

## Study: Neanderthals had “language gene”

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Courtesy Cell Press and [World Science](#) staff

Humans' closest extinct relatives, the Neanderthals, possessed a key gene variant believed to be related to our ability to speak, researchers have found. The finding shows this mutation arose much earlier than scientists had suspected, and raises at least the possibility that Neanderthals could talk, scientists said.

“From the point of view of this gene, there is no reason to think that Neanderthals would not have had the ability for language,” said Johannes Krause of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany, one of the scientists. He noted, however, that many other as-yet-unknown genes might underlie language, so the issue remains unresolved.

The gene, called FOXP2, is the only one known to play a role in speech and language, according to the researchers. People who carry an abnormal copy of the gene have speech and language problems.

Previous studies indicated that a spread in the human variant occurred because of strong evolutionary pressure less than 200,000 years ago, said the institute's Svante Pääbo. Since the Neanderthal and modern human lineages branched apart more than 300,000 years ago, “we would have guessed that these changes in FOXP2 would have happened after we separated from Neanderthals,” Pääbo said. He noted that the human version of differs from that of chimps in two places.

They based their conclusion on DNA from Neanderthal fossils collected in a cave in northern Spain. The study marks the first time a specific “nuclear” gene has been retrieved from Neanderthals, researchers added. Nuclear genes are those that reside in the cell nucleus, the vast majority of our genes. Other, more specialized genes reside in cellular compartments known as mitochondria.

The finding opens the door to other breakthroughs in scientists' understanding of human and Neanderthal evolution, the researchers said. “Leaving out the unlikely scenario of gene flow [between the two lineages], this establishes that these changes were present in the common ancestor of modern humans and Neanderthals,” they wrote. The study is to be published online Oct. 18 in the research journal *Current*