Caveman Couture: Neandertals Rocked Dark Feathers

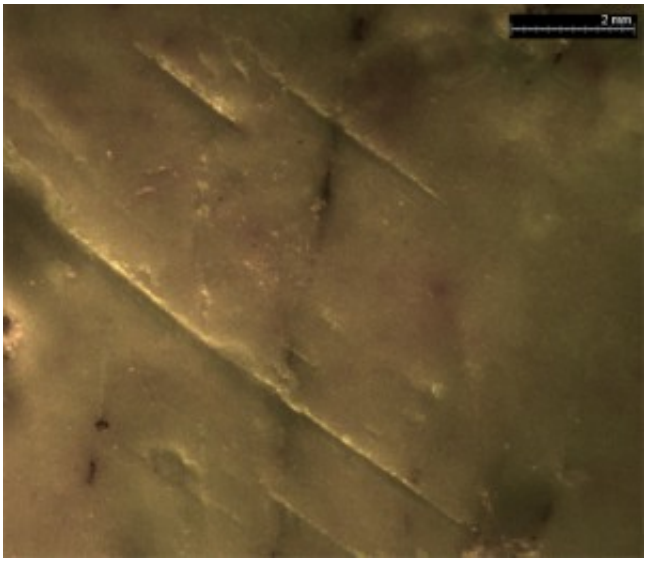
Kate Wong September 18, 2012

Artist's conception of a Neandertal's feather decorations. Image: Antonio Monclova

GIBRALTAR—Jordi Rosell removes a thumbnail-size piece of reddish-tan bone from a sealed plastic bag, carefully places it under the stereomicroscope and invites me to have a look. Peering through the eyepieces I see two parallel lines etched in the specimen's weathered surface. Tens of thousands of years ago, in one of the seaside caves located here on the southernmost tip of the Iberian Peninsula, a Neandertal nicked the bone—a bit of shoulder blade from a bird known as the red kite--with a sharp stone tool in those two spots. Though it would hardly merit a second glance from the casual observer, this cutmarked fragment is helping to deliver what could be the coup de grâce to some enduring ideas about the cognitive abilities of our closest relatives.

Experts agree that Neandertals hunted large game, controlled fire, wore animal furs and made stone tools. But whether they also engaged in activities deemed to be more advanced has been a matter of heated debate. Some researchers have argued that Neandertals lacked the know-how to effectively exploit small prey, such as birds, and that they did not routinely express themselves through language and other symbolic behaviors. Such shortcomings put the Neandertals at a distinct

disadvantage when anatomically modern humans availed of these skills invaded Europe—which was a Neandertal stronghold for hundreds of thousands of years—and presumably began competing with them, so the story goes.



Cutmarks made by a Neandertal on a wing bone from a griffon vulture. Image: Clive Finlayson

Over the past couple decades hints that Neandertals were savvier than previously thought have surfaced, however. Pigment stains on shells from Spain suggest they painted, pierced animal teeth from France are by all appearances Neandertal pendants. The list goes on. Yet in all of these cases skeptics have cautioned that the evidence is scant and does not establish that such sophistication was an integral part of the Neandertal gestalt.

The cutmarked bones from Gibraltar as well as bird remains from other sites could force them to rethink that view. In a paper published September 17 in *PLOS ONE,* paleontologist Clive Finlayson of the Gibraltar Museum, Rosell, a zooarchaeologist at Rovira I Virgili University in Tarragona, Spain, and their colleagues report on their analyses of animal remains from 1699 fossil sites in Eurasia and north Africa spanning the Pleistocene epoch. Their results show that Neandertals across western Eurasia were strongly associated with corvids (ravens and the like) and raptors (vultures and their relatives)—more so than were the anatomically modern humans who succeeded them.

The Neandertals seem unlikely to have hunted these birds for food. People today do not eat corvids or raptors. Moreover, if the Neandertals

Bonelli's eagle is one of the raptor species Neandertals hunted, presumably for its dark feathers. Image: Clive Finlayson

did hunt the birds for food, one would expect to see signs of butchery on those bones linked to fleshy parts of the bird, such as the breastbone. Yet the team's study of the bird bones from the Gibraltar sites found the cutmarks on wing bones, which have little meat—a sign that the Neandertals targeted the birds for their feathers rather than their meat.

Exactly what the Neandertals were doing with the feathers is unknown, but because they specifically sought out birds with dark plumage, the researchers suspect that our kissing cousins were festooning themselves with the resplendent flight feathers. Not only are feathers beautiful, they are also lightweight, which makes them ideal for decoration, Finlayson points out. "We don't think it's a coincidence that so many modern human cultures across the world have used them."

The Neandertals may have separated the plumage from the wing bones while keeping it intact and used the skin as a sort of cape or headpiece, depending on the size of the bird. Finlayson says preliminary experimental evidence

Neandertals captured ravens and other corvids, too. Image: Clive Finlayson

shows that removal of the plumage in this way using flint tools creates cut marks similar to those observed on the ancient bird bones recovered from the Gibraltar caves.

This is not the first time scientists have found evidence that Neandertals used feathers. In 2011 a team of Italian researchers reported on cutmarked bird bones from Neandertal levels in Fumane Cave in northern Italy that revealed this practice. But some researchers dismissed the find as an isolated phenomenon. The new findings suggest that feathers were de rigueur for thousands of years not only among Gibraltar's Neandertals but quite possibly for Neandertals across Eurasia.

Clive Finlayson models griffon plumage. The ulna was removed from the carcass with a flint tool and the feathers left intact. Most of the birds Neandertals used were smaller and thus perhaps better suited to headdresses. Image: Kate Wong

Although archaeologists have often argued that Neandertals did not have

the necessary technology to hunt birds, Rosell points out that many of these species are easily caught with bare hands. Vultures, for example, will hang out on tree branches in the morning, waiting for a wind to carry them away. During this time they are quite vulnerable to being captured. Neandertals could have also caught their favorite birds of prey while the birds were busy feeding on carcasses, he says. In addition, Gibraltar is on a key migratory route for many species, and the birds often arrive tired from the shifting winds. Perhaps Neandertals took advantage of this weakness.

Speakers at a conference on human evolution held in Gibraltar last week extolled the study, and agreed with the team's interpretation of the remains as evidence that Neandertals adorned themselves with the feathers as opposed to using them for some strictly utilitarian purpose. If the cutmarked bones from Gibraltar had been found in association with early modern humans, researchers would assume that the feathers were symbolic, says paleoanthropologist John Hawks of the University of Wisconsin notes. The same standards should apply to Neandertals. "We've got to now say that Neandertals were using birds. Period. They were using them a lot. They were wearing around their feathers," he comments. "They clearly cared. A purely utilitarian kind of person does not put on a feathered headdress."

Archaeologist John Shea of Stony Brook University observed that the preference for dark feathers mirrors the Neandertals' apparent preference for black manganese pigment, which is known from a few sites. Early *Homo sapiens,* in contrast, appears to have liked red pigment. "What our ancestors liked about red these Neandertals evidently liked about black. And both are very compelling kinds of colors," Shea says. "It means they had color symbolism. They were able to imbue colors in their natural world with some kind of arbitrary meaning."

"[This] is something many of us thought was unique to *Homo sapiens,*"

Shea adds. “But [it] turns out to be either convergently evolved with Neandertals or more likely something phylogenetically ancient we simply haven’t picked up in the more ancient archaeological record. It’s probably something [our common ancestor] *Homo heidelbergensis* did, we just haven’t found archaeological evidence for it yet.”

The views expressed are those of the author(s) and are not necessarily those of Scientific American.