

Neanderthals are speaking up – or at least a computer synthesiser is doing so on their behalf.

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"They would have spoken a bit differently. They wouldn't have been able to produce these quantal vowels that form the basis of spoken language," Robert McCarthy, an anthropologist at Florida Atlantic University in Boca Raton says. Neanderthals would not distinguish between "beat" and "bit", but probably would not notice.

Neanderthals speak out after 30,000 years

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Reconstruction of a Neanderthal child's face (Image: Anthropological Institute, University of Zürich)

Talk about a long silence – no one has heard their voices for 30,000 years. Now the long–extinct Neanderthals are speaking up – or at least a computer synthesiser is doing so on their behalf.

Robert McCarthy, an anthropologist at Florida Atlantic University in Boca Raton has used new reconstructions of Neanderthal vocal tracts to simulate the voice. He says the ancient human's speech lacked the "quantal vowel" sounds that underlie modern speech.

Quantal vowels provide cues that help speakers with different size vocal tracts understand one another, says McCarthy, who was talking at the annual meeting of the American Association of Physical Anthropologists in Columbus, Ohio, on April 11.

"They would have spoken a bit differently. They wouldn't have been able to produce these quantal vowels that form the basis of spoken language," he says.  
Talking heads

In the 1970s, linguist Phil Lieberman, of Brown University in Providence, Rhode Island, inferred the dimensions of the larynx of a Neanderthal based on its skull. His team concluded that Neanderthal

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speech did not have the subtlety of modern human speech.

Some researchers have criticised this finding, citing archaeological evidence of an oral culture and even errors in Lieberman's original vocal tract reconstruction.

Undeterred, the linguist teamed with McCarthy to simulate Neanderthal speech based on new reconstructions of three Neanderthal vocal tracts. The 50,000–year old fossils all came from France.

By modelling the sounds the Neanderthal pipes would have made, McCarthy's team engineered the sound of a Neanderthal saying "E". He plans to eventually simulate an entire Neanderthal sentence. Listen to McCarthy's simulation of a Neanderthal voice

In contrast to a modern human "E", the Neanderthal version doesn't have a quantal hallmark, which helps a listener distinguish the word "beat" from "bit," for instance. Listen to a simulation of a modern human voice

Though subtle, the linguistic difference would have limited Neanderthal speech, McCarthy says.  
The language gene

That conclusion doesn't fit in with Neanderthals' large brains, which may have been an adaptation to language, says Erik Trinkaus, an anthropologist at Washington University in St Louis. "Ultimately what is important is not the anatomy of the mouth but the neuronal control of it."

Neanderthals may have also boasted the genes for language, Trinkaus says. Last year, researchers discovered that Neanderthals shared a version of a gene called FOXP2 with humans.

People missing a copy of FOXP2 suffer from language and speech disorders, and humans have a version of the gene that is different from other animals – including chimpanzees, our nearest relatives.

Yet other genetic evidence suggests that spoken language shaped the recent evolution of humans. John Hawks, a biological anthropologist at the University of Wisconsin in Madison, also spoke at the Ohio meeting. He says that some genes important to hearing changed rapidly in modern humans, perhaps because the genes helped decode new, more complex spoken languages.

"Something's changing in the last 40,000 years," he says. "Maybe this is because our ears are becoming tuned to listening to sounds that have recently been changing."

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<http://www.newscientist.com/article/dn13672-neanderthals-speak-out-after-30000-years.html?DCMP=ILC-hmts&>