M. Otte (dir.), *La Spiritualité*.
Actes du colloque de la commission 8 de l'UISPP (Paléolithique supérieur), Liège, 10-12 décembre 2003.
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THE SYMBOLIC BEHAVIOUR OF THE FIRST MODERN HUMANS: THE FUMANE CAVE EVIDENCE (VENETIAN PRE-ALPS)

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The Paleolithic occupations of Fumane Cave on the western side of the Lessini Mountains

The southern slope on the western side of the Lessini Mountains, in the Venetian Pre-alps, gradually lowers in fan formation from its highest peaks (1500 - 1800 m) to the lowlands in a little over 20 km. Between 1200 and 600 m the slope forms a highland engraved with deep furrows separated by long backs, that join it with the underlying hilly area. During the Würm Interpleniglacial the western Lessinis offered to Paleolithic hunters a vast range of resources: game was represented in the most elevated area of alpine grassland and rocky environment by ibex and chamois, in the underlying woods with roe deer, giant deer and red deer. Numerous kinds of birds populated the open areas of the highland, the woods, the rocky slopes and the damp environment of the lowland, along the course of the Adige river. Outcrops of Tertiary rocks, torrential deposits and soils contained nodules and blocks of flint of different stratigraphic origin. These were different in structure, dimension and wholeness, allowing choices suitable to the dimensional and morphological characteristics of the knapping products used in the making of tools and weapons. Finally, numerous rock-shelters and caves allowed the establishment of residential areas that constituted constant points of reference for the human groups.

In this territory, Fumane Cave is found along the left side of the Vajo of Manune (right tributary of the Vajo of Breonio-Fumane), at an elevation of 350 m. The systematic digs, initiated in 1988 and still in progress, have revealed the entire stratigraphic sequence, formed during the last glacial period. The deposit, about ten meters thick, is divided in four great lithostratigraphic units, of which the two more recent (A and D) were formed during the occupations of the last Neandertal hunters and the first modern humans (Bartolomei *et al.* 1992; Broglio 1997).

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Toward the end of a moderate climatic phase, which probably correlates with the pollen zone of Hengelo, Neandertals abandoned the Lessini Mountains, and were replaced by anatomically modern humans, whose traces are found in units A3 - A1 and D7 - D3. Numerous radiometric dates, notwithstanding incoherences, establish an age of between 34.000 and 32.000 years for the occupation of the first modern humans. Subsequently the cave was abandoned by humans, and occupied by carnivores; clear traces of their presence are found on the surface of the inner most part of the cave. A last sporadic presence of Paleolithic hunters is represented by a carbonaceous thin layer with a Gravettian industry.

From the archaeological point of view, the Mousterian sequence is clearly different from the Aurignacian sequence for structures of domestic space, weapons employed in hunting and industries. The workmanship of the bone, the ornamental objects and the artistic production are exclusive to the Aurignacian period.

The Aurignacian structured use of living floor in Fumane Cave

Based on studies of sediments and soils (Cremaschi 2000), fauna (Cassoli & Tagliacozzo 1994) and radiometric dates, the beginning of the Aurignacian occupation of the cave can be traced back to the end of a moderate and damp climatic phase, which probably correlates with the pollen zone of Hengelo. This occupation continued in the following cold and arid phase, concluding in a less cold phase, possibly connected to Arcy. The examination of thin sections of teeth of some ungulates suggests that the cave was more frequently inhabited between the end of spring and the end of autumn (Facciolo & Tagliacozzo in press).

All the units with Aurignacian industries have yielded abundant animal remains. The study of the game mammals reveals no specialized hunting strategy toward a particular animal species or a determined age of its prey. Among the ungulates ibex is the most common species, followed by red

deer. Red deer is dominant in the more recent Mousterian units (A11-A4), while less frequent are chamois, roe deer and megaceros. Bison is rare. The size of ibex, roe deer and red deer were mildly superior to those in existence today. Of the artiodactyls there is present just one remain, that is a portion of deciduous rhino molar, perhaps attributable to the woolly rhino. Common among the carnivores are wolf and common fox, while the presence of polar fox is probable; less frequent are hyena and brown bear. Among the mustelids glutton, ermine, skunk, weasel and marten are present. Felines are represented by lynx, lion and leopards. Marmot and alpine hare are also well represented, and sporadically, beaver. A third of the determined fauna is represented by birds, among which alpine caw, mountain pheasant and king quail are abundant.

The Aurignacian deposit has been dug over a total surface of 75 m², in front of the actual cave hollow and the atrial zone. Numerous living structures have emerged, above all at the base of the unit (Unit A3 and A2). These structures are usually sub-horizontal, situated inside a loessic sediment, that passes to a coarse sand with ice plaquettes to the mouth of the cave. The earliest structures (S10, S14, S17) are situated in a sterile substratum (A3), while the others are found inside units A2 and A1. Based on the morphology and the content of the fill, we can distinguish different fireplaces (S10, S9, S16, S17, S18, S14), some post-holes (S3, S4, S6, S8), accumulations of ochre (S21) and zones where rubbish was discarded (S7, S19, S20) (Broglio *et al.* 2002).

The fireplaces are present across the entire investigated area, and introduce sub-circular depressions with a diameter varying between 100 and 50 cm, a depth of 5 to 20 cm, with alternating carbon and rare ash levels. The depression's widest point (S10) is found outside the cave, surrounded by big heavy slabs. Within S10 various charcoal level recordings have been dated: C14 AMS UtC-1774 (40.000+4.000/-3.000) and UtC-2051s (32.800±400). S14 has been found in the atrial zone, 140 cm under the actual vault, where three charcoal levels have been dated: S14B2 UtC-2690 (34.200+900/-1.100) and OxA-8053 (33.640±440); S14B1 UtC-2689 (35.400+1.100/-1.300); S14A UtC-2688 (36.800+1200/-1400) and OxA-8052 (34.120±460).

Some megaceros antler sections were worked, making some *sagaies* (among which two samples are *sagaies à base fendue*) and two picks. From some portions of long bone, points and awls were made.

Archaeological evidence of symbolic behaviour

Ornamental objects include red deer teeth, engraved bones, contemporary sea shells and fossils from the Aurignacian occupation (Broglio *et al.* in press).

Four red deer incisors have a furrow in the base of the root. The furrow consists of a series of segments obtained in succession through *sciage*.

A fragment of rib from a small herbivore, without the articular head and artificially thinned at the other end, has on the borders two sequences of thinned notches engraved through *sciage*, reunited in groups from 2 to 5. A pisiform of ibex bone shows two sequences of notches at the borders: 5 more evident and separated on one side, 4 thinner and closer together on the other.

A sample of *Rhynconella clesiana* Lepsius, probably detached from the vault or the walls of the cave, shows on both the dorsal and ventral sides the traces of a human attempt to perforate that has not produced a passing hole.

Sea shells have been found in all the Aurignacian units. In total, we are dealing with 723 finds, mostly intact and with their original colorings. 69 taxa have been identified, of which 62 belonging to the Gastropoda class, 6 to the Bivalvia class and 1 to the Scaphopoda class. The minimum number of identified specimens is 620, split between 583 gastropods, 36 bivalves and 1 scaphopod. The ratio between the number of finds and minimum number of specimens points to a high rate of gastropods found intact (0,92) and, on the other hand, a high rate of fragmentation between the bivalve (0,41). Their contemporaneity linked to the Aurignacian occupation of the site has been established on the base of 14C AMS datings obtained from three samples: *Nassarius circumcinctus* from the A2unity (OS-5871: 32.700±140 B.P.); *Homalopoma sanguineum* from the A2 unity (OS-5999: 32.000±90 B.P.) and *Glycymeris insubrica* from the D6 unit (OS-5872: 37.100±240 B.P.). The shells were collected along the Mediterranean coast, selecting samples smaller than 4 cm and preferring those of a red, pink or brown color. This collection of shells is probably the outcome of long-distance exchange networks. The most common species is the intensely red coloured *Homalopoma sanguineum*, with 260 samples, equal to 36% of the entire collection. Also prevalent are *Clanculus corallinus* with its red-brown colour and *Clanculus cruciatus*, brown with flame-like light decoration. In total, 278 shells, equal to 38,5% of the whole collection, have at least one hole. On a morphological basis it is possible to distinguish two categories of passing holes. The rare perfect circular holes are attributed to the actions of marine predators belonging to the Gastropoda or Cephalopoda class. The more common holes with irregular subcircular borders could have been produced by man using pressure, direct percussion or more probably indirect percussion. A single find classified as *Luria* cf. *lurida* shows a third type of hole, not completed, which was attempted through the use of deep *sciage*. Inside the furrow numerous secondary streaks (evident using S.E.M. observation) shows a nearly identical course of *sciage*, tending to diverge and widen to the edges, corresponding with the entry and exit zones of the tool.

Some shells bear the marks of abrasion and polish on particular sections of the border of the hole, probable proof of their suspension and sliding along a string, visible by S.E.M. observation. In the case *Glycymeris insubrica*, suspension has left evident traces of polish on the umbo. Besides this, it has

erased a small portion of hinge and abraded the wall of the hole that faces the umbo. Also, some gastropods (for instance *Osilinus articulatus*, *Gibbula cineraria*, *Jujubinus striatus*) bear traces of polishing along the zone of the border of the hole facing toward the natural opening of the shell. Relative to gastropods that have traces of use, a method of suspension has been assumed that consisted in the passing of the string through the natural opening of the shell and the intentional hole created by man next to the stoma. Those shells that show more than one hole (66 specimens, above all *Clanculus corallinus* and *Cyclope pellucida*) could have been suspended by passing a string between the two holes.

The spatial distribution of the shells in the A3, A2R and A2 unities shows a preferential position inside the cave, with ample empty areas near the walls; outside the presence of shells is isolated. In the eastern zone of the atrium, the shells are nearly all intact and without holes. Their concentration inside two 33 cm sided squares suggests existence of an area of reserve, where an organic container could contain them. Out of 38 intact specimens found in this area, 34 of these belong to *Homalopoma sanguineum*. This reserve contains around one third of all the intact *Homalopoma sanguineum* shells; those remaining are distributed all around, within a radius of one meter. Similar is the distribution of intact samples from the other species. The bivalves are mainly distributed in the atrial zone of the cave. The high rate of fragmentation and the good conservation of the surfaces of each fracture and the ornamentations have allowed the reassembling of various fragments; in some cases whole shells have been reassembled from numerous fragments. Out of a total of 76 fragments of *Glycymeris insubrica*, 22 connect, as do the 2 fragments of *Mytilus* cf. *galloprovincialis*.

The Aurignacian paintings of Fumane Cave

During the Aurignacian deposit dig, there have come to light various finds that show the use of red ochre by modern humans: two concentrations of ochre (one with weaker coloration at the base of the A2 unit, the other with more intense coloration at the top of the same unit), some small intensely colored clastics and some bigger fragments of rock, five of which show well defined painted patterns. The afore-mentioned are made of oolithic limestone, in four cases (I, II, III, V) deeply dolomitized like the oolithic limestone that constitute the vault and walls of the hollow (Bertola *et al.* in press). The five fragments present different surfaces: less uneven morphologies, at times covered by mineralizations, due to exposure to degradation agents, on which painted patterns are found; other fresher and irregular morphologies caused by fractures which have been well-preserved due to burial in the deposit. This admission and the observation that in four cases the painted patterns are interrupted by a fracture, lead us to believe that the patterns were painted on the vault or on the walls of the cave, and that subsequently fragments became detached due to cryoclastic effect. When they were already buried, some fragments were partially covered by thin calcitic concretions. They have come to light in the Aurignacian stratigraphic units or in the unit immediately above them.

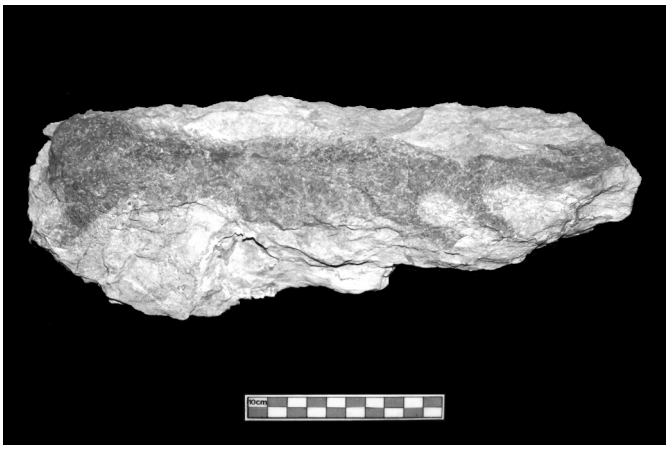

Figure 1. Animal.

Rock fragment with animal picture

Inventory: IG VR 60769, dimensions: 30 x 10 x 7 cm, origin: 69c between A2 and D3d base (Pallecchi in press, samples 15-16) (fig. 1).

A fragment of dolomitized oolithic limestone, narrow and lengthened, shows a red colored animal. The picture surface follows the soft undulated course of the rock, strongly curved in a perpendicular direction. The picture occupies a sort of ridge, with different levels and uneven roundedness. The absence of mineralization attributable to running water suggests that the fragment was originally found in a rather drier zone. The pigment in some points is in contact with dolomite crystals, in other points it covers a veil of whitish intercrystalline concretion.

The side surfaces and the surface at the back have a different aspect from the surface that shows the image. The colour is lighter, and microasperities are present that fix an irregular course. All of this suggests that they are due to fractures, a hypothesis strengthened by the observation of the head and the abdomen of the animal. These surfaces are also generally covered with a thin layer of whitish concretion and of an earthy aspect that detailed analysis has recognized as microcrystalline calcite. In some better preserved areas, the calcite is overlapped by a darker encrustation of brown, that is never present below the coloring.

Therefore it is very probable that there are two generations of concretions: the eldest, present only on the painted surface below the pigment, is of a whitish color, microcrystalline and of a calcitic composition; whereas the most recent, originally present on all the surfaces, is composed of two levels: the first whitish and microcrystalline, similar to the oldest concretion, covered by a second level made up of a brownish encrustation.

On the surface of the fracture positioned below the abdomen of the animal we note an erosive shower caused by the constant dripping of water, when the fragment settled on

the deposit but was not yet covered by sediments. The colour that partially covers the edge of this structure is not of an intense shade and seems to have been washed away.

The picture, almost as long as the fragment and incomplete because of the fractures at the head and abdomen, represents the outline of a four legged animal, with a slender body, long neck, relatively small (but incomplete) head, without a tail. We can clearly see two front legs and a back leg. Where there should be the fourth leg, there is a negative of a detached flake. We have assumed that we are dealing with a feline or a mustelid, mammals whose skeletal remains have been found among the Aurignacian fauna of the site.

Rock fragment with anthropomorphic image

Inventory: IG 60768, dimensions: 24 x 11 x 8 cm, origin: 72s D5 (Pallecchi in press, samples 13-14) (fig. 2).

Fragment of dolomitized oolithic limestone, with anthropomorphic image. The surface of the painting has a sinuous morphology, and occupies a sort of ridge, with different levels and uneven roundedness between lower and higher points. On almost all the surface a thin discontinuous coating of whitish microcrystalline concretion is present; on such a concretion the painting remains. At some points the colour is in contact with the grey coloured rock, which has not changed and with a crystalline matrix and visible ooliths. A second and more recent veil of whitish concretion almost entirely covered this surface at the time of its discovery, still leaving a glimpse of some coloured lines. This more recent concretion has been removed by restoration.

Figure 2. Anthropomorphous.

The other surfaces, at the side and at the back, have a different aspect. They are fresher, both for the lighter colour and for the presence of microsperities that follows an irregular course to sharper edges. These surfaces are also due to fractures, that interrupt the pattern in some points.

This fragment shows the outline of an anthropomorph seen from the front; the axis of the body corresponds to a small ridge of the rock. The figure is 18 cm tall, has on its head two horns (perhaps a mask), below the neck are stretched outwards, and the right hand is holding something that hangs downward (a small animal? Or a ritual object?). At the height of the navel two small a symmetric prominences, can be observed laterally. Further down, the body widens at the hips and the legs are bow-shaped. The painting is incomplete: the image is interrupted along the right side of the body at the leg.

The anthropomorph is similar to the composite figures of Paleolithic art that has been interpreted as witch doctors or shamen. The outline of the animal presents similarities with that of an ivory statuette, interpreted as a reppresentation of a feline, found in the Aurignacian deposit of Vogelherd Cave in Baden –Württemberg.

Rock fragment of doubtful interpretation with an intact pattern

Inventory: IG VR 63643, dimensions: 20 x 17 x 12 cm, origin: 51/61 D3s (Pallecchi in press, sample 9) (fig. 3).

Fragment of dolomitized oolithic limestone. The surface of the image shows a light undulation with weak gradients, a general roundness of form, and a slightly darker coloration that suggests its exposure for a certain time. The other surfaces have a slightly lighter colour and are more irregular. On the opposite surface to the decorated part we can see two distinct fractured areas. The first, longer and older (because its aspect is not as fresh and it has a less uneven morphology) was subjected to dripping that caused little erosive showers and relative deposits of concretion.

The painted picture is composed of two subparallel lines and five perpendicular lines.

Rock fragment with a ring pattern

Inventory: IG VR 63642, dimensions: 35 x 20 x 8 cm, origin: 117c+f D3a+bs (Pallecchi in press, samples 11, 12) (fig. 4).

Slab of oolithic limestone covered by a weakly concreted sediment. The surface of this side shows characteristics of dissolution/recrystallization, due to exposure to degradation agents. Sideways the surfaces are composed of broken

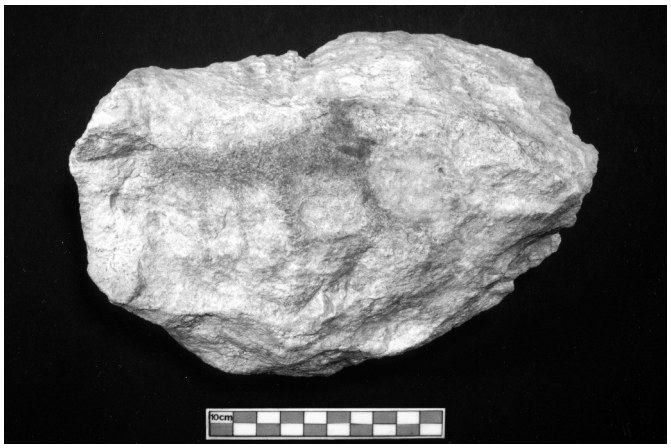

Figure 3. Image of doubtful interpretation with an intact pattern.

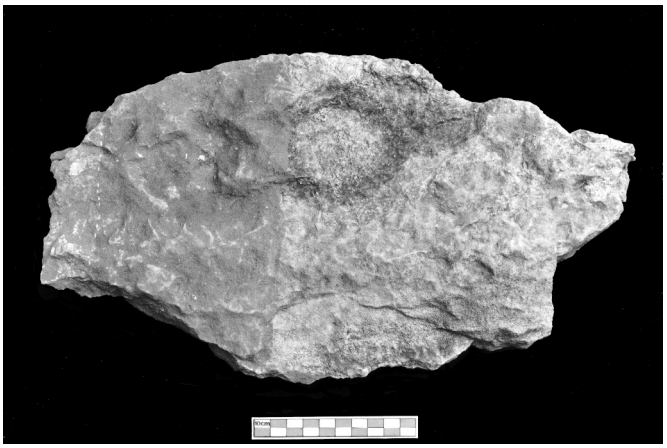

Figure 4. Ring pattern.

irregular lines along nearly the whole length of the perimeter; the fresh aspect and the morphology of the sharp edges suggest we are dealing with fractures. To confirm this we can see that in three different points a linear painted pattern is interrupted.

On the section cleaned by restoration, more than half the decorated side, we can see a ring with an oval shaped appendage. In other position we can see a linear stripe, interrupted in three places by a fracture.

Rock fragment of doubtful interpretation with an incomplete pattern

Inventory: IG VR 63641, dimensions: 14 x 7 x 5 cm, origin: 107e D1ds (Pallecchi in press, samples 17, 18, 19) (fig. 5).

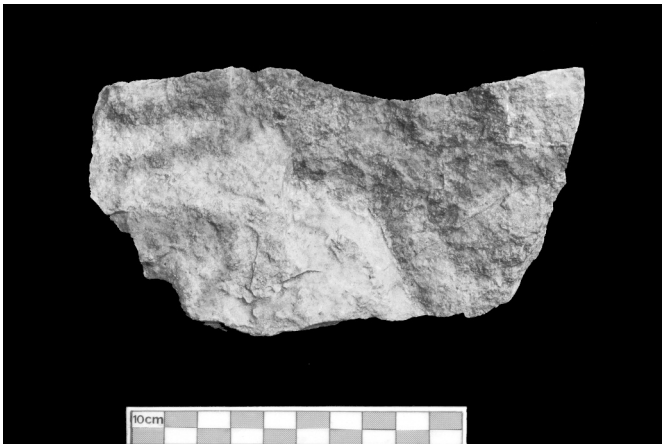

Figure 5. Image of doubtful interpretation with an incomplete pattern.

Fragment of dolomitized oolithic limestone. The surface of the pattern has a primarily flat course, interrupted by two transversal steps at the maximum length, and is covered by a veil of concretion left by running circulating waters.

Of the other surfaces, two clearly derive from fractures because of their fresh aspect and light color, with clear microasperity. The others show signs of a prolonged.

The pattern shows an approximately oval body, interrupted by a fracture. From it there extend two pairs of subparallel lines, among which there is another painted area. Even this is interrupted by a fracture.

Considerations

Despite the modest number of finds, the production of Aurignacian figurative art shows notable variety. All the sculptures from the caves of the Swabian Jura (Conard & Bolus 2003; Hahn 1970, 1982) all the engravings of the Dordogne shelters (Leroi-Gourhan 1965), the paintings at the entrance of the Fumane Cave and the paintings of the Chauvet Cave (Clottes 1997, 1999, 2001) suggest some centers, every one of which develops themes, in part common to each other, using one's own expressive language. This admission is not opposed with the attribution of all the Aurignacian sites, that is seen as a great systematic entity characterized by common technological bases - blade and bladelet production in the lithic industry, the making of points from animal bones - to which groups used to different environments who had developed ways of life, economic systems, social structures and most probably different cultures, joined.

The bond that seems to unite the ivory figurines of the Cave of the Jura, the paintings of Chauvet Caves and perhaps even the Fumane Cave paintings, seems to consist in the choice of the animals represented, that give an image of *Kraft und Aggression* (Hahn 1986).

As for the techniques and the language used, the expressive maturity and refinement of the ivory sculptures and above all the paintings, stand out. The radiometric dates of the sites do not show a large chronological discrepancy, such as to justify the acquisition of new ways of expression. We can instead, at least for the Chauvet Cave paintings, assume that the function of the cave within the society of Aurignacian hunters would need the intervention of qualified

artists. As the most important Paleolithic caves painted more recently in Western-Atlantic regions, the Chauvet Caves were never inhabited. They were used as places of initiation and worship, where most probably, many Aurignacian groups met each other at particular moments. The main problem remains: when and where did the first modern humans obtain painting and plastic techniques and the expressive ability to allow them to create art of such a high-level ?

Bibliography

Bartolomei G., Broglio A., Cassoli P.F., Castelletti L., Cattani L., Cremaschi M., Giacobini G., Malerba G., Maspero A., Peresani M., Sartorelli A., Tagliacozzo A., (1992) - La Grotte de Fumane. Un site aurignacien au sud des Alpes. Preistoria Alpina 28(1):131-179.

Bertola S., Masetti D., Zorzin R., (in press) - Le pitture aurignaziane: la collocazione originaria e le superfici utilizzate come supporto. Atti del simposio "Pitture paleolitiche nelle Prealpi venete: Grotta di Fumane e Riparo Dalmeri", 2003, Verona.

Breuil H., (1952) - Quatre cents siècles d'art pariétal. C.E.D.P., Montignac.

Broglio A., (1997) - L'estinzione dell'Uomo di Neandertal e la comparsa dell'Uomo moderno in Europa. Le evidenze della Grotta di Fumane nei Monti Lessini. Atti Ist. Veneto SS. LL. AA., 155 (1996-97) p. 1-55.

Broglio A., Bertola S., De Stefani M., Marini D., (2002) - L'Aurignaziano della Grotta di Fumane. Preistoria veronese. Contributi e aggiornamenti. Memorie del Museo Civico di Storia Naturale di Verona (II serie), Sezione Scienze dell'Uomo, n°5, Verona.

Broglio A., Cremaschi M., Peresani M., Bertola S., Bolognesi L., De Stefani M., Fiocchi C., Gurioli F., Marini D., (in press) - Structures d'habitat et exploitation du territoire des Préalpes à l'Aurignacien. Actes XVI Cong. U.I.S.P.P. Coll. 6. 5. Liège, BAR int. series.

Cassoli P.F. & Tagliacozzo A., (1994) - Considerazioni paleontologiche, paleoecologiche e archeozoologiche sui macromammiferi e gli uccelli dei livelli del Pleistocene superiore del Riparo di Fumane (VR), (scavi 1988-1991). Bollettino Museo civico di Storia Naturale di Verona 18:349- 445.

Clottes J., (1997) - New Laboratory Techniques and Their Impact on Paleolithic Cave Art. In: M. Conkey, O. Soffer, D. Stratmann & N.G. Jablonski (eds.), Pleistocene Image and Symbol. Mem. of the California Ac. of Sciences 23:37-52.

Clottes J., (1999) - The Chauvet Cave Dates. In: A.F. Harding (ed.), Experiment and Design – Archaeological Studies in Honour of John Coles. Oxford: Oxbow Books, p. 13-19.

Clottes J., (2001) - La Grotte de Chauvet. L'art des origines. Paris: Seuil.

Conard N.J. & Bolus M., (2003) - Radiocarbon dating the appearance of modern humans and timing of cultural innovations in Europe: new results and new challenges. Journal of Human Evolution 44:331-371.

Cremaschi M., (2000) - Manuale di geoarcheologia. Bari: Laterza, p. 268-283.

Facciolo A. & Tagliacozzo A., (in press) - L'occupazione stagionale di Grotta di Fumane durante l'Aurignaziano attraverso l'analisi delle sezioni sottili dei denti. Atti del IV Convegno Nazionale di Archeozoologia, 2003, Pordenone.

Fortea Pérez F.J., (2001) - Los comienzos del arte paléolitico en Asturias: aportaciones desde una arqueologia contextual no postestilistica. Zephyrus 53-54:177-216.

Hahn J., (1970) - Die Stellung der männlichen Statuette aus dem Hohlenstein-Stadel in der jungpaläolithischen Kunst. Germania 48:1-12.

Hahn J., (1982) - Demi-relief aurignacien en ivoire de la Grotte Geissenklösterle près d'Ulm. Bull. Soc. Préhist. Française 79:73-77.

Hahn J., (1986) - Kraft und Aggression: die Botschaft der Eiszeitkunst im Aurignacien Süddeutschlands? Archeol. Venatoria 7.

Leroi-Gourhan A., (1965) - Préhistoire de l'art occidental. Paris: Mazenod.

Pallecchi P., Colombini P., Giachi G., (in press) - Le pitture aurignaziane: esame mineralogico e chimico dei supporti e dei coloranti. Atti del simposio "Pitture paleolitiche nelle Prealpi venete: Grotta di Fumane e Riparo Dalmeri", 2003, Verona.