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Neandertal toolmakers left a leatherworking legacy

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Neandertal toolmakers left a leatherworking legacy

Abstract

Ever since the Neandertal (*Homo neanderthalensis*) type fossil was discovered in the Neander Valley of Germany in 1856, the species has been variously portrayed as knuckle-dragging cavemen and primitive members of the human family tree who became extinct as a result of being more stupid than members of our own species, *Homo sapiens*.

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Neandertal toolmakers left a leatherworking legacy

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Get the knuckle-dragging caveman image out of your head – Neandertals were master toolmakers. marcovdz

Ever since the Neandertal (*Homo neanderthalensis*) type fossil was discovered in the Neander Valley of Germany in 1856, the species has been variously portrayed as knuckle-dragging cavemen and primitive members of the human family tree who became extinct as a result of being more stupid than members of our own species, *Homo sapiens*.

So is that a fair call?

Well, no, according to our research published in the journal PNAS today: our Neandertal cousins weren't the dull-witted oafs they're commonly made out to be.

In fact, they may have mastered leatherworking tools before modern humans.

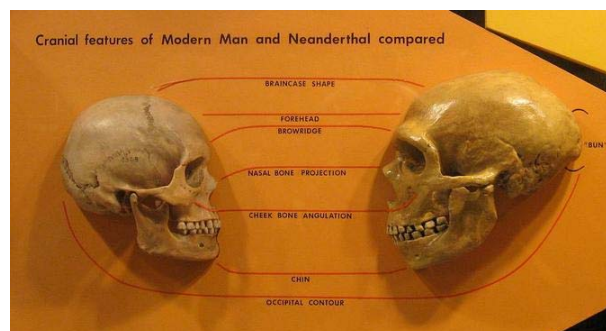
Last man standing

We are the only species of human left on our planet, but this is a relatively recent event, as Neandertals roamed southern Europe until about 40,000 years ago.

We also know from genetic studies that people now living outside Africa have around 3% of Neandertal DNA in their genome, indicating that our early ancestors interbred with

Neandertals at some distant time in the past and making them much closer relatives of us than was previously believed.

From fossilised remains, we know Neandertals were stockier and more muscular than modern humans, and had a thick rounded brow ridge and a prominent bulge at the back of the skull.



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But debate continues to rage about how Neandertals and *Homo sapiens* differed in the ways they thought, behaved and eked out an existence.

It has been suggested that we are the last remaining human species because, with our advanced social and behavioural abilities, we outcompeted the Neandertals, who are commonly perceived as cognitively challenged dead-ends.

But some researchers consider that Neandertal behaviour embraced the full range of “modern” technology, subsistence and symbolism.

Others argue that significant differences in behaviour existed between the two species, while yet another group of researchers contend that evidence for advanced Neandertal behaviour can only be found very late in the archaeological record and, hence, must have been a consequence of contact with *Homo sapiens* as they entered Europe.

Deciphering history

Archaeologists have to read scant evidence preserved in the ground to interpret past human behaviours.

In this latest study, two separate research teams comprising members from Europe, Australia and North America joined forces to report the discovery of Neandertal bone tools recovered from excavations at two neighbouring Palaeolithic sites in southwest France: Abri Peyrony and Pech de l’Azé I.

The tools are unlike any others previously found at Neandertal sites, but they are similar to a type of tool well known from later *Homo sapiens* sites.

This tool, called a lissoir, is a “smoother” shaped from a deer rib and polished at the tip. When pushed against an animal hide, it creates softer, burnished and more water-resistant leather.

The lissoir study forms part of a multi-disciplinary investigation that includes excavation of the two sites, together with geological and sediment analyses to establish the context and integrity of the archaeological finds.

The deposits were dated using a variety of methods, including radiocarbon dating of bone.

In the optically stimulated luminescence dating laboratory at the University of Wollongong, we

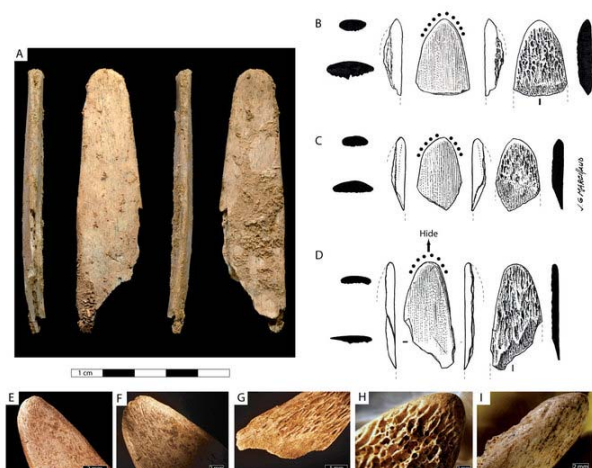


A reconstruction of how lissoirs, made of deer ribs, could have been used to prepare hides. Abri Peyrony and Pech-de-l'Azé I Projects

dated the sediment grains surrounding these lissoirs to at least 51,000 years ago, which agreed with the ages obtained by the other methods.

The lissoirs were identified by the team's bone specialists, who also compared them to younger and modern lissoirs from other known and uncontested contexts associated with *Homo sapiens*.

Microscopic studies of tool use revealed traces compatible with their use on soft materials such as animal hides.



Drawings and photographs of the four lissoirs discovered in two Neandertal sites in southwest France. Abri Peyrony and Pech-de-l'Azé I Projects

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Independent development?

These lissoirs represent some of the strongest pieces of evidence currently known for Neandertals developing, on their own, a technology previously thought to be the exclusive preserve of our species.

If Neandertals did, indeed, develop this type of bone tool independently of modern humans, then it is possible that our ancestors learned the technique to make the lisoir technology from contemporaneous Neandertals.

At present, it appears that modern humans entered Europe with pointed bone tools and only started to make lissoirs soon after they settled Europe.

The discovery of this specialised bone tool for leatherworking in southwest France could be evidence for the transmission of ideas from Neandertals to *Homo sapiens*.

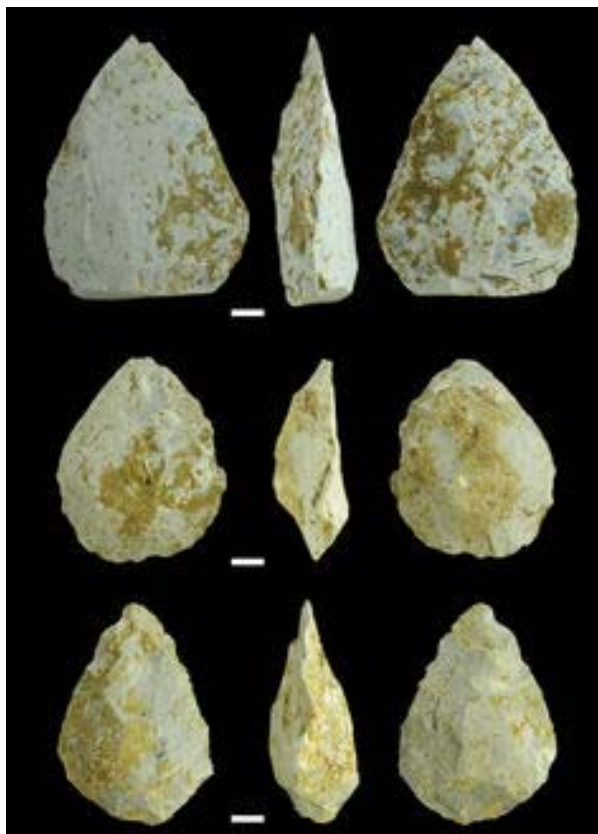
When and where modern humans first entered and populated Europe is still hotly debated by research teams around the world, and the subject of intensive investigations through multiple excavations and dating programmes across the breadth of Europe.

Given lingering uncertainties in the timing and routes of *Homo sapiens* dispersal and interactions with Neandertals in the region, we cannot rule out the possibility that the lissoirs instead indicate that modern humans entered Europe — and started impacting on Neandertal behaviour — much earlier than is currently accepted.

Whichever way the chips may ultimately fall, this study will stimulate further research by proponents from both sides of the debate.

Regardless of which species first invented the lissoir, it is a tool still used by luxury leatherworkers today, and must be one of the few tools that have survived from the Stone Age until modern times without any significant changes over the past 50,000 years or more.

It could even be claimed to be the only known Neandertal invention that is still in use today.



An example of some of the handaxes found in a level with one of the Abri Peyrony lissoirs. Abri Peyrony Project
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