 1979, fifth-ranking adult female Nazu gave birth to a male infant, Nimrod. This birth followed Nazu's first pregnancy. The infant appeared healthy and well formed, vocalized strongly, and clung tightly, although in the wrong position (between Nazu's hindlimbs). Nazu appeared inept in handling him; she held him to the lower part of her body instead of at the nipple, and occasionally she almost sat on him. Although Nimrod was not seen suckling on his first day of life, he did suckle on the next day. On that day the dominant adult female in Alto's Group and her juvenile daughter both attempted, without success, to take the infant from Nazu. By his third day of life, Nimrod was clinging in the correct position, with aid from Nazu when she began to walk.

When Nimrod was first seen at approximately 0915 on November 4, he was being carried ventrally by Summer, a 4-year-old-female who had not yet begun sexual cycling. Summer was probably dominant to or in an unstable dominance relationship with Nazu at the time of the kidnapping. Nazu's mother was dominant to Summer's; nevertheless, in the previous six months Summer had won decided agonistic bouts [sensu Hausfater, 1975] against several individuals, including Nazu's mother, that ranked higher than Summer's mother. Summer began cycling in December 1979; in January 1980 she won her first observed agonistic bout against Nazu.

Summer continued to carry the infant throughout the day, even when she climbed into *Acacia tortilis* trees to feed. Although Nazu remained near Summer during much of the day, she made no observed attempt to retrieve the infant. Nimrod did not cling well; when Summer sat to feed, he lay on his back with his eyes closed and moaned. He was still with Summer when last observed at 1645 hours.

At 0839 hours on the next morning, Summer was still carrying the infant ventrally; he seemed to be clinging well at this time. Nazu appeared to follow Summer at a distance of 1-15 m during the long day-journey. As on the previous day, Nimrod fell backward and gave "coo" and "ikk" distress vocalizations [Altmann, 1980] when Summer sat and fed. On one of these occasions Nazu moved toward Summer, but when she was within 1 m she turned and walked away. By 1726 hours Nimrod was obviously weak; the skin of his muzzle, ears, hands, and

feet was grayish instead of the normal bright pink of young infants. He attempted to suckle from Summer.

On November 6 Nimrod was still clinging to Summer's ventrum throughout the observation period (0725–1230 hours). Once again Nazu approached Summer to a distance of 1 m when Nimrod screamed but then only stopped and looked at the pair. During this morning Summer grabbed at two older infants while carrying Nimrod.

Nimrod was dead on the following morning, November 7, the fourth day after the kidnapping. Starvation or dehydration was presumed to be the cause of death, as no wounds were visible. Nimrod's mother, Nazu, carried his body in one hand as she walked; she placed it in her ventrum when she sat and fed. Not long after Nazu was first seen, Summer approached her and reached for Nimrod's body. Nazu moved away slightly; Summer mounted her and then walked away. Nazu groomed the body at various times during the day and allowed other group members to handle it, although none attempted to take it away from her. She continued to carry the corpse throughout the following morning; at approximately 1430 hours she left it on the ground and moved on with the group. The carrying of dead infants, sometimes for several days, is not uncommon among primate mothers of a wide variety of taxa [eg, Jay, 1963; Schaller, 1963; van Lawick-Goodall, 1967; Kaplan, 1973; Fossey, 1979; Altmann, 1980].

DISCUSSION

Fatal intragroup kidnappings have been reported in captive *Saimiri sciureus* (Rosenblum, cited in Hrdy, 1976), in wild *Cercopithecus campbelli lowei* [Bourlière et al, 1970], in wild *Papio ursinus* [Collins et al, 1984], and in wild *Papio anubis* [Collins et al, 1984; Strum, cited in Collins et al, 1984]. In addition, Hamilton et al [1982] describe the case of an introduced 2-month-old *Papio ursinus* that was grabbed by a juvenile and carried until the infant disappeared, presumed to be dead from dehydration. In contrast to some intergroup kidnappings [Hrdy, 1978, p 170; Mohnot, 1980, p 268; Shopland, 1982; chapters in Hausfater & Hrdy, 1984], none of the above intragroup cases involved wounding of or aggression toward the infant. In Alto's Group, however, a near-fatal kidnapping occurred in 1975. A higher-ranking adult female carried a 2-day-old infant until, dehydrated and unable to cling, he was retrieved by his mother 15 hours later [Altmann, 1980]. In this instance, the kidnapper bit the infant, but did not draw blood, while he was in her possession. In the fatal intragroup instances for *Cercopithecus* and *Papio*, two of the mothers and one of the infants involved were ill or weak. Infant ages ranged from 1 day to more than 1 month. The kidnapper was an adult female in four cases (three of the females known to be pregnant), an adult male (possibly the infant's father) in one case, and the juvenile brother of the infant in one case. Both of the female kidnappers whose dominance ranks were mentioned ranked higher than the infant's mother. In every instance the infant apparently died as a result of starvation or dehydration.

Given the above observations and the hypotheses about carrying by nonmothers mentioned in the Introduction, a few characteristics of the kidnapper Summer and the mother Nazu should be emphasized. Summer and Nazu were probably no more closely related than daughters of half-sisters; at one time their mothers were adjacent in rank, but no kinship between the mothers is known. Summer was dominant to Nazu once Summer became an adult. Although she began sexual cycling one and one-half months after the kidnapping, Summer was technically still a juvenile when the incident took place. Nazu was a healthy, primiparous female. She was inept in handling her infant on his first day of life. While she was under observation, Nazu made no attempt to retrieve Nimrod until he was dead, although she had success-

fully resisted pulling attempts by females ranking higher than Summer while the infant was alive.

Records of fatal intragroup kidnappings are still too rare to merit a general evolutionary interpretation. Individual differences in behavior of mothers and kidnappers may determine, at least proximately, whether a kidnapping results in the death of the infant. A fatal outcome may be only the occasional harmful side effect of behavior that is normally adaptive both for the mother-infant pair and for the carrier—ie, behavior that might deserve the terms “aunting” [eg, Rowell et al, 1964] or “allomothering” [Wilson, 1975, p 349; Hrdy, 1978] that have been used in the literature. This may be the situation in many one-male or family groups, especially among the callitrichids and some colobines [McKenna, 1981; Kohda, 1985]. Nevertheless, instances of “aunting to death” may be more appropriately considered evidence for reproductive competition among individual females and between lineages in species or populations where nonfatal pulling and mistreatment of infants by nonmothers is common, such as in many cercopithecines [Hrdy, 1976; Silk, 1980; Wasser & Barash, 1983; Collins et al, 1984; Kohda, 1985] (J. Altmann, unpublished data). In that case, it is comparable to infanticide by males [reviewed in Hausfater & Hrdy, 1984] or by females [Goodall, 1977], which is behaviorally more dramatic but identical in outcome.

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