Distribution of Affiliative Behaviors Among Adult Females Within a Group of Wild Patas Monkeys in a Nonmating, Nonbirth Season

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Received December 27, 1990; revised May 13, 1991

The distribution of four affiliative behaviors (proximity within 3 m, allogrooming, contact calling, and co-night-resting) were examined in a group of wild patas monkeys (Erythrocebus patas) during a nonmating, nonbirth season. To a greater or lesser extent, dominance rank and kinship influenced these behaviors of the adult females. Since high-ranking females tended to exhibit some of these behaviors with high frequency, they were considered to be acting as the focus of affiliative behaviors and as the center for group cohesion. Furthermore, related adult females also tended to exhibit some of these behaviors with a high frequency toward one another, so that matrilineal kinship was also seen to be an important factor for group cohesion. In contrast, the harem male tended to exhibit these behaviors at a low frequency and/or had no affiliative partner for any of them. Thus, it appears that the social organization of the patas group is concentric, being composed of high-ranking females in the center, low-ranking females at the periphery, and the harem male at the distant periphery.

KEY WORDS: wild patas monkeys; affiliative behaviors; dominance rank; kinship; social organization.

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INTRODUCTION

In nonhuman primates, kinship, rank, and sex are important factors that influence affiliative behaviors among intragroup members. For example, with respect to allogrooming among adult females, which accounts for a relatively large proportion of all affiliative behavior and has been well studied, the following general features have been reported: (1) high-ranking adult females received more grooming than low-ranking ones [rhesus macaques (*Macaca mulata*) (Sade, 1972); Japanese macaques (*M. fuscata*) (Oki and Maeda, 1973; Mori, 1975); stumptail macaques (*M. arctoides*) (Rhine, 1972); bonnet macaques (*M. radiata*) (Silk, 1982); vervet monkeys (*Cercopithecus aethiops*) (Seyfarth 1980; Fairbanks, 1980); chacma baboons (*Papio ursinus*) (Seyfarth, 1976); hamadryas baboons (*P. hamadryas*) (Stammbach, 1978); and capuchin monkeys (*Cebus apella*) (Robinson and Janson, 1986)]; (2) most grooming occurs between adult females of adjacent rank [rhesus macaques (Chapais, 1983); Japanese macaques (Oki and Maeda, 1973); stumptail macaques (Rhine, 1972); vervet monkeys (Seyfarth, 1980); chacma baboons (Seyfarth, 1976); geladas (*Theropithecus gelada*) (Kummer, 1975)]; (3) high-ranking adult females have more grooming partners than low-ranking ones do [rhesus macaques (Sade, 1972); chacma baboons (Seyfarth, 1976)]; and (4) related adult females groom each other more than nonrelated females do [rhesus macaques (Sade, 1972); Japanese macaques (Furuichi, 1984); pigtail macaques (*M. nemestrina*) (Defler, 1978)].

The influence of kinship, rank, and sex on affiliative behavior, especially allogrooming, has also been examined in patas monkeys (*Erythrocebus patas*). With respect to correlation between female dominance rank and allogrooming received, the following results have been reported. Hall (1967) noted that low-ranking females groomed high-ranking ones more than vice versa in a group of captive patas monkeys, although the size of the sample was small. More recently, Kaplan and Zucker (1980) demonstrated that low-ranking females received significantly more grooming than high-ranking ones did in a study of provisioned, free-ranging patas monkeys. Recently, Loy and Harnois (1988) demonstrated that female dominance rank was significantly and positively correlated with grooming received during the period right after formation of a group of captive patas monkeys but that this correlation became considerably weaker late in their study period. They also reported that female dominance rank was not significantly correlated with grooming received in another group of captive patas monkeys (Loy and Harnois, 1988). With respect to the relationship between kinship among adult females and allogrooming, Kaplan and Zucker (1980) speculated that genealogical relationships have little effect