

How our view of Neanderthals has evolved

By William Lee

Back in 1856, quarry laborers dug into two limestone caves in the Neander Valley, near Dusseldorf, Germany, and uncovered a startling find: a strange-looking skull, longer and lower than that of a modern human, with thick, bestial-looking browridges. Hermann Schaaffhausen, the first credentialed scientist to examine the remains, noted that its shape was “a natural conformation hitherto not known to exist, even in the most barbarous races,” and speculated that it was a relic of an ancient indigenous people who preceded the Germans. Other scientists haughtily dismissed his theory, arguing that the bones found in the cave belonged to some ordinary, unfortunate human deformed by pathology.

Since then, the Neanderthals have been the subject of controversy, right down to their name (some prefer Neandertal, in keeping with the modern German spelling). Were these ancient creatures, who lived in Europe and parts of Asia roughly between 200,000 and 28,000 years ago, a part of our family tree? Or were they a totally separate species of evolutionary dead-enders, doomed to fail in competition with our smarter, more linguistically and technologically advanced ancestors? Over the past 152 years, the popular conception of Neanderthals — who they really were, how they lived, and why they ultimately disappeared — has veered from one extreme to another. Some have portrayed them as bestial brutes with a shuffling gait who lacked the ability to speak but had an apparent penchant for cannibalism, while others have lauded them as gentle, compassionate, spiritual beings who placed flowers on the graves of their dead.

As Erik Trinkaus and Pat Shipman note in their 1994 book, “The Neandertals: Of Skeletons, Scientists and Scandal,” our view of Neanderthals has often been shaped by our own *Zeitgeist* as much as by the scientific facts. “Through the years, the shifting paradigms have drawn as much on the scientists and scholars themselves, and the times and social climates in which they lived, as they have on the ancient bones,” they write.

NEANDERTHAL DISCOVERIES

The discovery of numerous other Neanderthal remains — including two nearly-complete skeletons found with stone-age tools in Belgium in 1886—established that Neanderthals were a bona fide type of ancient hominid rather than modern victims of maladies. But even so, late 19th and early 20th century anthropologists were loathe to accept what newspapers already had taken to calling “Neanderthal Man” as a possible ancestor. One possible reason: Discoveries in Croatia from 1899 to 1905 of Neanderthal remains that were splintered and apparently had been exposed to fire led them to conclude that Neanderthals were cannibals, a legacy that few refined European gentleman-scientists would have been eager to claim as their own.

Scientists’ early conception of Neanderthals also was hindered by errant analysis. The most egregious example was French Anthropologist Marcellin Boule, who published an influential monograph on Neanderthals in the early 1910s. Boule incorrectly reconstructed Neanderthals’ anatomy, giving them a stooping posture, a slouching gait and a protruding, thrust-forward head. He also made assumptions that went far beyond anything he found in the fossil evidence. “It is probable that Neanderthal Man must have possessed only a rudimentary psychic nature, superior certainly to that of the anthropoid apes, but markedly inferior to that of any modern race whatsoever,” Boule concluded. Without doubt he had only the rudiments of articulate speech.” That fit conveniently with the view of Scottish anatomist Arthur Keith, who saw the Neanderthals as a race of primitives who’d been wiped out by “more virile” modern humans, just as European colonists had overwhelmed native peoples in the Americas and Australia.

NEANDERTHALS THE SAME SPECIES?

In the 1930s, however, scientific thinking about Neanderthals began to shift again; Neanderthal graveyards discovered in Italy and France showed evidence of complex burial rituals, such as tools and animal bones carefully placed with the bodies and a “crown of stones” surrounding a man’s skull. That suggested that Neanderthals, instead of being animalistic brutes, were intelligent creatures with spiritual beliefs. In the late 1940s, French paleontologist Camille Arambourg, after seeing an x-ray of his own neck vertebrae, noted striking similarities to those of Neanderthals, and showed that Boule’s analysis of Neanderthal anatomy had been wrong.

By the 1950s, scientists were emphasizing the similarities between Neanderthals and modern humans, rather than their differences, and some even argued that they actually belonged to the same species, just as different racial and ethnic groups do. As William Straus, Jr. and A.J.E. Cave wrote in a 1957 scientific article, if a Neanderthal “could be reincarnated and placed in a New York subway — provided that he were bathed, shaved and dressed in modern clothing — it is doubtful whether he would attract any more attention than some of its other denizens.”

Eventually, some even came to see Neanderthals not just as probable ancestors, but as the prehistoric equivalent of the 1960s counterculture. In his 1971 book *Shanidar; The First Flower People*, anthropologist Ralph S. Solecki argued that the Neanderthals were a gentle, peaceful society that took care of the elderly and infirm—with the obvious implication that they morally superior to the modern Americans waging a bloody war in Vietnam.

CHANGING THEORIES

But less than two decades later, scientific thinking about Neanderthals would undergo yet another drastic transition. In 1987, biochemists Rebecca Cann, Mark Stoneking and Allan Wilson published a paper in the scientific journal *Nature*, in which they used analysis of mitochondrial DNA from 147 people from around the world to show that the first anatomically modern humans had developed in Africa 200,000 years ago, apparently separately from the Neanderthals of Europe and the Middle East. The “out of Africa” theory not only rejected the idea that Neanderthals were among the ancestors of modern humans, but also lent credence to the notion that the spread of modern humans out of Africa to other continents had helped drive Neanderthals into extinction.

Once again, not everyone agreed. In 1998, the discovery in Portugal of the skeletal remains of a four-year-old boy with both Neanderthal and modern human features provided a boost to those who argue that Neanderthals are among the ancestors of today’s humanity. There seemed to be no clear way to resolve the controversy.

Then, in 2006, scientists at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany began working with a Connecticut company, 454 Life Sciences, on a project to map the Neanderthal genome, using DNA fragments extracted from Neanderthal remains. While that work is still in progress, one early finding from analysis of Neanderthal DNA suggests that it may well lead to yet another significant shift in our perception of Neanderthals. Researchers have discovered that Neanderthals had exactly the same version of the *FoxP2* gene, which is associated with the use of language, as modern humans — a similarity that would be difficult to explain if the two groups evolved separately. The discovery also raises the possibility that modern humans acquired the language gene by interbreeding with Neanderthals. If that proves to be true, it would mean that Neanderthals not only were our long-ago relatives, but contributed an important part of what it means to be human.