

Neanderthals were separate species, says new human family tree



A wax figure representing a Neanderthal man on display at a museum. A new, simplified family tree of humanity has dealt a blow to those who contend that the enigmatic hominids known as Neanderthals intermingled with our forebears.

A new, simplified family tree of humanity, published on Sunday, has dealt a blow to those who contend that the enigmatic hominids known as Neanderthals intermingled with our forebears.

Neanderthals were a separate species to *Homo sapiens*, as anatomically modern humans are known, rather than offshoots of the same species, the new organigram published by the journal *Nature* declares.

The method, invented by evolutionary analysts in Argentina, marks a break with the conventional technique by which anthropologists chart the twists and turns of the human odyssey.

That technique typically divides the the genus *Homo* into various classifications according to the shape of key facial features -- "flat-faced," "protruding-faced" and so on.

Reconciling these diverse classifications from a tiny number of specimens spanning millions of years has led to lots of claims and counter-claims, as well as much confusion in the general public, about how we came to be here.

Various species of *Homo* have been put up for the crown of being our direct ancestor, only to find themselves dismissed by critics as failed branches of the *Homo* tree.

The authors of the new study, led by Rolando Gonzalez-Jose at the Patagonian National Centre at Puerto Madryn, Argentina, say the problem with the conventional method is that, under evolution, facial traits do not appear out of the blue but result from continuous change.

So the arrival of a specimen that has some relatively minor change of feature as compared to others should not be automatically held up as representing a new species, they argue.

The team goes back over the same well-known set of specimens, but uses a different approach to analyse it, focussing in particular on a set of fundamental yet long-term changes in skull shape.

They took digital 3D images of the casts of 17 hominid specimens as well as from a gorilla, chimpanzee and *H. sapiens*.

The images were then crunched through a computer model to compare four fundamental variables -- the skull's roundness and base, the protrusion of the jaw, and facial retraction, which is the position of the face

relative to the cranial base.

When other phylotogenic techniques are used, the outcome is a family tree whose main lines closely mirror existing ones but offers a clearer view as to how the evolutionary path unfolded.

The paper suggests that, after evolving from the hominid *Australopithecus afarensis*, the first member of *Homo*, *H. habilis*, arose between 1.5 and 2.1 million years ago.

We are direct linear descendants of *H. habilis*. *H. sapiens* started to show up around 200,000 years ago.

None of the species currently assigned to *Homo* are discarded, though.

On the other hand, the Neanderthals are declared "chronological variants inside a single biological heritage," in other words, evolutionary cousins but still a separate species from us.

The squat, low-browed Neanderthals lived in parts of Europe, Central Asia and the Middle East for around 170,000 but traces of them disappear some 28,000 years ago, their last known refuge being Gibraltar.

Why they died out is a matter of furious debate, because they co-existed alongside anatomically modern man.

Some opinions aver that the Neanderthals were slowly wiped out by the smarter *H. sapiens* in the competition for resources.

Other contend that we and the Neanderthals were more than just kissing cousins. Interbreeding took place, which explains why the Neanderthal line died out, but implies that we could have Neanderthal inheritance in our genome today, goes this theory.

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