

# What does the archaeological record reveal about the behavioural repertoire of the Neanderthals?

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## Synopsis

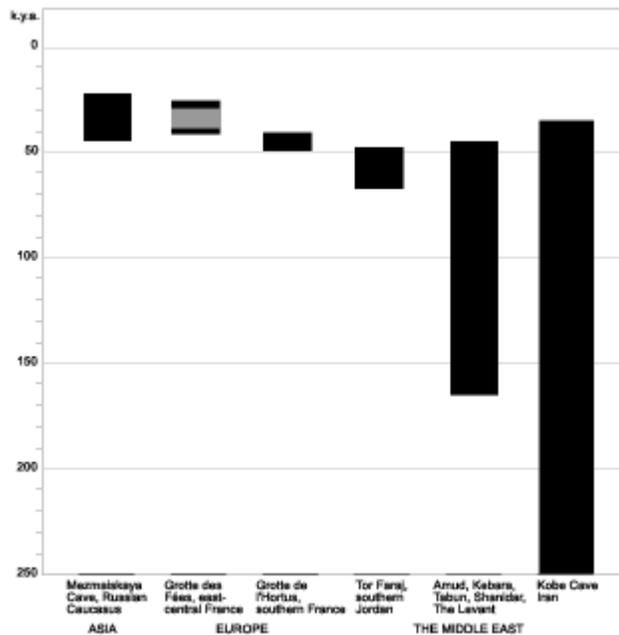
The Neanderthals were a robust, short and stocky people who lived between 300/250-35 k.y.a. mainly in Europe, the Middle East and central Asia who are source of great contention. Although they buried some of their dead, performed targeted hunting in groups, foraged, and made and adapted tools specific and indigenous to the locality, their humanity is under question. They traded raw materials with other Neanderthal groups, and with *Homo sapiens* through a large network, created artefacts with decoration, and used ochre pigment for paint. One particular group even performed artificial cranial modification for beauty. Neanderthals even show an ability to learn from others and their dwelling places were very similar to those of modern hunter-gatherers. Artefacts and fossils from the archaeological record prove one thing about these hominins: although they were a different species, in terms of behaviour, the Neanderthals were truly human.

## **What does the archaeological record reveal about the behavioural repertoire of the Neanderthals?**

The Neanderthals produced tools of stone, wood, bone and antler, they hunted and foraged for food, buried their dead and showed symbolic behaviour. They adopted living patterns similar to, and, for a time, coexisted with anatomically modern humans. Yet there is much controversy over the humanity of these hominins. This “large-brained, social, tool-using group of humans who survived for more than 100,000 years in some of the most physically demanding environments ever populated” (Shea 1998, p. S60) left behind a large body of evidence which can be used to reveal the behavioural repertoire of the Neanderthals.

The Neanderthals, *Homo sapien neanderthalensis* or *Homo neanderthalensis*, were short and stocky with short limbs, who were more robust than modern humans. Their faces were distinctive with large brow ridges and rather large noses. As they lived during the Ice Age, they “seem to have developed a body form consistent with the minimisation of body surface area and therefore heat loss” (Graves 1991, p. 518). The Neanderthals lived during the last glacial period, between 300/250-35 k.y.a. (Arsuaga et al. 1993, p. 534; Mellars 1996, p. 3). Neanderthal remains can be found in Europe, the Middle East and central Asia, and, although there is some controversy, have also have been found near Morocco (Mellars 1996, p. 3). They were geographically widespread, so their behaviour differed throughout the Neanderthal range (Hovers et al. 2003, p. 514). Specific studies of Neanderthal groups (Belfer-Cohen & Hovers 1992; Golovanova et al. 1999; Gravina, Mellars & Bronk Ramsey 2005; Henry et al. 2004; Marean et al. 1998; Pettitt 1997) cover Europe, central Asia and the Middle East, dating 250-32 k.y.a. (see

Figure 1). Along with general Neanderthal studies, these specific studies demonstrate a wide range of Neanderthal behaviour covering burial, subsistence, tools, networking, symbolism, coexistence with *Homo sapiens* and living patterns.



**Figure 1:** Neanderthal occupation in Asia, Europe and the Middle East. Asia: Mezmaiskaya Cave, Russian Caucasus, 45-32 k.y.a.; Europe: Grotte des Fées de Châtelperron, east-central France, 40-39 k.y.a. & 36-34.5 k.y.a. (Châtelperronian levels) and 39-36 k.y.a. (Aurignacian level) & Grotte de l'Hortus, southern France, 50-40 k.y.a.; The Middle East: Tor Faraj, southern Jordan, 69-49 k.y.a., Amud, Kebara, Tabun & Shanidar caves, The Levant, 166-45 k.y.a. & Kobe Cave, Iran, 250-35 k.y.a. (Belfer-Cohen & Hovers 1992; Golovanova et al. 1999; Gravina, Mellars & Bronk Ramsey 2005; Henry et al. 2004; Marean et al. 1998; Pettitt 1997)

There is an unusual amount of preservation of Neanderthal skeletons in the fossil record. Something unusual happened to allow this to occur, with the most likely explanation being deliberate burial (Gargett et al. 1989, p. 184). The relatively few burials were simple interment (Hillson 2000, p. 2; Pettitt 2000, p. 358). The first Neanderthal burials, representative of complex behaviour, occurred around 150 k.y.a. at Tabun (Langley, Clarkson & Ulm 2008, p. 292). At Mezmaiskaya Cave, a partial Neanderthal skeleton was found, dated 45-40 k.y.a., without ritual artefacts (Golovanova et al. 1999, pp. 83-84). Although a few items, such as the notched bone with parallel lines (Langley,

Clarkson & Ulm 2008, p. 297) and flowers at Shanidar 4 (Belfer-Cohen & Hovers 1992, p. 468; Gargett et al. 1989, p. 182), have been found in graves, there is a general lack of grave goods in the archaeological record. Nonetheless, such “deliberate burials [imply] the existence of some kind of strong social or emotional bonds within Neanderthal societies” (Mellars 1996, p. 381). Burial may or may not indicate a belief in life after death (Wunn 2000, p. 447), but this behaviour is a symbolic act stemming from close social relationships within the group.

Sustenance gathering is evidence of a proficient hunter-gatherer group with the cognitive ability to understand the world around them. At Kobe Cave, Neanderthals preferred to target the wild goats of the area - they smashed open long bones to extract the marrow (Marean et al. 1998, p. S90). The Neanderthals of the Levant used hafted stone points with impact fractures, similar to stone spears and arrow points used in North America (Shea 1998, p. S51) for hunting on the steppes. At Mezmaiskaya Cave, faunal remains show they favoured prime-aged bison, indicating that they hunted seasonally and specifically targeted adult animals (Golovanova et al. 1999, pp. 84-85). Evidence from Tor Faraj shows other foods eaten at the site - nuts, roots and tubers, palm tree fruits and figs (Dusseldorp 2009, p. 43; Henry et al. 2004, p. 24). European Neanderthals ate plant foods as a small but important part of their diet (Hoffecker 2002, p. 110). Neanderthals also hunted small game including hares, rabbits, tortoises and other reptiles, ate ostrich eggs (Dusseldorp 2009, p. 43; Langley, Clarkson & Ulm 2008, p. 302), and in the Levant and other Mediterranean sites, ate shellfish (Hoffecker 2002, p. 110-111). The archaeological record shows that Neanderthals targeted favourite animals, hunted seasonally, and foraged for other foods. This cognitively advanced

behaviour involved understanding the seasons and cycles of life, and the ability of the group to use it in their favour.

Group hunting is evidence of social relationships between Neanderthals which can be seen in the archaeological record. The weapons Neanderthals used were heavy throwing or thrusting tools. Along with the large amount of trauma evident on their skeletons, this indicates that their hunting technique involved large numbers chasing dangerous animals (Graves 1991, p. 519-520), such as the elephant killed with a wooden spear (Wunn 2000, p. 431). To kill such large beasts, Neanderthals participated in group hunting, showing that they had a pattern of mutual co-operation, and would have shared the kill (Mellars 1996, p. 362). Food sharing would “almost certainly have led to a very close integration of males and females in local groups” (Mellars 1996, p. 362). Tool making apprenticeship, another form of social integration, was a very long process (Graves 1991, p.529), which would indicate that Neanderthals could communicate with each other. The Neanderthal Levallois technique appeared across Europe and Western Asia around 300 k.y.a. (Hagen & Hammerstein 2007, p.4). At Mezmaiskaya Cave, Neanderthals made East European Micoquian Industry tools (Golovanova et al. 1999, p. 85). Other indigenous industries included the Châtelperronian, 45-33 k.y.a., the Uluzzian, 36-32 k.y.a., and the Szeletian, 35-30 k.y.a. (Graves 1991, p. 522; Jochim 2002, pp. 64-65). The prolonged use and resharpening of tools, such as Châtelperronian bone awls, required that knowledge to be communicated down the generations (Wolpoff 2004, p. 537). Tool making and usage were social activities, with traditions being passed down through the ages. Neanderthals must have had close cooperation, strong social bonds and communication within their groups.

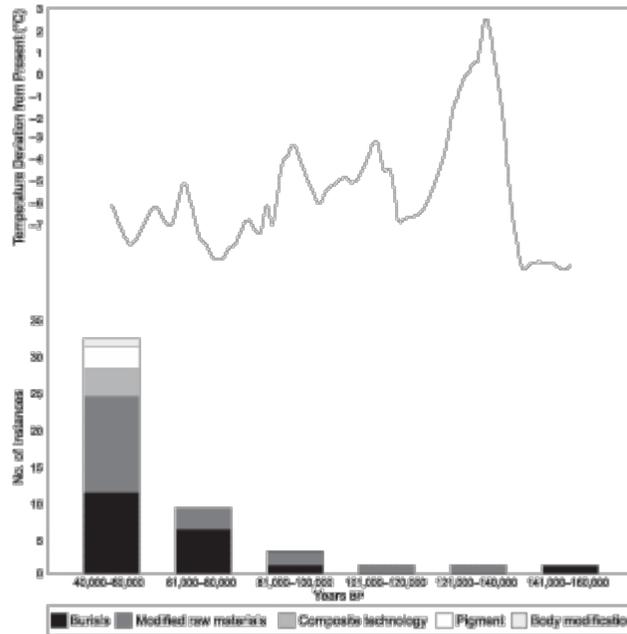
Evidence of intergroup exchange is that of exotic goods being dispersed throughout Neanderthal sites. This evidence suggests that they travelled widely and had an exchange network with other Neanderthal groups and *Homo sapiens* (Graves 1991, pp. 522-523; Speth 2004, p. 525). For this to have been possible, communication and similar cognition was essential. Mellars (1996, p. 163) suggests that this trade relationship may have been for more than goods, extending to an exchange of mates between the two species. For this to have happened, the Neanderthal behavioural range must have included language, social customs and an aptitude for symbolism.

A small number of Neanderthal bone artefacts have been found with visual symbolism in the form of decoration. Symbolism is the ability to represent objects, people and ideas with abstract visual, such as decorated artefacts, or vocal symbols (Langley, Clarkson & Ulm 2008, p. 291). Some perforated bones, perhaps for personal decoration, have been found at La Quina in southwest France dated 70-60 k.y.a. and Bocksteinschmiede in west Germany approximately 110 k.y.a. (Mellars 1996, p. 373), and an incised bone artefact at Taubach in Germany around 125–120 k.y.a. (Langley, Clarkson & Ulm 2008, p. 292). Pieces of ochre have been discovered at a dozen Neanderthal sites in southwest France (Mellars 1996, p. 69-70), which produce colours ranging from yellow to deep maroon. Many of the pieces show evidence of use, such as grinding powder or directly applying the colour to surfaces. These fragments first appeared around 60-55 k.y.a. as “pigment crayons and artefacts exhibiting pigment stains” (Langley, Clarkson & Ulm 2008, p. 300). These artefacts show that Neanderthals enjoyed beauty.

Artificial changes related to physical beauty appears in the archaeological record in the form of body modification. Neanderthal cranial deformation is “represented by Shanidar 1

and 5” at approximately 46 k.y.a. (Langley, Clarkson & Ulm 2008, p. 300). Infant head binding is one of the most widespread forms of aesthetic modification throughout history, which “implies a heretofore poorly documented personal aesthetic sense amongst these early humans” (Trinkaus 1982, p. 199). This suggests that Neanderthals understood the concept of beauty, supporting the idea of their use of symbolism in the forms of art.

Neanderthals certainly had the capacity for symbolic expression, although it was displayed differently to that of *Homo sapiens* (Hovers et al. 2003, p. 518). Neanderthal symbolic behaviour, that of burial, technological skill, social networks, art, music, aesthetics, communication and adaptation manifests exponentially throughout time in the archaeological record, with a rapid increase between 60 - 40 k.y.a., “suggestive of far greater rates of symbolic and complex behavioural artefacts and features” (Langley, Clarkson & Ulm 2008, p. 300). Burials started around 150 k.y.a., modified materials from 125 k.y.a., composite technology and pigmentation from 60 k.y.a., and the occurrence of body modification around 46 k.y.a. (Langley, Clarkson & Ulm 2008, p. 300); Figure 2 indicates that there was a great increase in both behavioural complexity and symbolism, indicating independent Neanderthal development in the lead up to the Châtelperronian period.



**Figure 2:** Occurrence of symbolic and complex behavioural instances in the Neanderthal archaeological record between 40-26 k.y.a. as against OIS curve (Mellars 1996 cited in Langley, Clarkson & Ulm 2008, Figure 2, p. 300).

While symbolism was part of the Neanderthal culture, the creative explosion that occurred coincided with their coexistence with *Homo sapiens*. One place where both species lived was at Grotte des Fées de Châtelperron. The sandwiching of the modern human Aurignacian between two Neanderthal Châtelperron levels demonstrate their chronological coexistence, “and therefore potential demographic and cultural interactions” (Gravina, Mellars & Bronk Ramsey 2005, p. 55). It highlights the Neanderthal ability to learn new ideas from another people and make them their own. The behavioural repertoire of the Neanderthals was so close to that of the archaic *Homo sapiens* that social interaction could and did occur at certain settlements.

Neanderthal shelters and settlements can reveal much about Neanderthal behaviour and their lives. At the Grotte des Fées mammoth tusks up to 2m in length were found in association with hearths in the centre of the cave. This is “a discovery that seems

strongly reminiscent of the mammoth-tusk 'hut' structure" found in Châtelperronian strata elsewhere in France (Gravina, Mellars & Bronk Ramsey 2005, p. 52). At Tor Faraj only hearths, sitting in depressions, were found behind the cave's drip line (Henry et al. 2004, p. 22). In conjunction with controlled use of fire, Neanderthals separated their activities into different areas: a sleeping area, a central domestic area where wood-work and butchering was done, an area for hide, bone and antler work, and an initial core processing area and dumping area (Henry et al. 2004, p. 26-28). This behaviour, the organisation of living space, was fundamentally along modern lines (Henry et al. 2004, p. 29). It is also evident that Neanderthals were able to adapt. They lived and worked in separate parts of their shelters, lived in close contact with each other, and they were able to change their environment to suit their needs. The use of fire and items for windbreaks, like the mammoth-tusk hut, show that they could make their lives more comfortable.

Neanderthal behaviour can be deciphered from the archaeological record. They buried some of their dead, understood and exploited nature for sustenance and created the tools with which to do so and had social networks. They had the aptitude for symbolic decoration and art, understood beauty, and lived with each other in social settings. Neanderthal behaviour differs little from that of modern humans, and the evidence of their lives can certainly be understood today. The archaeological record reveals that while Neanderthals were a different species to *Homo sapiens*, in their behavioural repertoire they clearly were human.

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