

Evolution of language: Did Neanderthals have the ability to speak?

The evolution of language, and the linguistic capacities in Neanderthals in particular, is a long-standing question in human evolution.

“For decades, one of the central questions in human evolutionary studies has been whether the human form of communication, spoken language, was also present in any other species of human ancestor, especially the Neanderthals,” said coauthor Juan Luis Arsuaga... The latest study has reconstructed how Neanderthals heard to draw some inferences about how they may have communicated.

The study relied on high resolution CT scans to create virtual 3D models of the ear structures in Homo sapiens and Neanderthals as well as earlier fossils from the site of Atapuerca that represent ancestors of the Neanderthals. Data collected on the 3D models were entered into a software-based model, developed in the field of auditory bioengineering, to estimate the hearing abilities up to 5 kHz, which encompasses most of the frequency range of modern human speech sounds.

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“This really is the key,” said Mercedes Conde-Valverde, professor at the Universidad de Alcalá in Spain and lead author of the study. “The presence of similar hearing abilities, particularly the bandwidth, demonstrates that the Neanderthals possessed a communication system that was as complex and efficient as modern human speech.”

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