

# Chimp study reveals how brain's structure shaped our evolution

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The pattern of asymmetry in human brains could be a unique feature of our species and may hold the key to explaining how we first developed language ability, experts say.

Findings are based on brain scans of humans and previously collected data from chimpanzees. They could help scientists understand how our brains evolved and why asymmetry is vital to human development.

The study explores the phenomenon of brain torque, in which the human brain shows slight twisting. Until now, this was also thought to be true of other primates.

Researchers led by the University of Edinburgh studied images from an existing bank of chimpanzee brain scans held in the US.

Comparisons were made with the brains of humans who were scanned using similar equipment - known as [magnetic resonance imaging](#) (MRI) - and identical experimental procedures.

Chimpanzee brains were shown to be made up of equal halves, or hemispheres, whereas in [human](#) brains a subtle twist was present.

Asymmetry was seen in humans - but not chimpanzees - with the [left hemisphere](#) longer than the right.

Language ability has been linked to areas within the left hemisphere of the brain and has also been associated with [asymmetry](#).

The research sheds light on how humans developed skills for language, researchers suggest. A new study of particular brain areas related to language using the same image bank could aid understanding of this.

Neil Roberts, Professor of Medical Physics and Imaging Science at the University of Edinburgh, said: "Our findings highlight a special, subtle feature of the [human brain](#) that distinguishes us from our closest primate cousins and may have evolved rapidly. Better understanding of how this came about in our evolution could help explain how humans developed

language."

The study was published in the journal *NeuroImage*. It was carried out in collaboration with researchers at the University of Oxford, as well as in China and the US.

**More information:** Xiang Li et al, Human torque is not present in chimpanzee brain, *NeuroImage* (2017). [DOI: 10.1016/j.neuroimage.2017.10.017](https://doi.org/10.1016/j.neuroimage.2017.10.017)

Provided by University of Edinburgh

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