Chimpanzees lack key parts of a language gene that is critical for human speech, say researchers. The finding may begin to explain why only humans use spoken language.

Last year scientists identified the first gene, called **FOXP2**, linked to human language. People with mistakes in this gene have severe difficulties with speech and grammar.

Now Svante Pääbo of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, and his colleagues have compared human with the versions of the gene found in the chimpanzee, gorilla, orang-utan, rhesus macaque and mouse.

Human **FOXP2** contains two key changes in its DNA compared with the other animals, the team found. "It changed in the human lineage," says team member Wolfgang Enard.

The changes may affect the human ability to make fine movements of the mouth and larynx, and thus to develop spoken language, Enard suggests.

"It's fascinating," says Martin Nowak, who studies the evolution of language at the Institute for Advanced Study in Princeton. "It's the beginning of a genetic foundation for human language."

Language is unique to humans: chimpanzees can be trained to communicate using a complex set of symbols, but they can pronounce only a handful of words because they cannot make the required facial movements.

The gene variant that permits language may have become widespread during the last 200,000 years, Enard estimates, based on analyses of the human gene from individuals worldwide.

It was around this time that anatomically modern humans emerged. The development of language may have been an important driving force behind human expansion. It allowed large amounts of information to be passed from one generation to the next, explains Nowak.

Researchers are not yet clear what the **FOXP2** gene does, but they think it acts by switching other genes on and off. The two changes aside, the gene is almost identical in humans and the other animals examined.

**References**