

Personal Ornaments and Symbolism Among the Neanderthals

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“The distinctive faculties of Man are visibly expressed in his elevated cranial dome—a feature which, though much debased in certain savage races, essentially characterises the human species. But, considering that the Neanderthal skull is eminently simial, both in its general and particular characters, I feel myself constrained to believe that the thoughts and desires which once dwelt within it never soared beyond those of a brute. The Andamaner, it is indisputable, possesses but the dimmest conceptions of the existence of the Creator of the Universe: his ideas on this subject, and on his own moral obligations, place him very little above animals of marked sagacity; nevertheless, viewed in connection with the strictly human conformation of his cranium, they are such as to specifically identify him with Homo sapiens. Psychical endowments of a lower grade than those characterising the Andamaner cannot be conceived to exist: they stand next to brute benightedness. (...) Applying the above argument to the Neanderthal skull, and considering ... that it more closely conforms to the brain-case of the Chimpanzee, ... there seems no reason to believe otherwise than that similar darkness characterised the being to which the fossil belonged” (King, 1864; pp. 96).

4.1. INTRODUCTION

As William King’s seminal definition well illustrates, cognitive impairment has been central to the notion that Neanderthals were a different species from the very beginning of human evolution studies. King’s paper is the written version of a presentation to the 1863 Newcastle meeting of the British Association for the Advancement of Science, and includes a footnote where, explaining that his mind had since changed, he went even further: “I now feel strongly inclined to believe that it [*Homo Neanderthalensis*] is not only specifically but generically distinct from Man.” This mid-19th-century perception of Neanderthal-ness was strengthened by Boule’s (1913) assessment of the complete skeleton discovered in 1908 at La

Chapelle-aux-Saints, in France, as belonging to an ape-like, hunchback creature with a stooping, imperfectly bipedal gait. The graphic reconstruction of the creature’s life appearance, directly inspired by Boule, powerfully conveyed the brute benightedness to which King’s Andamaner stood next and in which his Neanderthal would have been squarely immersed (Fig. 4.1).

It is my contention here that these early views continue to condition thinking about the Neanderthals, and this among the general public as much as within academia. Only such a deep paradigmatic bias can explain the widespread application of double standards in the evaluation of the empirical evidence that underpins ongoing debates about the place of Neanderthals in human evolution and the nature of their relationship with extant humanity. I have made this argument before (Zilhão, 2001, 2011), as have others (e.g., Trinkaus and Shipman, 1994; Wolpoff and Caspari, 1996; Roebroeks and Corbey, 2001; Speth, 2004), but research developments of the past decade have intensely illuminated the extent to which this remains a major problem. Therefore, it is useful to come back to the issue to further hammer in the point.

The Recent African Origin (RAO) or Mitochondrial Eve model of modern human origins that dominated the field since the mid-1980s proposed that all extant humans descended from a small East African population that speciated into *H. sapiens*. Thanks to the competitive advantage granted by the biological changes embodying the transformation, and attendant behavioural consequences, those first fully human beings would have rapidly expanded from their source area into adjacent regions of Africa, first, and then into Eurasia (e.g., Stringer and Andrews, 1988; Stringer and Gamble, 1993). Along the way, the local “archaic” populations encountered would have been replaced, extinction without descent having thus been the fate of such aboriginal groups, namely the Neanderthals.



FIGURE 4.1 Reconstruction of the La Chapelle-aux-Saints Neanderthal by the Czech artist František Kupka. Produced in 1909, this reconstruction was heavily influenced by Marcelin Boule’s view of the skeleton as belonging to a creature not fully human.

Against the background of its present-day primate relatives, advanced cognition is the hallmark of the human species. Therefore, the underlying assumption of such RAO views was that the material evidence for a species-level distinction of “moderns” (in skeletal morphology as much as in material culture) also served as a proxy for a species-level distinction at the cognitive level – essentially the same point that King had made. Although differences of detail existed, the notion was, basically, that people who were like “us” anatomically should also have been like “us” cognitively. In other words, they would have been endowed with symbolic thinking and language. Conversely, people who were not like “us” anatomically could not have been like “us” cognitively either. Thus, Neanderthals and other coeval archaic forms of humanity living elsewhere in Africa, Europe or Asia were seen as somehow handicapped by comparison, lacking in symbolic thinking and language, or having only primitive, inferior versions of them (e.g., Davidson and Noble, 1996).

These notions were put into practice through the use of definitions containing explicit criteria upon which “behavioural modernity” could be empirically recognised. Initially, such criteria were based on the archaeological record of Europe, and essentially consisted of lists of traits separating the Middle from the Upper Palaeolithic (e.g., White, 1982). The inadequacy of such lists gradually became apparent as the realisation sank in that the emergence of anatomical modernity in Africa went back beyond 100,000 years ago and, therefore, predated the Upper Palaeolithic of Europe by more than fifty millennia. This carried the implication that either the emergence of anatomical and behavioural/cognitive modernity had to be dissociated – as in Klein’s (2003) view that the capacity for language resulted from a genetic

mutation occurring among African moderns no earlier than some 50,000 years ago – or new definitions were needed. Eventually, this latter alternative prevailed and, over the last decade, building on McBrearty and Brooks’ (2000) vast survey of the evidence, archaeologists working in Africa developed a set of criteria adapted to the nature of their record and based on features whose presence/absence served to assess whether the species-specific “modern behaviour” of “modern humans” was or was not reflected in the late Middle and early Upper Pleistocene sites of that continent.

The following are two summary statements concerning indicators of “behavioural modernity” in the archaeological record of Africa whose validity is widely accepted by palaeoanthropologists:

“Artifacts or features carrying a clear, exosomatic symbolic message, such as personal ornaments, depictions, or even a tool clearly made to identify its maker” (Henshilwood and Marean, 2003).

“Complex use of technology, namely the controlled use of fire as an engineering tool to alter raw-materials; for example, heat pre-treating poor-quality siliceous rocks to enhance their flaking properties” (Brown et al., 2009).

Overall, there is little question that these and other authors (e.g., d’Errico et al., 2003) did a very good job in highlighting the extent to which, using such criteria, one could identify the crossing of a significant behavioural threshold in the archaeological record of the African continent, and especially so in that of southern Africa, sometime after 150,000 years ago. This recognition satisfied the expectations of the RAO model in that it supported

the notion that anatomical and behavioural modernity emerged in tandem, as one would expect if both resulted from the differentiation of a new species. Put another way, in any particular time/space configuration, the absence of those defining features from the record would reflect the fact that modern humans were not yet in existence, while their presence would reflect the time of emergence (at the source) or immigration (elsewhere) of the new species.

The above was evidently *necessary* for the RAO model to be supported, but it was not *sufficient*. What was rarely, if ever, asked from within this view of modern human origins was: Does the application of such criteria also enable us to categorise the Neanderthals and other anatomically archaic peoples as behaviourally nonmodern, i.e., as behaving like Africans of the period before 150,000 years ago even when living no more than just 100,000 or 50,000 years ago? Only if the answer to this question was “yes” would the model be logically consistent and, indeed, such a positive answer has been widely asserted or assumed, often on the basis of exceedingly cursory reviews of the Eurasian evidence that tended to explain away counter examples on the basis of the evidence being insecure (e.g., as coming from “old excavations”). In retrospect, however, we have to ask ourselves the following question: As RAO and the subsequent African-based “behavioural modernity” or “human revolution” paradigms were being developed, what knowledge was already in existence concerning the behaviour of the Neanderthals? Is it true that all secure evidence then available suggested that European peoples of the first part of the last glacial behaved like the Africans of previous glacials?

4.2. “NEANDERTHAL BEHAVIOUR”: THE MID-20TH CENTURY KNOWLEDGE BASE AND THE HUMAN REVOLUTION

The above-quoted African-based definitions of behavioural modernity put forth by Henshilwood and Marean (2003)

and by Brown et al. (2009) emphasise symbolic artefacts or features as well as complex technology. Concerning symbolism, let us first take a look at the evidence that has been available since the 1930s’ publication of the excavation of the French rockshelter of La Ferrassie, in the Dordogne (Peyrony, 1934; Defleur, 1993), where a number of individual burials containing the remains of seven people deceased in infancy, childhood and adult age were found in a single level of a deeply stratified deposit. The Neanderthal morphology of the remains is unquestionable, the integrity of the context is documented by the very fact of skeletal articulation and the associated stone tools have been used by archaeologists for decades to define a specific variant of the Eurasian Middle Palaeolithic, the Ferrassie-type Mousterian (Bordes, 1968). The chronology of this culture elsewhere in France indicates that the cemetery use of La Ferrassie by Neanderthals dates between 60,000 and 75,000 years ago. All of this is well known and rather uncontroversial, but that is not so with two other significant features of these burials. The first is that a bone fragment decorated with four sets of parallel incisions lay alongside the La Ferrassie 1 individual, an adult male; the second is that the La Ferrassie 6 individual, a 3- to 5-year-old child, had been interred in a deep pit covered by a limestone slab whose inferior face had been decorated with cup holes (Fig. 4.2).

A second example of symbolism among Eurasian Neanderthals concerns the Châtelperronian levels of the Grotte du Renne, at Arcy-sur-Cure, France (Leroi-Gourhan, 1961; Leroi-Gourhan and Leroi-Gourhan, 1965; d’Errico et al., 1998; David et al., 2001; Schmider, 2002; Zilhão, 2006, 2007, 2011; Caron et al., 2011). Although the fieldwork, directed by A. Leroi-Gourhan, took place more than 50 years ago (1949–1963), this was probably the first site in the world to be excavated with modern techniques (stratigraphic excavation and area exposure of occupation surfaces, spatial plotting of key finds and features and systematic sieving of the deposits) over an extended period

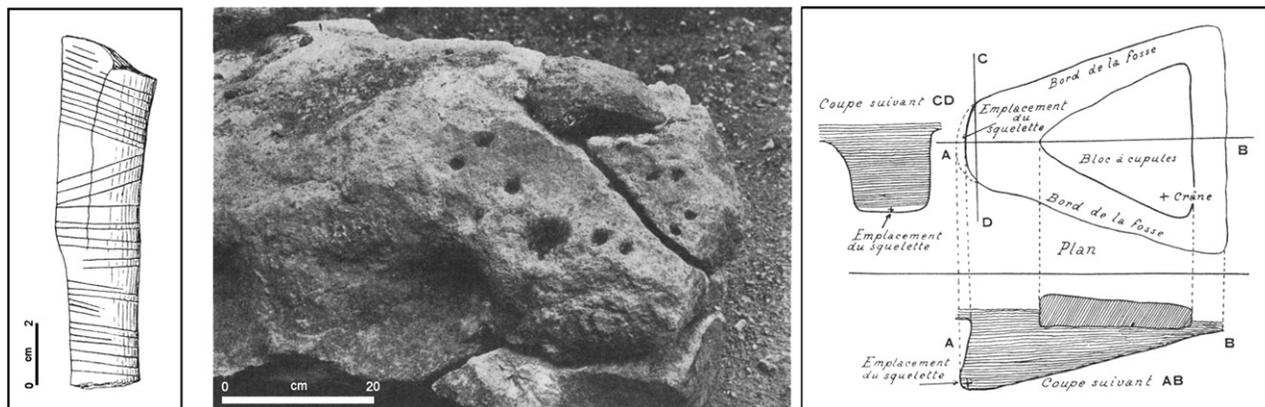


FIGURE 4.2 La Ferrassie (Les Eyzies, France). Left, engraved bone found with the adult skeleton in burial 1. Middle, the lower face, decorated with cup holes, of the stone slab that covered the burial pit of individual 6, a 3 to 5-year-old child. Right, plan and profile of the burial. *After Peyrony (1934).*

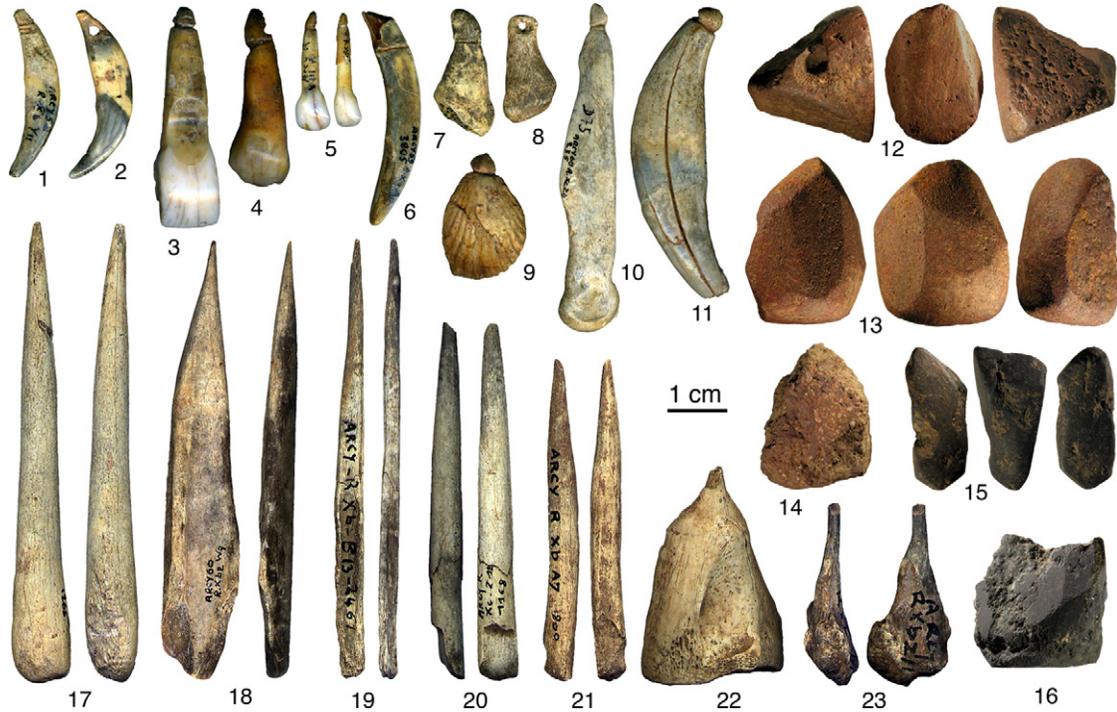


FIGURE 4.3 Grotte du Renne (Arcy-sur-Cure, France). Châtelperronian symbolic artefacts. Personal ornaments made of perforated and grooved teeth (1–6, 11), bones (7–8, 10) and a fossil (9); red (12–14) and black (15–16) colourants bearing facets produced by grinding; bone awls (17–23). *After Caron et al. (2011).*

of time. Moreover, the reliability of the described stratigraphy has since been confirmed by limited excavation of a stratigraphic baulk carried out in 1998. These observations are relevant because the Châtelperronian levels yielded no less than 39 personal ornaments or fragments thereof (mostly pendants made of animal bone and teeth and of fossils), as well as ~18 kg of yellow, black and (mostly) red colourants (Fig. 4.3). At the time, these finds were significant in two ways. First, they represented the earliest evidence for symbolism anywhere, justifying Leroi-Gourhan's (1964) view of the Châtelperronian as representing the “dawn of art.” Second, they were associated with human teeth of archaic affinities, suggesting that their creators could well have been the Neanderthals. This suspicion was eventually confirmed in 1979, with the discovery of a Neanderthal skeleton in a Châtelperronian context at the French site of St.-Césaire, in the Charentes (Lévêque and Vandermeer, 1980), and later, for the Grotte du Renne itself, with the results of the comparative study of the human teeth and child temporal bone found in its Châtelperronian levels (Hublin et al., 1996; Bailey and Hublin, 2006).

Where complex technology is concerned, the key example comes from the open-air site of Königsau. Located in the margins of the Ascherlebeiner paleolake in Saxony-Anhalt, eastern Germany, this site was excavated in 1963 by Mania (2002). It yielded two fragments of birch

bark pitch, one of which bore a human fingerprint as well as impressions of a flint blade and of wood-cell structures, indicating the use as an adhesive material to fix a wooden haft to a stone knife. Chemical analysis of these finds (directly dated by radiocarbon, in the meanwhile, to $\geq 50,000$ years ago) eventually showed that the pitch had been produced through a several-hour-long smouldering process requiring a strict manufacture protocol – under exclusion of oxygen and at a tightly controlled temperature (between 340 and 400 °C) (Koller et al., 2001). Similar finds have since been made at the Italian site of Campitello, where they date to an even earlier period, >120,000 years ago (Mazza et al., 2006). This birch bark pitch is the first known artificial raw material in the history of humankind, and the fire technology underpinning its production is of a level of sophistication that was to remain unsurpassed until the invention of Neolithic pottery kilns.

Thus, by the late 1980s, when the Mitochondrial Eve hypothesis was put forth, there was sufficient evidence indicating that, under the criteria subsequently formalised by palaeoanthropologists working in Africa, the Neanderthals had been culturally modern, even if, biologically, as supporters of RAO would go on to argue, they had been a different species and had made no genetic contribution to subsequent generations of humans. It is important to note, in this context, that, at the time, nothing even remotely equivalent to the European Middle Palaeolithic finds of the

1930s–1960s existed in the archaeological record of the African Middle Stone Age (MSA). Until the end of the 20th century, in fact, the earliest secure evidence of symbolic material culture in the African continent was represented by the painted slabs of the Apollo 11 cave, dated to about 30,000 calendar years ago (Wendt, 1974, 1976).

Therefore, with the benefit of hindsight, it seems obvious that only the following alternatives represented logically consistent corollaries of the late 1980s knowledge base concerning Neanderthals and modern humans: either cultural evolution needed to be decoupled from biological evolution, with Neanderthals and Moderns representing morphological “species” of humans that, cognitively and behaviourally, were equally advanced, implying that such capabilities were already present in the common ancestor, or, if a direct link between cognition, behaviour and the underlying biological/genetic variation was postulated, then, on the strength of the empirical evidence, Neanderthals had to be considered the more advanced species.

Given this, the research questions that should have arisen as a by-product of Mitochondrial Eve would have to be as follows:

- in the first case, what explained the differential manifestation, in time and space, of biological capabilities with a very remote ancestry, and why did it take so long for them to become apparent in the archaeological record?
- in the second case, why were Neanderthals replaced by modern humans, if, on the strength of the archaeological evidence, they seemed to have been the behaviourally more advanced (maybe as a result of a biologically based cognitive superiority) “species”?

Instead, the questions that inspired research carried out under the human revolution umbrella for the subsequent quarter of a century were the following: Given that Neanderthals went extinct, early moderns must have been the superior “species,” so, how do we explain away the European evidence? And, given that anatomical modernity emerged in Africa before 100,000 years ago, shouldn’t we expect behavioural modernity to have emerged alongside and, if so, where is the evidence hiding, and how do we go about uncovering it?

4.3. NEANDERTHAL SYMBOLISM: THE LAST DECADE OF RESEARCH

It is undeniable that these human revolution questions were productive. They led to a spurt of research in Africa that eventually changed our knowledge of the continent’s MSA rather dramatically, making possible the formulation of the definitions of behavioural modernity given above. The

critical discoveries were perhaps (a) the *Nassarius kraussianus* shell beads and engraved ochre crayons from the Blombos Cave, in South Africa, (b) the decorated ostrich eggshell containers from the Diepkloof rockshelter, also in South Africa, (c) the *Nassarius gibbosulus* shell beads from the Grotte des Pigeons (Morocco) and a number of other sites in the Maghreb, (d) the heat pretreatment of the silcrete used for the manufacture of bifacially flaked points and blade/bladelet blanks documented at the Blombos Sands and Pinnacle Point sites of South Africa for the Still Bay and Howiesons Poort facies of the regional MSA and (e) the harpoon-like bone points from Katanda, Democratic Republic of the Congo, where such points are likely to have been used for the catching of large fish (Yellen, 1996, 1998; Henshilwood et al., 2004; Bouzouggar et al., 2007; Brown et al., 2009; Texier et al., 2010).

One could have expected these finds to have led the experts to conclude that the apparent conundrum of the late 1980s (Neanderthals, the behaviourally more advanced species, replaced by the less advanced Moderns) was simply an artefact of insufficient research. Simply put, as some of the evidence summarised in the preceding paragraph goes back to as much as 100,000 years ago, “out-of-Africa” and the “human revolution” could indeed work because symbolism in Africa was as early as, if not earlier than, symbolism in Europe. More often than not, however, this new evidence was portrayed as vindicating the notion that, from the beginning, Moderns had had what Neanderthals had never had, the demise of the latter thus becoming self-explanatory. As a result, the last decade of the 20th and the first decade of the 21st century were still characterised by intense, often acrimonious, debate concerning the reliability of the evidence for Neanderthal symbolism. For the most part, controversies concerned the interpretation of the Châtelperronian, and particularly the evidence from the Grotte du Renne, but included assessments of the archaeology of the Middle Palaeolithic of Europe that omitted other key evidence. For instance, where La Ferrassie is concerned, even in the framework of extensive, almost encyclopaedic reviews of the French Mousterian (e.g., Mellars, 1996), commentators generally ignored the existence of the decorated bone associated with individual 1, or dismissed the cup holes in the slab covering the grave pit of individual 6 as possibly but not certainly artificial. Some even went as far as denying the fact of burial itself, not only at La Ferrassie but among Neanderthals in general (Gargett, 1989, 1999).

Elsewhere (Zilhão, 2007, 2011), I have provided detailed discussions of the empirical and logical inconsistencies that I perceive in the various propositions put forth in the context of the human revolution to explain away the evidence for Neanderthal symbolism; so only a brief inventory is necessary here. Basically, such propositions fall into two families, ones that accept the reality of the archaeological association between symbolic material

culture and Neanderthal-made stone tools and ones that reject it. Acculturation – the notion that the Neanderthals would have been led to adopt symbolic material culture, refashioned in their own terms, as a by-product of contact with immigrating moderns – was also proposed as an explanation for the Châtelperronian (Hublin, 2000), but this notion is not relevant here, as, by definition, it implies that the adopters possessed the same cognitive capabilities as those from whom the inspiration had been received.

The first family of explanations (e.g., Bordes, 1981; Stringer and Gamble, 1993; Hublin et al., 1996; Gravina et al., 2005; Mellars, 1999, 2005; Bar-Yosef, 2006; Bar-Yosef and Bordes, 2010) revolves around the notion that the association between symbolic material culture and Neanderthal-made stone tools is incidental and an artefact of long-term regional contemporaneity between late Neanderthal and early modern human cultures. For instance, the Châtelperronian could in fact have been made by modern humans, with the St.-Césaire skeleton representing the victim, not the maker, of the stone tools found in the deposit that contained it. Or fluctuating boundaries between the territories of the two groups might have led to situations where the remains of consecutive occupations of the same place by one and then the other became incorporated in an occupational palimpsest where the symbolic artefacts represented material left behind by modern humans, not Neanderthals. Alternatively, in the course of their perambulations across territory previously used by modern humans, Neanderthals could have come across abandoned material culture items that they collected as *curiosa* and brought back to their camps. Finally, the objects might be genuine Neanderthal craft but reflected imitation of behaviours observed among their modern human neighbours without any understanding of the deep symbolic meaning underlying the functional role they played in the societies of those neighbours. In a distant echo of King's (1864) comparative approach, the Neanderthals were even compared to children and to the “primitives” of 19th- and early 20th-century ethnography:

“... the replication of aeroplane forms in the New Guinea cargo cults hardly [implies] an understanding of aeronautics or international travel (...). To draw another analogy, if a child puts on a string of pearls, she is probably doing this to imitate her mother, not to symbolise her wealth, emphasise her social status, or attract the opposite sex” (Mellars, 1999; pp. 350).

The second family of explanations revolves around the contentions that no symbolism can, in fact, be inferred from the purported “symbolic” material culture documented among the Neanderthals or that the association of such material culture with Neanderthal-made stone tools is spurious and an artefact of postdepositional processes. Where burials are concerned (e.g., Gargett, 1989, 1999), the evidence was deemed equivocal and it was argued that

purposeful protection is not necessary to account for the preservation of articulated skeletons, which could result from the operation of entirely natural processes. Where personal ornaments are concerned (e.g., White, 2001, 2002; Taborin, 2002), it was pointed out that most of the evidence comes from the Châtelperronian and even then practically from a single site, the Grotte du Renne, where the corresponding levels are overlain by Aurignacian ones – as the Aurignacian is modern human related, the simplest explanation for the anomaly would be that the personal ornaments found deeper in the sequence are intrusive items.

After much debate, the first family of explaining-away propositions can nowadays be safely put to rest (and, for the same empirical reasons, such is also the case with acculturation). The analysis of continent-wide chronostratigraphic patterns (Zilhão and d'Errico, 1999, 2003; Zilhão, 2006, 2007), coupled with improvements in radiocarbon dating that corrected erroneous results and corroborated the conclusions derived from chronostratigraphy (e.g., Higham et al., 2009), has shown that the emergence of the Châtelperronian occurred sometime between 45,000 and 43,000 years ago. Therefore, it predates by many millennia both the Aurignacian (the earliest dates for which are of some 41,500 years ago) and the earliest unambiguous skeletal evidence for anatomical modernity anywhere in the continent (which, at present, is represented by the two Oase fossils from Romania, the Oase 1 mandible, directly dated to about 40,000 years ago, and the Oase 2 cranium; Trinkaus et al., 2003; Rougier et al., 2007). Therefore, even if one were to admit that the specific associations seen at St.-Césaire and the Grotte du Renne are open to question, the corollary that the Châtelperronian could have been made by modern humans instead of Neanderthals would be valid only if proof were to be provided that modern humans were present in Europe well before the time of the Oase fossils.

Recently, claims that such was the case have been forthcoming indeed (e.g., Benazzi et al., 2011; Higham et al., 2011), but so far they remain unsupported. Higham et al.'s argument is that the Kent's Cavern maxilla, in whose teeth they recognise modern human affinities, dates to the 43rd millennium. However, they did not date the fossil itself. The age estimate is based on the presumed stratigraphic association of the maxilla with some faunal remains that they did date, but the finds come from a context that was very poorly excavated and where recent archaeological work identified severe stratigraphic disturbance (Pettitt & White, 2012); in fact, the specimen could well be of much more recent age, as eventually was shown to be the case with a significant number of human remains once thought to date to the time of the Middle-to-Upper Palaeolithic transition (most famously those from the German cave site of Vogelherd; Conard et al., 2004). Benazzi et al., in turn, argue that two deciduous molars

from level E-III of Grotta del Cavallo (Nardò, Italy), placed beyond 43,000 years ago by dates for the overlying strata, are of modern humans. However, a number of studies have shown that, in tissue organisation as much as in external morphology, the overlap between Neanderthals and modern humans is such that secure assignment of isolated teeth to one or the other is simply not possible. For instance, Bayle et al. (2010) have shown that, in the dentition of a single individual, some teeth can present the “Neanderthal” endostructural pattern and other teeth the “modern human” pattern, while the statistical method developed by Bailey et al. (2009) on the basis of a sample of 158 teeth securely associated with Neanderthals and Upper Palaeolithic modern humans classified the Oase 1 mandibular dentition as modern and the Oase 2 maxillary dentition as Neanderthal.

Where the second family of explaining-away propositions is concerned, results from the recent re-analysis of the context of the child skeleton excavated in 1961 at Roc-de-Marsal (Dordogne, France) would seem, at first glance, to provide supporting empirical evidence (Sandgathe et al., 2011). However, even if this particular instance of a Neanderthal burial were to be rejected it does not necessarily exclude all other contenders. The key argument here is one that Leroi-Gourhan (1964) had already advanced more than two decades before the onset of the 1990s debate on whether Neanderthals had indeed buried their dead: If the large number of articulated human skeletons featured by the archaeological record of the Middle Palaeolithic is not a reflection of the emergence of intentional burial, how then do we explain (a) why identical instances of articulated human skeletons remain unknown from earlier levels of similar (if not the same) sites and (b) why do we not find identical instances of articulated skeletons of other cave-dwelling animals (foxes, wolves, hyenas, etc.) in the same deposits? In any case, intentional interment is documented by the ongoing re-excavation work carried out at the La Chapelle-aux-Saints complex of cave and rockshelter sites. This work has corroborated the original excavators’ accounts and was even able to re-expose the actual burial pit described by them at the Bouffia Bonneval, the 1908 site where the old man’s skeleton was found, thereby confirming the ontological reality of both the feature and the behaviour that produced it (Rendu et al., 2011).

The notion that the personal ornaments from the Châtelperronian of the Grotte du Renne are intrusive is also completely inconsistent with their vertical distribution across the site’s stratigraphic sequence: two-thirds of the combined total for the site’s Aurignacian and Châtelperronian levels came from the lowermost Châtelperronian, and only 17% were found in the levels whence all the others had been putatively displaced. No less an inconsistency is apparent when the notion is contrasted with the vertical distribution of the index fossils of

the relevant technocomplexes: not one out of 287 Dufour bladelets and not one of their 2800 unretouched blanks (Aurignacian diagnostics recovered in level VII) moved down into the Châtelperronian (found in levels VIII–X), while only one out of 385 Châtelperron points (diagnostic of the Châtelperronian) moved up into the Aurignacian. This pattern confirms the overall stratigraphic integrity of the site, as one could easily surmise from the good preservation of habitation features in the basal Châtelperronian deposit, where the spatial distribution of ornaments, worked bone, pigments and pigment-processing tools is congruent with the location of those features (Caron et al., 2011; Fig. 4.4).

Moreover, the Grotte du Renne is not alone. In France, other Châtelperronian sites have yielded similar types of ornaments, namely the rockshelter of Quinçay, in the Charentes (Fig. 4.5), where intrusion from overlying Aurignacian levels is hard to defend, as such levels are nonexistent at the site and the Châtelperronian deposits are sealed by collapsed limestone slabs several metres long and tens of centimetres thick (Roussel and Soressi, 2010). In Germany, the find horizon Ranis 2 of the Ilsenhöhle, a collapsed rockshelter excavated in the 1930s near Ranis, Thuringia (Hülle, 1977), yielded an ivory disc with a central hole, as well as a needle-like bone point. The associated stone tools have Altmühlian/Szeletian affinities, i.e., belong in a technocomplex characterised by the production of fine bifacial foliates that is found across southern Germany, Moravia and southern Poland. Across its area of occurrence, this particular type of stone tool production is radiocarbon- or stratigraphically-dated to before the Aurignacian and to about the same time interval as the Châtelperronian. In Belgium, 19th-century excavators working at the site of Trou Magrite (Pont-à-Lesse) found an ivory ring identical to those from the Châtelperronian of the Grotte du Renne. The associated lithics form a mixed collection where three different components (late Mousterian, Altmühlian/Szeletian and Aurignacian) can be recognised and, against previously held views (Otte, 1979; Lejeune, 1987; Moreau, 2003), the regional setting now favours the hypothesis that this object relates not to the Aurignacian but to one of the other, Neanderthal-associated occupations of the site. In Bulgaria, three items were recovered in level 11 of the Bacho Kiro cave (Dryanovo), the type site of the Bachokirian, which is broadly contemporary with the Châtelperronian: a spindle-shaped bone pendant that is oval in cross section and grooved at the narrow end, and fragments of two pierced teeth from unidentified species (Kozłowski, 1982). Finally, in central and eastern Mediterranean Europe, the Uluzzian technocomplex, now firmly dated to the time range of the Châtelperronian at the cave site of Klisoura 1 (Prosymna, Greece) and at the rockshelter of Fumane (Molina, Italy), features large numbers of shell beads, mostly *Dentalium* sp.

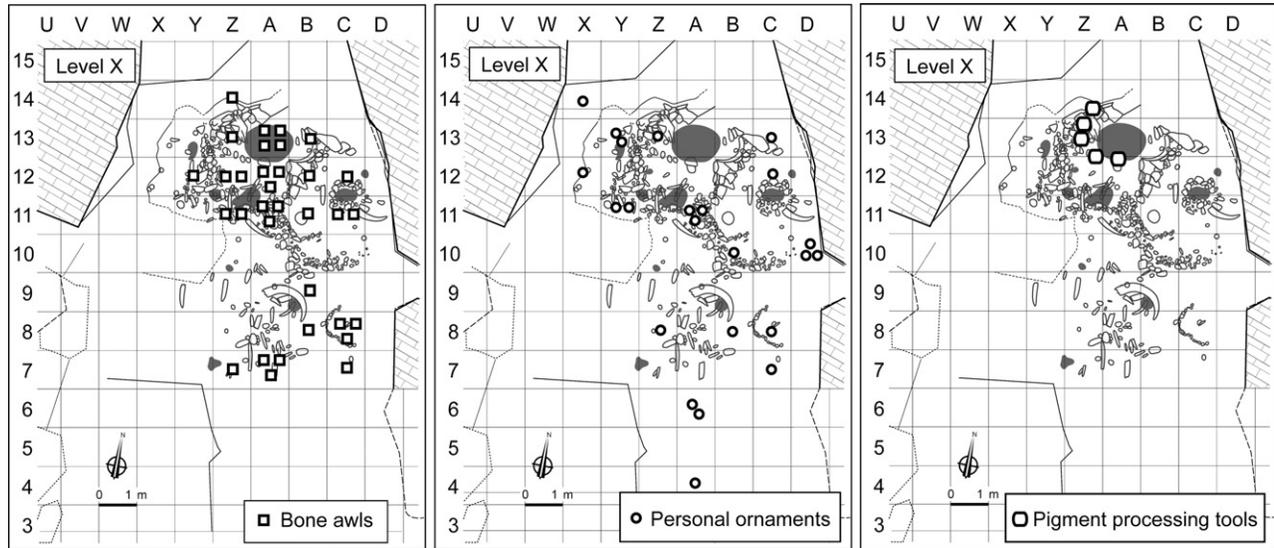


FIGURE 4.4 Grotte du Renne (Arcy-sur-Cure, France). Distribution of bone awls, ornaments and pigment-processing tools in Châtelperronian level X. The areas in grey are hearths. After Caron *et al.* (2011).



FIGURE 4.5 La Grande Roche de la Plématrie (Quinçay, France). Perforated wolf canine from the Châtelperronian. After Zilhão and d'Errico (1999).

tubes (Gioia, 1990; Palma di Cesnola, 1993; Koumouzelis *et al.*, 2001a, 2001b; Higham *et al.*, 2009; Peresani *et al.*, 2011).

In each case, these technocomplexes represent the initial Upper Palaeolithic of the corresponding regions, ranging in calendric age between ~41,000 and ~45,000 years ago. Recently, however, evidence has been produced that personal ornamentation was in existence in the

Neanderthal world even during the preceding Middle Palaeolithic. At Cueva de los Aviones (Cartagena, Spain) and Cueva Antón (Mula, Spain), four types of finds were made in Mousterian levels dating to as early as ~50,000 years ago (Zilhão *et al.*, 2010a; Figs. 4.6 and 4.7): perforated shells of large marine bivalves of the genera *Acanthocardia*, *Glycymeris* and *Pecten*, some of which are painted; one unperforated upper valve of the Mediterranean spiny oyster, *Spondylus gaederopus* (characterised by exuberant sculpture and vivid red or violet colour, two features that inspired collection for ritual purposes in a large number of archaeological and ethnographic contexts worldwide), which had been used as a container for the storage or preparation of a complex cosmetic recipe whereby shiny bits of freshly ground hematite and pyrite (black) were added to a base of lepidocrocite (red); lumps of iron pigments of different mineral species (hematite, goethite and siderite), but mostly of yellow natrojarosite (whose only known use is in cosmetics); and a kind of stiletto made of an unmodified pointed bone bearing pigment residues on the broken tip, suggesting use in the preparation or application of colourants.

There can be little doubt that the straightforward interpretation of this Spanish material is that the pigments were used in bodily, most likely facial, decoration, and the perforated shells in personal ornamentation, probably as neck pendants. Body painting has also been inferred for the crayons of black manganese found at the Mousterian site of Pech de l'Azé (Carsac-Aillac, France), and in this case such an interpretation is supported by experimental replication and use-wear analysis (Soressi and d'Errico, 2007). Like those from Cueva de los Aviones, the similarly perforated and ochred *Glycymeris* sp. shells from the Middle



FIGURE 4.6 Cueva de los Aviones (Cartagena, Spain). Perforated shells from Moustierian level II: 1. *Acanthocardia tuberculata*; 2-3. *Glycymeris insubrica*. Remains of red pigment (hematite) were found adhering to the inner side of no. 3. After Zilhão et al. (2010a).

Palaeolithic of Qafzeh, in Israel (Bar-Yosef et al., 2009), have also been interpreted as personal ornaments (in this case, in a modern human-related context and, as one would expect, rather uncontroversially). This evidence from the Eurasian Middle Palaeolithic has since been further strengthened by the finding in the Mousterian levels of Fumane of cut-marked bones of large birds of prey whose skeletal provenance, processing patterns and taphonomic context leave little doubt that they stand for the intentional extraction of feathers for ornamental purposes (Peresani et al., 2011).

In short, the makers of the Châtelperronian and coeval European technocomplexes must have been the Neanderthals simply because there was nobody else around in Europe at that time; the presence of body painting and personal ornamentation in those technocomplexes' cultural repertoire is demonstrated by the association of the corresponding artefacts with diagnostic stone tools in archaeological contexts whose integrity has passed the test of intensive scrutiny; similar, earlier evidence is now known from the Middle Palaeolithic; so no reason exists to treat such associations as problematic to begin with.

4.4. ONGOING CONTROVERSIES: WHY?

Overall, these recent developments have met widespread acceptance, among both academics and the general public, which is probably at least in part related to the fact that the first results of the Neanderthal genome project, published at about the same time (Green et al., 2010), corroborated the palaeontology- and archaeology-based assimilation model of Neanderthal "extinction" (e.g., Smith et al., 2005; Trinkaus, 2007). The realization that the time of contact witnessed significant interbreeding between aboriginal

Neanderthals and immigrating modern humans removed the rationale for thinking about that time in terms of different, competing species, rendering fully human cognition the null hypothesis for how Neanderthal brains worked and making expressions of fully symbolic material culture in their archaeological record the thing to be expected rather than an anomaly to be explained away.

Or so it should have been. However, while many former and prominent supporters of the human revolution have indeed taken the evidence on board and moved on to ask new questions arising out of this scientific watershed (e.g., Watts, 2010; d'Errico and Stringer, 2011), the old ways not only did not die out but continue to undergo (sometimes rather potent) bursts of expression. The invited PNAS commentary on recently obtained radiocarbon results for the Grotte du Renne, for instance, stated that their "central and inescapable implication" was that "the single most impressive and hitherto widely cited pillar of evidence for the presence of complex 'symbolic' behaviour among the late Neanderthal populations in Europe has now effectively collapsed" (Mellars, 2010; pp. 20148). The basis for this extraordinary claim resided in the fact that the dating results for the site's Châtelperronian levels (Higham et al., 2010) ranged from ~21,000 to ~49,000 radiocarbon years ago. This wide age range was taken to imply two things: (a) a substantial degree of stratigraphic mixing and (b) derivation from the immediately overlying Aurignacian of a significant proportion of the dated samples and, by inference, of the personal ornaments found in the Châtelperronian levels. Since the authors of the dating study had themselves cautiously flirted with such implications, the commentary was not entirely out of place, but, from an empirical point of view, were those implications in any way justified?



FIGURE 4.7 Two versions of the same concept, the ornamental use of perforated *Pecten* shells, both abandoned as half-valves after breakage, in the Middle and Upper Palaeolithic of the Mula basin (Murcia, Spain). Top: *P. jacobaeus* from Middle Gravettian level 7 of the rockshelter of Finca Doña Martina (Zilhão et al. 2010b). Bottom: *P. maximus* from Mousterian level I-k of Cueva Antón (Zilhão et al., 2010a). In both shells, the external side is painted, more apparently so in the Cueva Antón specimen, where the natural red color had been lost due to bleaching; pigment is also visible in the internal side of the Gravettian shell. The distance between the two sites is 2.5 km and they feature functionally similar kinds of human occupations. The symbolic significance of such shells, collected from the seaside, >60 km away, is uncontroversial when found in modern human-associated Upper Palaeolithic contexts, and there is no reason to think otherwise when they are found in the Neandertal-associated Middle Palaeolithic.

The first thing to bear in mind when assessing the Grotte du Renne results is that, technically, dating the site's Châtelperronian has been an extremely challenging exercise. Given regional culture-stratigraphic patterns, its age ought to be in excess of 36,500 radiocarbon years (i.e., 41,500 calendar years), as repeatedly pointed out for almost a decade now (e.g., Zilhão and d'Errico, 2003). Prior to this last attempt at dating it, however, only 2 out of the 17 (12%) available results satisfied that condition. For a long time, the other results were the single pillar of evidence supporting the "acculturation" and "imitation without understanding" explanations of Châtelperronian personal ornaments. However, they were patently

anomalous when viewed in their proper context, and there were repeated warnings that they were likely to be no more than minimum ages and an artefact of poor collagen preservation at the site (Zilhão, 2006, 2011).

In this regard, a dating experiment carried out at the Sesselfelsgrötte, in Bavaria, Germany (Richter, 2002), had already provided a pertinent cautionary tale. Here, bone samples collected from exposed areas of the site (exterior or close to the drip line, where the deposits had undergone long-term postdepositional leaching) systematically yielded much younger ages than those from interior, well-protected areas of the same levels. Knowing that overhang collapse soon after the Châtelperronian occupation transformed the corresponding levels of the Grotte du Renne into essentially an open site for more than thirty millennia, the example from Sesselfelsgrötte makes it clear that collagen degradation and incomplete decontamination producing erroneously young results are the parsimonious explanation for the dating anomalies seen at the French site. Another German example of a situation akin to the Grotte du Renne is the Ilsehöhle, where all four dates for the Ranis 2 Altmühlisan/Szeletian find horizon came out too young, one of them even in the Magdalenian range (Grünberg, 2006). Although a Magdalenian occupation of the site (the Ranis 4 find horizon) exists in levels >2 m higher up in the sequence, the cultural coherence of the Ranis 2 stone tool assemblage indicates that incomplete decontamination, not postdepositional disturbance, is likewise the reasonable explanation for the dating anomalies.

The new results represent a significant improvement of the Grotte du Renne situation, as 13 out the 21 Châtelperronian samples (62%) obtained by Higham et al. (2010) satisfy the condition that they should yield ages in excess of 36,500 radiocarbon years before present. This improvement is related to major developments in pretreatment and measurement, namely, the use of ultra-filtration (Higham, 2011). However, given previous history and the fact that poor preservation was confirmed by the failure of 19 out of 50 samples used in the experiment, can we be confident that the improved techniques managed to completely solve the site's contamination problems? In my view, we cannot. Therefore, under Occam's razor, the past dating history of the site and the pattern of overall stratigraphic integrity apparent in the vertical and horizontal distributions of key finds and features indicate that the presence of residual contaminants is a much better explanation for the anomalously young results yielded by some samples than their reflecting significant postdepositional disturbance of the sequence. In fact, no natural mechanism could possibly move 38% of the samples down from the Aurignacian to the Châtelperronian while leaving *in situ* in the Aurignacian level all of its bladelets (Caron et al., 2011).

When proper attention is paid to the details of the dating study, the suspicion that the problem lies in the dating rather than in the stratigraphy is considerably strengthened. For instance, 84% of the results obtained came from samples that either had been treated with glues and consolidants or were suspected of having been so treated – hardly the ideal kind of sample upon which to decide the major issues raised by the Grotte du Renne’s record. Also, two of those results on consolidated samples did feature C:N (carbon:nitrogen) ratios above the laboratory’s normal threshold for acceptance (3.5), indicating the presence of exogenous carbon, i.e., contamination. Finally, if we consider only the five samples for which treatment with consolidants was neither documented nor suspected, the results do come out in perfect stratigraphic order.

In short, it would seem that the news of the bursting of the “Neanderthal symbolism and ornament manufacture bubble” (Mellars, 2010) was, as Mark Twain would have put it, greatly exaggerated. The Oxford laboratory developed or fine-tuned many of the technical innovations that have allowed the radiocarbon dating of the transition to move forward so significantly, but why did this laboratory’s researchers choose to validate samples and results that, in any other context, would have been either rejected outright or at least treated with great suspicion? Also, even within their interpretive framework, why did they choose to emphasise that the glass was one-third empty instead of emphasising that it was two-thirds full? I can think of no explanation other than the enduring influence in academia of perceptions of Neanderthals inherited from the Victorian age that predispose many scholars to readily accept anything that goes along with such perceptions, and to resist anything that goes against them with levels of scepticism that go way beyond those required by the scientific method.

Although scientists like to think of themselves as unprejudiced and independent-minded, a recent anecdote illustrates well how even the most respected sancta sanctorum of academia are affected by the pervasive influence of their cultural environment. In the spring of 2009, the publication of an ivory statuette from the German Aurignacian (Conard, 2009) made headlines the world over. The buzz was justified, as the object was the oldest female figurine known so far, and one of the oldest examples (if not the oldest) of figurative art with good contextual and dating evidence. The exuberant bust and other well-marked features of the female body also made it entirely predictable that the tabloid press would promote it the way it did – in the words of *The Sun* (issue of May 14, 2009), as the world’s first ever “Page 3 girl” (<http://www.thesun.co.uk/sol/homepage/news/2427906/A-CURVY-statuettes-35000-years-old-has-been-unveiled-by-scientists-as-the-worlds-earliest-model-of-the-female-body>)The-ivory-figurine-with-big-boobs-could-be-the-first-ever-Page-3-girl.html, accessed May

9, 2011). Perhaps less predictable, however, was that much the same line was followed by *Science Now* (issue of May 13, 2009), the news portal of the American Association for the Advancement of Science, which commented on the find in a piece under the title “The Earliest Pornography?” (<http://news.sciencemag.org/sciencenow/2009/05/13-01.html>, accessed May 9, 2011). Concurring statements from reputed scholars were quoted, as well as the “nothing’s changed in 40,000 years” reaction of one of those scholars’ male colleague to whom the figurine had been shown.

Perhaps this 21st century male was right, but is it not at least equally plausible that the figurine had in fact been made and worn by a woman, and had nothing to do with the “sex-madness” attributed to the average Aurignacian male by another of those commentators? Could it be that this was simply another instance of the drive to see the Aurignacians as proper moderns “just like us,” as opposed to the improper, “quite not like us” Neanderthals that preceded them in the same regions? Also, since we are at it, could it be that attitudes towards the Châtelperronian personal ornaments of the Grotte du Renne are likewise influenced by this attitude more than by the dispassionate, purely “natural science” assessment of the site’s stratigraphy and dating? Since, over the last quarter of a century, this is what happened time and again whenever the symbolism of Neanderthal material culture seemed to be the obvious implication of the then-available evidence, chances are that such is indeed the case in this instance.

The scattered nature of the evidence concerning body ornaments, the fact that it comes from a very small number of sites and questions of association with the human remains found in the same levels at the key locality (the Grotte du Renne) are often raised as objections to the acceptance of fully symbolic behaviour among Europe’s later Neanderthal populations. In a glaring example of the double standards issue, no such “rarity” objections, however, have been raised in relation to the evidence from the African MSA, where, in all these regards, there is much stronger ground for such objections. Blombos remains the single South African site to have yielded perforated shell beads securely associated with well-dated MSA occupations, no human remains were found alongside and the closest in time are the slightly earlier fossils from Klasies River Mouth, whose morphology is archaic rather than modern (Trinkaus, 2005). Where the Maghreb is concerned, the so-called Dar-es-Soltan people living in the area at the time of production of the perforated *Nassarius* shells found at a number of Aterian sites are, morphologically, archaic, not modern (Klein, 1992; Trinkaus, 2005). In Eastern Africa, where, according to RAO, anatomically modern humans first sprung into being and whence they spread into the rest of Africa, known MSA sites have so far failed to yield similar evidence. None of this has prevented most palaeoanthropologists from accepting that Blombos and the Maghreb sites represent the

“modern behavior” of “modern humans” in the African continent as a whole. Yet, eyebrows are raised concerning Europe, where the “modern behavior” of “archaic humans” is supported by the immediate association in the same level, of the same site, between diagnostic Neanderthal fossils, large numbers of personal ornaments and amounts of colourants considerably exceeding those so far reported for any coeval African site!

4.5. CONCLUSION

One thing is certain after 150 years of Neanderthal debates: the answer to the questions above will remain open for quite sometime. To my mind, however, present evidence dictates that, like evolution, Neanderthal symbolism should be treated as fact, not hypothesis. Given that in and of itself Neanderthal-ness implies hundreds of thousands of years of divergent evolutionary trajectories between Africa and Europe – even if gene flow was never interrupted and, as pointed out by Holliday (2006), the isolation was insufficient in extent and duration to result in speciation – the corollary of this conclusion is that the emergence of symbolism cannot relate to processes of genetic or other biologically based, “flick-of-a-switch” change occurring in a geographically restricted, small but subsequently expanded, population. In this context, the only realistic models are those that explain symbolic material culture as a by-product of the increasing complexity of social interactions, resulting from demographic growth facilitated by technological progress and increasing adaptive success, and reaching a threshold at about the same time interval across vast regions of the Old World (e.g., Gilman, 1984; Shennan, 2001; Powell et al., 2009). Only such a process can explain both the geographical unevenness of the emergence of material symbols and the “now you see it, now you don’t” pattern (Hovers and Belfer-Cohen, 2006) displayed – as befits the beginning of any curve of exponential growth – by its initial stages, in Europe as much as in Africa.

In this context, an interesting possibility is raised by the evidence for symbolic material culture among Neanderthals as far back as the Middle Palaeolithic, $\geq 50,000$ years ago (as documented at La Ferrassie, Cueva de los Aviones and Fumane). In the Near East of last interglacial times, the presence of the African tradition of *Nassarius* beads so far rests on a single find from the cave of Skhul (Israel). Although Vanhaeren et al. (2006) made a good case for that bead to come from the level that contained the burials of early modern humans, the true age of the burials themselves is controversial. Uranium-series dates obtained on animal teeth suggest that an important component of that deposit dates to only 40,000–45,000 years ago (McDermott et al., 1993; Grün et al., 2005), and the palaeoanthropologists of different persuasions who have studied the skeletons (e.g.,

Stringer, 1998) seem to concur that two chronologically distinct populations, one anatomically less “modern” than the other, could well be represented in the Skhul sample. The possibility exists, therefore, that the Skhul *Nassarius* bead relates to a later period of occupation, i.e., to the modern humans who returned to the Near East after 45,000 years ago, not to those who lived there during the last interglacial, whose only items of personal ornamentation would therefore be the perforated-ochred *Glycymeris* sp. shells associated with the burials of that age found at the nearby cave site of Qafzeh.

Bearing in mind the long duration of traditions of body decoration (Stiner, 1999), the fact that this significant cultural trait – the ornamental use of perforated/painted, bivalve shells – is shared between the Qafzeh Moderns and the Aviones Neanderthals suggests the following hypothesis: that the Aviones shells represent the persistence in Europe, among Neanderthal societies, of traditions of personal ornamentation going back to the last interglacial, at which time they would have been spread around at least the eastern and northern Mediterranean seaboard, regardless of (real or perceived) biological boundaries. Put another way, it is possible that, some 90,000 years ago, two different ornament traditions were already in existence: one in Africa associated with modern humans or their immediate ancestors – the *Nassarius* beads tradition of the Still Bay culture of South Africa and the Aterian culture of the Maghreb; another in Mediterranean Europe and the Near East associated with both modern humans and Neanderthals – the tradition of pendants made of nonfood, large bivalve shells documented by the Tabun C-type Mousterian of Qafzeh and the Middle Palaeolithic of Iberia. In this context, the Châtelperronian and its personal ornaments made of animal bones and teeth pierced or grooved for suspension would represent yet a third tradition, one whose origins may well be more recent and possibly related to social and demographic processes triggered by the northward expansion of humans in Europe after the end, $\sim 60,000$ years ago, of the first cold phase of the last glaciation.

Future research will show whether these hypotheses will be supported by the evidence, and whether such hypothesised ornamental traditions relate, even if in an incomplete and perhaps distorted way, to the cultural markers of geographic significance and time depth that Richter (2000) sees in the typology and technology of the stone tools of the Middle Palaeolithic of the Greater Mediterranean region. Here, they serve to illustrate the kinds of questions that should lie ahead of us, now that “the Neanderthal problem”, to take up the title of a late 20th century *Current Anthropology* discussion forum (Fox, 1998), can be recognised for what it really is: a textbook example of the popular saying that “you never have a second chance to make a first impression.”

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