



An excavation site near Neshar Ramla in central Israel.

# FOSSILS EXPAND HUMAN FAMILY TREE — BUT QUESTIONS REMAIN

Bones found in Israel and China could belong to new types of ancient human.

By Nicola Jones

**F**ossils dating from around 140,000 years ago are adding to the ranks of hominins that mixed with early modern humans.

A collection of fossils from Israel hint that a previously unknown group of hominins, proposed to be the direct ancestors of Neanderthals, might have dominated life in the Levant and lived alongside *Homo sapiens*<sup>1,2</sup>. Meanwhile, researchers studying an ancient human skull found in China have controversially classified it as a new species — dubbed Dragon Man — which might be an even closer relative to modern humans than are Neanderthals<sup>3,4</sup>.

But both findings have sparked debate. The studies are based on analyses of the size, shape and structure of fossilized bones — methods that are subject to individual judgement and interpretation. As is often the case for fossil finds, there is no DNA evidence.

## Ancestor to Neanderthals

Since 2000, the view of human evolution during the past half a million years has become ever-more complicated as researchers have added to the list of species in the genus *Homo* that lived in the Middle and Late

Pleistocene, overlapping in time with modern humans (*H. sapiens*) and Neanderthals (*Homo neanderthalensis*).

Now, researchers studying fossils found in Israel think they might have identified a new group of hominins. Physical anthropologist Israel Hershkovitz at Tel Aviv University and his colleagues focused on skull fragments found at the site of Neshar Ramla in central Israel — parts of parietal bones and a jaw, probably belonging to the same individual — that date to between 140,000 and 120,000 years ago.

Conventional thinking is that only *H. sapiens* lived in the Levant at this time, the team says; the earliest conclusive evidence of Neanderthals being there is from 70,000 years ago. “What we expected to find was *Homo sapiens*,” says co-author Hila May, also at Tel Aviv University. “At first glance, for sure it wasn’t.” The jaw and teeth were Neanderthal-like, but the skull shape was more archaic.

The oddity seems to match up with a handful of other fossils found around Israel, none of which had previously been classified. In a pair of studies<sup>1,2</sup> published in *Science* on 24 June, the authors propose that all of these fossils belong to a new hominin population — the Neshar Ramla people — who might have dominated the region for hundreds of thousands of years.

The Neshar Ramla population seems to have mastered the same stone tools as *H. sapiens* living in the area, hinting that they lived together with modern humans and perhaps interbred.

But not all researchers agree with the team’s findings. To palaeoanthropologist Philip Rightmire at Harvard University in Cambridge, Massachusetts, the skull looks like an “early, rather archaic-appearing, Neanderthal”. Rightmire says he would not be surprised to see Neanderthals in this region at this time.

## Dragon Man

In China, an analysis of a Middle Pleistocene hominin skull that was unearthed decades ago could also shed new light on our ancestors.

The Harbin skull is an extremely well-preserved cranium that dates to about 140,000 years ago and is thought to belong to a 50-year-old male. It was originally dug up in 1933 before being hidden from the Japanese army in a well, and was donated to Hebei GEO University in Shijiazhuang in 2018. The skull is particularly large and thick, with big, squarish eye sockets, low cheek bones, large teeth and a wide palate.

In work published in *The Innovation* on 25 June, palaeontologist Ji Qiang at Hebei GEO University and colleagues propose that the unique features of the Harbin skull are enough to classify it as a new species<sup>3,4</sup>. They suggest the species name *Homo longi* (Dragon Man) after the common name of Heilongjiang province, Long Jiang (Dragon River), where the fossil was found.

However, naming a new species on the back of a single skull — particularly one that has been removed from its original context and comes with no artefacts — is controversial. “I think that there were more species running around Asia than people have allowed themselves to think about,” says Jeffrey Schwartz, an anthropologist and evolutionary biologist at the University of Pittsburgh in Pennsylvania. But there isn’t enough evidence to convince him that this skull represents a new species.

In the study, Ji and colleagues say that, given the Harbin skull’s similarity to some early *H. sapiens* fossils, *H. longi* might be an even closer relative to modern humans than Neanderthals are. But Schwartz thinks some of these fossils have been inappropriately lumped into the *H. sapiens* category.

Overall, the current hominin classifications make little sense, argues Schwartz, because they bundle too much diversity together into species such as *H. sapiens*. “I think we should start from scratch,” he says. “Some people aren’t bold enough to say: ‘let’s look at everything from the beginning.’”

1. Hershkovitz, I. et al. *Science* **372**, 1424–1428 (2021).
2. Zaidner, Y. et al. *Science* **372**, 1429–1433 (2021).
3. Ji, Q. et al. *The Innovation* <https://doi.org/10.1016/j.xinn.2021.100132> (2021).
4. Ni, X. et al. *The Innovation* <https://doi.org/10.1016/j.xinn.2021.100130> (2021).