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Baboons share our ability to amass knowledge, study finds

One of humankind's most remarkable traits – an ability to achieve great feats by building on the work of others – is also present in the animal kingdom, research suggests.

The phenomenon, which sees people make gradual improvements in knowledge over time to reach their goals, was previously thought to be unique to humans.

Researchers have shown that essential elements of this capacity – known as cumulative culture – can be seen in baboons.

Great achievements, such as eradicating disease, sending rockets into space and even language itself – are a result of this gradual accumulation of small improvements.

The team devised a computer test which is the first to reveal that humans are not the only species capable of making progress in this way.

The researchers created a series of grid patterns, which baboons, who had free access to computer booths, tried to remember and copy by pressing buttons on a computer screen. This allowed the scientists to recreate the kind of cultural exchange of knowledge and skills that takes place in humans.

The patterns that one baboon produced – whether or not they were correct – became the patterns the next baboon in a chain had to memorise and reproduce.

The researchers from the University of Edinburgh and CNRS Aix Marseille University found that when the patterns are transmitted between baboons they changed to become easier to memorise and pass on.

In the same way that humans can perfect technologies, baboons were able to make gradual improvements to the patterns provided by others.

Prof Simon Kirby, of the University of Edinburgh's School of Philosophy, Psychology and Language Sciences, said: "For a long time, researchers thought that cumulative culture was uniquely human. However, the evolution we see in our experiment mirrors human cumulative culture, providing an entirely new way of studying our species-defining trait."

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Dr Nicolas Claidière, of CNRS Aix Marseille University, said: “ Baboons do not have complex culture in the wild, but appear to be capable of much more in our experimental set-up. Understanding why this is gets us closer to uncovering the crucial differences between humans and our primate relatives.”

The study, published in *Proceedings of the Royal Society B*, was supported by the Agence Nationale de la Recherche.

Animal work in France was undertaken in line with European Directive 2010/63/EU and approved by Comité d’Ethique CE-14 pour l’Expérimentation Animale’.

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