

SHORT-TERM FLEXIBILITY IN THE STRUCTURE OF FEMALE RHESUS MACAQUE NETWORKS

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Social structure plays a critical role in shaping some of the emergent characteristics of societies, such as the persistence of cooperative behaviours and the rate at which information and disease can be spread. Until very recently, however, researchers have been unable to describe social structure in a fully quantitative manner. Social network analysis provides a range of quantitative measures of social structure. Here, we use social network analysis to examine the flexibility of social structures that emerge from socio-positive interactions among adult female rhesus macaques. Behavioural data collected over 9-months were analysed for 21 adult females from a single free-ranging group on Cayo Santiago. Network metrics of social structure were compared between the mating and birth seasons. The grooming, proximity and vocalisation networks had greater densities, greater clustering coefficients, and smaller mean shortest path lengths during the mating compared to the birth season. On average, females had a greater number of grooming and proximity partners and spent a greater amount of time in proximity to other females in the mating compared to the birth season. A greater amount of female-female competition in the mating season, and consortships with males may explain these differences. Although further research is required, this study represents a step toward furthering our understanding of social structure, and the forces that may shape it, in nonhuman primates.

Keywords: social structure, social network analysis, structural flexibility, rhesus macaques