

Would you like to groom me?

Researchers at UNIL's Department of Ecology and Evolution reveal the existence of social traditions in vervet monkeys. This work was published in *iScience* on December 19, 2023.



Grooming helps maintain bonds between individuals. © Charlotte Canteloup

British tits have learned from each other how to pierce the lids of milk bottles left on doorsteps. On the island of Koshima, Japanese macaques started washing sweet potatoes to rid them of sand. The animal realm is full of examples of traditions linked to food, tool use or hunting techniques that have spread within specific communities. However, few traditions of social nature, i.e. how individuals interact with each other, have been described.

A study led by **Erica van de Waal**, Associate Professor in the Department of Ecology and Evolution (DEE) at UNIL's Faculty of Biology and Medicine, and **Charlotte Canteloup**, a former DEE post-doctoral fellow, documents the existence of socially transmitted customs in three groups of vervet monkeys from the same population.

Erica van de Waal's team has been studying the cognitive and social abilities of these primates for almost fifteen years, as part of the "[iNkawu Vervet Project](#)" initiated by the professor. In the field, in South Africa, biologists follow these animals daily, identifying

each one, observing them and recording their behaviours. These can be affiliative (so-called "positive" social attitudes), such as time spent sitting side by side or playing together, body contact and grooming. Or agonistic, such as conflicts, threats or aggression.

Genetics and environment out of the equation

First author of the study, **Elena Kerjean** a former master's student under the supervision of Erica van de Waal and Charlotte Canteloup, analysed 84,702 social interactions involving 247 monkeys between 2012 and 2020. She then calculated a sociality index estimating the propensity of individuals to be rather affiliative or agonistic, an index measuring the reciprocity of grooming and an index quantifying social behaviours between members of the same family.

"The results show that one of the three groups, called AK, was generally more affiliative than the other two, and that grooming was more reciprocal. This was true throughout the nine years of the study", says Charlotte Canteloup, now a permanent researcher at the CNRS and the University of Strasbourg. This observation was independent of socio-demographic variations between the three groups, including sex ratio, number and age of individuals. "Furthermore, as the three groups share a very similar habitat with overlapping territories, and gene flow is ensured by the movement of males between groups, it is highly improbable that these variations in sociality can be explained by ecological and genetic differences only. All this suggests a social origin for these differences", adds Elena Kerjean.

According to the researchers, AK members may have developed a more affiliative "social tradition", under the social influence of the community or specific key individuals. "The monkeys could thus behave like others through a process of behavioural mimicry acting like a social glue", suggests Charlotte Canteloup.

Males embrace their new home's habits

Interestingly and surprisingly, according to the authors, some animals - in this case six adult males who dispersed to their neighbour groups - adapted their behaviour to match that of their new home. Thus, those who left the most social group to join one of the other two became less social. And vice versa.

In a previous study, the team looked at how a new eating habit spreads and is maintained in vervet monkeys. "We had found that males abandoned their initial preference for one food and conformed to the local dietary norm of their new community. This time, we show that this conformity may extend to social behaviour, which has never been reported before", comments Erica van de Waal.

More generally, the research published in *iScience* contributes to a better understanding of the traditions of vervet monkeys in their natural habitat, which are far less studied and documented than those of great apes such as chimpanzees. "Primate cultures are made up of a greater variety of customs than what was believed even a few years ago. The more research progresses, the more we discover that 'basic' and universal social behaviours in apes, such as play, body contact and grooming, form the basis of cultures", concludes Charlotte Canteloup.

Links :

- [Article in *iScience*](#)
- [Erica van de Waal's group](#)
- [Erica van de Waal's profil \(French\)](#)
- [INKawu Vervet Project](#)

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