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TO BE OR NOT TO BE PALAEOLITHIC, THAT IS THE QUESTION

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Abstract. The tendency of many European and some Asian archaeologists to pronounce rock art as being Palaeolithic in the absence of any evidence other than stylistic vibes is examined. Numerous examples are presented and discussed, from central Europe, Britain, France and especially from the Iberian Peninsula. The rest of the world is also briefly considered. All claims from outside the traditional main corpus, essentially in France and Spain, are shown to be tenuous and largely unsupported, and this applies to the entire region from Portugal to China. There are literally hundreds of false or very tenuous claims for Pleistocene rock art from Eurasia. This state is then compared with the situation in other continents, in an effort to understand the psychology of those making precipitate claims.

1. Introduction

A fascinating article about Palaeolithic art is Freeman's (1994) erudite review of the undercurrents involved in the discovery, rejection and acceptance of the Altamira rock art, examining how myths have conditioned the research about Palaeolithic art. It also explains the parallels in the validation of religious shrines and their usurpation by ecclesiastical authority:

Those special beliefs and feelings [about Palaeolithic art] are held by the professional prehistorian as well as the average citizen. Neither is particularly good at self analysis. ... There are reasons to believe that the behavior associated with the Palaeolithic sites is not directly modeled on that surrounding Christian shrines, but that these two manifestations of belief, reverence, and validation of experience have the same origin at a deeper structural level. I still can not pretend to understand that origin; I believe it to be promising material for further serious investigation. (Freeman 1994: 341)

In the following paper I will attempt to address some of the questions Freeman raised, by illuminating specific developments mostly of the subsequent years.

It is a well-known maxim in rock art studies that the interpretations of early 'art' tell us much more about the interpreter than about the 'art' (Mandl 1996). A case in point is the preoccupation of many European rock art connoisseurs with finding Upper Palaeolithic art. Two aspects of this mostly European phenomenon illustrate the point. First, there is a distinct tendency in Europe of assigning Pleistocene ages to Holocene rock art or portable art. Second, while there are no known instances of Pleistocene art frauds in Africa, Asia, Australia or

South America, some examples are known in the United States; but in Europe, thousands of instances have occurred, and many have no doubt not been exposed yet (Bahn 1993; Bahn and Vertut 1997: 77–83).

While it would be fascinating to explore the reasons for the geographical distribution of fakes of Pleistocene art — bearing in mind that Pleistocene art itself occurs in all continents other than Antarctica and is far more common in Australia than in Europe — here I wish to limit myself to exploring the propensity of European pre-Historic 'art' specialists to pronounce Holocene rock art as being of Pleistocene antiquity, always on the basis of 'perceived Palaeolithic style'. There are so many examples of this penchant that it ought to be possible, by looking for common features and trends, to construct a rational explanation for it.

One aspect of this phenomenon is that, almost invariably, when the pronouncement of Pleistocene age is questioned or contradicted, the protagonists favouring it express great disquiet and may resort to extreme measures in defending their chronological assertions. But this does not seem to apply to cases in which an assumed Holocene age is corrected to a Pleistocene age. In other words, the implication seems to be that, when a Holocene age is proposed for purported Pleistocene art, this constitutes a personal criticism of those who support the initial view, but not when a Pleistocene age is proposed for purported Holocene art. Clearly, then, this is not about the implication of being wrong; just as in the phenomenon examined by Freeman, there is some other factor involved. I would like to examine what that factor might be.



Figure 1. Some of the petroglyphs from Kienbachklamm, Upper Austria.

2. Case histories

2.1. Northern Alpine Limestone Belt, Austria

To review the issue carefully it is essential to consider some case histories. I begin with a case that has received rather little attention. In Austria, portable art of the Pleistocene is rare, although it includes some of the most famous specimens in the world, such as the anthropomorphous figurines from Willendorf and Galgenberg (Bednarik 1989a). There are also a few known fakes (Mohr 1933), but there is no known rock art of Palaeolithic age in Austria. However, a number of petroglyphs in the Northern Limestone Belt of Upper Austria have been ascribed to the Ice Age by Kohl and Burgstaller (1992). These occur at two sites, Stubwieswipfel on the Warscheneck mountain, and Kienbachklamm, a canyon near Bad Ischl (Fig. 1). According to Burgstaller, considered to be the 'Father of Austrian rock art studies', seven naturalistic animal heads at the first site and several more figures at the second belong into the Upper Palaeolithic period, and were made either immediately before or after the Last Glacial Maximum. The figures in the Kienbachklamm, occurring together with thousands of much more recent images, are claimed to include two mammoths, some stags and a reclining woman. These age claims are based on style and purported subject matter. Other observers have either been unable to detect these figures, or regard them as natural grooves on the heavily weathered rock. The published photographs of some of these figures, particularly of the 'female figure' and the 'mammoths', suggest that the identifications are the result of wishful thinking.

At both sites, the petroglyphs occur on limestone walls that are exposed to the rain. This in itself practically excludes an age of more than a millennium or two, because limestone recedes between 2 and 20

mm per 1000 years when exposed to atmospheric precipitation (Schwegler 1995: 109); in fact under laboratory conditions of continuous dissolution, the rate of 1 mm per 31 days has been reported (Chou et al. 1989). Hundreds of petroglyph sites in the region have been studied, and dated inscriptions, safely datable motifs and superimpositions have provided numerous credible age estimates (Mandl 1996). According to these, over 70% of the region's rock art is post-Medieval, and under 2% is Roman or earlier. This is not to imply that no rock art was created in earlier times, but that the record is severely truncated by taphonomy. The probability of finding Pleistocene petroglyphs among this corpus is for all practical purposes nil.

There have been numerous other cases of central European cave art falsely attributed to the Palaeolithic

period, including that of Kleines Schulerloch (Birkner 1938: Pl. 13) and Kastlgänghöhle (Bohmers 1939: 40), debunked by Bosinski (1982: 6) and Freund (1957: 55); Hohle Fels (Hahn 1991; Conard and Uerpman 2000) and Geissenklösterle (Hahn 1988), both refuted by Bednarik (2002); Mladeč Cave (Oliva 1989), refuted by Bednarik (2006); and Bycí Skála, refuted by Svoboda et al. (2005).

2.2. Côa valley, Portugal

The lower Côa valley of Portugal features a series of petroglyph sites on schistose facies of low metamorphism. The corpora comprise images and inscriptions of greatly varying ages; a large component consists of modern and Christian motifs, dated inscriptions and markings made with metal tools, but markings made with stone tools also occur (Bednarik 1995a; Zilhão et al. 1997). The major concentrations coincide with the presence of old watermill buildings or ruins of such structures. A series of semi-'naturalistic' animal figures, mostly bovine and equine, has at several sites been pronounced Palaeolithic by some, and as being 20 000 or more years old on the basis of perceived style. Yet these figures are often less weathered than dated inscriptions of 200 or 300 years age on the same or adjacent rocks (Fig. 2), they were found to dissect lichen thalli in many cases, and the rock panels they occur on are subjected to rapid weathering. Schist recedes at about half the rate of limestone (i.e. at 1–10 mm/1000 years), which means that no petroglyphs could possibly survive on it fully exposed to the rain for ten or twenty millennia. Yet some of the presumed Solutrean images at Côa sites are superbly preserved in microscopic detail. In 1995, a series of 'blind tests' by rock art dating scientists found that the art at the three Côa main sites is generally of the late Holocene,

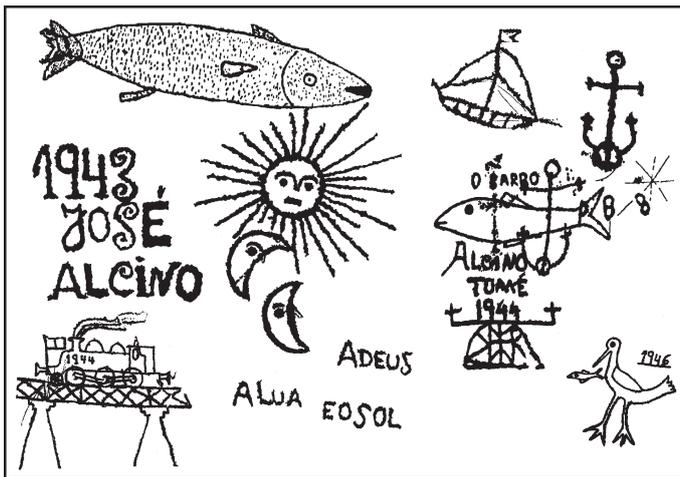


Figure 2. Selection of petroglyphs of the lower Côa valley, Portugal, occurring a few metres from purported Palaeolithic petroglyphs that are often less weathered than these motif and dated inscriptions.

and most of it is of historical antiquity only. The archaeometrists also determined that the terraces along the present course of the river are essentially recent, that the valley itself is geologically very young, and that the prospects of finding Pleistocene occupation deposits or rock art along the present thalweg were most discouraging.

This finding led to a major academic controversy, as every archaeological commentator had insisted the Côa rock art must be of the Pleistocene (e.g. Bahn 1995a, 1995b). A group of Portuguese archaeologists set out to refute the scientific determinations, by excavating the sediments around numerous decorated rocks, and by searching for archaeological remains of Pleistocene human settlement of the valley. No concealed petroglyphs were found below ground, and although mainly microlithic stone implements were excavated at a few sites, they occurred together with ceramic remains, indicating that they were Neolithic or younger. At one site, Cardina 1, some microliths were also found just below pottery, indicating the possibility of a late Mesolithic occupation (Aubry et al. 1997). Moreover, the extensive Portuguese research confirmed that the largest terrace, at Penascosa, is of recent age, and remnants of a Late Pleistocene terrace were found 40 m above it (Fig. 3). Radiocarbon analysis results were not disclosed, except for one final Holocene date (Zilhão et al. 1997).

In 1999, a petroglyph panel covered by fluvial sediment and colluvium was excavated at Fariseu, and as the colluvium was claimed to contain Gravettian stone tools, the rock art was pronounced to be over 21 000 years old (IPA 1999; Himelfarb 2000). However, these strata were probably formed only in the previous seventeen years, and the components of the colluvium — which is a secondary deposit derived from the steep hill sides — are entirely unrelated to its age, and thus the age of the rock art (Abreu and

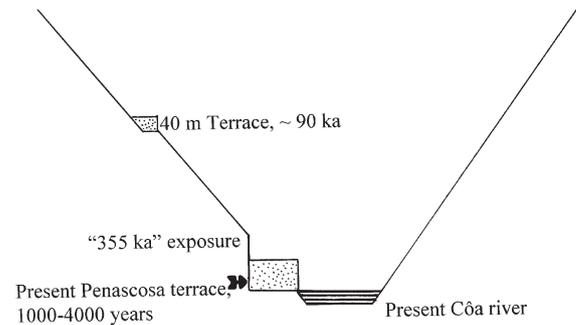


Figure 3. Schematised section at Penascosa, lower Côa valley, Portugal, showing the elevation of a Late Pleistocene terrace remnant 40 m above the engravings claimed to be Palaeolithic, and the relative elevation of a supposedly 355 000 BP exposure whose 'age' was 'determined' by cosmogenic radiation products analysis (Phillips et al. 1997).

Bednarik 2000). One of the horse figures at Fariseu even seems to wear a bridle, rendering a Pleistocene age particularly unlikely, and all figures are practically unpatinated. What the archaeological work conducted in the Côa valley does indicate is that there are no Pleistocene sediments present near the valley floor, their residues may occur only high up on the slopes, at Pleistocene river levels.

The recent age of the current valley was thus confirmed, rendering the presence of any Pleistocene petroglyphs even more unlikely, and the occurrence of Pleistocene occupation deposits on the valley floor impossible. But the debate had become so thoroughly politicised that no Palaeolithic art specialist was willing to question the official policy of the Portuguese Institute of Archaeology that the Côa rock art is Palaeolithic. This policy continues to be disseminated publicly in Portugal, having been politically tied to the demand for preservation of the rock art (Gonçalves 1998: 17): the rock art must be preserved *because* it is Palaeolithic, so in order to be worthy of preservation it must be pronounced Palaeolithic. 'The political nature of the archaeologists' strategy influenced their scientific discourse', comments a social scientist examining the issue (Gonçalves 1998: 18). Those who dare to question this age claim are branded as being opposed to the preservation of the Côa rock art. Voices of reason, such as the concern of a senior Portuguese archaeologist that the faith in stylistic arguments is not justified, and that a combination of scientific methods needs to be used to resolve the issue (Raposo 1995), have been drowned out by political rhetoric.

2.3. Mazouco and Escoural, Portugal

The controversy concerning the Côa rock art is not made any easier by the concurrent problems the Palaeolithic claims relating to two other Portuguese sites have encountered. Here, too, some archaeologists



Figure 4. Vandalised petroglyph at Mazouco, northern Portugal.



Figure 5. Cupules outside Escoural Cave, southern Portugal, on marble, possibly of the Chalcolithic.

had vigorously argued for Palaeolithic antiquity, and again without presenting falsifiable evidence. Mazouco is located within walking distance of the Côa valley, consisting of a very small group of animal figures on a schist cliff. The only complete outline, apparently of a horse, is said to be of Palaeolithic style (Jorge et al. 1981). But like the Côa figures (Jaffe 1996), it has been subjected to extensive vandalism by archaeologists, making analytical work difficult. The equine motif has even been re-engraved for better visibility, therefore none of its original surface remains available for study.

Even long before the Côa petroglyphs were reported, a Portuguese archaeologist explicitly rejected the Palaeolithic age of the Mazouco figures, after he found a stylistically similar equine motif at Vale da Casa (near the confluence of Côa and Douro), in what he defines as a clear Iron Age context (Baptista 1983: 63). In contrast to most of the Côa rock art, the Mazouco site is located well above the river, so the petroglyphs would not have suffered from fluvial erosion, but the schistose support rock is also unsheltered, and weathering retreat renders a Pleistocene age unlikely. In view of the extensive vandalism the site offers little scope for scientific study, its research potential having been destroyed (Fig. 4).

In contrast to the open sites with the controversial age claims of their petroglyphs, the engravings of Escoural occur in a cave, and until recently their Palaeolithic age had been widely accepted. Indeed, this is the only Portuguese rock art site whose Palaeolithic attribution had not been queried. However, a critical review of the site (Lejeune 1997) emphasises the possibility that post-Palaeolithic art may be present in the metamorphosed limestone cave. Escoural contains occupation evidence from two periods, the Middle Palaeolithic and the Neolithic. The former is restricted to the area of the previous entrance, which now appears to be closed, and among the large boulders outside this area, further finds from the

Middle Palaeolithic and Neolithic occur, together with Chalcolithic material from the fortified settlement on the hill above the cave (Araújo and Lejeune 1995). If the rock art were of the Upper Palaeolithic, the absence of that period's occupation evidence, including ochre or charcoal from torches, would need to be explained. However, none of the very few figurative images are of typically Upper Palaeolithic style, and many of the apparently noniconic images resemble Holocene art elsewhere (Fig. 5). Moreover, the complete absence of the so-called Palaeolithic signs, which are by far the most typical imagery in Palaeolithic cave art of Iberia (Casado Lopez 1977), renders a Palaeolithic age of the Escoural cave art somewhat unlikely.

2.4. Siega Verde, Spain

In the case of this site it is particularly absurd that its petroglyphs should have ever been pronounced Palaeolithic. Siega Verde is a corpus of several hundred figures spread along the left bank of the Río Agueda over some 1300 m, located northwest of Ciudad Rodrigo, just 50 km from the Côa sites. Equid depictions dominate (Fig. 6), and styles and methods of execution differ greatly within the corpus. The rock art occurs on soft schist blocks that have been, and continue to be, sculptured by the coarse angular quartz grains of the river sand. The river floods episodically to 6 or 8 m depth, and all petroglyphs are located within this flood zone.

Among the petroglyphs, the base of one of the support columns of a stone bridge has been constructed of the same schist rock the rock art occurs on. It, too, is being sculptured by the suspended load of quartz sand being rafted past every time the site is inundated. The surface retreat of the bridge base is as much as 30 mm, which indicates graphically the susceptibility of the schist to abrasion by suspended particles. In these circumstances, the petroglyphs cannot possibly be expected to survive more than a few centuries, even in well-protected locations.

Moreover, close examination of the site reveals numerous small remnants of an old, very coarse-grained alluvial terrace among the engraved rocks. These are firmly lodged in deep crevices and cracks. It is entirely impossible that the rock art could be older than this terrace, because both its accumulation and later degradation would have involved massive surface modification of the engraved boulders. The deposit consisted largely of cobble-sized granite and angular quartz detritus. Therefore this terrace provides a secure *terminus post quem* for the Siega Verde petroglyphs. In 1998 I located a 10-cm-large pottery shard in the remains of the terrace, just above some petroglyphs, which has been identified as probably being of the Roman period (M. Simões de Abreu, pers. comm.). It was water-worn and had clearly been transported for some distance, so there can be no doubt that the rock art must be well under 2000 years old (Fig. 7). Its real age, however, may well be related to a large watermill, the ruins of which still loom in the southern part of the site, and to the presence of a large team of bridge builders and stone masons in 1925. A detailed study of a series of dated inscriptions at the site has yielded a method of quantifying erosion as a function of time, indicating that both inscriptions and petroglyphs tend to be erased after about 200 years (Bednarik 2009). The villagers from nearby Castillejo de Martin Viejo, who 'had always believed the art to have been made by shepherds whiling away the time and ... had a good laugh when archaeologists told them that the art was Palaeolithic' (Hansen 1997), are probably right; and the experts of Palaeolithic art, who insist on the Palaeolithic age of the Siega Verde art, are certainly wrong (Balbín et al. 1991; Balbín and Alcolea 1994; Bahn and Vertut 1997: 130).

As in all the Cõa sites, at Mazouco and Escoural, and indeed at all of the open petroglyph sites supposedly of the Palaeolithic that are currently known from the Iberian peninsula and the Pyrenees (Bednarik 1995a), there is at Siega Verde not a single animal depiction of a species that did not exist in the region during the last 2000 years. The animal figures at all these sites are mostly of horses and Spanish fighting bulls, the latter with their

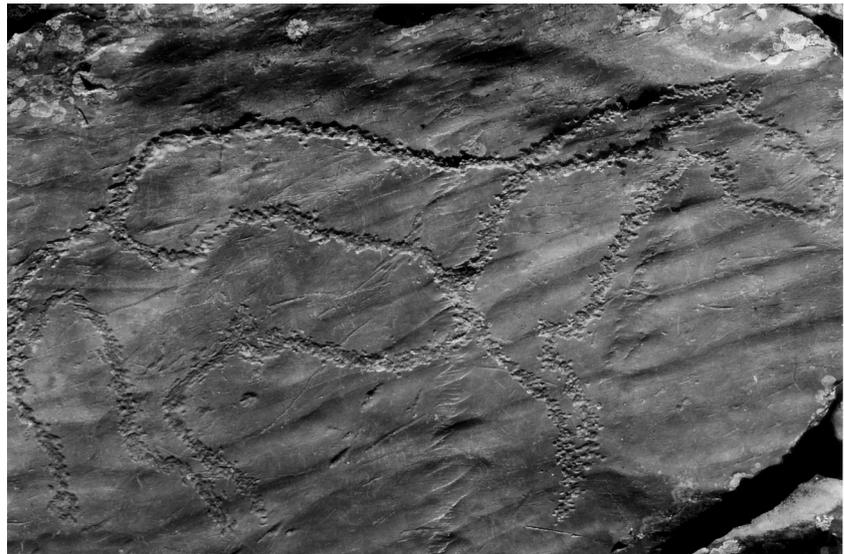


Figure 6. Petroglyph supposed to depict a horse of Palaeolithic style, Siega Verde, western Spain. Whatever the misshapen creature is, it is not of Palaeolithic style.



Figure 7. Petroglyph at Siega Verde, western Spain, occurring in the lowest part of the flood zone, this figure shows the same degree of fluvial abrasion as a 1954 inscription nearby, at the same elevation. It dates from the 20th century, not as claimed from the Palaeolithic.

characteristically curved, forward-pointing horns; such animals can still be seen grazing within a few kilometres of Siega Verde. Also, there is not a single geometric motif of the type usually called 'signs', which are the most characteristic and distinctive of the Palaeolithic designs in cave sites. Both extinct animal depictions and 'signs' are numerous in Spanish cave

sites, in fact the latter occur in huge numbers in various parts of that country.

2.5. The Levantine shelter art, Spain

Precisely the same applies to the Levantine rock paintings in eastern Spain: there are no Palaeolithic 'signs', no extinct animal species, or any other indications of Pleistocene age. And yet this art was attributed not only to the Palaeolithic period, it was initially assigned to the very early part of the Upper Palaeolithic. Breuil (1948, 1952), for instance, placed the early Spanish Levantine paintings into the Perigordian (which effectively begins with the Neanderthal Châtelperronian and leads to the Gravettian), partly because of its stylistic similarities with the paintings of Lascaux, which he mistakenly also regarded as Perigordian (see below). He and others perceived this entire art corpus as essentially Upper Palaeolithic. Martínez Santa-Olalla (1941), Pericot (1942), Bosch Gimpera (1956, 1967) and Hernandez Pacheco (1959), by contrast, placed it in the Holocene, usually the bulk of it in the Mesolithic, and both Almagro (1966) and Ripoll Perello (1964, 1968) agreed with this assignment, even extending the duration of the Levantine figurative art to the Neolithic. Jordá Cerda (1964) went further still, concurring with Martínez Santa-Olalla that the art is Neolithic and Bronze Age, with the 'schematised' figures extending into the Iron Age.

After the rejection of the Pleistocene age, the Levantine shelter art was widely accepted as being of Mesolithic age for several decades, and published as such on countless occasions. Only during the late 1980s was this attribution finally abandoned, especially through the work of Beltrán (1982) and Hernández Pérez et al. (1988). The entire art corpus remains essentially undated, but the present consensus favours an age of Neolithic or younger. This is a classical example of a well known, extensively studied and published major regional rock art tradition that has been attributed to virtually every archaeological period from the beginning of the Upper Palaeolithic to the Iron Age, i.e. to all pre-Historic periods of the region for the past 35 000 years. The complete absence of any credible proof of Pleistocene antiquity did not prevent these claims, which are now assumed to be false, and which were based largely on stylistic assumptions.

2.6. British claims

The several claims for Pleistocene rock art in England have been either refuted or remain problematic. In 1912 H. Breuil and W. J. Sollas thought they had found Palaeolithic cave paintings in Bacon's Hole, in Wales. It turned out that the red stripes, which were indeed of ochre, had been made by a workman eighteen years previously. A claim of Palaeolithic rock art in the Wye Valley found its way into a prestigious journal (Rogers 1981), where it was published despite its very obvious shortcomings. Sieveking (1982) falsified it in the following year by demonstrating that the rock

markings were natural phenomena. In April 2003, a team of two British and one Spanish Palaeolithic rock art specialists reported finding three engravings in Church Hole, one of several caves at Creswell Crags in Derbyshire, and attributed them to the Palaeolithic period (Bahn et al. 2003). A few months later they visited the site again, finding another nine figures, and a year after the first find, they reported the discovery of yet another thirty images (Ripoll et al. 2004). I then questioned the reliability of these reports, noting that the published recordings of the main figure were severely flawed (Fig. 8), that most of the claimed rock markings were in fact natural features, and that presentation of these finds offered no scientific observations (Bednarik 2005). The discoverers responded angrily (Ripoll et al. 2005) and increased the number of claimed images to about ninety, stating that Church Hole 'possesses the most richly carved and engraved ceiling in the whole of cave art'. They then presented an irrelevant uranium/thorium date, but their subsequent publications became much more subdued. By 2007 the number of motifs was reduced to ten, of which only three were 'recognisable images'. However, the scientific information I had

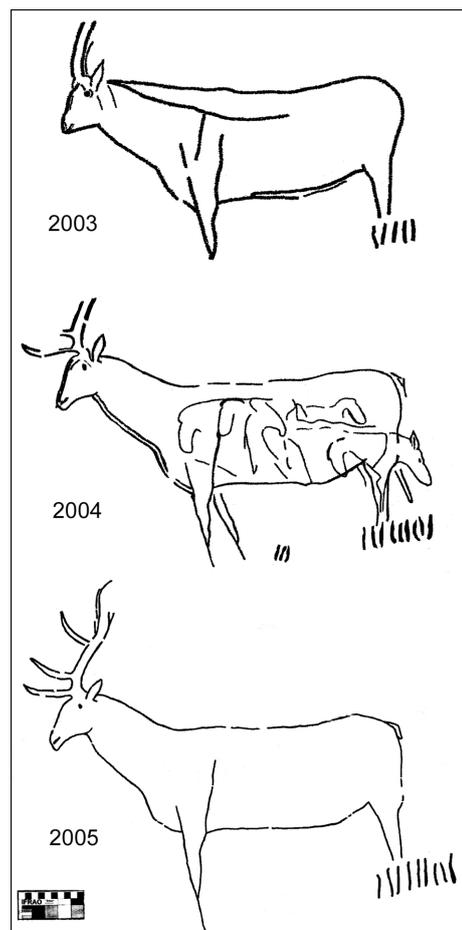


Figure 8. Three different published versions of the principal 'Palaeolithic' motif in Church Hole, United Kingdom, all having been produced by Bahn, Pettitt and Ripoll.

specifically requested remains unavailable, and there is no objective way to assess the 'murky landscape of unsupported and untestable a priori, premature claims' about a few engravings in this heavily decorated cave (Montelle 2008). No explanation has been offered for the now withdrawn excessive claim of motif numbers, but from the patchy information available it appears that perhaps eighty 'motifs' are now regarded as natural surface features by Bahn and Ripoll (2007).

Since these controversial images were reported, another figure in an English cave has been attributed to the Pleistocene, this time from Gough's Cave, a site previously examined by the Church Hole team without finding it. Mullan et al. (2006) presented a considerably better documented marking, which they concede is largely a natural feature. However, they feel that part of a line resembling the back of a mammoth is anthropic. The groove in question does not, however, resemble the flow of an engraved line. Mullan and Wilson (2004) have previously documented a set of certainly engraved, crisscrossing lines from another English cave, which they have suggested might be of Mesolithic age.

2.7. Lascaux, France

One of the most famous of all 'Palaeolithic art sanctuaries' (note the religious overtones) is the classical cave of Lascaux. Its painted art of 600 figures (plus 1500 engravings) is indeed one of the greatest to have survived in Europe, particularly the panel of the large bovids is ranked among the most superb artistic masterworks of all time. Its attribution to the late Solutrean or early Magdalenian, however, is not secure.

Initially, Breuil and Peyrony placed the Lascaux art into the Perigordian (Bahn and Lorblanchet 1993), i.e. the early Upper Palaeolithic, but after charcoal from the poorly conducted excavations in the cave was analysed, the art corpus was pronounced to be about 17000 years old. Although substantially younger charcoal occurs in abundance in the cave, and often together with ochre, it was assumed, without good reason, that all the art relates to the earliest charcoal found. Not only is this quite unlikely in a logical sense, Bahn (1994, 1995c) has convincingly argued that the Lascaux corpus comprises considerable cultural diversity. The sediments were haphazardly excavated to allow access by tourists, and later carbon isotope analysis of the mostly un-provenanced charcoal has provided many Holocene dates, ending at about 7500 years BP. There is no doubt that the cave was open during the Holocene, and visited and probably painted in by humans. To then assume that all of the art is of the late Solutrean is illogical; it is more likely that some of the most recent visitors created the most recent art, and even that Holocene art might dominate. To be more specific, the huge bovid figures are decidedly unique in Palaeolithic art. They are among the most recent components of the Lascaux assemblage, and if



Figure 9. Typical Lascaux bovine head, which is most probably of the Holocene. Yet these figures are misused for demonstrating that other undated rock art also must be Pleistocene (e.g. Zilhão 1995).

they depict aurochs, as is widely assumed, then they cannot be of the age usually assigned to them. Not only are most aurochs remains from the Holocene, the species has not been found in south-western France between the Gravettian and the very final Magdalenian (Delpech 1992: 131, cited in Bahn 1994). It seems therefore impossible that these figures, at least, could be of Solutrean or early Magdalenian age. Moreover, their resemblance to bovid depictions of the above-mentioned Levantine shelter art was already noticed by Breuil, which is precisely why he assumed that both were Perigordian. The same, incidentally, applies to the recent Lascaux cervids, for instance in the way their antlers are detailed. But while it is accepted today that the Levantine art is of the late Holocene, the myth that the Lascaux corpus is of the Ice Age continues, despite the complete absence of any proof to support it (Fig. 9). It is true, as Bahn suggests, that the older painting phases of Lascaux are likely to be Pleistocene, but it is quite unlikely that this also applies to the more recent art phases of the site. Nevertheless, at least one archaeologist has tried to argue for a Pleistocene age of some C^ôa bovinds on the basis of their stylistic similarity to the large Lascaux bovinds (Zilhão 1995). Perhaps he is right concerning the stylistic similarity, but if this were valid, he would only demonstrate that the C^ôa art is probably *not* of the Pleistocene.

3. Pleistocene age claims for non-European rock art

This raises the question, to what extent could the styles that we might be inclined to perceive as 'Palaeolithic styles' have continued into the Holocene? Some researchers deny this possibility outright



Figure 10. Shishkino site, Lena valley, central Siberia. 'Naturalistic' petroglyph made with a metal tool and of recent origin. Note the similarity with the zoomorph in Figure 8.

(Ripoll 1997; Rosenfeld 1997), others accept it as a valid phenomenon (Lorblanchet 1989; Beltrán 1992; Marshack 1992; Bahn 1997). Many authors have reported finds of perceived Palaeolithic style that are clearly post-Palaeolithic (Vilaseca 1934; Martin 1973; Couraud 1985; Aparicio Pérez 1987; Fullola I Pericot et al. 1987; Lejeune 1987; Lorblanchet and Welté 1987; Roussot 1987; Villaverde Bonilla 1987; Marshack 1991; Beltrán 1992; Otte et al. 1995). Such finds occur not only in south-western Europe; rock art or portable art of animal motifs of 'naturalistic style' that might be perceived as resembling Palaeolithic art have been reported from regions that were never occupied in the final Pleistocene (e.g. Scandinavia), or from site contexts where they cannot be of such age (e.g. Austria, see above). Moreover, such 'naturalistic' art occurs also outside of Europe, where it has on occasion been assigned a Pleistocene age. The best-known example is perhaps the Bubaline tradition of the Sahara, which Mori (1974) and others have assigned to the Pleistocene, based on the 'naturalistic style' and the apparent preoccupation of the artists with hunting aspects. Muzzolini (1990) has convincingly shown that this art must be Neolithic, and that it postdates 6000 BP, by demonstrating that it includes many depictions of domesticated sheep.

In central Siberia, a few painted animal figures selected from the large rock art site of Shishkino have been pronounced Palaeolithic on the basis of style, and again these are horse and cattle figures (Okladnikov 1959). At another Siberian site, Tal'ma, Okladnikov recorded what he thought was the figure of a rhinoceros. The figure does not even resemble the recorded image which itself does not, I must confess,

remind me of a rhinoceros (see H. Breuil's similar mistake at Minateda, Spain, and the false claims of a rhinoceros image at Siega Verde). This figure, like the Shishkino paintings, occurs among other painted and engraved figures; the latter were made with metal tools (Fig. 10) and often depict recent motifs, especially horses with riders. As at Siega Verde, the local villagers claim that the pictures were made by shepherds in recent times, and again I tend to agree with them, and not with the claims of archaeologists. At both these Siberian sites, the paintings are fully exposed to the weather, and the fragile sandstone is subjected to rapid destruction in this harsh climate. Microscopic examination of the paint residues renders it extremely doubtful that these figures are any older than the engraved motifs around them (Bednarik and Devlet 1993).

There are hundreds of other claims of Pleistocene art in Asia, for portable as well as rock art, which have been refuted by me, including claims involving numerous 'engraved' ostrich eggshell fragments in India, a female figurine at Lohanda Nala, also in India, and 600 supposedly engraved bone objects from wenhua Shiyu, China. In China, claims not only of Pleistocene rock art, but in one case even of Tertiary rock art have been made. None of them deserve any serious consideration (Bednarik and Li Fushun 1991). On the other hand, Chinese cave art of distinctly 'naturalistic' animal figures that would be perceived as Palaeolithic in Europe has been correctly described as being 2000 or 3000 years old. These paintings were found near Hutiaoxia, Huayi, and Yinbiruo in Lijian (Peng Fei 1996). About thirty sites on the Kalguty River of the Ukok Plateau in south-western Gorniy Altai were attributed to the Stone Age, possibly even the Palaeolithic, again on purely stylistic grounds (Molodin and Cheremisin 1993, 1994). Similarly, Novgorodova (1983) described the petroglyphs of Delger-Muren and Tes in the same general region as Mesolithic. Kubarev (1997) refutes both claims, showing that all central Asian rock art west of China is either of the Bronze Age or younger. Similarly, the assumed Palaeolithic age of the paintings in Kapova and Ignatiev Caves in the Urals has yet to be demonstrated (Bednarik 1994; see dating by Steelman et al. 2002); and supposedly Pleistocene petroglyphs in Mongolia postdate the most recent glacial striae on their support panels. One of the 'earliest manifestations' of rock art in central Asia, in the Zaraut-Kamar Rockshelter in southern Uzbekistan, has been attributed to the late 19th century (Jasiewicz and Rozwadowski 2001).

Claims of Pleistocene art have also appeared in the Americas. I have refuted those relating to Pedra Furada in north-eastern Brazil, of 32000 years for paintings of the late Holocene, but accepted a final Pleistocene/Early

Holocene age for another site in the region, Perna 1 (Bednarik 1989b). In the United States, the Holly Oak, Delaware, engraving of a mammoth was exposed as a fake when the shell fragment it was engraved on was analysed well over a century after its 'discovery'. The shell yielded a radiocarbon age of only about 1500 years, much later than the extinction of the mammoth in North America (Griffin 1988).

Even Australia has not been immune to this tendency of attributing Ice Age antiquity to more recent palaeoart. The three major examples include a set of portable limestone plaques from the cave Devil's Lair, thought to be engraved, and dating from the Final Pleistocene (Dortch 1976, 1979, 1984; Dortch and Dortch 1996). Detailed microscopy of these objects has shown that the markings are all of taphonomic nature (Bednarik 1998). Second, the claims of Late Pleistocene antiquity of petroglyphs at three sites in the Olary region (Nobbs and Dorn 1988) are now essentially invalid, as the analyst concerned has discredited his own results (Dorn 1996). Third, archaeologists claimed to have dated a cupule panel at the Jinmium rockshelter to between 58 000 and 75 000 years (Fullagar et al. 1996). This was rejected by several Australian rock art specialists before publication, but a British archaeology journal, against better advice, insisted on publishing the false claims. They were subsequently refuted by more detailed scientific analysis of the site and its sediments, which showed unequivocally that the rock art was of the Holocene (Roberts et al. 1998; 1999).

4. Discussion

It needs to be emphasised that there are many examples of valid claims for Pleistocene rock art in Australia (Bednarik in press), possibly even in the Americas, and there is certainly Pleistocene rock art in Asia, and can be presumed to be in Africa (although not demonstrated until April 2009; Beaumont and Bednarik in prep.). Similarly, the presence of Ice Age rock art as well as portable art is securely established in various parts of Europe. The issue here is therefore not the question of existence of Pleistocene art, but the issue of inventing such antiquity for more recent art corpora. There are many misidentifications in all continents, but actual fakes of Ice Age art, both on rock and as portable objects, are to the best of our knowledge limited to very few world regions. This may be a related issue, because the regions where it does apply seem to coincide with those where unsupported or unsupportable age claims of this nature tend to be most fervently defended.

Of particular relevance seem to be the twenty or so 'Palaeolithic' open air sites of south-western Europe, as they can be loosely grouped together on the basis of several variables. They are found on the Iberian Peninsula, and all occur on schist, a particularly soft rock, as open sites fully exposed to weathering. Schist is subjected to re-equilibration reactions under



Figure 11. The only petroglyph at the Ocreza site near Mação, Portugal, claimed to be Palaeolithic, which it is unlikely to be.

prolonged aqueous exposure, i.e. it reverts to its lower metamorphism phases and eventually disintegrates. At least half of these sites occur just above the rivers of young valleys, on rocks that show massive evidence of kinetic and abrasive action in their high-energy environments, from both bedload and suspended particles. These are certainly not the kinds of places where one would even expect to find particularly early rock art. In some cases, such as Siega Verde, it is simply absurd to assign the art to the Pleistocene. In that environment it could not possibly have survived for the immense time span such antiquity demands.

Other open air schist petroglyphs, mostly of horses, that have been attributed to Palaeolithic artists are those at Domingo García (Martín Santamaría and Moure Romanillo 1981) and the nearby sites Carbonero Mayor, Bernardos and Ortigosa (Ripoll Lopez and Muncio Ganzalez 1994); Piedras Blancas near Escullar, Almería (Martinez 1986/87); Fornols-Haut, Campôme, in the French Pyrenees (Bahn 1985); and Ocreza in Portugal (Fig. 11). Most have not yet been examined critically, and all are on schist. The complete absence of depictions of extinct species, as well as of the characteristic geometric 'signs' of Palaeolithic art is manifest at all these sites.

The frequent occurrence of equine motifs at all these sites is noteworthy, because equine percussion petroglyphs are such a common feature in the region in question. Hansen (1997) describes a 4-m-high stonewall of almost two kilometres length at Castro in western Spain which bears hundreds of horse figures. This is located near Siega Verde, and Hansen reports that the owners of the land have not permitted archaeologists to enter the site because they 'are wary of them'. Judging by some of the horse-like figures from Siega Verde, any motif that even remotely resembles a horse is considered Palaeolithic by some researchers, so there may be many more 'Palaeolithic' figures waiting to be 'discovered' on the stone wall of Castro.

If we are to assume that Pleistocene rock art may

be mistaken for Holocene, and vice versa, a random result might be to have similar numbers of both forms of error. In fact there seem to be very few cases of an attribution to the Holocene having been corrected to Pleistocene (as for instance in Australia). These are far too rare to reflect a random process, and most importantly, they have not led to any objections from archaeologists. This would seem to indicate a strong predisposition towards favouring greater ages rather than lesser. The hypothesis can be proposed that an inclination to prefer the greater ages is the principal reason for this apparent imbalance. It seems to derive considerable support from three factors:

1. The pronounced clustering of such instances of preference for greater than real ages in specific parts of Europe; this suggests again the involvement of non-random determinants.
2. The distinctive tendency in these same geographical areas of local rock art specialists to strongly defend their pronouncements, and to reject the principles of refutation of propositions, in order to preserve preferred age interpretations.
3. The factor particularly well identified by Gonçalves (1998), that Pleistocene age is used to assert the 'importance' of a particular corpus of rock art (and thus enhance the importance of its promoters).

The third factor appears to have no rational basis; in fact logically it even presents a preservation threat to *other* rock art. Clearly if archaeology were to champion the principle that eligibility for preservation is a function of age, it would pre-empt any future demands to preserve more recent rock art. This, I would argue, is unacceptable to rock art science, for obvious reasons. Most of the world's rock art is clearly not of the Pleistocene, and to prejudice its survival by designating it as 'less valuable' or less worthy of preservation would be irresponsible. Perhaps some European archaeologists actually do feel that rock art of the Pleistocene is more important than rock art of the Holocene, but surely they are aware that other stakeholders in rock art may have other priorities. Surely it is also obvious that this kind of value system has no rational basis; it is essentially emotive and irrational. Moreover, there are many stakeholders in rock art who may find this value system entirely contrary to their own. I am not just referring to practitioners of other disciplines who may hold interests in rock art (e.g. art historians, ethnographers, anthropologists, semioticians), but primarily to the cultural owners of rock art in those parts of the world where they still exist. Peoples such as the Aborigines of Australia hold views concerning the importance of rock art that seem to be diametrically opposed to those of some European archaeologists: they perceive the most recent rock art as the most important, not only because it demonstrates the continuity of their society's expressions of material culture and thus validates legitimacy, e.g. in their connection with the land, but also because it is the most recent rock art that can best

be related to historically. From their point of view, the concept that the oldest art is the more important would necessarily seem illogical.

Even in Europe, similar principles do apply. Various living societies perceive the rock art in their regions as part of their own cultural heritage, as having been made by their own ancestors (e.g. in Scandinavia and Britain). Moreover, various groups of researchers specifically work with relatively recent rock art, precisely because it provides information of recent cultural dynamics. An example are the members of Verein Anisa, a research group working in parts of Austria and southern Germany, who specialise in the study of rock art and rural, especially montane, settlement patterns, and for this purpose may find pre-Historic rock art considerably less interesting.

It follows that the principle of the earliest rock art of a region being the most important reflects the bias of Palaeolithic rock art connoisseurs of quite specific regions, most especially of south-western Europe. These same people show no marked interest in Pleistocene rock art of other continents. It is also in this area that the incidence of fakes of Pleistocene mobiliary art reached plague proportions (see Bahn 1997: 77-79; consider for comparison that not a single fake is known from Russia and Siberia, where similarly large corpora of portable Palaeolithic art are known). I propose that these two factors are connected: a construct of significance has created the conditions encouraging both forgery and excessive age claims.

Two observations become evident if this reasoning is followed through. First, the decision of some Pleistocene archaeologists to pronounce sites such as those on the Côa as Palaeolithic reflect merely their own value system, and not a value system that anyone else might necessarily share. Second, their nomination of this purported Palaeolithic antiquity as the reason why this rock art must be preserved is not only without rational justification, it invites several serious criticisms:

- a. This form of logic is unacceptable to rock art researchers of the rest of the world, not just because it devalues other rock art forms, but because it prejudices the preservation of younger rock art. It is therefore designed to satisfy the self-interest of a specific group of scholars.
- b. This strategy reinforces an arbitrary value system for rock art that lacks objective justification.
- c. A preservation campaign based on the age of rock art, particularly when there are reasonable doubts about that age, invites the possibility of failure if the true age of the rock art should become apparent. It is therefore imprudent.
- d. A campaign conducted on this basis misleads the public, and it corrupts academic debate because it bears within it the need to persevere with false claims once they were made.
- e. Such a campaign debases scholarship, because it is likely to lead to victimisation of researchers who

eschew political expediency or correctness, and it favours the agendas of the politically active.

- f. The validation of the value judgments such a campaign is based on is, from Freeman's (1994) perspective, a procedure resembling the process of validating religious shrines, particularly in the Catholic tradition. It lacks scientific credibility because its 'stylistic' beliefs are criteria which are inaccessible to falsification. In this sense it turns archaeology into a belief system, a quasi-religion.

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