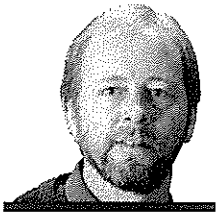
Neanderthals and those lost vowels



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WATCH YOUR LANGUAGE

RECENT media interest in anthropological research in the United States took on a local flavour in New Zealand when it was suggested in our newspapers that Neanderthals might have spoken like New Zealanders.

This claim does not appear to have been made by the researchers themselves, but was probably added by local journalists to increase the appeal of their reports. So what is the basis for this link, and what does the original research claim?

Florida anthropologist Robert McCarthy joined forces with other researchers, including speech scientist Philip Lieberman, to reconstruct how Neanderthals might have spoken.

They worked from fossilised remains, which give only a limited idea of what Neanderthal speech organs might have looked like, because tongues and other fleshy parts of the speech apparatus do not fossilise well. However, based on skull measurements and estimates of body sizes, the researchers calculated the likely dimensions of Neanderthal mouths, tongues and so on.

They used this information to create synthetic speech.

Examples on the *New Scientist* website demonstrate that the Neanderthal "ee" vowel (as in "bee") is certainly quite different from a modern "ee", but it is no more similar to a New Zealand English version of this vowel than to any other version.

So the suggestion that Neanderthals might have spoken like New Zealanders must be based on something else in the research.

Importantly, the research team made some basic observations about the capabilities of the Neanderthal speech apparatus.

One crucial aspect is the shape of the vocal tract, the bent "tube" that runs vertically up from the voice box and then horizontally forward to the lips.

The Neanderthal's short neck and long face (long from back to front, that is) would have resulted in a differently shaped vocal tract from that of modern human adults, who have just about as much vertical tube as horizontal tube.

The long Neanderthal face also required a longer tongue, with much more of it toward the front of the vocal tract compared with the more rounded tongue of modern humans.

A larger nasal cavity would also have had a muffling effect on speech sounds.

THESE features would have resulted in a severe limitation on the possible range of distinct or "quantal" vowel sounds, that is, of contrasting vowel sounds that linguists argue are necessary for a language to work properly as a language.

So perhaps the link being implied by the journalists is with the oft-heard complaint that New Zealand English is losing its vowels?

In reality, though, there are few vowels that are being lost altogether from New Zealand English. The difference between "beer" and "bear" is disappearing for some speakers, but there are relatively few words that rely on that distinction, compared with most other vowel contrasts.

The difference between the vowel at the beginning of "about" and the vowel in "kit" is also less clear for New Zealanders than for many other English speakers. Overall, though, New Zealand English still has a substantial set of vowel contrasts (19 or 20 different vowels, depending on how you treat "beer" and "bear"), and many more than a considerable number of the world's languages.

In fact, New Zealand English is in the top 4 per cent of languages in terms of number of vowels, and more than half the world's languages have fewer than eight vowels.

So any comparison of New Zealand English with a vowel-deprived Neanderthal language has little basis.

What is of more general interest about the research is the claim that because of the limited number of vowel contrasts that Neanderthal speakers were capable of making, it is unlikely that they had speech, in the sense of having an organised language using contrasting sounds. However, this disregards other aspects of spoken languages.

Tone languages such as Mandarin, Thai or Hausa often use voice pitch differences to produce a large set of vowel contrasts with a small set of vowels. It also disregards non-spoken languages, such as sign languages.

The debate about whether or not Neanderthals had "language" continues, fuelled by recent findings of another nature, namely that Neanderthals possessed some of the genetic material that has been linked in humans with the ability to use language.

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