ROLE OF MOTHER AND ALLOMOTHERS IN INFANT INDEPENDENCE IN CAPPED LANGUR TRACHYPITHECUS PILEATUS

Awadesh Kumar1 and G.S. Solanki2,*

1Department of Forestry, North Eastern Regional Institute of Science & Technology, (Deemed University) Nirjuli 791 109, Itanagar, Arunachal Pradesh, India. Email: tpileatus@gmail.com
2Department of Zoology, Mizoram University, Aizawl 796 004, Mizoram, India. Email: gssolanki02@yahoo.co.in, drghanshyam.solanki@gmail.com
*Corresponding author
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We investigated the mother-infant relationship and allomothering in Capped Langur Trachypithecus pileatus in Pakhui Wildlife Sanctuary, Arunachal Pradesh, India, from July 2001 to June 2003, based on observations of five mother-infant pairs. Infants spent 75% of the time on ventro-ventral contact during the first three months, 71% of which was on nipples in the first month, which decreased gradually thereafter. The time of contact with mother varied significantly (p < 0.01) across the months. A significant negative correlation (Pearson: r = -0.963, p <0.01) was found between the time infants spent with mother with increase in age (n=5 mother-infant pairs; 60 observations). Infants started straying away from mothers at around 16 days of age, and moved away as far as 3 m at the age of 30 days. The distance away from the mother increased up to 5 m at the age of 3 months, and they spent about 20% of their time away from the mother at the age of a year. Neonates spent 9.2% of the day with allomothers, and this increased to 25% for the next 15 days. It decreased gradually from the second month, and allomothering was not observed from the eighth month. The process of infant’s independence started at the age of 6–8 months and was completed by 12 months, with infants spending 80% of their time away from the mother.

Key words: Allomothering, Capped Langur, mother-infant relationship, maternal rejections, ventro-ventral contact

INTRODUCTION

Primate infants are born dependent on their mothers (Strier 2007) and mothers play a significant role throughout the offsprings’ lives (Hrdy 1999). The mother-infant relationship and parental care has special significance in mammals because it ensures the survival of infants and sets the stage for relations among the members of the troop. A long period of postnatal development is a characteristic feature of primates. Newborns depend on their mothers for nutrition, transport, protection, and mothers also help them to develop skills to become independent and integrate within the society ( Förster and Cords 2002; Harlow and Harlow 1965; Hinde and Spencer-Booth 1967; Jensen et al. 1967; Xi et al. 2008).

The other important aspect of social behaviour in colobines is an affiliation between allomothers and infants (Horwich and Manski 1975; Jay 1963; Kumar et al. 2005; McKenna 1979, 1981; Stanford 1992; Vogel 1984). The relationship of mothers and allomothers with infants in the group leads to the growth and development of an infant in a socially coordinated manner (Kumar et al. 2005). It has been argued that allomothers provide assistance to the mother so that she can have time for foraging (Stanford 1992; Vogel 1984; Xi et al. 2008); infants learn to manage in the absence of their mothers, which ensures proper socialization with others members of the troop (McKenna 1981); and immature females of the troop also get an opportunity to handle infants (Hrdy 1976; Lancaster 1971). The mother may derive benefits from the allomothers’ cooperation in territorial defence, in anti-predation, and save on time and energy that can be devoted for infant care (Garber et al. 1984; Koemig and Rothe 1991). Allomothering thus increases the chances of the infant’s survival. The development of mother-infant relationship in nonhuman primates also influences the ontogeny of social behaviour ( Nicolson 1987).

Studies on mother-infant relations and infant development in captive and free-ranging Old World monkeys have concentrated mainly on Macaca mulatta (Berman 1980a, b, 1990, 1992; Berman and Kapsalis 1999; Maestripieri 1994a, b, 2001; Simpson 1985; Stevenson-Hinde and Simpson 1981), M. silenus (Krishna et al. 2008), M. radiata (Singh et al. 1980) and M. fuscata (Schino et al. 1993, 1995, 2003; Schino and Troisi 2001). Other primate species studied are Papio spp. (Altmann 1980; Nash 1978), Cercopithecus aethiops (Fairbanks and McGuire 1985; Lee 1984; Struhsaker 1971), C. mitis stuhlmanni (Förster and Cords 2002), Cercopithecus neglectus (Kirkevold and Crockett 1987), Presbytis entellus (Dollinhow and Murphy 1982), Cebus capucinus (Manson 1999), and Callimico goeldii (Schradin and Anzenberger 2001). Studies on mother-infant relationships and behaviour development of infants are scarce on colobine monkeys (Horwich 1974a, b; Horwich and Manski 1975; Jay 1963; Medhi 2004; Sugiyama 1965). To