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Speech easy, even for caveman? FAU vocal model seeks answer

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Thursday, April 17, 2008

BOCA RATON — The first words spoken by a Neanderthal in 30,000 years may be from Shakespeare.

Using a computer synthesizer, Florida Atlantic University anthropologist Robert McCarthy has reconstructed a model of a Neanderthal vocal track in an effort to learn more about how the extinct human species spoke, and whether they communicated with modern homo sapiens.

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scientific questions that McCarthy says may be answered by knowing how Neanderthals spoke and the sounds they made.

The circumstances of Neanderthal extinction are debated by scientists, some of whom question whether the two human species mingled or even procreated.

"Did we come into direct conflict with them? Did we meet and trade with them, speak with them, could we understand them, could they understand us?" said McCarthy, who has spent two years building on decades-old studies done by his research partner Philip Lieberman, who teaches linguistics and anthropology at Brown University. "Neanderthals were a different species of humans, yet they lived in Europe alongside modern humans."



So far, the model has produced one computer-generated sound - a sound like the short "i" in American English, as in bit or sit.

In a few months, however, McCarthy hopes to create a full sentence taken from the play Hamlet: "What a piece of work is man."

Beyond the novelty of having Shakespeare performed in Neanderthal are deeper

McCarthy presented his research Friday at the American Association of Physical Anthropologists in Columbus, Ohio. This research has focused on reconstructing Neanderthal body parts that affect speech from fossils found in France.

From there, he said he can tell where the larynx, or voice box, would have to fit to produce the same subtlety and level of sounds modern humans make.

The position of the Neanderthals' voice box would make them incapable of producing fundamental vowel sounds that underlie modern speech, McCarthy said.

By modeling the sounds the Neanderthal pipes would have made, McCarthy engineered the sound that a Neanderthal would have made trying to say "E," the first step to re-creating more sounds.

"The vowel E is incredibly important because it allows us to normalize all the other sounds of our speech," McCarthy said.

Lieberman's early research on this subject from the 1970s was met with skepticism, and scientists continue to disagree on Neanderthal development.

Critics today argue that McCarthy's research is philosophical as much as scientific, and an attempt to separate the two human species by making one superior.

Erik Trinkaus, a physical anthropologist at Washington University in St. Louis, said Neanderthals had the cognitive abilities to produce language.

"He is trying to make us something totally unique, separate from earlier forms of humanity," Trinkaus said. "They were all making a living the same way. Even if they had different vocabularies they could still find common ground."

Trinkaus says McCarthy's research is "linguistically fallacious, anatomically arguable, and, for me, philosophically objectionable."

Lieberman and McCarthy said they are not prejudiced against Neanderthals, but the vocal cord differences do separate modern humans from the extinct species.

"What we are saying is they could speak and had language," McCarthy said about Neanderthals. "The question is, how did they speak? And I think it's physically impossible for them to speak like we do."

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