Horse and bull petroglyphs of Europe

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Summary

This paper summarises a large number of cases in which late Holocene rock art in Europe, often of the historical period, has been pronounced to be of the Pleistocene, generally on the basis of perceived style. Since a large component of what is widely regarded as 'Palaeolithic' rock art is in fact not of that period, it follows that the concepts currently held of Palaeolithic style must be severely flawed. The reasons for the importance given to Palaeolithicity in Europe are explored, leading to the hypothesis that it is seen as underpinning the neo-colonialist notion that art, symbolism and human cognitive modernity originated in Europe in the Upper Palaeolithic. This is demonstrably a fallacy that has dominated nearly all discourse on the 'origins of art', suggesting that those who hold this view are inadequately informed. The causes of the persistence of this myth are explored from a global perspective.

Riassunto

L'articolo desamina un ampio numero di casi nei quali arte rupestre Europea del Tardo Olocene, spesso di periodo storico, è stata attribuita al Pleistocene, solitamente sulla base di considerazioni stilistiche. Visto che un'ampia parte di ciò che viene largamente considerata come arte rupestre 'Paleolitica' non appartiene di fatto a quel periodo, ne consegue che i *concepts* correntemente contenuti nello stile Paleolitico devono essere errati. In Europa di attribuiscono grande importanza e attenzione alle forme d'arte attribuite al Paleolitico, in ragione dell'idea neocoloniale che l'arte, il simbolismo e la capacità congitiva umana moderna si siano originate nell'Europa del Tardo Paleolitico. Questa è chiaramente una falsa credenza che ha dominato pressoché ogni discorso sull'orgine dell'arte. Nel testo l'autore esamina le cause della persistenza di questo mito in una prospettiva globale.

Introduction

This paper was prompted by the recent report of a group of presumed horse petroglyphs at a site near Gondershausen, in the Hunsrück mountains of Germany, and the contention that they are of the Pleistocene. Similar claims about Pleistocene petroglyphs on schist exposed to precipitation have been appearing for thirty-five years, ignoring the geological reality that schistose facies erode much too rapidly to preserve rock art for tens of millennia. For instance in the case of Gondershausen (Welker 2015), the small assemblage of petroglyphs was proposed to be of Aurignacian style, which would make it in excess of 30,000 years old. When exposed to rain, schist, like phyllites, siltstone and slate, hydrates and gradually reverts to mud, the surface retreating at a rate ranging from 1 to 10 mm per millennium (Schwegler 1996; Bednarik 2007, p. 61). Therefore petroglyphs on schist exposed to the rain can generally have survived only from late Holocene times. Disregard for basic principles of rock art deterioration rates is

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Fig. 1 – Fortification wall of Castro, near Yecla de Yeltes; note zoomorphs on large block.

the main factor in the numerous erroneous age estimates of both petroglyphs and pictograms that mar a great deal of literature on rock art.

The most fundamental tenet in this field is the principle that the relative susceptibility of any petroglyph to erasure by natural means (be it aeolian, fluvial, marine or any other agent) is roughly proportional to the time it takes to create it (Bednarik 2012a, p. 79). The time required to fashion a petroglyph on a given rock type is a known variable (or can become so through replication); therefore the relative longevity of a given petroglyph is also predictable. Far too many archaeologists have ignored this simple rule in their desire to declare rock art to be of the Pleistocene, when it is in fact much more recent. To illustrate by example: it takes about 400 times as long to create a cupule on unweathered quartzite than to produce a cupule of identical depth on weathered sandstone (Bednarik 1998, p. 30, Fig. 5; Kumar 2007; Kumar, Krishna 2014). It will then also take about 400 times as long to naturally erase it by natural processes, rock of hardness 7 on Mohs scale being roughly 26 times more resistant to abrasion than hardness-3 rock. This reasoning helps appreciate the greatly varying propensity of petroglyphs to survive, depending on the weathering resistance and hardness of the rock and on such factors as its groove depth and exposure (Bednarik in press a). Therefore, in commenting on the potential antiquity of a petroglyph, researchers need to fully appreciate its taphonomy (Bednarik 1994a).

Numbering in their many hundreds, the instances of grossly incorrect age estimates for rock art motifs are in all cases attributable to lack of regard for taphonomic tenets. Examples can be cited from all continents except Antarctica, but they are especially numerous in Europe, where in the majority of cases they concern

Fig. 2 – Zoomorphs on the Castro walls, showing the amount of weathering experienced by granite in one or two millennia

'Palaeolithic' attribution to Holocene motifs. In reviewing the vast number of instances it can be generalised that the great majority of these mis-datings were applied to presumed equine and bovine images. Over recent decades, a trend has developed of regarding all so-called naturalistic zoomorphs in Europe as having to have been made in the Pleistocene. In this two aspects are ignored: that no rock art motifs are truly naturalistic (i.e. they are generally abstractions), and that 'naturalistic' animal depictions were made in all historical periods of the continent (i.e. there is no a priori reason why such depictions should necessarily have been made in a Palaeolithic period). Bearing in mind that there are thousands of presumed horse and bull rock art images of recent centuries and millennia across much of Eurasia, this paper will commence by examining a major assemblage of such historical rock art imagery which, by definition, cannot be of the Pleistocene. It occurs on the outer walls of a historical structure of approximately known age, and because it occurs on granite, a relatively weathering-resistant rock, it is of particular value in understanding the issue better.

The 'horses' of the Castro at Yecla de Yeltes

The fortifications of the Castro, about 1 km south of Yecla de Yeltes in far-western Spain (Salamanca) were founded by the Iron Age Vettones in the 5th century BCE. However, most of the surviving structures are more recent, of the 3rd century BCE and dating from Roman reconstruction in the 3rd century CE and later (fig. 1). The fortification contained a village of 5 ha area which was only abandoned in the 12th century CE (probably shortly after 1184 CE). Thus most walls surviving today date from Roman and medieval times. The walls of the

fortress, overlooking the Varlaña stream, range in height from about 3 m to 5 m, being mostly 4 m high, and they extend over approximately 1050 m length. It is on these expansive structures that most of the petroglyphs are found, of which at least 200 have survived. About half of these are so severely weathered that they can barely be recognised. Those that survived best are said to represent mainly horses, although there are also some anthropomorphs, 'wild boars', 'donkeys' and bovid figures.

The dry-laid walls of the Castro are made exclusively of the local granite, and numerous locations of quarrying activities are apparent at the site. In the construction of the walls, advantage was taken of local terrain, incorporating steep rock escarpments in the defensive design. Like any other rock, the surface of granite retreats with time, but the rate at which this occurs varies widely, from 0.05 mm to 2 mm per millennium, depending on the lithology and environmental conditions. The Castro granite has a high component of mica and is low in feldspar. The surprisingly high average annual rainfall at the site, 706.0 mm, has contributed to the weathering of the granite, which appears to be mostly in the upper range, i.e 1–2 mm/ka. Although the exact age of any of the Castro petroglyphs remains unknown, the entire corpus postdates the construction of the walls and must therefore be expected to be between 700 and 2000 years old. This provides a reliable point of reference of the amount of weathering experienced by historical petroglyphs on granite (fig. 2).

In considering the 'style' of the Castro petroglyphs the technology of production must be allowed for, as it is determined by the nature of the rock. Shallow engraving or incising, which is often used on soft rocks such as slate and schist, is ineffective on essentially unpatinated granite. Figures were presumably deeply chiselled by indirect percussion with metal tools. Due to the extensive weathering, production traces have not been retained even in the best preserved motifs. Although the Gondershausen petroglyphs were made on schist, they are stylistically very similar to those at Castro, because the German figures occur not on smooth foliation surfaces, but on a panel truncating the rock's wafered composition at right angle. Therefore the makers of the Gondershausen motifs had to contend with similar technological issues, and the 'stylistic' similarity of the 'horses' of the two sites is at least to some degree attributable to the fabric of the respective rock facies. It is a fundamental error to assume that such petroglyphs provide much 'stylistic' information, and that such information should have much bearing on their age.

The horse and bull petroglyphs of Siega Verde

About 32 km southwest of Yecla de Yeltes and near the Portuguese border is the World Heritage petroglyph site of Siega Verde, located at Castillejo de Martin Viejo. It also comprises several hundred zoomorphs, mostly of equine plus some bovine and cervid images. All of these animals exist in the region today, and there are none of the typically Palaeolithic motifs, the so-called signs. The site occurs on both sides of a towering masonry bridge over the Agueda river, coinciding with hundreds of rock inscriptions. Both the petroglyphs and the inscriptions are entirely limited to a zone of 6 m above the thalweg, i.e. within the

flood zone. The river floods frequently, rafting vast quantities of coarse angular quartz sand and quartz debris up to boulder size through the valley. As a result the soft bedrock schist has been extensively sculpted, including cavitation by pothole formation. Of greater importance than plucking or bedload abrasion is the impact of suspended-load abrasion (Alexander 1932; Foley 1980; Sklar, Dietrich 1998; Snyder *et al.* 2000). The abrasion coefficient for schist (16) is significantly higher than that of, for example, granite (0.4) or quartzite (0.15) (Attal, Lavé 2005, pp. 156, 159), and abrasion by saltating or suspended particles is therefore much in evidence at the site (fig. 3). It has affected petroglyphs and inscriptions equally, and since many of the latter were furnished with engraved dates, it has been possible to plot Degree of Erasure as a function of time (Bednarik 2009a). This has demonstrated beyond reasonable doubt that the Siega Verde petroglyphs are mostly under 200 years old, and that after 400 years, any anthropogenic rock marking would have been erased fluvially within the flood zone. Indeed, it was found that the majority of the petroglyphs dates from the construction period of the bridge, which was completed in 1924. This is indicated not only by the measured Degree of Erasure, but also confirmed by the occurrence of two zoomorphs that were executed on the recess carved from the bedrock to provide the base for one of the bridge piers. The pier itself partially conceals the two motifs, demonstrating that they must have been executed between the time of initial preparations for the bridge (apparently early in the 20th century) and the commencement of the construction of the pier in question (fig. 4).

There is one exception to the very young ages of the petroglyphs: high on one of the rocks north of the bridge, at an elevation of about 6 m above the normal level of the river (i.e. just outside the zone of fluvial erosion), occur filiform designs, over which much more recently a horse head has been pounded. The subparallel fili-

Fig. 3 - Siega Verde schist surface showing the heavy impact by suspended particles, and below the quartz sand causing this fluvial wear.

Fig. 4 – The petroglyph grooves of an equine neck hammered into the rock surface exposed to create the base for the bridge pier (on left) that has since concealed it; the grooves therefore date from the time between the creation of the recess and the establishment of the pier

form incisions resemble Iron Age rock art in the nearby Douro valley and are fully patinated (matching background patination), whereas the superimposed horse head image is almost unpatinated and significantly younger (Fig. 5). Another factor delimiting the potential age of the Siega Verde rock art is the evidence, found in crevices and recesses at the site, of the former presence of an extensive alluvial terrace of very coarse-grained composition (mostly granite cobbles to boulder clasts), in the form of many firmly lodged, small remnants at elevations of up to 7–8 m above the river. It would be impossible for any petroglyph or inscription to survive first the deposition and then the eventual degradation of this terrace. Therefore the terrace must predate all of the lower rock markings, and its own post-Roman antiquity is demonstrated by water-worn Roman pottery (Bednarik 2009a). This terrace deposit therefore provides a secure *terminus post quem* for the Siega Verde petroglyphs. Finally, the villagers from Castillejo de Martin Viejo have long known the origin of the rock art (Hansen 1997). They 'had a good laugh when archaeologists told them the art was Palaeolithic', after archaeologists 'discovered' in 1988 what had always been known to the villagers.

Despite the overwhelming evidence demonstrating that the Siega Verde petroglyphs are of the most recent history, some archaeologists continue to insist that they are of the Pleistocene and around 20,000 years old (Balbín *et al.* 1991; Balbín, Alcolea 1994; Bahn, Vertut 1997, p. 130). Indeed, in 2010 they succeeded in having the property inscribed on the UNESCO World Heritage List on the basis of the rock art's 'Palaeolithic' age. The only evidence tendered for this antiquity is the purported 'Palaeolithic' style of the animal figures, when in fact none of them resemble authentic Pleistocene rock art in Iberia (fig. 6). Apart from the dominant equine figures and some Spanish fighting bulls, there are some 'deer', a dog-like quadruped and one image resembling a ferret or weasel. This implies a modern fauna, while both extinct animal depictions and Palaeolithic 'signs' are numerous in Spanish cave sites (Casado Lopez 1977). Moreover, the dominant percussion method was generally not used in these caves; the geometric 'signs' are completely lacking at Siega Verde; the site features no Pleistocene occupation evidence whatsoever; and all scientific data ever offered in relation to this corpus of rock art indicates that it is generally under 200 years old.

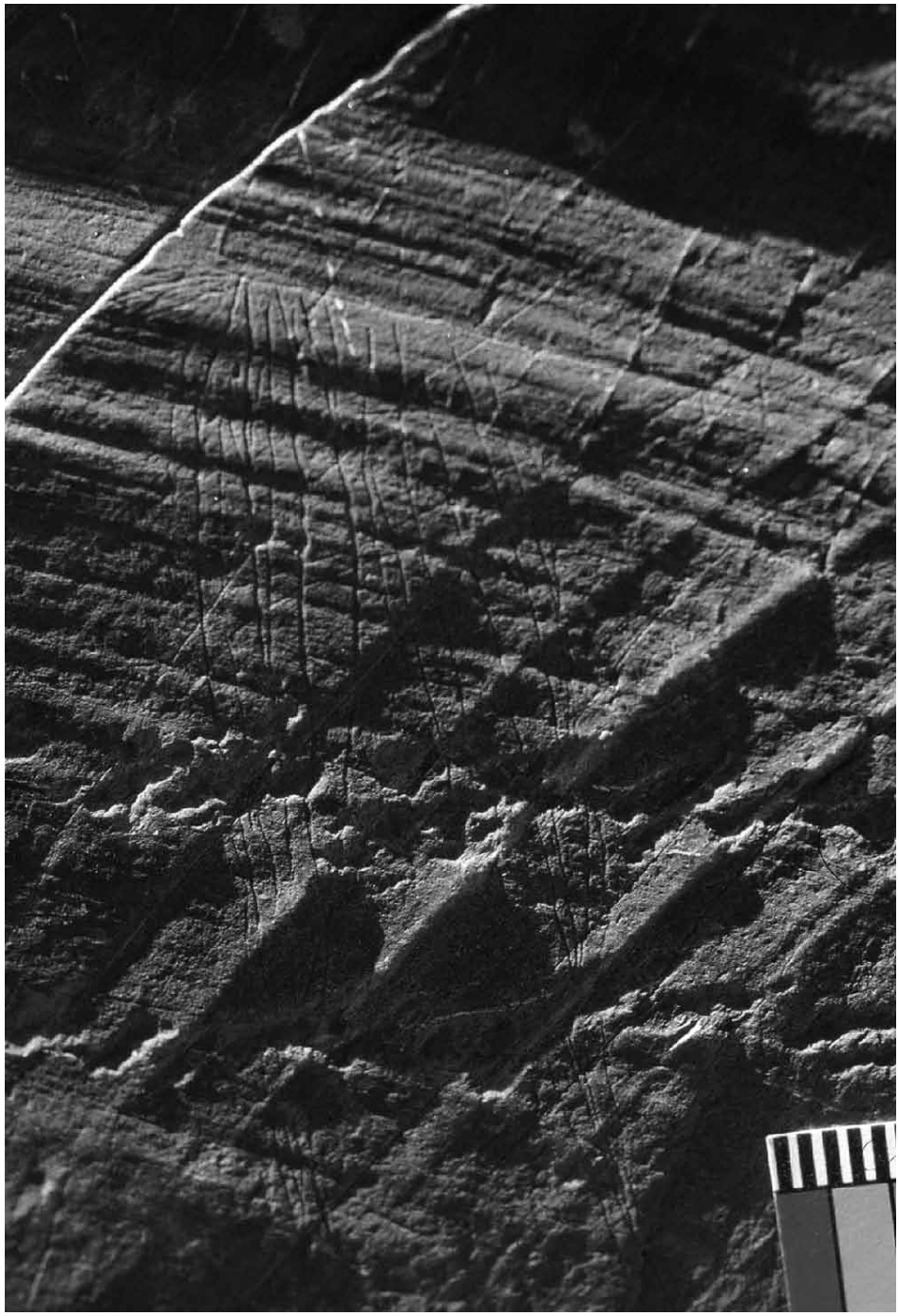

Fig. 5 – Siega Verde, part of a pounded equine zoomorph, weakly patinated, superimposed over earlier, completely patinated single-incision markings; scale in mm

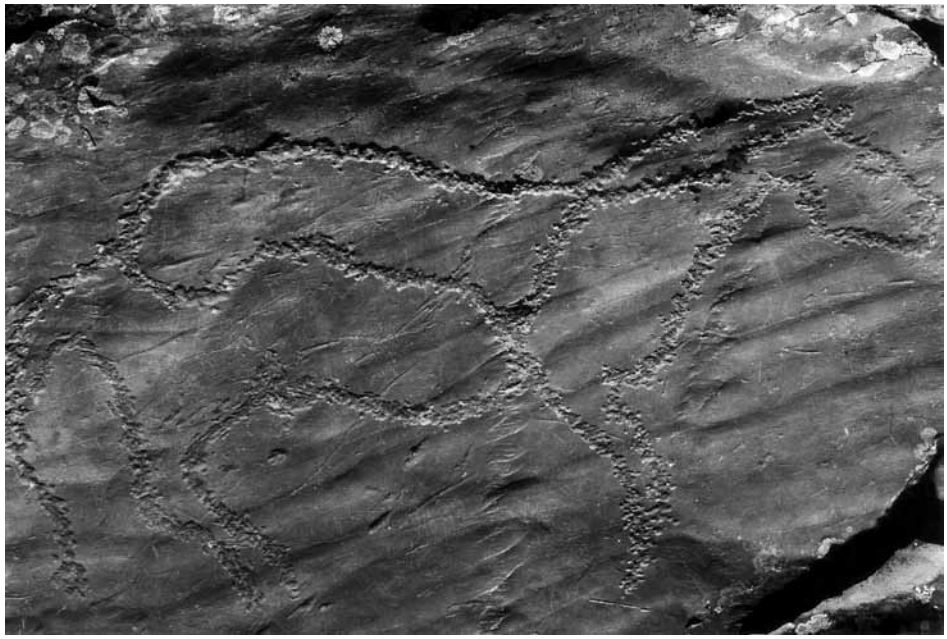

Fig. 6 – Siega Verde, the 'rat-horse', a percussion petroglyph lacking any Palaeolithic features but resembling equines at nearby Castro

The Côa soap opera

The inscription of the body of essentially modern rock art at Siega Verde on the World Heritage List as 'Palaeolithic art' may be an absurdity, but it is not a unique aberration. It was preceded by the inclusion on that List of a whole series of nearby sites, again under the pretence of a Pleistocene antiquity. Just as in the case of Siega Verde, local residents had always known about the rock art for as long as it existed, but in the early 1990s archaeologists 'discovered' the Côa petroglyphs (about 60 km from both Siega Verde and Yecla de Yeltes) and promptly declared their 'Palaeolithic' age. Because the Portuguese government had a special interest in the claim (it planned to inundate the sites by a reservoir) it arranged a 'blind test' involving four rock art dating scientists. They had to agree not to communicate with their colleagues for the duration of the experiment and submit their findings to the government, which would then compare them. In July 1995 it was announced that the four separate findings were all in agreement: none of the rock art was of the Pleistocene, all was of late Holocene age, and most of it was only a few centuries old (Bednarik 1995; Watchman 1995, 1996).

This prompted an intensive excavation campaign in the lower Côa valley, churning up the sediments around dozens of decorated rocks, all without finding any trace of Palaeolithic occupation. Wherever archaeological remains were recovered, Neolithic microliths and ceramics extended down to bedrock. The problem, very simply, is that the lower Côa valley is geologically very young and near its present floor contains virtually no sediments predating the second half of the Ho-

Fig. 7 – Completely unpatinated equine petroglyphs at Fariseu, Côa valley, at least one of which is wearing a bridle

locene. Some pockets of Palaeolithic-bearing sediments were found in remains of ancient terraces high on the slope, from a time when the river was at an elevation 40 m higher than at present (Zilhão *et al*. 1997, Fig. 3; Aubry *et al*. 2002). After several years of fruitless searching for petroglyphs covered by sediment, the site of Fariseu eventually presented a dense tangle of petroglyphs that had been concealed by sediment. Unfortunately, that sediment consisted of colluvial and fluvial deposits, i.e. materials that had been deposited either by gravity (slope descent) or by water deposition (Anon 2000). Any archaeological objects occurring in such sediments are of no relevance to dating these, because their deposition is fortuitous (all components of fluvial and colluvial sediments are older than the time of depositions). In the case of Fariseu, the sediments were deposited through erosion of the banks of the reservoir, postdating the construction of the Douro dam. Moreover, the Fariseu petroglyphs are completely unpatinated and look very fresh (Fig. 7).

Neither the Fariseu site, nor any other of the excavated sites in the lower Côa valley, has produced any of the archaeological data expected from a Pleistocene occupation site. There have been no Palaeolithic stone tools reported, nor any radiocarbon or OSL dates from occupation deposits; no human remains, no food remains, no pollen spectra, no sedimentary data or any other scientific data supportive of Pleistocene antiquity. Some TL dates obtained from supposedly heated rocks were reported from one level but these vary greatly from each other and the corresponding charcoal dates were withheld. Many of the Côa zoomorphs were

engraved with metal tools, although others were made with stone points. As in Siega Verde, not a single animal depiction has been claimed to be of a Pleistocene species, although there was a claim (Zilhão *et al.* 1997) that ibex were extinct in the region in the Holocene. That claim has been squarely refuted by Wyrwoll (2000) who demonstrated that the depicted ibex most closely resembled a Holocene subspecies, *Capra ibex victoriae* (Fig. 8). At least one of the many equine petroglyphs at Fariseu is shown wearing a bridle, and yet there are no credible claims that Pleistocene horses were domesticated (only Bahn has proposed this). Most importantly, the sub-naturalistic animal images of the valley are much less weathered and patinated than the inscriptions of the 18th century within a few metres of them (Bednarik 1995). Other zoomorphs are clearly much older, but they were executed in highly schematised forms that differ significantly from the naturalism of authentic Palaeolithic rock art. Another defining feature of the Côa petroglyphs is that they invariably occur in the close vicinity of ruins of former water mills. Many of them are located within the flood zone of the river, yet none show any appreciable fluvial erosion wear. Another factor that shows the absurdity of the Palaeolithic claims is that many engraved grooves clearly dissect lichen thalli that can be estimated to be up to a few centuries old, while the grooves themselves are covered by only very recent thalli. This confirms that the petroglyphs are of recent centuries. Finally, as on the Siega Verde schist, the gradual surface retreat of the similar schist renders it impossible for petroglyphs to survive for tens of millennia.

Siega Verde and the Côa series of sites are certainly not the only open schist localities on the Iberian Peninsula that have been stylistically attributed to the Pleistocene in the last few decades. The first of these many sites, which are do-

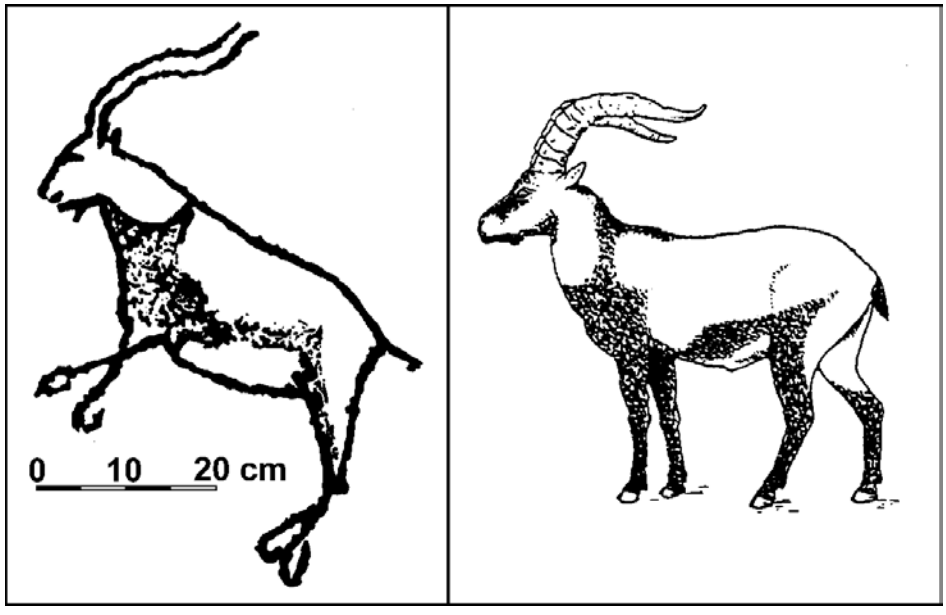

Fig. 8 – On left zoomorph from Rego da Vale, Côa valley; on right a Holocene subspecies of the region

minated by equine petroglyphs, were Domingo García in central Spain (Martín Santamaría, Moure Romanillo 1981) and Mazouco in the Portuguese Douro valley (Jorge *et al.* 1981). It is notable that the Palaeolithicity of the 'horse' petroglyph at the second site was already refuted by Baptista (1983), and yet it continues to be proclaimed by the believers. These early reports were followed by engravings of animal heads at Fornols-Haut, Campôme, in the French Pyrenees (Bahn 1985; Sacchi *et al.* 1987). Next, a 'horse' petroglyph at Piedras Blancas near Escullar, Almería, was presented as Palaeolithic (Martinez 1986/87). The sites Carbonero Mayor, Bernardos and Ortigosa near Domingo García were reported by Ripoll Lopez and Muncio Ganzalez (1994); and finally, a headless zoomorph lacking any diagnostic features was pronounced as a horse at Ocreza, Portugal, and since it was assumed to be a horse it was believed it must also be of the Palaeolithic.

Despite the complete lack of evidence in favour of a Pleistocene age, the Côa rock art was successfully nominated for World Heritage listing *because* 'it is of Palaeolithic age'. Bearing in mind that only a tiny fraction of the world's surviving Ice Age rock art is actually in Europe, and that not a single such site in the other continents has ever been nominated for listing, it does need to be asked why European sites, massively over-represented on UNESCO's list, need to be added even when they are manifestly younger. But from an epistemological perspective, the more important question to ask is, how do these false chronological attributions become established in the first place? The following examples can help illustrate this.

The Pleistocene rock art of Germany

The claim of having discovered the 'first Palaeolithic rock art' in Germany has a long history, in which the Gondershausen contention merely represents the most recent manifestation. The previous such assertion concerned a rock spall from Hohle Fels near Schelklingen (Conard, Uerpman 2000) and preceding examples extend back to the early 20th century (see Bednarik 2002 for review). To review each and every one of them in detail would occupy considerable space, so it will have to suffice to briefly mention those that have garnered some attention. But it can be said from the outset that all these claims have been very effectively refuted and at present, Germany lacks any known rock art that can be credibly attributed to the Pleistocene. In view of the country's rich assemblage of portable palaeoart of the final Pleistocene and the frequent occurrence of limestone caves this lack of early rock art is surprising, and the same applies to much of the rest of Europe (see following chapter). In the case of Germany, it cannot be said that it has not been tried very hard to eliminate this hiatus.

Among the earliest propositions of German 'Palaeolithic' rock art to have been falsified are those concerning the image of a 'stag' in the Kleines Schulerloch, Bavaria (Birkner 1938, Pl. 13; Maringer, Bandi 1953, p. 23) and the engraving of an 'undetermined' animal figure in the Kastlhänghöhle (Bohmers 1939, p. 40). The refutations can be found in Bosinski (1982, p. 6) and Freund (1957, p. 55). The 'stag' in the Kleines Schulerloch, which does not resemble the style of credible Palaeolithic imagery, is accompanied by a runic inscription that has been described as flawed, and suggested to date from Germany's fascist period. Most re-

cently Zuechner (2015) reopened the issue by reporting that a date of 800 BP is said to have been obtained from a bead of reprecipitated calcite formed on the inscription, but that the claimant does not respond to requests and Zuechner is unable to tell what method was applied. In all probability it could have been either radiocarbon or U/Th analysis, both of which provide only controversial results from such samples, or alternatively the report was simply a hoax; certainly information of this calibre needs to be ignored.

The black-brown 'pigmented' limestone fragment from Geißenklösterle was defined as part of a black painted rock art motif (HAHN 1988a, 1988b, 1988c, 1991; RICHTER *et al.* 2000) but, upon microscopic examination was pronounced to be a fire-spalled rock fragment bearing an accretion of partly combusted plant resin (BEDNARIK 2002). The 'black, yellow and red coloured' piece from the same site (HAHN 1986; MÜLLER-BECK, ALBRECHT 1987) consists of a rock fragment stained yellow by goethite that has been in contact with the reducing flame of a hearth, converting the iron salt to the haematite phase towards the edges of the flake. A more recent accretionary deposit is of carbonate, containing tiny charcoal flakes. Then there is the limestone fragment from Hohle Fels, which Conard and Uerpman (2000) interpreted as rock art, which became spalled from the cave wall. The object bears two arrangements of red dot marks applied by finger tips, probably of a child (fig. 9). However, the dorsal surface of the stone, i.e. the spalling plane, bears hundreds of microscopic traces of the same red pigment, arranged in such a fashion that it reflects the paint-covered fingers holding the plaque as the fingertip patterns were produced (BEDNARIK 2002). Therefore the object is a piece of portable palaeoart of the Pleistocene and not rock art.

A different error occurred in the determination of a series of exfoliated wall fragments of *Bärenschliffe* (cave bear polishes) bearing linear incised grooves, widely interpreted as anthropogenic rock engravings (HAHN 1991, 1994; SCHEER 1994; CONARD, UERPMANN 2000; HOLDERMANN *et al.* 2001). Detailed microscopy demon-

Fig. 9 – Limestone plaque from Hohle Fels with rows of paint marks applied by finger tips

strated beyond doubt the fully natural origin of these random incisions (Bednarik 2002). They were caused by quartz grains embedded in the shaggy fur of the cave bears, as they rubbed their bodies against the polished surfaces of the cave walls. Such cave markings are well known from many other European caves that served as hibernation lairs of these powerful ursine visitors (Bednarik 1994b).

A small number of engraved markings in an unnamed cave in the Rothaargebirge, Germany, has been suggested to be of the Pleistocene in the late 1990s, but it has never been published or analysed. The Rothaargebirge is effectively a northeastern extension of the Hunsrück mountains where the Gondershausen site is located (Welker 2015). As the latter site has prompted the present paper it deserves to be considered in more detail. The site consists of a wall-like schist tower, the flatness and angular shape of its panel appearing to have been shaped anthropically. However, this feature is of natural origin, having been caused by the erosion of angular blocks. The panel bearing the six zoomorphic percussion petroglyphs and two inscriptions cuts across the laminar grain of the schist and is deeply and extensively weathered: natural foliation lines have eroded up to a depth of 14.8 mm. The edges of the panel are well rounded and are significantly older than the petroglyphs and inscriptions on the panel, which are typically eroded less than 1 mm (Fig. 10). What renders them appearing old is mostly the dense lichen cover of the panel, while the rock art grooves remain almost unweathered where they are free of lichen. These grooves differ significantly according to their orientation: the horizontal ones tending to follow the foliation of the rock and are up to 13 mm deep, while those of predominantly vertical orientation tend to be less than 6 mm deep. Their respective sections also differ significantly: horizontal grooves are essentially symmetrical in section, i.e. the cross-sections on either side of the deepest point are of similar areas. Vertical grooves display a very pronounced asymmetry: the slopes on their left are very steep, even vertical to the panel or undercut; the right slopes are typically inclined at only 20° to 22°, and at a significantly consistent angle. These characteristics suggest that a flat chisel was used by a right-handed person. The shape of the working edge of this chisel can be gleaned from the 'muzzle' region of zoomorph II (Welker 2015, Fig. 3), where the groove is deepest but quite rounded, indicating that the chisel was rather

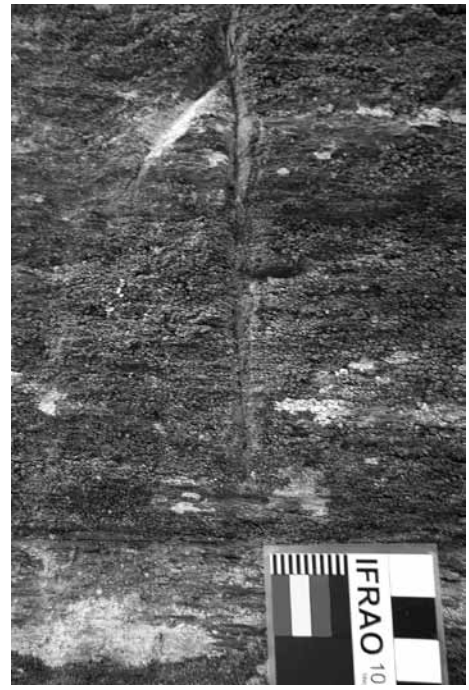

Fig. 10 – The inscriptions on the Gondershausen petroglyph panel are no less weathered than the petroglyphs

Fig. 11 - Microphotograph showing the deepest portion of a vertical groove in 'horse II', Gondershausen petroglyph panel; note the steep wall on the left, the c. 20° angle of the right slope, the chisel's striations and the almost unweathered condition of the floor where it is not covered by lichen

blunt. A vertical groove even provides a negative impression of the metal chisel edge: it was straight, only 8-9 mm long, and its rounded edge seems to have had a diameter of about 2-2.5 mm. These marks are in mint condition, showing the striations caused by the chisel's impact (fig. 11).

Welker's (2015) argument in favour of Pleistocene antiquity of these petroglyphs was entirely based on a stylistic proposition. Apart from the geological and forensic evidence that these motifs can only be of recent, historical antiquity, the stylistic argument is also flawed. Petroglyphs of similar stylistic parameters are clearly much more common across Eurasia in historical periods than in authentic Pleistocene assemblages. For instance, the many equid petroglyphs on the walls of the Spanish site Castro described above match those of Gondershausen; they occur on much more weathering-resistant granite and yet they are significantly more eroded than those at the German site. Since the Castro figures are under 2000 years old, it can safely be predicted that those at Gondershausen are somewhere in the order of 300 to 1000 years old (Bednarik in press b). Moreover, the proposal of their being of Palaeolithic style evaporates through the evidence that equine figures of this type are far more common from historical periods than from the Pleistocene. The assessments of the site by Antonio Martinho Baptista, Dominique Sacchi and Paul Bahn, who pronounced the Gondershausen rock art as Palaeolithic because they consider all equine images on schist sites in Europe to be so, are mistaken.

In the Mäanderhöhle at Veilbronn, northern Bavaria, which consists of 40 to 50 m of narrow winding passages, rock markings were discovered on 21 March 1991. Bosinski considered the line markings on rounded moonmilk formations to be Palaeolithic cave art, comparing them to female figures at Gönnersdorf (Blumenröther *et al.* 2015). However, 3D scanning and detailed analysis showed that the grooves are natural features, possessing very flat floors and lacking any striation marks. The lines are erratic and appear to be 'stretch marks' formed as the bulging moonmilk ceiling features expanded. Similarly, the linear wall markings in another Bavarian cave, the Schönsteinhöhle, are clearly animal claw marks and are probably attributable to chiroptera. Bat markings are extremely common in limestone caves (Bednarik 1991). A very modern-looking bovid image at Reinhausen near Göttingen is regarded as a recent feature. Another possibility of 'Palaeolithic art' presence concerns the Teufelsfelsen near Bad Griesbach, Bavaria, but such a proposal has not been formally published. This shelter is formed by a huge conglomerate block leaning against another rock and contains red and black rock paintings. The main figure, an anthropomorph with ibex-like horns surrounded by six smaller versions is not, however, likely to be of great age. There is also a well-made cupule at the site, but its possible antiquity has not yet been appraised.

The usual suspects

Germany is not unique, however, in the failed endeavours to attribute Pleistocene age to rock art; for instance in the United Kingdom several such proposals have been made. The earliest on record is the 1912 claim by H. Breuil and W. J. Sollas that they had found Palaeolithic cave paintings in Bacon's Hole, Wales. Although the red stripes were indeed of ochre, they had been made by a workman only eighteen years previously (see similar finding concerning Mladeč Cave below). The 'Palaeolithic cave art' found in the Wye valley (Rogers 1981) was found to consist of natural grooves and the 'malachite inlay' reported from it was in fact green algae (Sieveking 1982). Church Hole in the Creswell Crags of Derbyshire was the next site claimed to contain 'Palaeolithic art', when three engravings were reported from it in April 2003 (Bahn *et al.* 2003). A few months later the authors found another nine 'Palaeolithic' motifs, and a year after the first find, they reported the discovery of yet another thirty images (Ripoll *et al.* 2004). At that stage, the first objections were voiced, suggesting that the three versions now published of the main figure were significantly different, even depicting different species (Fig. 12), and that the three reports were severely lacking in scientific detail and presented contradictory interpretations. Moreover, many of the ceiling figures appeared to be natural markings in the published photographs (Bednarik 2005). But this did not deter the discoverers from increasing the number of images first to ninety, then to well over one hundred, and proclaiming that they had discovered 'the most richly carved and engraved ceiling in the whole of cave art' (Ripoll *et al.* 2005). Next, an irrelevant uranium/thorium date was presented (it was not collected from any rock art) but two years later the number of motifs was reduced to ten, of which only three were 'recognisable images' (Bahn, Pettitt 2007). The continuing lack of testable scientific information means, however, that the 'murky landscape of unsupported and untestable a priori, premature claims' (Montelle

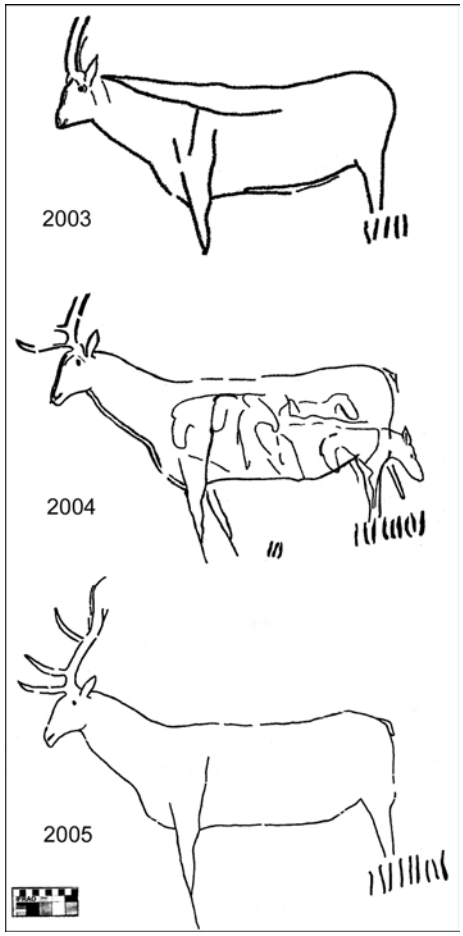

Fig. 12 - Three different published recordings of the principal motif in Church Hole, all having been produced by Bahn, Pettitt and Ripoll: the intitial ibex became a stag

2008) concerning this site still cannot be assessed, and access by sceptical researchers has been discouraged. Nor has any explanation ever been offered why nearly all the claimed rock art motifs in Church Hole have been abandoned.

However, this controversial and poorly presented proposal has prompted two other claims of possible Pleistocene rock art in Britain. The first derives from Gough's Cave, a site previously examined by the Church Hole team without finding it. Mullan (*et al.* 2006) presented a much better documented marking, which they concede is largely a natural feature. They interpret part of a line resembling the back of the pareidolic 'mammoth' as anthropic, but the groove in question does not resemble the flow of an engraved line and seems also natural. 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. Finally, Nash (2012, 2015) reported finding an engraved motif he interprets as the image of a reindeer (it does not resemble authentic Ice Age images of reindeer). A uranium series date of c. 12,500 years BP from flowstone covering the image needs to be considered in the light of the evidence that such deposits have been found to yield dates that are too old. Nevertheless, the motif from Cathole Cave, Gower Peninsula, Swansea, can be regarded as the only possible final Pleistocene engraving currently known in Britain. The remaining claims have little or no credibility.

But to return to wider central Europe, the Pleistocene age of many other rock art sites Bahn & Vertut (1997) list as such has been either refuted or at least challenged. For instance Bahn lists Mladečských jeskyní near Olomouc, Czech Republic, because Oliva (1989) has attributed a series of red pigment markings to the Palaeolithic period. But a study of the sixteen markings in question has shown that some of them are inscriptions and others are simple lines or crosses made with the same pigment, apparently occurring where human remains or other significant finds were made during the excavations of the cave in 1882 (BEDNARIK

2006). Bycí Skála is another cave in the Moravian karst listed by Bahn, containing black pictograms of a 'Palaeolithic' zoomorph and a geometric pattern, both of charcoal. Radiocarbon dates showed that the cervid figure is in the order of 680 year old, the second motif is c. 4420 years BP and might date from the Eneolithic (Chalcolithic) (SVOBODA *et al*. 2005). Similarly, the black paintings and torch smears in Domica Cave in Slovakia probably belong to the Neolithic Bükk culture, despite the presence of claimed Palaeolithic occupation evidence. A ceramic vessel of the Bükk type has been found encased in flowstone. The extensive system of Ardovska Cave also features charcoal marks on its walls, accompanied by occupation remains dating from Neolithic, Bronze Age and Iron Age times. A radiocarbon date of about 42,800 years BP is regarded as questionable and demands further investigation (SEFCAKOVA, SVOBODA 2015). In Austria, petroglyphs at two sites have been attributed to the Pleistocene: at Stubwieswipfel in the Warschenegg mountains, and in the Kienbachklamm near Bad Ischl (KOHL, BURGSTALLER 1991). Investigation of these claims has categorically excluded such great age for the rock art, and at the latter site complex natural markings occurring among late historical motifs and inscriptions had been interpreted as rock art (BEDNARIK 2009b). In addition to Hohle Fels and Geißenklösterle, Bahn also lists the cave art sites Cuciulat, Kapova and Ignatiev Caves as Palaeolithic, although evidence to that effect is lacking from them. The Holocene radiocarbon dates extracted from three charcoal motifs in Ignatievskaya suggest a more recent age. A supposed mammoth image yielded a date of 7370±50 bp, while two geometric markings seem to be 7920±60 and 6030±110 years old respectively (STEELMAN *et al*. 2002).

Indeed, the only securely Palaeolithic rock art from eastern Europe is the recently discovered assemblage of peştera Coliboaia in Romania which is probably of the early part of the Upper Palaeolithic period (>30,000 years old). This presents a dismal impression of the purported ability of some rock art scholars to determine the Pleistocene age of a rock art motif from simple eyeballing. Leaving aside the focal Franco-Cantabrian region and its numerous cave art sites, there is precious little authentic Ice Age rock art known in all of Europe, yet so many sites have been pronounced as such, by scholars who believe in their ability to recognise such images by perceived style. It is interesting to note that a team currently investigating the more than 400 caves of southern Burgundy in France, close to the great concentrations of cave art, has so far yielded no evidence of Pleistocene rock art (FLOSS *et al*. 2015). Looking further afield, to the Asian section of Eurasia, the number of false claims about Ice Age rock art is considerably smaller than in Europe, but there are still a few examples. The claims concerning some 'horse and bull' pictograms at the open site Shishkino on the upper Lena river in central Siberia (OKLADNIKOV 1959) have been refuted (BEDNARIK, DEVLET 1993). The purported image of a woolly rhinoceros at Tal'ma does not remotely resemble that species, nor does Okladnikov's own recording. Some thirty rock art sites on the Kalguty river in Siberian Altai were attributed, again on stylistic grounds, to the 'Stone Age', possibly the Palaeolithic (MOLODIN, CHEREMISIN 1993, 1994), while others at Delger-Muren and Tes were placed in the Mesolithic (NOVGORODOVA 1983). Both claims were refuted by Kubarev (1997), who declared categorically that all known rock art of central Asia, west of China, was of the Bronze Age or

Fig. 13 – 'Horse and bull' paintings in Dunde Bulake Site 1, Altai, China, pronounced Palaeolithic in following the European model; they are in fact of the late Holocene

younger. Another example are the pictograms of the Zaraut-Kamar Rockshelter in southern Uzbekistan, purportedly the 'earliest known rock art of central Asia', which are in fact of the late 19th century (Jasiewicz, Rozwadowski 2001), reminiscent of the many instances of European rock art of recent centuries having been assigned to the Pleistocene by 'Pleistocene art experts'. Mongolian petroglyphs have been ascribed to the Ice Age on the basis of style, when in fact they are manifestly superimposed on striae of the final glacial incursion and are significantly more recent than these. Recently three rock art dating specialists examined the pictograms of Dunde Bulake Site 1 in the Altai area of Xinjiang Uygur Autonomous Region, China, which had been attributed to the Pleistocene on the basis of their 'horse and bull' images (fig. 13). They were found to be of the late Holocene, and the purported 'earliest depiction of skiing' at the same site was refuted similarly (Bednarik 2015a). But it should be noted that when fairly naturalistic zoomorphs were found in caves near Hutiaoxia, Huayi, and Yinbiruo, Lijian, no attempt was made to present them as 'Palaeolithic'; they were proposed to be in the order of 2000 to 3000 years old, showing considerably more restraint than many European 'experts' have shown (Peng 1996).

The Palaeolithic obsession

The last observation leads to the obvious question to be asked: what is it that has led to such a large number of false attributions of European rock art to the Ice Age? After all, there are hardly any examples of rock art being mistakenly placed

in the Iron Age, before the age is revised to Palaeolithic. Since Pleistocene rock art is far more common in other continents than it is in Europe, why is there such an obsession evident in that one continent? And why is it that most fakes of Pleistocene palaeoart have occurred in Europe, when such ancient finds are in fact of worldwide distribution? Another question to ask, and one that seems to aim directly at the heart of the issue: why is it that when the stylistic attributions of rock art to the 'Palaeolithic' are challenged by refuting evidence, their advocates tend to be personally offended and greatly concerned, whereas if the correction went the other way — from a designation to a recent period to one of the Palaeolithic — no such expressions of animosity are experienced? Clearly, then, this is not about being wrong; it is about some other issue. Could it be that the significant over-representation of European Pleistocene rock art sites on the World Heritage List, when not a single such site from much richer endowed other continents is on that register, has a connection with the other defined factors?

These issues seem to be interdependent in some fashion, and their close examination is worthwhile. One way to approach such analysis is to note that there are thousands, if not tens of thousands, of 'Palaeolithic' fakes from Europe, as well as a good number from North America (Bednarik 2009b). Not a single one is known from Africa, Asia, Australia or South America. European Russia and Siberia have yielded numbers of Pleistocene portable palaeoart similar to western European countries, and yet there is not a single fake object of this kind known from all of Russia. Yet in the United States, which lacks a Palaeolithic altogether, Palaeolithic fakes (such as female figurines) do occur. These differences are far too pronounced to be mere coincidences; they must form part of a rational explanation.

It is generally accepted, at least outside Europe, that the World Heritage List is a Eurocentric convention, but the complete absence of any extra-European Pleistocene rock art site on a register featuring dozens of European such sites (even many that are not remotely of the Pleistocene) is again far too conspicuous to be attributable to a statistical fluke. A productive mode of reasoning is promised by the observation that many Europeans are comfortable with the idea that Europe, on the whole, has given humanity 'civilisation' or 'advanced culture', and that this is well expressed by the magnificent cave art of France and Spain. Indeed, this misleading and decidedly neo-colonialist disposition is manifested in the widespread belief that 'modern' culture begins with these 'great artworks'. This absurd idea ignores more data than can possibly be discussed here, ranging from the puerile fantasies of archaeology about human modernity (Bednarik 2012b) to the very much earlier rock art traditions of Asia and Africa. Therefore it seems a useful working hypothesis that the Palaeolithic obsession of Europeans has a pragmatic basis: early in the 20th century the colonialist notion that humans first evolved in England was defeated by Dart's find in South Africa (although it took four decades to accept that the discipline had been fooled by the Piltdown hoax). Palaeoanthropology then took a very different road, but in 'art' origins the colonialist model, according to which Europe was the hub of 'semiotic', 'cognitive' and artistic evolution, still reigns. So the purpose, deliberate or not, of this emphasis on Palaeolithicity is to preserve the imagined role of Europe in raising humanity to its present level. In other words, the distorted view facilitated by the

World Heritage List, by Pleistocene archaeology and by the captive mass media has a practical political purpose.

This hypothesis seems to derive support from the evidence presented in this paper, of an obsession with Palaeolithicity in rock art. No such obsession exists in Australia, where the largest amount of Pleistocene rock art probably resides — but has attracted very limited interest. Much the same can be said about the two continents that have so far furnished the earliest known rock art occurrences, Asia and Africa. In fact all publications considering the Ice Age palaeoarts of both continents — as well as Australia — on a pan-continental basis were written by just one author (Bednarik 2013a, 2013b, 2014). By comparison, there are many thousands of publications on the Pleistocene palaeoarts of Europe.

Conclusion

Specialists of Pleistocene rock art need to ask themselves, what would they think of a discipline — let us say, for instance, plate tectonics — that focuses entirely on one rather small continent, from which it has produced a list of misidentifications such as the one presented here of 'Pleistocene' rock art that is in fact not of the Pleistocene. Is it unreasonable to raise this question? No science could expect to escape criticism if it demonstrated such an excessive failure rate, and yet Pleistocene rock art students in Europe demand the authority of deciding, often without empirical evidence, which rock markings are or are not of the Pleistocene. Since very large numbers of Holocene rock art motifs are seen by them as being Pleistocene it should be obvious that these experts can only possess a distorted view of the diagnostics of Ice Age rock art: their visualisation of it includes thousands of motifs that are not remotely of the Pleistocene. If their tendency of inventing interpretations of zoomorphs as extinct animals (such as the rhinos at Siega Verde, Minateda or Tal'ma) is added to this disadvantage, the full extent of the self-delusion becomes evident. (There have even been several examples of this aberration in the US and one in Australia; see e.g. Malotki, Wallace 2011, corrected in Bednarik 2013c, 2015b; and Gunn *et al.* 2013, corrected in Bednarik 2013d; Chalmin *et al.* in press.) It is then reasonable to regard this self-appointed status as the arbiters of Palaeolithicity in rock art motifs as illusory and fallacious and without a credible basis.

Freeman (1994) has carefully examined this process of validation of 'Palaeolithic' rock art and has noted the parallels with the way religious shrines are authenticated by ecclestial authority. His conclusions need to be cited here:

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, p. 341).

Thus the validation of European rock art as Palaeolithic is in the hands of those who have been anointed by the 'high priesthood' of the 'Palaeolithic lobby'

(Thompson 2014) to act as arbiters, much in the same way the Roman Catholic church would validate its saints, holy relics or sacred sites. Such 'authentication' of rock art sites is generally conducted without the use of scientific or forensic data, such as testable dating evidence, but on the basis of some mysterious, undefined ability of the cognitive systems of the experts on Palaeolithic style. That style is a vague, Humpty-Dumpty-type concept (meaning whatever is intended; *sensu* Lewis Carroll), and since thousands of non-Palaeolithic motifs have contributed to its definition it can only be a flawed construct. Yet when the findings of these experts are contradicted by scientific evidence, the scientists can find themselves severely attacked and defamed. This is, in a sense, understandable, because the experts derive their status from the ability that is under scrutiny, and naturally they are inclined to defend that status. This also explains why many Pleistocene archaeologists are opposed to blind tests, which they define as 'disrespectful'.

But the self-delusion of the experts can only exist if its object, the 'Palaeolithic art' (which, conversely, is probably not an art at all) is afforded great importance. That importance, it seems, derives from its potential to underpin the grand delusion of European cultural and cognitive priority. And that, in turn, seems to explain the incredible neglect of extra-European Pleistocene palaeoart, and the persistence well into the 21st century of the neo-colonialist myth that art, symbolling and modernity all derive from Upper Palaeolithic Europe.

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