

Methods of research on Valcamonica rock art

Campanine of Cimbergo – a preliminary analysis

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Abstract

The challenge of interpretation is one of the main issues in contemporary rock art studies. From this point of view Valcamonica is an extraordinary place to conduct fieldwork, since documentation has been going on there for many years. Only now is it revealing some hidden “rules” of this complex and long-lasting phenomenon of European prehistory. Interpretation is the purpose of the whole process of documentation and analysis and results from a deep knowledge not only of the single engraved panels but of the main themes of whole zones, which often are characterised by repetitive symbols or unique depictions. Campanine of Cimbergo is an area with 87 engraved rocks where the Valcamonica Department of Centro Camuno di Studi Preistorici had carried out ten years of extensive research. The main figurative themes are discussed in the present paper together with iconographic traditions present in the Italic world of the first millennium BC, in order to find out possible meanings of symbols through a “cross-comparison” of different sources of information (archaeology, classic literature, ethnography, etc.).

Introduction

The interpretation of rock art is a great challenge. Only through its comprehension, although partial and somehow hypothetical, can we raise its *status* from that of silent witness to that of historical document, from a sign with aesthetical-chronological values to a datum that illuminates the historical-cultural situation that produced it.

Interpretation is the “final” moment of a process that begins with prospecting, discovery, tracing and cataloguing of carvings. During all phases of fieldwork we attempt to understand and analyse the environmental, contextual, chronological and associative evidence that emerges. This is essential to frame the document, to gain familiarity with it, to

have a direct perception of it. The relationships of the engravings with the location, with the rock, with the space that it is in, with the human and natural elements surrounding it, are intimate and essential: they are an integral part of its reason for existing. To understand the carvings in the context of these relationships allows us the first fundamental step of comprehension. To attain this one must assess the geological and morphological setting, the relationships between the rock art and the layout of ancient paths and watercourses, the forms, orientations and positions of the rocks that were chosen for engraving (and those not chosen), and the environmental conditions that prevailed during the different ages.

From these aspects we can easily ascertain the peculiarity of a site and its rock art, the characteristics of which clarify the differing choices made over the ages in the different areas. Contemporarily we conduct archaeological investigations into the presence of datable structures and finds in the territory, widening research to associated cultures that could provide economic, social, religious and even iconographic analogies.

Closer to the heart of the problem is the analysis of the artistic context: its typology, thematic and chronological distribution and associative schemes. These elements can be connected with the environmental values and definitions of the characters of areas and rock panels can be made in order to evaluate the peculiarities of the phases and the thematic choices. The data resulting from fieldwork at Campanine can then be compared with that of surrounding areas.

The site of Campanine

Campanine is a vast and rather impervious area, 400 meters wide, at 800 meters above sea level, on the east side of the middle Valcamonica. The park of Naquane lies to the west, the regional park of Foppe di Nadro to the south, the area of Paspardo to the north, the latter separated by the deep gorge of the

stream Re, a narrow and deep valley called by the inhabitants "Valley of the Spirits". Situated eastwards are the Pizzo Badile Mountain and the glacial terrace where the village of Cimbergo is set. This last zone contains as many engraved surfaces as the others neighbouring areas, which are of the more densely carved in Valcamonica (around 100 rocks in Naquane, 50 in Nadro, 50 in Paspardo-Vite and 30 in Zurla). Campanine has around 110 engraved rocks and is composed of many sub-areas: Campanine Alta, Bosc del Vicare, Figna and Plain of the Swedes. Each of these zones has a rather marked peculiarity that must be read with attention, but together they form a complex with uniform thematic-chronological aspects.

Regarding chronology, the tradition of rock art at Campanine was maintained during many periods: some images belong to the Neolithic (as in Naquane and, in smaller measure, in Nadro and Paspardo), the Calcolithic period is absent (as in Naquane, but not in Nadro and Paspardo), images from the Bronze Age are scarce (as in Zurla, but unlike Naquane and Nadro), the Iron Age dominates (as at all other sites, that at Zurla belonging mostly to this period), the Roman phase is present (as in Naquane and Nadro), and images from historical times, especially from around the 13th–14th centuries, are evident (there are few traces in Naquane and Nadro but more in Paspardo).

Campanine seems to have a certain prehistoric proximity with Naquane and it appears to be unique for the medieval period. But if we analyse the different subjects represented and the differences in the same subjects common to the various areas, we find a distance that is not revealed by the chronological proximities. For instance, in the Iron Age, Campanine has a huge number of bird figures (less in Naquane and Nadro), many axes (few in Naquane, more frequent in Nadro and absent in Zurla), few shovels (very frequent in Naquane, some in Nadro, absent in Zurla), and very few topographical maps (more than in Naquane, while they are present in Nadro and absent in Zurla). Among the widespread subjects of huts, busts, footprints, warriors, fighting figures, north-Etruscan inscriptions, we can notice significant differences: Campanine for example has many paired hut images, one on top of or inside the other (rare in Naquane and Nadro) and many warriors armed with axes (rarer in the other sites).

We can deduce that every area, and its sub-areas or single surfaces, absolved specific cultural

functions, perhaps in respect to different divinities, their rituals and their specific symbology. There is no casualness in the choice of the sites for carving, but there are also subjects that caused so much interest that they appear almost anywhere and anytime, even if varying over the areas. The sites of rock art were not generic sanctuaries but aimed ones. We can now turn to clarifying the iconographic structure that animated such finalities.

Themes and symbols

In the middle and late phases of the Iron Age, Campanine was an area with a complex character and, as already seen, with particular frequencies or absences of subjects. The most significant emphases appears to be on aquatic birds, axes, wheel images, huts and other particular themes, like images of heroes or gods, that can reveal many other details when adequately investigated. The present paper will attempt a brief analysis on some of the symbolic meanings suggested by these main themes.

Aquatic birds

Images of aquatic birds are always outlines of ducks or waders (herons, cranes or storks), represented in isolation or, more commonly, in association with huts, warriors, busts, axes and labyrinths (R1, idem in Naquane). In five cases they are ridden: by a praying man with (deer?) horns (R49), by warriors (R11, R36 and R50) and in one case (R 60) by an armed man with a sword and a strange symbol (probably lightning) resting his feet on two ducks that face in opposite directions.

To understand the symbolic value of the aquatic bird we must remember its diffusion within Iron Age culture and its origins in the Bronze Age. The aquatic bird is a particularly common symbol of the Villanovian culture (9th–8th centuries BC) and, after that, of the Etruscan and Italic world. In the most ancient phases the only creatures represented in the figurative repertoire are the bird and the horse (rare non-geometric iconography from the Bronze Age show aquatic birds or horses often related with sun chariots or solar boats, in some cases decorating helmets or other prestige objects). In accordance with the contemporary Greek geometric style, the Villanovian style privileges geometric decorations (meanders, swastikas, chevrons, etc.), with the very

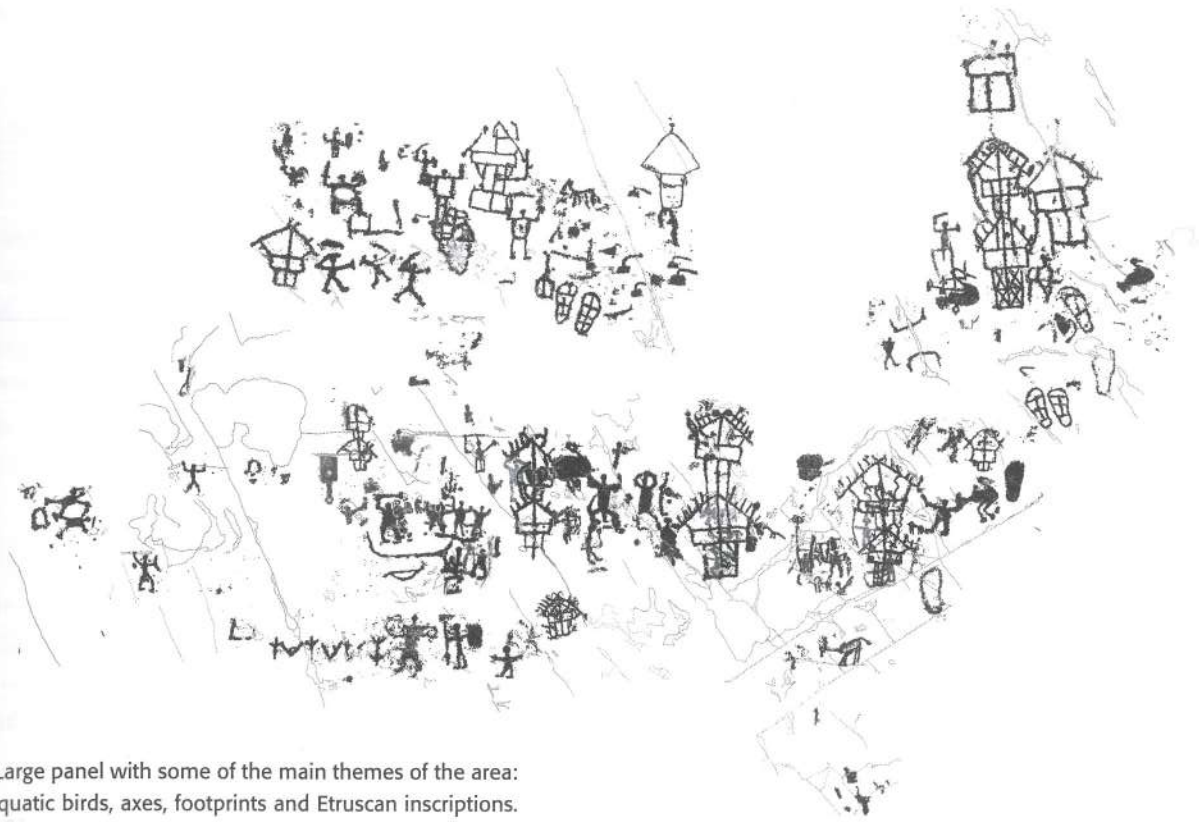


Fig. 1. Large panel with some of the main themes of the area: huts, aquatic birds, axes, footprints and Etruscan inscriptions. Campanine, rock 50.



Fig. 2. Section with huts and horses. There are also unique subjects, such as two-headed horses and horsemen. Campanine, rock 49.

important exception of the solar boat, which is always represented with bird-head prows. Often depicted on cinerary urns, belts and other objects, the solar boat probably has a central European origin. This pattern spread through northern and middle Italy during the beginning of the Iron Age, with examples up to the 5th–4th centuries BC. We have many examples of this iconography in the ancient Italic world: finds from the area of the Piceni culture include a bronze belt where the solar boat appears in a more naturalistic form, the *klinai* with ornithomorphic elements present in the so-called “art of the *situlae*” from the Reto-Venetic culture and the *kline* from Hochdorf, probably made in the Golasecchian area (Hallstatt culture). In the Etruscan world the geometric stylisation of the bird-head prows probably disappears during the Oriental style period (7th century BC) when it became usual to represent monstrous and fantastic figures and when animals were depicted in a more naturalistic way instead. The aquatic bird appears in the early painted Etruscan tombs, like the “Tomba delle Anatre”, and in the bas-reliefs with scenes of symposium on the *klinai* of the characters. It is associated with the labyrinth (“Oinochoe of Tragliatella”, 7th century), riders, warriors, duellers and the dead. Such images are represented on ritual “sticks” and on ceremonial axes from the 8th century BC.

The almost exclusive choice of aquatic birds clearly hides a symbolic intention tied up with the wide spread idea of “soul-carrier” that is attached to this kind of bird. This symbolism is enhanced by the power of access to both the celestial spheres (flight, sky) and the aquatic universe (water, underworld powers). This reminds us of earlier images of birds carrying the sun, diffused in the preceding millennium, which were probably valorised in a funeral sense here. We cannot delve further into the symbolic role of aquatic birds for the Etruscans. However, we do know of the importance of the *avispicium*, one of the “Etruscan disciplines”, which assigned divinatory powers to the flight of birds. On some funerary stele the dead offer a bird to the infernal god that prevents entry into the world of the dead, in one case a dead woman hands a bird to her consort (Este). Such elements bring us to the most widespread meaning of the bird: as symbol of the soul the bird incarnates the most intimate and elevated essence of man.

To find references to ridden birds we have to go further afield: Aphrodite rode a goose, a swan or a

dove (the Indian goddess Mahavidya is likewise described); Apollo is described as reaching the Hyperboreans on a chariot hauled by swans or himself riding one; in the Altai the shaman rides a goose for pursuing the soul of a horse, and among the Galli Sequani a duck is the goddess Sequana’s sacred animal and she is represented on a boat with prows in the shape of a duck. The list could continue but these examples should be enough to reveal the range of meanings attributed to the bird.

Axes

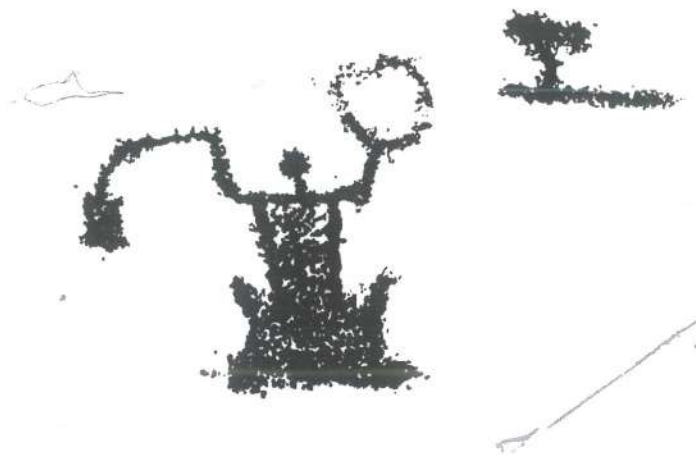
This weapon is often wielded by a warrior, usually armed with a shield, but is frequently also found in isolation. They often occur in pairs and sometimes in groups. The most recurring association is with huts, warriors, busts and birds. In almost all cases the outline of the blade is quadrangular (the Nanno type, present also in a sample from Valcamonica, of Etruscan origin and with local variations). Often the square shaped blade is enhanced and the handle strongly simplified, at the point of total lack of comparisons with actual objects. The axe had an high social value and there may be a close symbolic relationship with the similarly shaped figure of “paletta” (shovel), which was an enigmatic object of prestige found in burials from Villanovian, Golasecchian and Venetic cultures.

Three of the most interesting rock art scenes in Campanine show the symbolic value of the axe: on R1 a group of five axes is located at the entrance of a labyrinth and, nearby, a few axes are associated with a wader; on R52 an unusual human figure sits in the “lotus” position raising a circular shield (a solar or celestial symbol?) and holding an axe with a very curved handle. Overhanging this figure is another axe. He seems to be a deity, similar to the Celtic gods with an identical posture, like the Kernunnos depicted on the cauldron of *Gunderstrup*. This impression seems to be confirmed by the dominant position of the rock, from which springs a water source. On R37 a magnificent warrior with an axe and shield stands above an “altar” structure. Immediately below him is a semicircular shape (a container/cauldron?) that is touched by long poles handled by two human figures. Above and besides are two axes, one of which is of a natural size, and a praying man refers to a third axe. The scene, probably presenting a god or a figure of great social importance, confirms the prestige and symbolic value of the weapon.



Fig. 3. (Above) A great heron stands in the centre of the rock surrounded by other large birds. Campanine, rock 49.

Fig. 4. (Below) Human figure "raising" or "sitting" on a throne and associated with axes and circles (the celtic god Taranis?). Campanine, rock 52.



Such an evaluation can be extended to the whole cultural complex of north and central Italy during the Iron Age, with many antecedents (also in rock art) in the Bronze Age and the Copper Age. The axe appears in funeral outfits, in ritual depositions (such as the Retic *Brandopferplätze*) and in the iconographic contexts. In Etruria, both the double-edged (with ancient links to the Minoan and middle-oriental culture) and single bladed axe reveal a deep symbolic value. Many ritual axes can be found in burials, rarely in bundles, made of thin bronze plaque or even as small amulets. The Etruscan exemplars from the 7th century BC are very interesting: the handles are studded with aquatic birds as is an amulet of a small axe from Bologna that is surmounted by a little duck. The axe seems to have ritual meaning in various other contexts including the already mentioned "art of the situlae" (6th–5th centuries BC). Axes also figure on funerary stele: they are surely signs of high social and religious power and have comparisons in the stelae of Lunigiana, five of which show anthropomorphic figures armed with square blade axes. Processions, in which an attendant handles the axe symbolising the power of the dead, sometimes appear on sarcophaguses after the 5th century BC. It is noticeable that the axe was then assumed by the Roman world as a symbol of the magistrate.

It is probable that such shapes of the ancient weapon were preserved for a long time because of their high symbolic value, this being confirmed by the long use of these objects (the square blade axes, for example, persisted from the 9th century BC to the 6th–5th centuries BC). The axe therefore became progressively synonymous with religious-judicial power. From this point of view we can consider the armament of the warrior of Capestrano (6th century BC): the sword (military power) and the axe (religious power). The axe was used during the Roman period as a sacrificial weapon: a sarcophagus from Padua features a scene of an ox killed by a celebrant armed with an axe and the famous Gnosis mosaic from Pella (3rd century BC) includes a scene of symbolic deer hunting with swords and axes.

On the other hand the Romans noted how the Retic people actually used axes in war in the historical age. We can find confirmations of this in the "art of the situlae" (warriors with mixed armament, like two spears, helmet, shield and axe). Etruscan culture sometimes also shows duels with axes as well, which probably resulted in the later Roman gladiators, and processions of riders

unusually armed with axes (fictile friezes from the prince palace of Murlo, 7th–6th centuries BC). This means that the axe was also used as an actual weapon and could, in some cases, be associated with realistic examples of warriors.

The various mythologies from the Indo-European area give hints of connections with sky and thunder deities (Varuna, Thor, Teshup, Dolikenus, Rama, Hattusas, Esus) and rock art seems to confirm this symbolism.

Wheels

The wheel is one of the most enigmatic images of the late Iron Age: on R10, introducing us to the engraved area, we find a wheel painted in red, one of the few rock paintings known in Valcamonica. On R36 there is a large carved wheel associated with huts and warriors, while on R41 a wheel is associated with a praying figure and a human figure with lowered arms.

In the Celtic culture the wheel symbolizes Taranis, god of the celestial vault as well as of the cyclic turning of time and fate. A figure carved in Paspardo shows a human figure with a wheel-shaped head that could be a representation of such a god. Other wheels are engraved in Naquane, Foppe di Nadro and Zurla. The Romans re-named the Celtic god Taranis as Jupiter and in Campanine we have the Roman inscription "IOVIS" on R5 (probably meaning "devoted to Jupiter"). These examples suggest that Campanine is likely to have been the sanctuary of the "god with the wheel" Taranis/Jupiter. This inscription in fact enlightens the cultural role of the site, at least during the last phase of the Iron Age. We can probably deduce its role during the entire Iron Age if we look at the carvings of wheels, horses, the "god in lotus-flower position" (R52), and the symbols of lightning (R61).

Huts

Figures of huts are present in Campanine with high density and usually they are engraved on specific panels or rock-sectors (R7, R16, R38, R49 and R50). Characteristic of the area is the composition of two huts on the same pole, with many stylistic variations: some of them are *unicum* in Campanine (like the "pagoda-shaped" huts or some very elaborate examples). One of the biggest figures in the area (R7) includes another hut, footprints, warriors and a scene

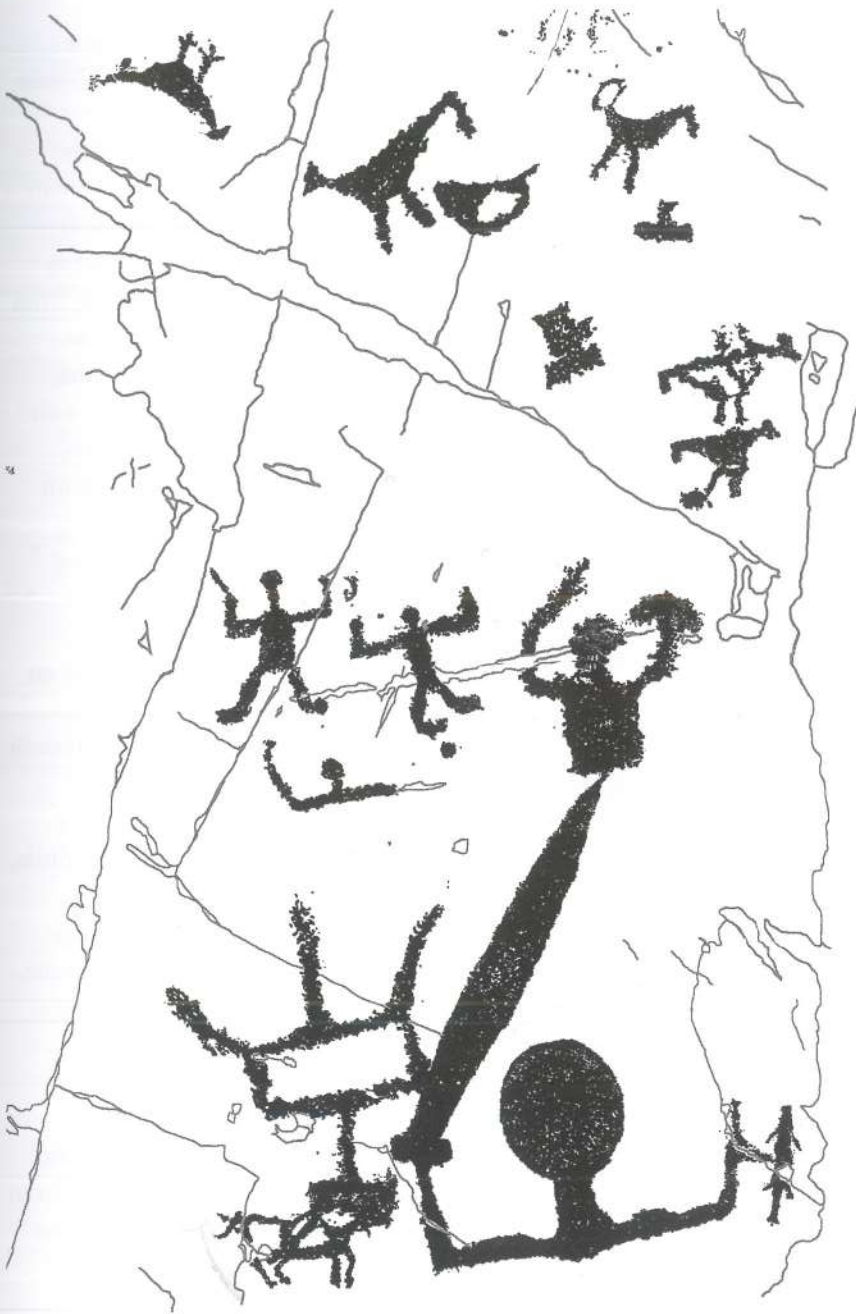


Fig. 5. (Above) A large bust holding a sword and surrounded by humans and birds. Campanine, rock 61.

Fig. 6. (Right) Noble warrior or hero with very rich attire standing on two juxtaposed birds. Campanine, rock 62.



of conversation between two sitting men, one of which sits on a “throne” (similar to archaeological findings from the site of Verucchio or to “thrones” represented in the “art of the *situlae*”). This scene is likely related to an exceptional event and to a man of high social status. The tips of the roofs are often shaped like goat-horns, horse-heads or bird-heads.

The most meaningful interpretation of hut images is the funerary one, with comparisons in the Villanovian-Etruscan culture. Their disposition on the panels may suggest the representation of family or kindred groups. It is clear that the carvings do not represent real dwellings: there are scarce comparisons in the Alps of the structure represented in rock art (e.g. in Brig-Walmette, in the Swiss Valais). The most common type of real Camunian houses, probably almost unchanged over several centuries, is now being discovered by archaeological investigations at Temù (5th-4th centuries BC), Pescarzo (1st century BC), and at Darfo-Boario Terme (1st century BC). These include the following features: underground floor-levels, stone skirting boards, wooden walls and roofs.

Analysing the engravings of huts we can do some further considerations. Many different types of huts are represented on the panels and nearly each hut is unique. This phenomenon almost never occurs in reality as it is uneconomical. A functional pattern will not be changed quickly, especially in a conservative culture such as the alpine one, unless caused by general and deep environmental changes such as, for instance, climatic shifts. Some types of huts are architectonically impossible. They have bended roof beams, plinths made by only one pillar, exaggerated trapezium-shaped middle floors (statically unstable), disproportionate ornaments, or they are coupled on the same pole. This emphasizes the semiotic element present in rock art, as the most obvious purpose of the ancient engravers is to communicate a message, using the figures of huts as a sign, varying the sign as situations changed. So the different styles and ornaments may reflect not only changes in style as time passes, but also the wish to add details to those signs – the huts – making people able to immediately distinguish each one from the others.

It is widely known that the house has a strong symbolic and funeral value in the Tyrrenic world. Starting from the house-shaped cinerary urns found in the Tosco-Latial sites that in the Villanovian culture replaced the common bi-conic cinerary vase. In northern Italy and the Alpine area we have two

important archaeological findings which show a similar use of the hut: a funerary stele from S. Vitale (Bologna, Etruscan culture, 6th century BC), presenting a carved hut on the front side, and the cinerary vase from Balzers (Swiss), showing a small scratched picture of a typical Camunian hut. It is very interesting that the Villanovian cinerary urns are also strongly individualised: some are made from metal, with peculiar ornaments (ornithomorphic heads or horse-heads at the top of the roof-beams, anthropomorphic figures, discs, friezes painted with horses or birds), and similarly to the Camunian carvings of huts, they are typically associated with aquatic birds, horses, and warriors.

Labyrinths

We have already mentioned the labyrinth carved on R1, associated with axes, a warrior and a wader (phallic and horned). In Campanine another labyrinth is scratched on R5 and is surrounded by huts, warriors and north-Etruscan inscriptions. Another labyrinth can be found in Naquane and four in Zurla, where many complex meanders can also be seen. On the right side of Valcamonica other labyrinths are carved in Dos del Mirichì, Piancogno and Luine. The meaning of this sign is enigmatic and complex. Its presence in Valcamonica's rock art probably represents ideas coming from the south, mostly through the Etruscan world.

The type of labyrinth represented is actually the Minoan one, that with only one-route, so named from the *labrys* (one- or two-edged axe). So far, only one labyrinth figure has been found from the Etruscan world: it is on the *oinochoe* from Tragliatella (7th century BC). We can nevertheless read about the tradition of the *ludus troianus* (“trua”), a kind of carousel ridden by an aristocratic youth, still in use during the times of Augustus. Vergilius (*Aen.*, V) describes it, with other games, races and naval competitions, among the ceremonies held for Anchises' death. The Latin poet (*Aen.*, VI) also tells us that a labyrinth was represented on a leaf of the infernal door in Cuma.

The labyrinth actually symbolizes ‘a complex way’, with many on-route tests that cause deep changes in the individual who passes through it. It is strongly connected with passage rites (sacerdotal, military initiations, birth, death, puberty and marriage). On the vase from Tragliatella the labyrinth is associated with two riders that hold large



Fig. 7. The Minoan labyrinth with axes near the entrance. Campanine, rock 1.



Fig. 8. Another labyrinth associated with an aquatic bird, a warrior and two duelling figures. Naquane, rock 1.

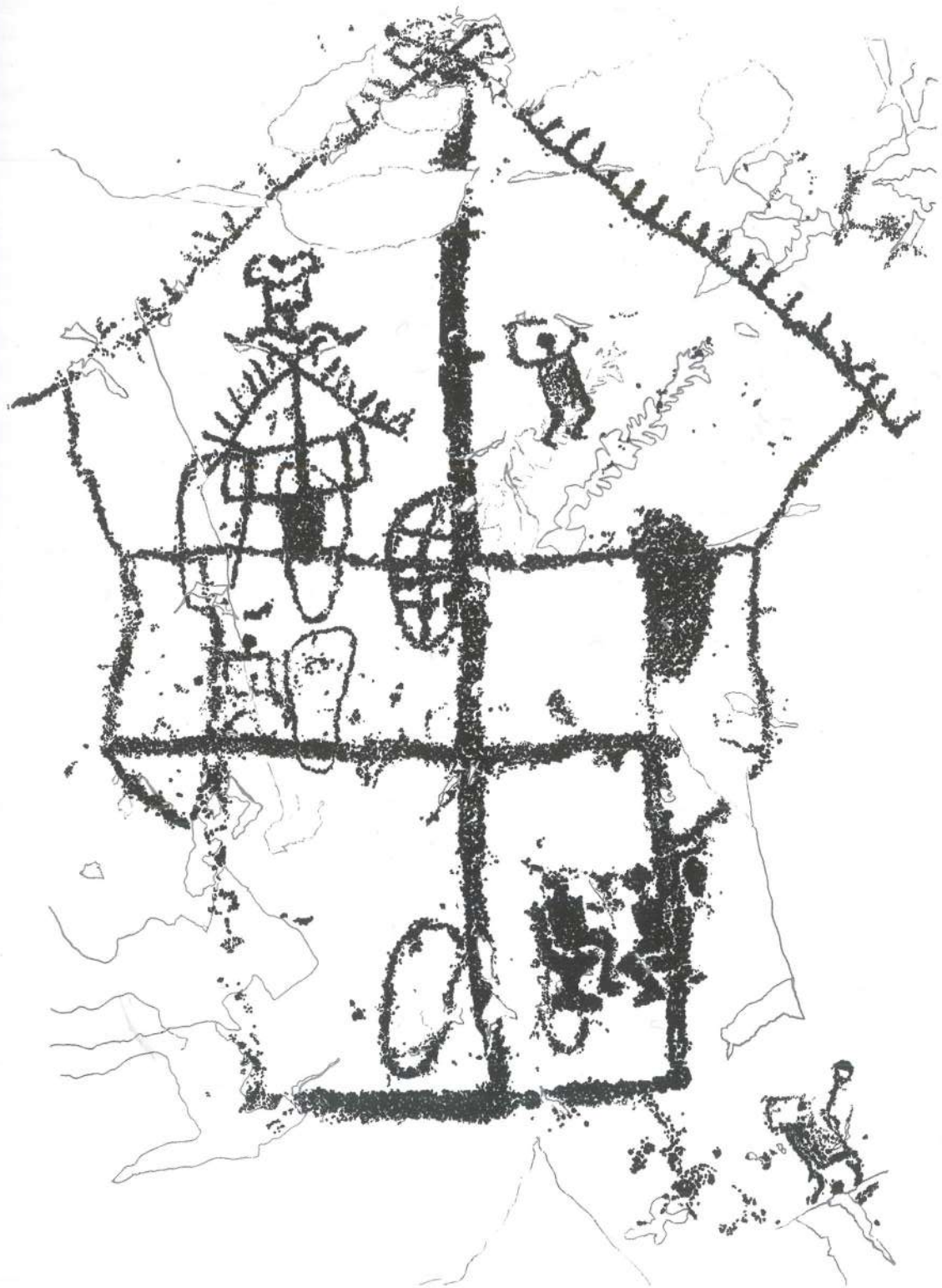


Fig. 9. A large hut with a scene of two people talking inside it (apparently one of them is sitting on a "throne" which resembles Venetic and Etruscan models). The panel is completed with footprints, other small huts and warriors. Campanine, rock 7B.

shields (one of which bears the badge of a bird) and with two intercourse scenes on *klinai*. The well-known myth of Theseus tells us about the two initiation tests of the hero: the defeat of Minotaurus and escaping the labyrinth with the help of Ariadne. The sources also describe Theseus' "crane dance" on exiting the labyrinth, a sort of bodily and spiritual "release" formed by movements in rhythmical volutes, that is somehow similar to the lay-out of the labyrinth and seems to hint at the cosmic cycle of life and death. This association with cranes reminds us of the strong connection between the labyrinth in *Campanine* – and that in Naquane – with waders. And more: the myth of Theseus details the enterprise of the prince of Athens, his meeting with death, his struggle and victory, from which the hero "re-emerges", his sword still in hand, from the labyrinth's "depths". What should we infer from the constant association of the labyrinth with warriors (heroes) and aquatic birds (related with death and "the other world") in Valcamonica's rock art? What are the meanings of the axes "guarding" access to the labyrinth on R1 in Campanine, when we know (Vergilius, *Aen.*, VI) that Daedalus also carved axes on the other side of the infernal door in Cuma, just in front of the labyrinth?

Thrones

Inside the image of a big hut at Campanine (R7), we can see two sitting human figures. The one on the left sits on a seat similar to the Etruscan "thrones". In Naquane two figures sitting in a hut use different seats and a small table. The shape of these "thrones" is very similar to the "throne" from tomb n. 89 of Verucchio (8th–7th centuries BC), an object with complex depictions connected to the social power of its ancient noble owner. In Valcamonica rock art we do not find representations of scenes clearly related to the Etruscan symposium, and that is probably due to the distance of this area from the heart of the Etruscan and Italic world. But the "classic" Etruscan symposium, with people leaning on *klinai*, is often represented on funeral paintings and friezes but spreads only after the 6th century BC due to Greek influences. Beforehand we have representations of the funeral meal with people sitting at the table, each one in front of the other, as we find in Valcamonica.

Other elements related to the funeral meal are not evident in the rock carvings. The metal implements used to cook meat (spits, cauldrons and fire-dogs) and

the pottery used to serve wine (large craters, cups and *schnabelkanne*) are almost never found on rock surfaces, though we have some rare depictions of vases. These latter objects are only ever scratched in isolation and their typology seem to refer to a later phase, probably transmitted during the Celtic influence in the Padana Valley.

Other subjects

Among the subjects peculiar of the Iron Age in Campanine we can notice fifteen inscriptions in the north-Etruscan alphabet, some large armed busts, two "camunian roses", some shovels ("paletta") and an extraordinary two-headed horse with rider. This subject occurs only in Campanine and has interesting comparisons with archaeological findings of ritual objects from the Retic, Etruscan and Piceni's worlds in the 6th–5th centuries BC.

Conclusions

This preliminary analysis (the work is still in progress) shows the main features of an area. Such features are becoming clear if we consider groups of rocks forming sub-areas, each one well identified, and which together form the vast context of Campanine. From this point of view the investigation of the "Plain of the Swedes", on the west border of the site, led by Ulf Bertilsson and his team, have produced very important results as the area shows intermediate characteristics similar to those present at nearby Naquane. This is not surprising as the whole Campanine area is thematically and chronologically quite close to Naquane.

The value of the engravings of Campanine is more in qualitative than quantitative (there are about three thousand figures). Campanine provides much information on prehistory during the Iron Age, enlightening what we already know and providing crucial evidences for aspects of prehistory about which we know very little. For example, the labyrinth, present in Valcamonica more than in all of Italy during prehistory, shows scenes and details that are essential to acquiring a more defined and deeper understanding than other Italic sites. The same happens for the aquatic birds, the axes and other subjects.

The study of rock art is one of the great frontiers of archaeology: only recently have we begun to

investigate its many facets and its unforeseeable richness. It is not only the pure archaeologist, thus, but also scholars of related subjects, such as history of religions and phenomenology of symbols and myths, that are finding rock art to be a source of a great importance.

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The cultural meaning of the owl in China's rock art

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Rock art is a testimony to the history of ancient civilisation. In order to decipher it we must master the rules of primitive artistic creation that were controlled by primeval thoughts. We must understand the relations and characteristics of the images, symbols and pictographs in order to make them understandable. This helps us to reveal the cultural mystery deeply hidden in rock art. China's ancient calendar, recordings, writings, poems and legends are related to these primeval conceptions and thus provide clues to the rock art.

Easily recognisable depictions of owls, *Xiao*, appear on prehistoric ceramic, bronze and jade objects of China whilst owls in rock art are often simplified and abstract. Nonetheless, many owl images have been identified in the rock art of China. Recent investigations of rock art and archaeological excavation have shown that the number and range of owl figures in rock art have increased over time. Owl images contain a kind of formula: an evolved symbolic sign and it is within the ancient cultural background of China that we find their cultural meaning. The owl is the symbol of the 18th constellation, one of the 28 constellations into which the celestial sphere was divided in ancient Chinese astronomy. It appeared in the ancient Chinese calendar with the arrival of the winter solstice and is the symbol of life, spring and the sun: it is the god of seasons. The owl is the theme of many rock art sites in Inner Mongolia that date to the Xian-Shang Dynasty (3000–4000 BP). It also appeared as a mythical animal in ancient Chinese writing and in folklore.

Up to now many images of the owl have been discovered in China's art and rock art. Scholars believe these to be related with prehistory and the Xian-Shang culture (before 5,000 BC). Figurative, easily recognisable, images of the owl ("*Xiao*") appear on prehistoric ceramic, bronze and jade objects whereas prehistoric rock art images of the owl were more abstract in style. This has resulted in debate regarding the identification of the latter

images as owls but the present author has identified many such creatures in the rock art of China.

Although owl-faces are only a part of the repertoire of prehistoric primitive art imagery, recent investigations of rock art and archaeological excavations have revealed that the frequency and range of owl images increased as time passed. Therefore, the owl image seems to have been created in no casual way and is a phenomenon that deserves investigation. During research into the rock art of Inner Mongolia, the present author was lucky enough to see images of owl-faces in the rock art. Their main features are two eyes, consisting of central circles within outlines, which are connected with a vertical line. Although owl-faces were made during prehistory using two different styles, both emphasise the size of the eyes, the creature's most obvious feature. The other immediately identifiable characteristic associated with the owl is their nocturnal nature, which results in them rarely being seen during daylight hours.

It seems that owl-faces are like art objects in that they contain a kind of formula intention: an evolved symbolic sign. So, although these images seem to refer to the faces of owls, we have no objective proof. But if we investigate the ancient cultural background of China, the hidden cultural intention of owl-face imagery is clear: its origin is based on early peoples' interest in and need for astronomy. Nomads and farming peoples have needed it for tracking changes in the seasons: to connect the entire natural world with the phonemic of the changes of season. The owl was thought of as a kind of spirit in the natural world. It has a nocturnal habit and its regularity is dependable: its disappearance and re-emergence is in accordance with the movements of the sun, stars and seasons. When the sun rises the owl hides but when the sun sets it appears. Ancient peoples may have noticed this and associated the owl with these changes. This may be why the owl was idolised in ancient Chinese mythology and this is why there are so many archaeological finds of prehistoric owl art

objects, found in vastly dispersed places over a wide time-span, and made from different materials and in different styles. We can only assume that there were many more which have not even been discovered.

The first image of the owl is associated with the emergence of agriculture during the late Stone Age. Because of the dependence of farming communities on the seasons and the association of the owl with changes in these, owl images became a symbol of seasonal instruction for people to produce and they became a protective myth for agriculture. Human society invariably makes constant progress as does culture. Ancient peoples connected good or bad harvests with prosperous or unfortunate clans. The production and reproduction of both were inseparable. So, from the protective myth emerged the reproductive myth of clan society. Through investigation of the prehistoric rock art imagery of the owl we find its special meaning as a totem of the Xian-Shang dynasts (5,000 BC). They are evidence of the change during prehistory by which prehistoric civilisations were established.

Variations

Unearthed prehistoric owl art objects found at Liaohé, northeast China, the middle plain of China and Qinghai plateau, west of China have differences but their similar shape must be because they belonged to a similar culture. Future study of these will be aided by the discovery of more such objects. There are wide variations in owl rock art imagery in China (Figs. 1.a-c). So far, owl rock art has been found mainly in the eastern and southern parts of China, at LianYun Guang of JiangSu to the north, the BeiCa River area in the eastern part of Inner Mongolia and at LianYunGuang, 9 km south of the JinPin Mountain (near the LianYunGuang), in the south. Often, faces consist of complete outlines of faces with head adornments or netted patterns, some with seeds (Fig. 2). Others are carved without outlines, consisting of concentric circled eyes, with connecting brows and nose (Fig. 3). It is on a hillside about 4 km northeast of Ganggensumu and spreads 11 m from south to north. It faces a vast spacious land that is an ideal worship place. More rock art is also carved at the foot of the hillside. Some rock art images are difficult to identify (Fig. 4). They have been called monkeys, but in August 1997, the present author visited the panel

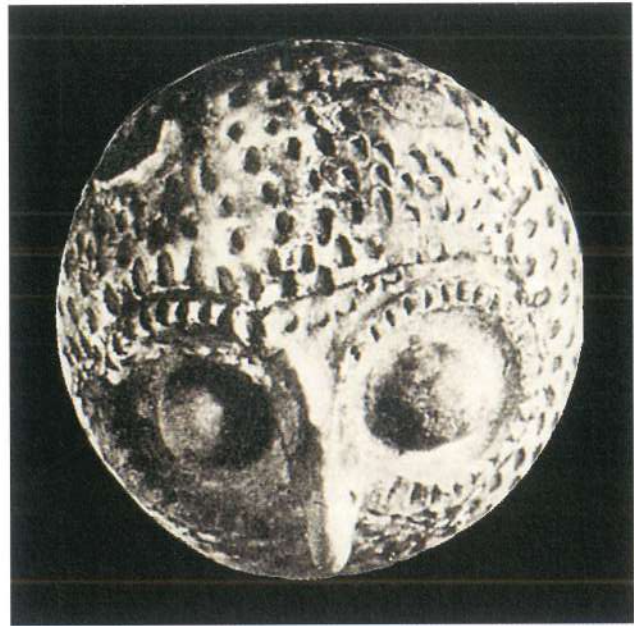


Fig. 1a-c. Variations in owl rock art imagery.



and found that only five or six whole images can be seen clearly. One of them is completely outlined. The others are owl-faces. From comparisons with earlier photographs, some of them are becoming black/brown and some of them can no longer be identified. The need for conservation is obvious.

The rock art in the county of Wanheyong, in front of a mountain on the Beica River in the east of Inner Mongolia, lies on the north-western hillside. A rock here has had marks inlaid artificially. There are two groups of rock art: under the left group is a concentric circle and in the middle part is an outline that has a head decoration. Above this a shallow owl-face image that is about 0.22 m long and 0.10 m wide (Fig. 5).

On the east suburb of Cifeng of Inner Mongolia there is rock art nearly the bank of the Ying River, including owl-face images. On the east of the hillside are other rock art sites consisting of mostly human faces. Because of the wet atmosphere, many rock art surfaces have been damaged by the growth of bryophyte.

According to ShongYaoLiang in "*Prehistoric Mythical Faces in the Rock art of China*", there are also owl-face images in the East Sheng Temple Golf Mountain, of Veimong, and in Geraopao of Ying Mountain. Gaishangling recorded in "*Rock art Ying Mountain*" that in Toalingou, in Dengkou town, there is rock art consisting of a beast's face with a brow, two eyes and teeth, which is 0.23 m high and 0.62 m wide (Fig. 6). It is the same as that at Ganggens. Another one has been found in the north-west Ge of Dongkou Town Territory, located on a hillside on the east bank of the south passage in Shanggegou. It is 0.44 m high and 0.54 m wide. Upon the left and the right sides, there are two patterned clouds consisting

Fig. 2. Outlined faces with head adornments or netted patterns.

Fig. 3. An owl-face without an outline. LianYun Guang county JiangSu province.

Fig. 4. Some images are very difficult to identify. Ganggensumu, Cifeng county, Inner Mongolia.

Fig. 5. A panel of rock art with owl imagery. Wanheyong, Cifeng county, Inner Mongolia.



Fig. 6. A beasts' face. Wulanchabu, Inner Mongolia.

of circles. On the left is a man's face. Below is an animal with a tail. The picture may depict a wizard praying for rain. They are all similar to the owl.

The owl as the Xian-Shang totem

For the Saotian tribe, the bird is an important symbol: every clan's name is that of a bird and their judge is a bird. They belong to the Daiwenkou culture thus it is natural that the Saotian owl culture is evident in the rock art. It reflects the importance of the owl totem idol within the primitive religious culture, a culture that was very powerful during those times. We can see from above the situation. Although the number of prehistoric owl/man-face art objects are few, some are directly related with remains and can thus be dated to the earlier Shang nation or tribe. These owl images were not made as a game or for hunting purposes. Instead they were idols of Xian-Shang and Shang as their totem. This symbol is closely related with the ancestors of the Shang nation and is embodied in the ancestors' production and life.

Xian-Shang and Shang are actually the same nation as the Saotian, using the same bird symbolism.

The owl and astronomy

It seems that the Xian-Shang made owl rock art that was related with astronomical observations. For example, owl images on the Lanyungang consist of two small images without outlines and numerous gods. In ancient times astronomy and knowledge of nature were used to track the changes of seasons and the movements of stars, plants and birds were observed and linked with these seasonal changes. Thus people began to understand the laws of the universe. In China the year was divided by twenty-eight into four calendars. The owls' activities are so regular that they were especially useful as a calendar device. Even stars were named after the owl, including Xiao and Mao, and we find recordings of these in ancient literature. People today do not conceive of such relationships because they use different methods to explain natural phenomena.

The Mao star day is the shortest day of the year. This is the winter solstice in China when there is little light and the owl is most active. This is due to its unique pair of eyes and this may be why the feature was depicted. During the winter solstice plants emerge and deer grow new horns. Everything appears to change. So the ancestors may have associated these natural phenomena with the frequency of owls during this time. The Mao star and the owl idol are quite closely related.

Further thoughts

Depicting the owl idol has a long tradition. Besides the rock art, we have other evidence which suggests that the owl was used as a means to symbolise changes in the weather. The owl may have been idolised as a protective god of agriculture and as a symbol of the regeneration of society and culture. This symbolism was further abstracted to symbolise human reproductive organs. The bird or owl totem was that of the Xian-Shang agricultural society. The father of the Xian-Shang was called "Jun", as is testified to by ancient Chinese writings, and its pictograph is an image of a bird's head. During these times, man was thought to control everything, and male genitalia were a powerful symbol because a numerous and strong population was essential for the procurement of foods and resources. The association of the words 'bird' and 'male organ' in the Chinese language even today, confirms the powerful associations of the owl for primitive cultures.

The owl was idolised as a god and as a totem symbol it was closely related with regeneration and life. This kind of cultural phenomenon was part of the evolution of our cultural inheritance. Owl art is just part of the process. We are lucky to find evidence of this now. In some areas, the owl's mouth is portrayed carefully but for the Xian-Shang and Shang cultures there is a taboo that prohibits the drawing of mouths. In some oriental nations, especially China, the owl is hated because it is regarded as an unlucky sign: to hear an owl cry is bad and the owl is tabooed in folklore. What has made people hate the owl so much?

Conclusion

According to our research, the owl rock art motif is useful as evidence for studying the Xian-Shang and Shang cultures. The owl art is an important clue for Xian-Shang cultural transmission. The cultural associations of owl rock art have evolved, developed and spread continually, affecting peoples' lives for centuries. Even now its shadow remains. Future research into the image of the owl in rock art could be supported by more objective evidence from other disciplines. This paper is just the starting point for this, but there is much further to investigate China's ancestral artworks, ideas and prehistoric culture.

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Dating rock art by archaeological reasoning – an antiquated method?

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Since it became possible to date rock art by scientific methods there is a tendency to reject the classical, archaeological methods as unreliable and merely subjective. An extreme position is taken by some authors who declare that “only a scientifically dated picture is a dated picture”. Other colleagues take a more empirical decision: if there are AMS-dates they are considered correct, even if they are in contrast to all experience. If there are none, they use the classical methods to fix the age. There are some problems with the archaeological methods used to determine the age of rock art. We use the term “archaeological” and not “stylistic” as we want to express that these are the same methods normally used in prehistoric research. Correctly used they yield good results even if they are not without fault. It seems necessary to reconsider these methods and how they work:

- Dating by self evidence (e.g. daggers, halberds etc.)
- Connection with settlement layers (terminus ante quem – ad quem – post quem)
- Superposition of pictures (relative chronology)
- Regular combination of figures (cf. prehistoric hoards)
- Dating by style: what do “style” and “stylistic dating” mean? This is the most crucial point, as there are severe misunderstandings regarding this.

There are enough archaeological methods available to get good results. If scientific and archaeological methods yield contrasting results we have to weigh up carefully what might be correct.

The background to this paper is provided by an investigation into Chauvet Cave (Chauvet *et al* 1995). Due to scientific dating, this cave is generally thought to date to the Aurignacian period despite this being in stark contrast to knowledge of the development of Ice Age art that has been gained through archaeological methods (Züchner 1995a, 1996, 1999). However, we are not going to deal with the Chauvet Cave itself but instead discuss which archaeological methods are apt for determination of the age of Palaeolithic rock art. The common attitude to these methods is that they

are highly subjective whereas, as a rule, scientific dates are accepted as objective and reliable. Owing to the uncritical belief in science (cf. Rosenfeld, Smith 1997), the importance of which is undoubted, the other possibilities available to archaeology for dating rock art are losing ever more support. Here, what is being referred to is “archaeological methods”, rather than “stylistic dating” or suchlike, in order to ascertain that when determining the age of rock paintings in effect the same procedures that are common and successfully used in prehistoric research can be adopted. Unfortunately, these are not always applied with the necessary precision, which leads to misjudgements that in turn make some scholars doubt the method itself. Occasionally the chronological scheme that was developed by Leroi-Gourhan on the basis of archaeological studies (Leroi-Gourhan 1965) is presented as proof of their failure. Even if one does not agree with the chronological positioning of some paintings and cave complexes, the chronological scheme is basically correct. That means that the method and the results must not be rejected as a whole. Instead, singular errors must be corrected.

A big problem is the fact that nowadays, in most cases, rock art is no longer seen as an integral part of prehistoric cultures but as an independent unit. The effect is that *Art Mobilier* (portable art) is normally not included in the considerations leading to the dating and interpretation of rock art. This separation of the different kinds of artefacts did not yet exist in the generation of Breuil (1937), Obermaier (1912) Kühn (1929) or Graziosi (1956). It is a phenomenon of later decades. Even the important congress “L’art des objets au paléolithique”, Foix 1987, (Clottes 1990) did not change this attitude.

A detailed presentation of an “archaeological” chronology of Upper Palaeolithic rock art and its justification would require a very large amount of pictures, the space for which is not available here. However, this is not the intention. Instead, it is the methodical questions that will be discussed. Basically, the same procedures have been applied since the

discovery of rock art and described several times (e.g. Breuil 1906, 1952).

About ten years ago it was possible for the first time to gain radiocarbon data from minimal samples of the charcoal used by the painters of the Ice Age (e.g. Valladas *et al* 1992). As the majority of the results corresponded to the age that was to be expected based on general considerations (Züchner 1993) this gave immediately rise to the assumption that one had found an "objective" way to determine its age. At about the same time micro-organisms enclosed in the rock varnish were dated successfully. It seemed that here too had been found a way to determine the exact age of petroglyphs.

Following the 2nd AURA Congress at Cairns, Australia, in 1992 a report with the programmatic title: "*Rock Art Studies. The Post-Stylistic Era or Where do we go from here?*" was published (Lorblanchet & Bahn 1993). Where this way is actually leading now and we will be in future is still a contentious issue (Cacho Toca & Gálvez Lavín 1999; González Sainz 1999; Lorblanchet & Bahn 1999).

The following discussion refers exclusively to the art of the Upper Palaeolithic in Europe, where the interrelations between rock art and portable art and the general development of cultures provides particularly good results. In other regions we are confronted with other problems which have to be solved in other ways.

Regarding "direct dating" Robert Bednarik, among others, takes an extreme position: he battles for his conviction that only a picture that has been dated by scientific methods is reliably dated and that all other statements regarding its age are subjective and therefore to be rejected (Bednarik 1992, 1994a,b). He even goes so far as to consider Lascaux to be undated (Bednarik 1996) and very probably to be postglacial because, in his opinion, the fauna that is depicted does not comprise any glacial but only Holocene elements. However, he does not take into consideration that bones and stone slabs decorated with the respective animals – as well as of some of Lascaux's signs – occur in the settlement layers, which means that there is nothing to contradict a quaternary age.

Most authors prefer scientific dates on principle, even if they are in stark contrast to the results of traditional studies. Jean Clottes, for example, after initial calls for archaeological and scientific results being thoroughly weighed against each other (Clottes 1997), has been swayed by the radiocarbon dates

which have convinced him that the art of Chauvet Cave is of Aurignacian origin (Clottes *et al.* 1995; Clottes 1996a,b, 1998, 2001). But all the facts suggest that the cave was decorated during a longer period of time spanning from the Gravettian to the Middle Magdalenian (Züchner 1995a, 1999). If there are not any radiometric dates available as in Lascaux, Trois Frères and many other caves, the same authors assign them without any comment to certain cultural periods that were determined using the classic methods (e.g. Lorblanchet 1997).

The present author is of the opinion that scientific dating is only one of several methods that must be compared critically with others. Each method has strengths and weaknesses that do not insignificantly depend on the respective development in research. Lorblanchet and Bahn – at first advocates of radiometric dates – recently also seem to have been distancing themselves ever more from their uncritical acceptance (Lorblanchet & Bahn 1999).

The question about the "correct" dating and the reliability of scientific and archaeological methods can certainly have deep impacts that are not only of academic importance. Here are two examples:

Chauvet Cave: The assumption that the paintings of Chauvet Cave stem from the Aurignacian and are the earliest art known has culminated in sensational statements in the press such as: "*History of art and thus the history of mankind have to be rewritten*". 100 years of archaeological investigation are thus portrayed as being made in vain because of some radiocarbon data. If we accept that similar situations may be repeated at any time, this renders comparisons based on forms and types senseless regardless of whether they belong to paintings, pottery, bronzes or other artefacts.

Foz Côa: In Central Portugal the largely virgin, blooming district of Foz Côa was almost sacrificed to a gigantic dam project, beside other reasons, because the obviously Upper Palaeolithic engravings (Züchner 1995b) had been "scientifically dated" (Baptista 1999) to only a few decades, centuries or at best a few millennia old. This meant that they were not worth being preserved as World Heritage. The discussion, sometimes very emotional and controversial, was summarised in a voluminous report in 1998 (Zilhão 1998).

In Foz Côa the "direct dating" proved wrong because excavations at the lower course of River Côa resulted in the discovery of engravings covered by sediments. The basic layer contained Gravettian, the

uppermost Late Palaeolithic, artefacts. The reliability of these results is still denied by some scholars who claim that the sediments and artefacts covering the rock are a secondary deposit from recent erosion, a fact that seems evident to them only because of the pictures' fresh appearance (Simões de Abreu & Bednarik 2000). That there are also some sites with heavy weathered rocks is simply ignored in the respective literature. In fact the sites of Foz Côa are among the most important cultural heritage of the Upper Palaeolithic, sharing all essential features with the cave sanctuaries. In spite of the fierce battle fought by "rock art specialists" against this cultural heritage, the construction of the dam was successfully stopped and instead an archaeological park was created.

Scientific and archaeological dates: What are the possibilities and the problems?

Scientific methods

Rock paintings: Today, radiocarbon dates can be gained from minute samples of charcoal. It is taken for granted that the age of the colour pigment and the act of painting are identical. However, this assumption is only true at first glance because a colour pigment can be made from subfossil wood that is frequently included in river terraces. This means what is primarily determined is the age of the colour pigment but not necessarily the time of painting. But even in the latter case the precision of the measurements is never sufficient enough to identify the order of paintings in a cave, the history of a site's development, with the desired exactness.

Rock engravings: For the determination of weathering crusts which formed before and after the engraving, micro-organisms that are enclosed in these crusts can be extracted. It is taken for granted that this rock varnish grows quickly and only once and that, in the course of this process, micro-organisms are enclosed and remain unaffected by any external influence. This premise was fundamental in the discussion about the age of the engravings of Foz Côa (cf. Zilhão 1998). But there is no proof and it is actually highly unlikely because dates from beneath lichen colonies give a significantly younger age than those directly adjacent to them. Everyone working in the Sahara will confirm that one and the same rock may have a different desert varnish at its opposite faces and that it may weather and form anew. The

same phenomenon can be observed in Siega Verde (Balbín Behrmann *et al.* 1991), an Upper Palaeolithic open air site not too far from Foz Côa. In addition laboratories have produced pretty arbitrary results (Beck *et al.* 1998).

Archaeological methods

Self-dating: Rock art is self-dated when it shows a certain object, a certain symbol, or an extinct animal species whose age is known. In contrast to the Bronze or Iron Ages, in the Upper Palaeolithic this will as a rule provide only a rough point of reference. Examples that could be cited are certain signs (rectangles, lattices and tectiforms) whose occurrence has been established in portable art. The sequences of Grotte d'Isturitz, of Cueva del Parpalló (Villaverde Bonilla 1994; Züchner 1997) and some other sites offer many points of reference that are most important in this respect.

Context: Occasionally, rock paintings are dated on the basis of their connection with other findings. Putting them in context with layers of settlements as a rule provides a *terminus ante quem*, seldom a *terminus ad quem* as is normally assumed albeit erroneously. For example, the question as to how old the engravings in Pair-non-Pair really are remains ultimately unsolved: were they made by people who were standing erect in front of the rock wall at the time of Aurignacian or by people who, at the time of Gravettian, had to crouch already because sediments were starting to grow above the painting zone (Delluc & Delluc 1991, 1999)? Certain circumstances would even require one to assume a *terminus post quem*, namely in the case that the back wall of a rock shelter collapsed after the formation of the layers of settlements and the boulders, owing to their weight or changes in position, dug into the sediments. For if that happened the difference in time between the last person walking there and the act of painting is uncertain: the painting can have been made before, during or after the respective layer of settlement. This seems to be very likely, for example, in the case of the painted boulder of Abri Blanchard which, without any knowledge of the findings context (that is badly documented anyway), you would think to be from the Gravettian like the rock shelters next to it rather than from Aurignacian of the site itself (Delluc & Delluc 1991, 1999).

Superposition: Superposition of pictures may suggest tendencies in development, which facilitate

the establishment of relative chronologies for an unknown time range (cf. El Castillo: Alcalde del Río *et al.* 1911, Figs. 106 & 148). If these changes in the way an animal is represented occur at several sites, and in portable art as well as cave art, it can then be assumed that they show a general trend and are thus typical of their time and culture and not dependent on random factors.

Combinations: As a rule rock paintings and engravings are not connected with each other in any noticeable way. Like the hoards of Bronze or Iron Age from moors, rivers or fountain shafts they can have been “deposited” on a single occasion or in the course of an unknown range of time (Züchner 1993). But when certain motifs, types of pictures and symbols regularly occur together or exclude each other, they give hints about whether they are from the same or different periods. The composition of the fauna and symbols in Lascaux or Le Gabillou from the Upper Solutrean and Badegoulian would be absolutely unthinkable for the Magdalenian sites of Font-de-Gaume, Rouffignac or Niaux. Taken together with other observations, this provides points of reference for a relative and absolute chronology.

Style and stylistic analyses: It is often believed that the stylistic dating of rock art is based on the subjective assumption that art has developed from simple, primitive beginnings to ever more realistic and technically more elaborated works. The pictures would be put into this succession according to their “development level” just as into a typological sequence. Breuil’s chronological system (Breuil 1906, 1952) and to a lesser degree Leroi-Gourhan’s system (Leroi-Gourhan 1965), are to a certain extent based on these ideas. However, such a method can at best serve to determine the relative position of a certain picture between others of similar appearance in one and the same site. The widespread rejection of “stylistic” dating today probably has several reasons which have nothing to do with the method itself but instead with the fact that it is unclear what is actually to be understood by “style” and because “stylistic analyses” are usually superficial to an extent that would never be accepted in prehistoric research, classical archaeology, history of art and linguistics (cf. Apellániz & Calvo Gómez 1999).

“Style” is frequently used in the sense of “epoch”: Leroi-Gourhan’s “Styles I-IV” are cultural units, just like the “Romanesque”, “Gothic” or “Renaissance” periods. Used this way the term says just as little about the special characteristics of a concrete piece

of art as the terms “naturalistic” or “abstract”. *Here, style means to us the specific way in which a certain subject is presented*, be it in a painter’s personal handwriting or in accordance with the conventions among a group, in a region or an epoch. Every artist, no matter how extraordinary, depends on the appearance of his real or imaginary subject and on the conventions of his community. The representation always differs in some way from the model; it is never identical with it (GRAPP 1993; Surre 1997). The “spotted horses” of Pech-Merle are just as “naturalistic” as those of Trois-Frères, Les Combarelles or Ekain are but they still differ very clearly from nature, emphasising certain elements whilst reducing others. They adapt to the idea of an artist and his times. The expert immediately recognises whether a bison or a horse is from Périgord, the Pyrenees or Northern Spain.

In this respect an “analysis of style” means the identification of conventions regularly repeated in space and time, basically being nothing else than the definition of types and subtypes usual in prehistoric research. An “analysis of style” – in different varieties and with different names – is generally and very successfully used in the history of art, linguistic research etc., provided it is applied with the necessary precision. Apellániz in particular has made an effort in the last few years to identify criteria intended to facilitate an objective and understandable description of style (Apellániz 1984, 1991, 1992, 1999; Apellániz & Calvo Gómez 1999). But a trained eye and experience are the best tools.

Stylistic dating: A closer look at cave art shows great differences in the way animals are depicted. They are partly determined by certain regularly repeated conventions and also partly by the message of the picture. An example for the latter case will be the “spotted horses” of Pech-Merle. They are so skilfully drawn that the artist would certainly have been able to get the proportions of head and body right. Nevertheless the heads are far too small. They were reduced because of their insignificance for the meaning of the picture, as were the “*femmes-bisons*”, the women’s silhouettes of Pech-Merle, whose heads were not depicted because only the body was important to define the “woman” in general (Leroi-Gourhan 1965, p. 362, fig. 367–371).

The existence of regional and chronological conventions for the depiction of animals is a well-known fact. It should suffice to point out how much the paintings of Covalanas, La Haza or La Pasiega

look alike and how much the paintings of Dordogne (e.g. Font-de-Gaume), the Pyrenees (e.g. Niaux, Trois-Frères) and the north of Spain (e.g. Ekain, Altamira) differ from one another, although similar basic tendencies can be identified. However, supra-regional conventions in the depiction of animals allow comparisons sometimes covering large distances, as do more complex signs whose legibility requires rules known from afar (e.g. "Le Placard" signs, "clavi-forme" signs and females of type "Gönnersdorf").

Parietal and portable art of the Upper Palaeolithic have numerous features in common, both formal and in content, of which only two examples will be cited here. The engravings on small stone plaquettes in Enlène or Labastide do not differ from those on the walls of their respective cave sanctuaries: the same person could have made them (Bégouen & Clottes 1990; Simmonet 1990). The development of the style and of the signs within the long stratigraphic sequence at Cueva de Parpalló is repeated in different contexts. Those close connections facilitate chronological statements regarding the age of identical rock paintings and symbols. They give points of reference in a development, saying that a certain phenomenon was known at a certain time, but not whether it had possibly begun earlier and continued to be used. Here it is important to find new points of reference that limit the respective time frames.

To argue for a style of pictures requires a discussion of as many different details as possible: which species of animal is represented, what does it look like in nature, how is it represented, what is its attitude (standing, walking quietly, running, jumping), which details are shown and which are omitted etc. (Züchner 1975)? To isolate one detail as a chronological marker may be misleading: the M-line demarcating the dark back and the pale belly of a horse has a very long history. It can be used only in correlation with other details. Different techniques can be used at the same time: painting, engraving, and relief. This means that technique is not a stylistic criterion by itself. *Only the sum of details can provide reliable results.*

In conclusion, we have different archaeological instruments at our disposal, which allow us to date rock art. Just like all other methods, archaeological methods are of course not immune to errors either. However, they are definitely not based on subjective assumptions, and are therefore, in my opinion, neither antiquated nor outdated. A scientific method whose possible errors are not yet sufficiently known

should not be preferred uncritically. Instead, results that have been gained by different methods should be thoroughly weighed against one another in order to come to reliable conclusions.

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