

Scientists complete Bonobo genome

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This is Ullindi, the female bonobo from which the genome was sequenced, in the Leipzig zoo. Credit: Michael Seres

In a project led by the Max Planck Institute for Evolutionary Anthropology in Leipzig, an international team of scientists has completed the sequencing and analysis of the genome of the last great ape, the bonobo. Bonobos, which together with chimpanzees are the closest living relatives of humans, are known for their peaceful, playful and sexual behaviour that contrasts with the more aggressive behaviour of chimpanzees. The genome sequence provides insights into the evolutionary relationships between the great apes and may help us to

understand the genetic basis of these traits.

The genome was sequenced from Ulindi, a female bonobo who lives in the Leipzig zoo. Genome sequences have also been generated from all other great apes – chimpanzee, orang-utan and gorilla - making this the final genome of a [great ape](#) to be sequenced and providing insights into their relationships with one another and with humans.

The comparison of the genome sequences of bonobo, chimpanzee, and human show that humans differ by approximately 1.3% from both bonobo and chimpanzee. Chimpanzees and bonobos are more closely related, differing by only 0.4%.

Bonobo and chimpanzee territories in central Africa are close to one another and separated only by the Congo River. It has been hypothesized that the formation of the Congo River separated the ancestors of chimpanzees and bonobos, leading to these distinct apes. Examination of the relationship between bonobos and chimpanzees showed that there appears to have been a clean split and no subsequent interbreeding, which supports this hypothesis.

Despite the fact that on average the genomes of bonobos and chimpanzees are equally distant from human, analysis of the [genome sequence](#) of the bonobo revealed that for some particular parts of the genome, humans are closer to bonobos than to chimpanzees, while in other regions the human genome is closer to chimpanzees. Further research will determine whether these regions contribute in any way to the behavioural differences and similarities between humans, chimpanzees, and [bonobos](#).

More information: The bonobo genome compared with the chimpanzee and human genomes, *Nature*, June 12 2012, [DOI: 10.1038/nature11128](https://doi.org/10.1038/nature11128)

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