Monkeys' grooming habits provide clues to how we socialise

September 30 2009

Two Japanese macaques engaged in social grooming.

(PhysOrg.com) -- A study of female monkeys' grooming habits provides new clues about the way humans socialise. New research reveals a link between the size of the neocortex in the brain, responsible for higher-level thinking, and the size of grooming clusters that monkeys belong to.

A study of female monkeys' grooming habits provides new clues about the way we humans socialise. New research, published today in Proceedings of the Royal Society, reveals there is a link between the size of the brain, in particular the neocortex which is responsible for higher-level thinking, and the size and number of grooming clusters that monkeys belong to.

The researchers, from the University of Oxford and Roehampton University, have shown that bigger brained female monkeys invest more

time grooming a smaller group of monkeys but still manage to maintain contact with other members of their group, even though they have much weaker social bonds with them. In contrast, monkeys of species with smaller neocortices, and therefore less cognitive ability, live in groups with a less complicated social structure.

An analysis of data on the grooming patterns of 11 species of Old World monkeys suggests the relative size of the neocortex is the key factor, rather than overall brain size. The neocortex is connected with cognitive functions, such as learning, memory and more complex thought. In monkeys, species with large neocortices typically live in groups of 25-50 animals, whereas species with small neocortices live in groups of 10-20 individuals.

Species with larger neocortices are able to maintain larger social groups because they can balance a few very intimate friendships against many less close acquaintances. In contrast, species with smaller neocortices cannot manage this, and so have groups that fragment more easily.

The study therefore suggests that, while bigger brained female monkeys concentrate their social effort on core partners in smaller cliques in order to minimize the costs of harassment from other members of the group, their enhanced social skills allow them to exploit weak social links with others in the wider network and maintain good social relations outside their own close-knit groups.

Professor Robin Dunbar, from the Institute of Cognitive and Evolutionary at Oxford University, said: 'These findings give us glimpses into how humans manage the complex business of maintaining coherence in social groups that are much larger than those found in any other primate species. Our neocortex is three times larger than that of other monkeys and apes, and this allows us to manage larger, more dispersed social groups as a result. '

The ICEA is a degree-granting component of the School of Anthropology and Museum Ethnography. The School is part of the Division of Social Sciences at the University of Oxford.

Provided by Oxford University (news : web)