The role of the cave in the expression of prehistoric societies

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ARTICLE INFO

Article history:
Available online 17 January 2016

Keywords:
Upper Palaeolithic
Cave art
Spatial context
Signs
Supports
Graphic identity

ABSTRACT

One of the major characteristics of prehistoric arts is that they belong to a very specific spatial context, be it open air, rocks, shelters or caves.

The presence of these images in these particular places is a mark of their identity and of the heritage left by these ancient societies and their beliefs, ever since the first cultural manifestations of the Upper Palaeolithic in Europe. The specific choice of a wall or of a particular background, of a location in the cave can thus be just as significant as the image that one chooses to represent or the way in which they choose to represent it.

This is why the present research intends to study the links between the images and their supports, through a family which has already shown a particular affinity with the space: the family of signs. The example of the signs highlights the fundamental role of the supports in the construction of images and the important and sometimes radical influence of the cave on their graphic identity. They illustrate thus “ways of expression” of the prehistoric men, expression of their developed and complex reasoning.

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1. Introduction

Prehistoric art are often known through representations, either paintings or engravings, reflecting the symbolic productions of prehistoric societies. Nevertheless, one of the major characteristics is that they belong to an original spatial context, be it open air, rocks, shelters or caves, which is a mark of their identity and of the heritage left by these ancient societies and their beliefs, ever since the first cultural manifestations of the Upper Palaeolithic in Europe.

The graphical expression on the walls of the caves, the outcome of various techniques and of a firm gestural expertise, under shelter or in open air, is the most spectacular manifestation of new behaviours emerging at the dawn of the Upper Palaeolithic in Europe. The artists have thus dedicated a location only visible to some, very often in the darkness, where their work would not be easy access or to see. For more than 20,000 years, 350 caves have been explored and painted in Western Europe.

This idea of a “painted cave” that is usually used when referring to Palaeolithic art is proof of the perspective that we have on this form of art, a view which implies for the artists a true pattern of approaching the subterranean areas. Specific analysis of signs help to define this approach pattern and to identify through them the function that this caves and their walls hold in the very structure of this art. Methods of relief use, influence of support and structures choices, and organization in subterranean space are useful to assess the role of the cave in abstract prehistoric expression.

2. The cave: symbolical key painting area

An important symbol in many cultures and namely European ones (Plato’s Allegory of the Cave being one example), the cave hides expression opportunities which have been largely exploited by humans. “It is obvious that a man who painted two points behind a stalagmite or on the edge of a cleft has done so as a result of a choice and of a decision” (Leroi-Gourhan, 1966: 47) and it goes the same for a theme (geometrical or figurative), the technique used or the style.

Although the technique, the style and thematic relations have often been analysed, the painted structure is but rarely studied. However, the specific choice of a wall or of a particular background, of a location in the cave can be just as significant as the image that one chooses to represent or the way in which they choose to represent it. The recurrence of the same graphic image in a cave, particularly in a given territory, is both a feature of the artists and of the style used for these representations.

In order to define the importance of the natural context in Palaeolithic art, it is extremely important to identify and
characterise the support and structures chosen, as well as the manner in which they are used. Thus, it becomes obvious that the cave is actively present in the identity of each and every picture, through its implication in the form, technique, location or structure of this image.

André Leroi-Gourhan made a point of illustrating one of these very aspects, namely the location, through the study of the topographical distribution of the images. He dwelled upon the cave in its whole through the use of different spaces and structures: rooms, galleries, diverticula, where he identified the central parts as well as the extremities. He was able to identify a “model-pattern” by proposing especially for the signs, classifications based not only on form but also on their distribution and occurrence in the cave. He thus found three groups of signs: “the big signs located in the main compositions, the unfinished contours and lines in bunches assembled in intermediary zones, points and sticks gathering in the critical positions of the sanctuary: beginning, ending and some points of the main compositions” (Leroi-Gourhan, 1958a: 314). If numerous exceptions, appearing in the painted caves themselves, have fully shown to what extent all attempts at systematizing proves difficult if not impossible, considering the diversity of karst webs (Robert, 2012: 1944—1945), they do not invalidate the certain fact that the spatial pattern of the images and most of all of the signs.

In order to understand as a whole the influence the cave has on its representations, it is important to analyse their direct supports on the walls. The latter were belatedly considered by the studies of the painted sites. It is through this new approach of study that the attention has evolved, and one of the main methods mentioned is undoubtedly the work of Léon Pales on the engraved plaques of la Marche (Vienna), about which he notes that, “the engravers have more often than not worked on rough surfaces rather than smooth ones, even if they had the freedom of choice” (Pales, 1969: 32).

Integration of support in research has been adopted since the 1970s in the caves, linked to a new line of archeologic work in painted caves, as in Pech Merle (Lorblanchet, 1981a,b). It is also seen in the methodology of samples under the form of a cartographic code, leading to a rigorous definition of the engraved elements on the lithic supports and of their morphotechnologic variations (Delluc and Delluc, 1984).

Nevertheless, the exhaustive registration has seldom led to a semantic analysis of the importance of the supports. Extensive work was dedicated to the use of natural reliefs (Lejeune, 1985), and some other work was dedicated to the distinction of different scales on the importance of the reliefs (Sauvet and Tosello, 1998). The cave thus appears as a joined architecture of different spaces, considered through the prism of different scales (Vialou, 2004).

Nowadays, the cave is most of all studied for its morphology, and the issues linked to the natural modifications or altering phenomena (Ferrier et al., 2014; Denys and Patou-Mathis, 2014). If the cave is consequently considered as more important in the studies on its representations (Villeneuve, 2008), its function is yet to be defined. This is why the present research intends to study the links between the images and their supports, through a family which has already shown a particular affinity with the space: the family of signs.

Self-evident expression of the abstract thinking of the artists during the Upper Palaeolithic, they alone represent the two thirds of the representations in parietal mode of the time. Most of work and studies dedicated to them have privileged the analysis and their classifications in terms of formal construction (Casado Lopez, 1977; Sauvet et al, 1977).

In addition to their constant recurrence and their typological diversity, they also present real parietal constructions, in which both the support and the cave are significant for their form and function in the cave (Fig. 1). The study by André Leroi-Gourhan showed that their importance was significant for the painted ensembles, with identification of different groups according to their positions in the cave.

To highlight how signs are disposed on walls of the caves, an analysis of their graphic treatment, associating formal characters (aspect, dimension orientation…), contextual criteria (detailed nature of the rock supports) and association (link to other signs or animal figures) are used. The analysis has tried to emphasize the fundamental role of the supports in the construction of images and the important and sometimes radical influence of the cave on their graphic identity. This influence can be seen at several levels, as well on construction of images, as with their organization in the cave. For each, caves contribute to their cultural identity, illustrated by the way in which the natural reliefs are used.

3. Results

The first is integration, characterised by the insertion of natural reliefs (clefts, ravine paths, ridges, edge of walls…) on the direction of the image in order to compose it. This integration can become “pregnant” or “discrete” (Sauvet and Tosello, 1998) depending on the relief being most of the image or representing only a few isolated elements. The most spectacular illustration of the link support-image, the integration is often emphasised by figurative representations, but this seldom appears for the signs.

Only a handful of signs in the caves can thus present an integration of natural reliefs, proof of a graphic approach clearly different from the human and animal figurations. An example is an ovalised triangular of the Mayenne-Science cave whose base is “mainly made of rocky ridges” (Pigeaud, 2004: 62), or an angular sign of the Portel cave, made of a natural ridge on one of its sides and of a red path on the other.

On the other hand, the examples are much more numerous for the second way of using the reliefs: the frame. The use of lines of natural relief is intended for a partial or full limit-field of the image. This goes for groups of points, such as La Pasiega B, or for more elaborate motifs, such as Las Chimeneas for one of the quadrangular pediments of the main gallery (Fig. 2). In these cases, the frame defines the contour of the sign. In other cases, it becomes the apparent fulcrum, as seen for the spindle signs in the cave of Combarelles, which have a breach in the wall at their end.
In the first sample of 700 analysed signs, more than 400 used natural reliefs (Robert, 2007). Only 7 include a relief in their layout. New observations have confirmed this tendency. Only one sign was an example of relief integration, in Mayenne-Science, whereas more signs present framing: series of signs in cave of la Croze-à-Contran (Dordogne), sign in “beam” at les Deux Ouvertures (Ardèche), supported on a whole, or the oval in le Colombier (Ardèche), observed in the study of specific original motives. Beyond the form, the supports, through the way they were used, have an important influence on the images, which has different manifestations.

4. The influence of the supports on Palaeolithic representations

The first field of influence is identified for the technique. The nature of the wall can lead to a preferred technique. This is true mainly for the clay walls on which several digital traits were discovered. Although there can be a natural adaptation considering the support, the matter of choice is still present, given that other techniques have been used on the same type of supports. Thus, in Rouffignac, on the panel of the Patriarch, there are digital traits for the mammoth tusks, whereas the chisel engraving is used for the remaining part of the animal’s body (Fig. 3). The signs of Rouffignac, namely the tectiforms, have all been finger traced.

The choice of the theme or the type of sign is sometimes guided, more or less obviously, by the nature of the support. The example of the bird of Altxerri is one of the most remarkable ones, in which the natural relief comprises the majority of the graphic image, completed by only a few traits engraved next to the beak or for the circle around the eye (Fig. 4a). A few discreet traits alone betray the action of humans on the wall. This influence can be less obvious but coherent to the author nevertheless. For instance the bison with cups in Niaux cave is built from four wells representing the eye of the bison on the one hand, and the peak of the three angular signs...
on the other hand (Fig. 4b). This construction conveys a direct reference to the other bison paintings in the Salon Noir, bearing the same signs on their side. In both cases, it is all about an initial interpretation of the artist, in an opportunist manner or intentional, as in the Niaux cave.

The influence of the support on the theme is verified also through graphic construction. At Font-de-Gaume, four engraved circles appear in the middle of a several centimetres deep circular concavity in the wall, overlapped by four round parallel traits which are deeply engraved on the edge of the concavity (Fig. 5). The influence of the parietal volume on the form itself of this motifs is absent, a detail all the more significant especially in that these are the only circular signs of the cave. One can notice the will of the artist to emphasise an original opportunistic creation, amid an ensemble of repetitive and codified themes, among frequent bison, horses, and tectiforms.

The contour of the signs is also influenced by elements of the wall chosen by the artists, as in Pestillac (Lot). There, we can find a sign made up of twelve parallel incurved lines, some of them with a lateral loop (Fig. 6). The highest one on the left measures 18 cm, the shortest one on the right 11 cm. "This difference [ ... ] is given by the morphology of the wall because the artist has used the surface of a panel convenient for the engraving" (Sentis, 2000: p. 141). Combined with the recurrent gap between the lines, this inscription on the parietal support transforms the 12 parallel lines in a separated homogeneous graphical entity, where the natural relief is part of its identity.

Beyond the theme itself, the construction of the image is also influenced, first and foremost by its contour and orientation. Concerning the latter, if most representations are painted horizontally, the case of animals in a vertical or diagonal position often show a use of natural reliefs which favours this orientation. The phenomenon is not systematic though, namely for the panels bearing palimpsets, such as the Sanctuary gallery in the Magdalenian cave of Trois Frères (Begouen et al., 2014).

Among the examples for which the influence of the support is essential for the orientation of the representations, are two engraved fish in Altxerri cave, a horse painted in Garma, and the black bison of Castillo. The very nature of these images only makes sense through the support. The singular construction of the image is at all times the outcome of a developed graphic game on the edge of the wall.

In Travers de Janoye (Tarn), the series of aligned punctuations all have different orientations, which are without exception the manifest outcome of a framing on natural reliefs (Clottes et al., 1981). Horizontal, vertical or diagonal, rectilinear or sinuous, they start successively with an oblique cleft (line of points no. 4), a horizontal ridge (line of points no. 5), an oblique trail then the inferior edge of the wall (line of points no. 8), or the edge of the final
The choice of certain walls with an original morphology, the "macroleitiffs" (Sauvet and Tosello, 1998), can, moreover, give an additional dimension to the location choice. For instance, the privileged use of a rock base in the middle of a gallery is proof of the will to highlight a representation. Other parietal monumental spaces are tapped into stalagmitic pillars, rock bases, ledges, and galleries.

Thus, the quadrangular Cantabrian signs are assembled on the subvertical wall of the "Tectiform Corner" at el Castillo, at the bottom of the final dip of La Pasiega A (Robert, 2011). In all of these cases, the orientation of sign varies according to the support and a particular morphologic accident.

The in (Cantabres) where the punctuation groups are engraved in the concavities, construction which is moreover set on the same platform at the bottom of the cave. The cultural dimension is accessible, when these repetitions become almost identical for an entire perimeter, and for the same sign (Robert, 2011): the large ejected punctuations.

The systematic orientation of the lines of points as the reliefs may be, as observed in the cave of Travers de Janoye, proves an original graphic construction sought for and repeated by the artists, construction that can be found in other caves, Combe Négre, Pech Merle, Les Merveilles, Le Moulin of Laguenay (Robert, 2007), all belonging to an ancient phase of Quercy (Lorblanchet, 2010). Beyond that, there are similar approaches in the Cantabres (La Garma, Castillo), the Asturias (Candamo — Corchón et al., 2014) or in the valley of the Ardèche (Chauvet, Grotte aux Points — Brunel et al., 2008). On all of these sites, the punctuations are serially engraved on remarkable reliefs, namely on stalagmitic pillars.

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If André Leroi-Gourhan has suggested a uniform pattern of the distribution of the signs, the current analysis of the organisation of images reveals a more complex structure, built around four distribution modalities (Robert, 2011):

- The aggregation: all the signs or images belonging to the same theme are set on the same wall. At Cougnac, the aviforms are all clustered in a large alcove, away from the rotunda where all the figurative representations are displayed.
- The concentration: similar to the aggregation, but about the choice of a gallery, of a sector in the cave and not only a single wall. Several types of signs are coherent with this phenomenon at Combarelles.
- The location at strategic points: here the distribution favours transition spaces (entry of a gallery or room). The same theme (or type) can segment the path, as with the claviforms at Niaux (Robert, 2012, CD p. 1955).
- The continual dispersion in the entire cave. The theme or type is constantly present in the parietal device, a “common thread” or
“main theme”. This is the case for the barbed signs from Marsoulas.

New observations in caves have confirmed these modalities, such as the aggregation for original signs. Grids or squares in El Buxu or las Herrerias (Asturias), and the striated ovals of le Cantal (Quercy), are all aggregated on the same wall, as seen frequently for the red motives in Cantabres or Asturias: Santian, el Castillo, la Pasiega, Tebellen; or in Chauvet, where most of the original red signs are in the same space.

The distribution modes reveal different choices within the same cave in order to create an authentic graphic discourse. The influence of the natural frame is noticeable throughout the parietal device. It is not about the form, the size or even the technique of the image (which is, at least partially dependent on the parietal support) but about the distribution of images which is the result of the subterranean space in its whole.

This distribution has different logics, sometimes obvious for the same type of signs. This is true for several “big signs”, a phrase coined by André Leroi-Gourhan. They are those which meet on the central panels, signs formerly identified as “big signs”: scutiforms, tectiforms, claviforms, penniforms, etc. (Leroi-Gourhan, 1958b: 384). They do not always occupy the same location. The tectiforms from Bernifal are almost all (11 out of 12) aggregated on the wall of the Passage (Fig. 9), whereas those from Font-de-Gaume are displayed all along the parietal device, both on the large panels and at the bottom of the lateral gallery and the finale Diverticula (Vialou and Vilhena-Vialou, 2014), answering to choices of construction that are totally different. In les Combarelles, the 6 tectiforms are distributed in the last part of the cave, while in Rouffignac, distribution seems to be very dispersed in different areas. There are also technical variations, and more cross-associations with animal representations: 59 tectiforms were engraved or painted on walls of these four caves, but organization, technics, spatial distribution or association with animals varies among them.

We can observe similar originality with claviforms in Niaux (Ariège). Their distribution in strategic locations of the cave (Clottes, 1995) (end of the entry gallery, beginning of the deep gallery, on both sides of the Salon Noir…) is different from those of Fontanet, Trois Frères, Pindal or la Cullalvera, where the claviforms are always displayed on the same wall.

Through disposition in the subterranean space, but also by the selection of supports according to their morphology and visibility, as well as by the adopted technique or style, the artists of the Upper Paleolithic gave to the images that they painted or engraved a full-fledged function in the parietal device. This is true namely for certain “motives” impossible to classify, sometimes at the extreme of the figurative field and which have a special graphic treatment (Robert, 2014). The particular attention given to these images could be the reflection of a specific role that they have been given. The choice of giving certain images a specific form and technique along with a special location in the cave, is the expression of a real graphic expression developed by prehistoric societies.

In order to have a better understanding of these factors of expression, precious tools are at hand nowadays, above all 3D tools to download and scan in detail all the volumetric characteristics of the walls. Their utilization has to highlight all factors which define the relation between wall-support and image, which is crucial in understanding the function of representation in the parietal device.

7. Conclusion

After analysing the relationships and links between the images and their natural frame, it appears that the cave plays an essential role in the construction of the Palaeolithic art. Beyond the
topographic distribution, it influences the images through several factors: the morphology of the support (aspect, size), the nature of the rock, its visibility level, and even its degradation and conservation state: all of which are aspects that the Palaeolithic artists have used in order to construct their images. The signs offer a remarkable example of the way in which meaning was created, through the narrow and different relations they have with their supports. The frequency observed with relief uses, the systematization of the same choice of support for certain types of signs (great punctuation, cantabrian quadrangular), and the variations observed between caves for the same type (claviforms, tentiforms) reveal the decisive role of the support for the function of these signs in the parietal devices.

The mastering of natural architecture is as important as the technical expertise shown by prehistoric societies. Space is not a mere frame for the images: it contributes directly to their role and function in the parietal devices, just as it is used in the building of these very devices. The graphic expression of these societies is neither immobilised in the panels, nor animated by style effects. It is literally exposed, accentuated or toned down by the effect of volumes and of our moving eye along a path where every location has a meaning. Approaching the links between the cave and the representations allows access to a fragment of language and expression of prehistoric societies.

Acknowledgements

My thanks go to National Museum national of natural history, the University Paris 1 Panthéon-Sorbonne, the UMR 7041 arScAn, team Ethnologie prehistorique, and the UMR 7194 HnHp where my research was carried out. My special thanks go to Carmen Rivera who had a decisive contribution to translate this article.

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