SYMPOSIUM 9

SIGNS, SYMBOLS, MYTH, IDEOLOGY

Pleistocene Art: the archeological material and its anthropological meanings

Chairmen

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FOREWORD

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The Symposium sought to occasion new ideas and innovative research, to afford fresh theories and bold hypotheses together with unpublished information and recent discoveries relative to the study of Pleistocene Art in general and in particular to the philosophies and practices it implies. The Symposium thus has provided an open and fruitful opportunity to discuss the roles played by Iconography and Myth in Palaeolithic times. This has been obtained utilizing a multiplicity of perspectives and approaches, among which emerges the light which can be shed by insights from the anthropological study of peoples whose material life-styles and assimilated mentalities can be plausibly paralleled to those of our prehistoric forebears.

There is no third way beyond conscious or unconscious ethnocentrism. It must consequently be recognized that anthropology and archaeology with their respective categorizations of empirical reality (amongst which “Art” and “Prehistory”, “Ritual” and “Myth”) are pure products of recent Western history. This recognition, rendered creative as well as critical, could lead, far beyond the usual interdisciplinary syncretism, to radically new hermeneutical systems able to attribute less ambiguous meanings to the very terms under discussion such as “artistic production”, “the Pleistocene”, “prehistoric religion” and “hunter-gatherers”.

In particular, such issues as the following were debated:
• problems emerging with regard to the archaeological and anthropological documentation of art sites with special reference to palaeo-archaeo-anthropological data;
• the correlations, synchronic and diachronic, between palaeo-ethnocultural areas at different periods and in various places;
• the iconography of Pleistocene art as a reflection of prehistoric cultural representations;
• ceremonial aspects and underlying meanings of material culture; the possible role and function of Pleistocene art in keeping with eco-social-cultural changes;
• data from sites that are still in use, insofar as they can be related to Pleistocene art sites.
THE DEEP STRUCTURE
OF PLEISTOCENE ROCK ART:
the “Artification Hypothesis”

Ellen DISSANAYAKE

The artification hypothesis offers a new direction for describing and understanding non-iconic Pleistocene rock art by conceptualizing it as the product or residue of a behavior of “artifying”, rather than as a specific form of graphic paleoart. “Why did our ancestors make marks on (artify) rock surfaces?” becomes the appropriate first question, rather than “Are these marks symbolic (and hence art)?”

The term artification refers to what I propose is an undescribed but biologically distinctive and noteworthy characteristic of humans: an evolved capacity and motivation to deliberately make ordinary things extraordinary. It occurs, for example, when adorning or elaborating ordinary bodies and artifacts with pigments, incised and carved lines (scars or tattoos), or with strings of pierced shells and teeth; and in making an ordinary wall extra-ordinary with cupules or handprints. The concept applies to other arts, as well, although here I specifically address rock art.

Western Archaic Tradition cupules from a site in Gila County, Arizona (photo: courtesy E. Malotki).
My approach is ethological, tracing the elements of artification to an evolved (adaptive) ritualized communicative interaction between ancestral mothers and infants. Two early adaptations in hominin evolution—bipedality and brain enlargement—resulted in reduced gestation and premature birth of highly altricial (helpless) infants who required months and years of assiduous care. To address this adaptive problem, a universally-observable and well-documented interactive behavior evolved in which mothers present affinitive communicative signals of face, voice, and body to receptive infants. Derived from already existent visual, vocal, and gestural signals of friendliness and accord performed by adults, an ancestral mother simplified, repeated, exaggerated, and elaborated these signals, inadvertently reinforcing her own neural circuits and brain chemistry for affiliation, thereby becoming motivated to give requisite care to her infant, contributing to its survival and her reproductive success.

Evolved receptivity by ancestral infants to these evolved maternal “operations” on affiliative signals provided an emotional reservoir for what later could be exapted as a deliberate behavior of artification. These operations—formalization (which includes shaping, composing, patterning, organizing, schematizing, simplifying), repetition, exaggeration, and elaboration—are performed by artifiers when they make ordinary things (e.g., skin, hair, rock surfaces, natural surroundings, common artifacts) extra-ordinary. The operations of artification, as in the precursor mother-infant interaction, attract attention, sustain interest, and shape and mold emotion.

The motivation for artification is traced to the cognitive desire for control or influence on biologically or psychologically important but uncertain outcomes, based on anxiety about obtaining food, safety, health, fertility, and so forth—the circumstances that frequently inspire what we today call ceremonial ritual. Such practices occur universally in transitional or uncertain contexts and are composed of visually, vocally, and gesturally artified behaviors—that is, visual art, song, and dance. These artified behaviors often occur all together in a multimodal performance (as in the antecedent mother-infant interaction).

The operations of artification can be viewed as design features that address two adaptive problems, individual debilitating stress/anxiety and group cooperation, by providing tension-reducing and group coordinating activities—organized, patterned, unifying, and emotionally—satisfying behavior in visual, vocal, and gestural modalities. With regard to mark-making in particular, bodypainting and decoration as well as visual enhancement of surroundings would draw additional interest and attention to a ceremony, making it even more special and powerful. Such costly (extra-ordinary) signals indicate the degree of importance of (and emotional investment in) the occasion they adorn. They signal to higher powers, to others, to one’s group, and to oneself “See how much I (we) care about this matter (artifact, occasion).”

Calling these activities examples of “artification” (rather than calling their products “art”) avoids the connotations of aesthetic value, beauty, skill, depiction, creativity, and self-expression inherent in the modern Western concept. When applied to Pleistocene palaeoart, the approach provides new ways of thinking about motivation, function, and meaning even of unskilled or non-iconic forms.
FINDING THE FIRST INTENTIONAL MARK MAKERS:
Clues in Brain Development

Margaret BULLEN

In this paper I endeavour to reach back before the creation of the lionesses of the Upper Palaeolithic to find the point in time when the realisation occurred that a mark made by one individual could influence another.

It is a quest not only for the time but also for what was needed. Was it a larger, more specialised brain, more connectivity or more complexity of synapses? Was it necessary to have language before pictures?

Early hominids left few traces; some stone tools, faint evidence for habitation and scattered skeletal material. Endocasts may be misleading and the only brains available are those of our closest living relatives, the non-human primates. In the paper I first explore how non-human primate behaviour differs from that of humans noting the over achieving pygmy chimpanzees trained by Savage-Rumbaugh, and then consider the physical differences between the human and non-human primate brains before observing hominid evolution at the macro and micro level. A major difference between human and non-human primates is that of brain size, the human brain being 35% larger than that expected of an ape the same size and more importantly the frontal cortex, Brodman’s Area 10, is twice the size in humans as it is in chimpanzees. The importance of studying cyto-architecture rather than surface anatomy is stressed.

Brain asymmetry, once considered unique to the human brain is shown to be present even in birds but the nature of the asymmetry may be a defining human feature. Petalias are extensions of the cerebral cortex beyond their counterparts on the other side of the brain. Primates do show some asymmetry but rarely the petalial pattern nor true handedness.

Asymmetry in fossil skulls is contentious and it’s presence in skulls from Australopithecines to Neanderthals is discussed more fully in the paper remembering that information from endocasts is literally superficial.

The use of language and the ability to think in words is linked to being human yet there are no unique human anatomical correlates for language. Broca’s area in the inferior frontal lobes and Wernicke’s area in the angular gyrus at the temporal-parietal-occipital junction are essential in humans for the production and comprehension of the spoken word.

Mirror neurones were originally discovered in Area F5 of macaque monkeys and were shown to become active not only when the animal carried out a task such as grasping an object, but also when it observed another monkey or a human performing the same action. The region in the human brain homologous to F5 in the macaque is near Broca’s area, the expressive speech area.
This area becomes active when an individual carries out a task themselves or observes another person doing it. An important difference between the mirror neuron system in macaques and humans is that the latter responds also to intransitive meaningful hand movements. The mirror neuron system in humans not only mirrors the goal but also the pathway to achieve it considerably enhancing the speed and efficiency of learning.

**Hominid evolution**

Australopithecines had small brains of less than 500 cc and perhaps had asymmetry of their Sylvan fissure. Endocasts of *Homo habilis*, dating from 2 Mya, with an average brain size of 646 cc, indicate developments in the regions corresponding to Broca’s area and Wernicke’s speech area. Most significantly, primitive tools, Oldowan pebbles, are associated with *Homo habilis*. They would not have required a great deal of processing and the object-related mirror system described in macaques would have supported the copying of the action from one individual to another.

Acheulian tools associated with *Homo erectus*, dating from around 1.5 Mya, are found over a wide geographic and temporal range. Unlike the Oldowan tool kit, there is evidence for a prepared core technology that differed between sites but was consistent within sites. This seems to be the first evidence of shared intentionality with both process and outcome being transmitted from one individual to another.

It is not until *Homo sapiens neanderthalensis*, with a brain capacity averaging 1450 cc, appears around 130,000 years ago, that the tool kit really expands and there is evidence, if controversial, for symbolic behaviour.

**Cells and Synapses**

The paper discusses in detail the importance of specific cells such as spindle cells which experimentally are associated with the empathy trait and appear to have developed in the last 15 Mya. It pursues the new fields of proteomics and genomics discussing the enormous computational power of the neural synapse, which transmits information in the form of a neural code.

The fact is there was no sudden becoming human. The basic protosynapse present in the simplest unicellular organism is preserved in all animals with complexity building on the basic framework.

Somewhere along the line of hominid evolution people started to imagine, to shape things with intention. Did they need language? Temple Grandin, an academic with high functioning autism, says no. Pictures provided all that she needed to construct her world.

*Homo erectus* made tools, at times bringing material from a considerable distance to their working floors. They needed to work cooperatively and while they could have done this without using symbols or leaving messages, it is possible that they made marks encoding information.

Evidence of ornamentation by Neanderthals suggests a society in which individuals were aware of themselves and their capacity for influencing others. Making marks with intention was within their power.
Connectivity is perhaps the key element in the development of a brain that thinks and that knows that others think. The problem is that the evidence of connectivity—those long white tracts that make pathways through the brain, the networks of interconnecting cells and the thousands of proteins that make up the postsynaptic density—disappear as easily as the narratives they carry.
EVIDENCE FOR SYMBOLIC BEHAVIOR IN THE MOUSTERIAN

Marin Cârciumaru, Elena-Cristina Nitu
Minodora Țuțuiianu-Cârciumaru

As we know, there is much evidence for the use of ochre by Neandertals. Despite this, the possibility that they tattooed themselves has rarely been discussed. In Cioarei Cave, the discovery of recipients to prepare ochre provides direct material proof of painting, perhaps on the body, by Mousterian communities. This evidence concerns the preparation and use of ochre in a precise manner, consciously and with known meanings.

In Cioarei Cave, the pigments and recipients are concentrated in level E, which is contemporary with the Boroșteni warming complex. The $^{14}$C dates of this level are between 51 900 ± 5300 / -3200 BP and > 45 000 BP. We nonetheless suspect that they are younger than the true age, as has been indicated by palynological and faunal analyses, probably due to the age limit of the radiocarbon method. It is possible, considering the chrono-climatic correlations of the Boroșteni warming complex with the last interglacial, that the ochre found in Cioarei Cave is older than 80 000 BP.

In addition to the large quantity of ochre in level E (48.62%), we found a significant amount in level F (16.28%) as well. This level is contemporary with the first glacial phase after the last interglacial.

The samples were generally used in their natural state. Many originate from clay, and others have a fibrous structure similar to that of goethite. There is also a close correlation between the highest quantities of ochre and the levels intensively occupied by Paleolithic humans (level E).

The discovery of ochre with different tints in Cioarei Cave in general, and especially in level E, is closely linked to the presence of recipients for its preparation, most of which are concentrated in the same level (figure).

A first observation concerns the way the recipients were made, most with the upper part of stalagmites that were truncated before successively scraping the internal layers. The Mousterians thus obtained bowls with variable dimensions and depths, though generally similar, for the preparation of ochre.

The fact that the ochre is mostly concentrated in the bottom of the bowls is another argument in favor of their use for similar, well defined, purposes. If the ochre was found in greater quantities on the outside of the recipient, we could have deduced that the recipient was placed on a substrate of ochre.
Recipients made from stalagmites and images of ochre obtained with a VHX-600 digital microscope

The first recipient discovered in Cloarei cave (1983)

Diverse tints of ochre inside the recipient

Layers of superimposed colors

A recipient discovered in 1985 in level E

ochre spread inside the recipient
All of this indicates the existence of a specific manner of preparing ochre for body and/or facial tattooing by Neandertals, who would have possessed the technical capacities necessary to make the recipients. The ritual of body painting permits us to speculate on the spiritual context that incited these populations to attribute symbolic value to each color used. Though much evidence has been found for the collection of ochre during the Mousterian, we have little material evidence of how it was prepared and used for body and facial tattooing.

The discovery in Cioarei cave of recipients for the preparation of ochre provides direct material evidence for the practice of body painting by Mousterian communities, even if we cannot completely refute the hypothesis of ochre preparation for other purposes, such as to paint tools, weapons, or skins used to protect the body or as a blanket.

In Froide Cave (Rece), a very strange distribution of four *Ursus spelaeus* skulls was discovered enveloped in calcite. The $^{14}$C date of an *Ursus spelaeus* maxilla found nearby is only 40,000 BP, while the calcite covering the skulls has been dated by U/Th to approximately 75,000-85,000 BP.
SEX & DRUGS & ROCK ART:
Revisiting Three Hypotheses on the Origins of Visual Art in the Pleistocene

Larissa MENDOZA-STRAFFON

From an evolutionary perspective, three theories account for the emergence of the visual arts. The first one states that visual art, like a male peacock’s tail, arose as a sexual strategy to acquire mates, so that the origin and proliferation of visual art are likely the product of sexual selection, or a “courtship adaptation”. In the courtship behaviour scenario, visual art is supposed to work as a sort of advertisement for good genes whereby potential mates can guide their choices: artworks can act as “fitness indicators”, that is, they may be used by others to assess the prospectively attractive mental qualities of the author such as creativity, intelligence, sensibility...
The second theory sees visual art as a communal practice, originating in ritual ceremony. Supposedly common to all hunter-gatherers, shamanism therefore is thought to have been the predominant belief system of Pleistocene humans. The shamanic trance or neuropsychological model sees rock art traditions as the result of shamanic practices during which mental images, visions and dreams experienced in altered states of consciousness were projected and “fixed” onto wall surfaces. The universal presence of geometric motifs in these manifestations would represent trance-related entopic phenomena, and the systematic predominance of a selected group of animals and animal-human images, would represent a sacred bestiary and the shaman’s transformation or trip into the supernatural. The socialization of such dreams and visions in a religious context through shamanic rituals would allow the emergence of image-making.

The third theory contemplates a neurocognitive change that allowed modern humans to conceive visual art at some point during the late Pleistocene. A hypothetical genetic mutation that had an effect at the neurological level set off the reorganization of brain functions allowing “fluidity” or communication between different mental modules and, with it, symbolism, imagination, and creativity. This new mental freedom enabled humans to diversify their technology and experiment with new types of tools and artefacts, and to populate new territories.

While all three explanations raise interesting points, a reassessment is clearly needed. This task is not that simple, as all three scenarios provide quite accurate descriptions of some of the effects that visual art might have. However, none provide an actual plausible explanation for the emergence of visual art; of why it appeared when it did, where it did, and how it managed to develop into one of the most distinctive human behavioural traits.

Having found all three scenarios unsatisfactory, I suggest exploring the role of visual art in evolution as a communicative signal and an instance of human material culture, rather than an innate cognitive ability. This paper does not intend to provide a complete hypothesis on the origins of visual art, instead it puts forward a new approach that might eventually lead to constructing a solid and testable scenario for the emergence of visual art in the Pleistocene.
THE DOUBLE AND THE VISION:
What Cognitive Level is Necessary to Associate a Drawing with its Referent?

Matteo Wladimiro SCARDOVELLI

This article addresses the possibility that the creation of the first figurative (or iconic) images by Homo can inform us on the degree of cognitive development of their creators.

Semiological analysis of images

Starting from the basis that the production of images implies the capacity to read them, I proceed with a semiological analysis of the act of reading. Like any sign, the iconic image transmits a limited amount of information relative to the Object to which it refers. The receiver of the image is thus asked to make a “semiotic investment” in order to reconstruct, through cognition, the idea or mental image that was already that of the producer. The reading of images is thus associated with a competence that is more cognitive than sensory.

Following Persson, I propose a three-part division of the act of reading depending on the “mode” of reading the images: as a “surface”, as a “reality” and as an “image”. We perceive only the “surface” of an image when we perceive it only in its “plastic” sense, meaning the colors, shadows and gray tones. On the contrary, the image perceived as a “reality” is interpreted as a reflection of an iconic reference, but with no conscious awareness of this reflection (there is thus confusion between the “image” and its “referent”). Finally, when an image is read in the “image” mode, there is a full iconic recognition of the object represented, and at the same time, a full awareness that the image is not the object.

After considering experiments conducted with animals, we arrive at the conclusion that some animals possess certain visual competencies when faced with stimuli as poor in information as are bi-dimensional images. Nonetheless, we have no proof that a “pictorial competence” has been acquired as such. In contrast, following experiments with Homo sapiens children, as well as populations with an oral tradition, we conclude that human beings are equipped with a true semiotic network that enables them to automatically and instantaneously decode an image (figurative).

Image and representation

Like Michel Denis, we will consider the “image [... as an instrument for the figuration of the signification”. According to him, an image as a representation permits the construction of a model of reality that can be the object of mental manipulation. The image as a “representation” would thus be a sort of “double” of the world, a virtual world in which it is possible to make predictions, calculations and manipulations of all kinds.
Finally, if our aim was to understand why the human visual system provides us with the capacity to read visual signs as an “image”, the question to ask would be pragmatic: what (adaptive) behaviors can be manifested by an animal species that can use images (internal and external) to show its cognition? According to Denis, “Representations can be interpreted as the functional bases of these conduits, as permanent structures that serve to anchor these conduits which are by nature circumstantial”.

**Conclusion**

To conclude, we suggest that the beginning of the visual-poietic behavior of humanity proves the existence of its capacities for planning and manipulating reality through “representations”. Concretely, “a rock art image may have [...] served as a cognitive and mnemonic tool”. However, we know that animals constitute the major theme of Paleolithic “art”. Considering that they “incarnated [the] survival of [the human being]: a violent death or a full stomach”, we can conclude that a representational cognitive treatment of images of animals would have had a high adaptive value. The image thus conceived could have served, for example, to “emphasize the precise spot to shoot a projectile into a prey or a hunter or to reveal the morphological characteristic of an animal of a given age”.

A painted rhinoceros in Chauvet Cave (Ardèche, France), considered here as a symbol of the first figurative image created by our ancestors.
ROCK ART AND HUMAN DIMENSIONS OF CLIMATE CHANGE

Thomas HEYD, Tilman LENSSEN-ERZ

This paper first outlines the potential relevance of the arts, and particularly of prehistoric rock art, for understanding human responses to environmental changes, such as change and variability in climate. We continue by describing some reasons for choosing artworks as valuable research sources that may allow us some access to the mentalities or worldviews of their makers. We conclude by making some suggestions for future research strategies that exploit these possibilities.

Human dimensions of climate change and the arts

To date there has been very little emphasis on the potential contribution that the arts can make in facilitating a grasp of the self-understanding of people in the face of the environmental changes that they live through. The material, archaeological, evidence from the Pleistocene has made possible the reconstruction of complex and diverse cultures, on the basis of, e.g., the lithic industries, and faunal and plant distributions, evident in the record. In terms of the reconstruction of mentalities or worldviews, though, reliable resources are scarce. However, through analogies from recent ethnography we may learn about the options of human agency in situations such as recurrent droughts that people may have endured.

Art as research source

As an initial working hypothesis we propose that objects, events or processes that are understood to be art are distinguished from the remainder of anthropogenic objects by their characteristic, perceptually accessible, “excess of meaning”. We suggest that, notwithstanding the particular uses of the objects, events or processes in practical (utilitarian), ritual, legal, or moral contexts, their presumed art status is correlated with the supposition that they contain more meaningful information than required to carry out the function or task in question.

In virtue of their apparent “excess of meaning”, such objects, events and processes transmit part of the lived experience of members of particular human groups, and consequently betray particular viewpoints on lifeways and mentalities, that is, on ways of seeing self and one’s place in the world of one’s time. Given that much rock art, including much of the Pleistocene art, would seem to offer an abundant “excess of meaning”, we propose that these manifestations may constitute a potentially very rich way of accessing the self-understanding of their makers.

Suggestions for a research programme

What kind of information about the way humans stood in relation to environmental transformations provoked by climate change may we obtain if this sort of environmental change generally was a slow affair? Certain particular associations may be of explicative value.

We propose, in particular, to consider associations between, on the one hand, important changes or variations in climate, and, on the other:

a. the appearance or disappearance of particular motifs;
b. significant increases or decreases in variability of motifs or styles over a certain territory;
c. over time, the production of rock art and its discontinuation in areas that in principle are suitable for such production in terms of materials (wall space, painting or engraving surfaces and materials);
d. the utilization of particular motifs in time periods in which their use would seem surprising, given the actual environmental conditions that prevailed during the production of the art.

Case studies from prehistoric Australia and Pleistocene Europe have demonstrated how evidence on climate variability can be meaningfully linked to art. By contrast, also the absence of change in motifs and the continuity in rock art production, despite significant climate change, may tell us something about the mentalities of the makers of such manifestations.

Conclusion

Artistic behaviour likely reflects the interplay of the cognitive dispositions, emotional make-up, and practical skills, manifested in the presence of the particular conditions for the production and reproduction of life that human groups have had to contend with in times of environmental change. Consequently, rock art may constitute an outstandingly valuable resource for our understanding of people’s responses to their circumstances, including environmental changes provoked by changes and variability in climate.
LEARNING FROM ARTS AND CRAFTS IN THE PLEISTOCENE

Anthony SINCLAIR, Natalie UOMINI

Studies of the Paleolithic have often considered that the function of artistic practices was to establish meanings and cultural identities, while that of crafts was to respond to functional needs, such as tool manufacturing. This split has caused the studies of art and craft to develop a vocabulary and history of investigation that are quite different. We shall argue that this division is artificial and suggest that our understanding of Pleistocene art can advance through a consideration of the obstacles overcome by research on Paleolithic crafts. For example, the research must link two extremes of knowledge: on one hand, the detailed studies of images alone, and on the other, the broad theories concerning artistic behavior. In recent years, scientific analyses of pigments and detailed recordings have revealed the methods of production of decorated panels at sites such as Lascaux, Pech-Merle and Chauvet. However, despite the high quality of the information resulting from this work, we still have trouble associating these details with broad theories. They concern artistic practices, meaning and symbolism, such as the teaching of hunting, the strengthening of social relations or consciousness. How can we bring these two research orientations together?

In the meantime, Paleolithic craft activities have overcome this hurdle through a long tradition of lithic experimentation, which facilitates the dialog between the processes of apprenticeship and theories on human evolution. The study of Paleolithic crafts and ethnography can contribute information through lithic technology, refittings and experimental analysis. We know, for example, that for the traditional stone workers in Papua New Guinea, the manufacturing of stone axes is not purely functional. There are also esthetic, mythical and symbolic aspects. From this perspective, we suggest that Paleolithic art can be placed in the category of craft activities, without losing its artistic element, because it is impossible to separate these two dimensions.
When developing studies of parietal art, it is necessary to create a language and terminology to describe and situate specific actions within a larger context. Lithic technology studies have advanced with the identification of techniques, methods, traditions and “apprenticeship”. For example, new techno-psychological or cognigram approaches have been developed. The examples reconstructed at the site level are instances of practical skilled actions. They express the knowledge, know-how and skill of an individual, while they are also integrated into a social context in which the meaning is structured and transformed.

The distinction between “method” and “technique” applies to different levels of apprenticeship and knowledge (knowledge and know-how, or theoretical conception and motor skill). A method can be transmitted orally or through observation of the sequences of actions, with no practice. A technique, on the other hand, can only be learned through regular individual practice in order to obtain a motor skill, and cannot be learned theoretically.

These two levels of apprenticeship can be acquired in very different contexts, for example through secret rituals or public demonstrations/shows. The example of iron working in historic times in Kenya (Apel 2001) highlights very clearly this dichotomy. Knowledge of iron smelting was a guarded secret, whereas the practice of forging was public. A recipe that can be transmitted orally (or through drawings, dances, stories or legends) is easy to transmit, while a physical action – more difficult because this requires time – is linked to a person by whom it must be acquired.

We can imagine that Paleolithic rock painting was divided into two phases:
1. the preparation of pigments according to known or transmitted recipes;
2. the realization of the painting depending on the physical capacity of the individual.

By studying these different contexts of Paleolithic art works, we can distinguish whether the practice was considered to be public or private. For example, the paintings in the large gallery of Altamira could have been part of a public event since the gallery could accommodate large groups. On the contrary, many negative hand stencils are found in places that are hidden or difficult to access in decorated caves; only one or two people could have entered into these spaces. The pigments used at Niaux and prepared at La Vache, show that pigments were shared between these two caves, where pigment preparation was separated from its use, and was thus perhaps secret.

For Paleolithic art, we could begin by continuing studies of the age of the artists, the technical and technological skills, the knowledge and know-how required to prepare the pigments, and by considering the social network that must exist to support these apprenticeships. We suggest the use of cognigram analysis, which schematically shows all the stages and tools necessary to create parietal art. This groups the activity units by temporal and spatial phases. This schematic view of the units allows us to clearly see all of the elements included and their relationships to each other.

In this way, we can connect the artificial division that separates art and crafts, and thus learn something about arts and crafts in the Pleistocene.
SYMBOLISM AND BECOMING A HUNTER-GATHERER

Iain DAVIDSON

Art is the making and marking of surfaces. In 1997, I suggested that there were some hints of a common process in the late Pleistocene emergence of painting and engraving, but that the outcomes were different in different regions: marking of individuals through beads...; marking of segments of society in open social networks; marking of closed social networks through identification in a central place; marking of the manner of corporate ownership. I suggested that the relative absence of painting and engraving of all forms in the Upper Palaeolithic of the east Mediterranean region was not a coincidence, but represented a different ideology in relation to the environment; a difference related to the emergence of agriculture in the east, but not in the west, Mediterranean region. In the same volume, Bar-Yosef documented the few late Pleistocene “artistic” expressions in the Near East and argued that the scarcity was unlikely to be a product of lack of sites or of taphonomy. Rather, he suggested the reasons probably lie in the social realm. Socio-economic changes led to restructuring of social groups, because complex symbolic behaviours enhanced group cohesion and played a role in resolving conflict.

In this paper I argue that people use symbolism to work out their social relations with each other. Elsewhere in this volume, I show that using the evidence from Parpalló. We know about the way in which people worked out their symbolic relationships with their environments and with each other in much detail for the western end of the Mediterranean but we know very little about the way in which people worked out such symbolic relationships for the eastern end of the Mediterranean.

Almost all European Upper Palaeolithic paintings and engraving are earlier than the Younger Dryas (figure) but everything is different after that event in both the west Mediterranean (where painting and engraving almost disappears) and the east Mediterranean where a new painting and engraving emerges at sites such as Göbekli Tepe and Mureybit, which is complex in a variety of different ways. There is no sign of the emergence of agriculture or related practices in the western region, but it is in the context of this new symbolic environment that agriculture emerged in the east. Whatever the merits of the argument that the symbolic relationships that developed in the west Mediterranean region made it unlikely that people would move towards agriculture, the broader point of this argument is to suggest that there may be important processes operating in past human behaviour that can be understood by recognising the significance of variation in symbolic behaviour across broad geographic regions.

In order to move further in such arguments, it is necessary to have an understanding of the sorts of theoretical contexts in which visual cultures interact with human belief systems. Of many possible options, I will mention that constructed by Philippe Descola. He has associated generalisations about the production of art with the patterns of belief about physical form and cognition in naturalism (as in the Western world), Totemism (as in some Australian Aboriginal societies),
Animism (as in certain native South American tribes), and Analogism (as in some Central American peoples). Each of these ontologies (as Descola calls them) reflects in its art people’s beliefs about the relationship between humans and the rest of animate or inanimate nature. Unfortunately, it is much more difficult to infer the ontology from the traces of the art alone – the art will not allow us simply to attach a label to prehistoric ontologies. Nevertheless, the important point for this argument is that fundamental ruptures in the way in which the world is represented probably correspond to different world views. On the other hand, as I have argued elsewhere in this volume, it is also possible for there to be different world views within a single iconic tradition.
BEAUTY AS MEANING

Marcel OTTE

In their distant and mysterious universe, in the heart of the immensity of China, painted and engraved rocks did not escape the first rule of plastic expression: harmony. Renewed on each occasion, this pictorial experience awakens a part of us that was silent until that moment, their strangeness even adding a note to the range of our sensitivity. Here, the mass of a bovid was expressed through a “reserve” of the stone mass that imparts its density, roughness and texture to the animal, as if the image leaped from the stone that had been waiting for the bovid to arrive. This controlled imprint would be less troubling to us if the outline of its profile was familiar, but it is not: the horns, raised tail, hind-legs and chest remind us that we are in another world. The image reveals what a Chinese spirit from Protohistory saw in its dreams of the surreal element in all of us. Herein lies the charm and mystery of this work. Though its sacred meaning has perished, the durable work of art retains its essence: its form, exuded from abstract thought.

Verging on reality, the horses of Chauvet Cave nonetheless reach beyond its limits; their vital appearance is there only to attract the senses. Such beauty owes nothing to Nature, it is made only of seduction, where myth is materialized by configurations drawn from the imagination, where the virtual reality in which Paleolithic humans placed their lives took refuge, composed of dreams and beauty.

On the other side of the world, in Australia, the most mysterious of arts was produced in a universe where beings transform themselves, and the mythic foundations of this are still known to us: the passage from the “Dreaming” into real life, during which some humans became the animals that occupy the earth and sea. The paintings evoke these myths and give them substance, in a strangeness and fluidity that the spirits must have had: in them, we “see” the myth laid out as in oral histories; they become sublime, hanging between reality and the surreal, the perpetual, and permanence. The mystic “reality” is there, in this confusion where the story, drawn from a sacralized imagination, has become eternal, and thus more real than any inevitably transient lifetime. This call to mystery opens an immense perspective onto that which painting could be, detached from any academicism and revelatory of a magic view of the world that is completely different from ours, but which shares the greatest virtue of our sacred arts, that of creating eternal beauty.

Like the arts of the Omo, and all original art, the greatest form of beauty is that which is applied to oneself, following an absolute rule that traverses all creative time and space. The Amazonian tribes have given us, along with the masks of New Guinea, sumptuous examples of body art, composed of brightly colored feathers, skins, fabrics, body painting and abundant jewelry. Ethnologists could explain the lost meaning of each element, its elegance and fragility, but it is the balance of elegance that is most striking, and such ephemeral decorations, elsewhere made permanent by the wall paintings realized by the same populations, emphasize above all the importance of the exceptional circumstances with which they were associated.
Feminine head known as La Dame de Brassempouy or La Dame à la capuche (~ 21 000 BC, excavations Édouard Piette, 1894-1897).

Beauty, the first component of any meaning, flagrantly breaks any logical link that messages try to establish via an ephemeral and specific code. On the contrary, the emotional attraction traverses time and all modes of plastic expression; it is through emotion that the message exists, in all its forms, from floral decoration to the majesty of the vault. The language is thus carried by seduction. This is the common element linking all works from all continents and times, and it is through this seduction that they live on in our eyes, because beauty is timeless.
Beauty is certainly not a meaningful factor, as we would expect of a word in a speech. But it is nonetheless beauty that renders a plastic message universal, and which links the spirits of peoples constantly surprised by the audacity of artists. Expressions of beauty must have been found in other forms, such as in the narratives themselves, in all the stories and legends that awaken our dreams. But the hand of other artists was necessary to transform this quivering of thought, inspired by the charm of stories, into images offered for all to see, and avoiding the detour of an entirely intellectual signification. It awakens the foundation of our understanding, initiating a discourse that is transmitted from soul to soul in only its plastic form. Such performances are thus substitutes for narratives, and are the only remaining source of emotion, a phenomenon that is more powerful than any intelligence.
THE POWER OF COLOUR

Simona PETRU

People are visual beings. Eyes are our primary sense, which helps us to orient in space. This makes colours vitally important. They affect us and our emotional world, even when we do not consciously perceive them.

Red colour has special meaning for us, since humans are among the rare mammals with trichromatic vision. In addition to the cones for the perception of blue and green light, we also have cones for red. This is an evolutionary advantage, and it enables us to distinguish red fruits and young leaves on a green background. For that reason red might be subconsciously connected with food. For some monkeys with trichromatic vision, red skin or fur presents an important sexual attribute. People also associate red colour with sexuality. Since food and procreation are essential for human survival, red colour carries a strong emotional charge for most people. That might be the reason why red pigment was the first one to appear in the archaeological record. In addition to red, black and white pigments were also present quite early.

Human vision functions best when there is sufficient light present. We only see colours in daylight or when we switch on the light in the dark. Hominids only settled in caves when they started to control fire, which enabled them to illuminate dark places. However, colours in the cave do not possess as much power as when seen outdoors. They have different properties in semi-darkness as opposed to daylight. Since the light which the early visitors were using was not strong and constant, colours in caves were not as expressive as they were outdoors. It is therefore unlikely that they had the same role and symbolic meaning as under a bright sun.

A sensory phenomenon that could be important in creating early images is synesthesia. It is experienced by some people and represents an interaction between the perceptions of different senses. We can imagine that mystical, dark and quiet caves represent an ideal environment for stimulation of this phenomenon. If during the rituals sounds were created in acoustic parts of decorated caves, the participants may have experienced internal colours, which greatly increased the impact of images on the walls. There is also a link between touch and colour. We experience some colours as warm and others as cold. During the colder periods of the Pleistocene, when there was very little colour present, red stood out even more and radiated “heat”. Because of its warmth, it might have been symbolically linked with fire. Fire is an instrument of transformation: ochre transforms to various shades, clay hardens, cold turns into heat and darkness into light. It is possible that the red colour as a representation of heat and fire was also symbolically connected with transformation. Such a connection might be reflected in the red coloured Palaeolithic female figurines. It is possible that femininity, fire and red represented the symbols of change and transformation.
People discern two things when looking at objects: form and colour. For contemporary humans, colours have a richer expressional value than forms, while in early art it seems that form was more important. The emphasis on colour only occurs with the development of polychrome images. The frequent motifs that appear in rock art are outlines or imprints of hands and different pigments might be used for their execution on the same site. So we can conclude that colour was an important part of an image. But often a pigment was only an instrument to “transmit” the form of a hand onto a wall. Emphasis is placed on a hand, sometimes even deformed, and a pigment is only the means which led to the creation of the form (figure). On the other hand the colour was in some cases more than just an instrument for creation of forms. This is suggested by a complex mixture of pigments, which were sometimes used. A possible symbolic connection of colour and space could be deduced from the choice of colours in different chambers of the Chauvet Cave. Large panels of monochrome images in some caves give an additional impression that colours may have had a symbolic meaning and that pigments were not selected only on the basis of their availability.

An imprint of hand. Colour was used to create the form.

It is rather difficult to examine the role of colour in early art. The perception of colour in modern society is very different from what it was in prehistoric times.

In times of fewer external stimuli it was not just symbolism, but also the impact of colour that was important. It had a direct effect on human emotions and the subconscious. Through colours, it is therefore easier to establish an emotional and subconscious connection with prehistoric artists rather than to create a rational explanation for the meaning they held in early societies.
THUNDEROUS REVERBERATION AND ROCK ART
THUNDERSTORM IMAGERY

Steven J. WALLER

Thunder myths around the world contain thunder god descriptions matching rock art motifs found in reverberating locations. Thunderbirds are found on echoing cliffs of the Americas, and reverberating shelters of the Southwest contain wide-eyed Tlaloc figures, the Mesoamerica’s rain/thunder god. Australia has the Lightning Brothers. In Europe, hoof beats from mythical horses and goats of Odin and Thor reverberated through the skies, and the Bull God’s voice (bull-roarer sound) is the roar of thunder. Greater than 90% of European cave art depicts ungulates, typically thundering stampedes in portions of caves reverberating the loudest. An acoustical connection with rock art thunderstorm imagery is explored. Thunderstorms were one of the most powerful and frightening natural phenomena encountered by early humans, yet also brought life-giving rain. The universal experience of thunderclaps and lightning that was shared by cultures around the world gave rise to many similar legends that explain these phenomena as caused by supernatural spirits, an example of animism.

This paper is a result of investigations of reverberation, which is a particular type of acoustics in which sound reflections are so closely spaced together that they perceptually merge into the gradually decreasing persistence of sound that is characteristic of thunder as well as large spaces enclosed by hard surfaces such as caves and canyons. Without knowledge of the wave nature of sound, reverberation would have been considered a very mysterious phenomenon.

Thunder, echoes, reverberation, bullroarers, galloping hoofed animals, drumming, hammering, “the voice of god”, and flapping wings all sound homologous to each other as revealed in myth, such that they were interpreted interchangeably. Many ancient cultures took advantage of these similarities via homeopathic magic where mimicking the sound of thunder was employed in the belief that it would bring rain. I postulate that the mystery of hearing thunderous reverberating sounds in caves and canyons evoked not only the mental concept of thunder, but also brought to mind those culture-specific images and symbols believed to cause the identical-sounding celestial thunder. Such mythical thunderous sound sources included supernatural thunder beings described as having animal and/or human shapes that correspond to frequently occurring rock art design elements.

The connection between rain-making rituals in general and rock art has been well substantiated in both the Old and New Worlds. Connections have also previously been made between thunder and rock art: “rock thunder produced by one rock striking another... pitted boulders might possibly be viewed as stone drums.” In this paper I concentrate on thunderous reverberation as a signature aspect of thunderstorms and focus on its sonorous connection with both rock art iconography and the longignored acoustical attributes of rock art sites.
Comparison of Norse thunderstorm mythology portrayed as “The Wild Hunt of Odin” by Peter Nicolai Arbo in 1872 (top), and stampeding ungulates painted in the reverberating cave of Lascaux (bottom) – see the barbed sign reminiscent of the forked trident weapon known to be a symbol of lightning thrown by Eurasian thunder gods.
While researching myths of reverberation and thunder, I noticed a striking similarity between cave art and the depictions of the thunder gods of Europe. The 1872 painting “The Wild Hunt of Odin” by the Norwegian painter Peter Nicolai Arbo, who specialized in painting images from Norse mythology, shows the thunder god leading a stampede of hoofed animals through a stormy sky. This stampede is uncannily reminiscent of the painted hoofed animals stampeding through Lascaux (figures). This rendition of how thunderstorms were perceived by ancient Europeans helped lead me to postulate that the hoofed animals depicted in reverberant caves represent the very same supernatural hoofed animals thought to cause thunder in the clouds.

If so, one can test this postulate by looking for internally consistent images in the rock art that corroborate this postulate, e.g., the presence of associated lightning images. With this perspective, the various “abstract” strokes and barbed signs that have been previously interpreted at face value as mundane weapons or symbolically as male signs, may now be recognized as depictions of lightning accompanying the thunderous reverberation. Lightning in antiquity throughout the world, but particularly in Europe, was typically represented as the spears, arrows, and tridents thrown by the Thunder Gods. In my opinion, designs known to be thunderbolts resemble to a remarkable degree many cave art signs. Scientifically documented acoustic evidence showing hoofed animal imagery occurs preferentially in the loudest parts of caves, coupled with myths that inform of the nature of European Thunder Gods who were closely associated with hoofed animals, suggests that European ungulate cave art may represent thunder spirits. Based on this evidence, I further propose that some of the weapons and branched signs among prehistoric European ungulate cave art may represent the lightning/thunderbolts associated with these hoofed thunder spirits.
THE EXISTENCE OF ACOUSTIC SIGNS AND THEIR MEANINGS IN PALEOLITHIC CAVERNS

Igor Reznikoff

Considering it as accepted that there is a significant correlation between the placement of images (paintings, engravings, signs) and the acoustic quality of these locations in decorated Paleolithic caves, we will discuss the multiple meanings of this correlation.

Echolocation and functional signs of acoustic locations

We explore a cave in conditions similar to those in prehistoric times, most often using only small oil lamps that cast just a faint light, or when in larger spaces with torches (which cannot be used in narrow passageways). Our surroundings only a few meters distant thus remain almost totally obscure. A question that arises is thus, which way should we go? Since sound carries much further than a small light, especially in an irregular rocky environment, the only way to advance in the cave is to explore it using the voice and its resonating effects, especially its echo. The resonance indeed responds and we can hear where the response is coming from, as well as its approximate distance and intensity, which gives us an approximate idea of the direction and nature of the space toward which we are moving. It is thus natural to go in the direction of the best resonance, and we are naturally guided toward the paintings. When crawling through a narrow tunnel, even a small oil lamp is not very reliable, and the voice thus enables us to continue with at least a minimum degree of security.

This has been verified in narrow tunnels where red spots are often found in the exact locations of maximum resonance, showing the importance of this effect for those who explored the cave. The red spots applied when passing through can be found again, even in total obscurity, through sound. When making sounds while crawling through a tunnel, at a certain moment the tunnel will respond in a very powerful manner: if we then turn on a flashlight, we find a red spot (or several) on the wall. Statistically, the association of maximum resonance/red spots is impressive and leaves no doubt as to the purely acoustic meaning of these signs. They thus show the essentially acoustic and functional aspect of certain signs.

The ritual meaning of the relationship between images and the resonance quality of their placement

The fact that most images are located in acoustic locations shows the major importance of sound and thus of music for the Paleolithic people who decorated these caves. In effect, if the paintings are mostly found in locations with a high sound quality, it is because these people chose acoustic locations, and thus made sounds, especially through singing. We have shown that it is necessary to use a singing voice to progress in the cave, especially in narrow tunnels where we must crawl. Some niches are incredibly powerful instruments and, with voice sounds of a normal intensity (rather low mm or hm), we can make sounds resembling a mooing bison, which can be
Kapova Cave: panel of the mammoth procession with acoustic niches below (photo: V. Kotov).
heard several dozens of meters away. We have discovered this “bison effect” in all of the caves, including Kapova Cave where in the Hall of Paintings, the largest panel with a procession of mammoths is located above two acoustic niches at ground level where these sounds can be made (figure).

Given that in many caves, the concordance between images and acoustic places is around 80 or 90%, or even 99% for red spots, the use of vocal and musical sounds is certain. This provides the best argument, or even proof, of a ritual use of some parts of caves and the ritual meaning associated with the images represented in these locations. We can distinguish two levels:
1. the level of the visible world, of the physical animal;
2. the relationship to the invisible world, for example, that of the energy, or even the spirit of the animal.

This latter is characteristic of shamanism: the notion of the spirit, and precisely, the future or the voyage of the spirit is essential.

Images are thus at the limit between two worlds, the visible and invisible, and sound – especially singing – provides the best tool for entering into this relationship between the visible and the invisible. In this manner, it is also functional in this relationship. We thus find, in parallel with the double function of images, the two acoustic functions: the level of physical function, necessary for navigation within caves through their resonance, and the level of ritual function, necessary to access the invisible through the use of sound in the deep levels of consciousness.

The complementarity of images and sound

With hindsight, the use of sound and the voice appears evident: all ancient primitive societies have rich oral traditions, with countless rituals and celebrations involving singing. It was nonetheless necessary to directly demonstrate the existence of ritual singing in the prehistoric space of decorated caves. It is illusory to think that we can understand the meaning of parietal art based on its visual aspects alone. We hope to have demonstrated the complementarity and undeniable association between the acoustic world and the pictorial world in this exceptional prehistoric context.
MYTHS AND SYMBOLS IN UPPER PALEOLITHIC ART:
the Role of Animal/Animal and Animal/Human Assemblages

Anne-Catherine WELTE, Georges LAMBERT

In Upper Paleolithic composite representations of animals and humans (assemblages) can we identify the components of an original symbolic system that could have continued into the later mythologies of Europe?

1. The “animal/animal” assemblage exists in two forms:

   - the “patchwork” assemblage, consisting of either a composite animal or “heterogeneous, but identifiable, body segments” that are intentionally aggregated: in both art forms, 41 cases, 24 of which are Magdalenian, are from 18 sites. The binary assemblages (horse/bovid and horse/cervid) dominate on both walls and objects. Three ternary cases exist in parietal art. The support is always stone (walls, slabs), except for one possible spearthrower;
   - the “fusional assemblage”, consisting of a more or less complete integration of two individuals of different species through a melding of anatomical parts: there are 9 cases of this in the Magdalenian, originating from 7 parietal and portable art sites. The common binary themes are horse/bovid (aurochs) and horse/cervid. The supports are all stone, except for one bone piece (a rib).

2. The animal/human assemblage, according to J. Clottes, results in “composite creatures […] with] morphological features that are indisputably attributable to humans and animals”. They are created by the aggregation of “heterogeneous body segments”, extracted from reality, and most often identifiable at the level of Family or Order (e.g. an animal ear or a caudal appendage) (figure).

   - In portable art, 25 cases (14 Magdalenian) come from 14 sites. The supports are varied (ivory, reindeer antler and stone), as is their function. They include possible utilitarian objects (retoucher, spearthrower, pierced baton?), statuettes (at least 6) and lithic slabs (11). The binary themes associate humans (rarely sexed: 4 females and 2 males) with quadrupeds (herbivore or carnivore), lion, caprid, cervid, equid or prolagus.

   - In parietal art, 23 cases (14 Magdalenian) come from 12 caves and rock shelters. Binary themes dominate: human/bison (8, with 4 sexed humans), human/bird (10, with at least 2 sexed humans), human/cervid (2). A more complete theme exists (at least ternary) in the cave of Les Trois-Frères where the “Sorcerer” is composed of the animal segments of at least three species (cervid, strigid, feline).

An associated conceptual arrangement lies in the integration of animal prints in the figure realized by the engraver, for example, bear claw marks integrated into the engraving of a hand.
Interpretive orientations

There are currently 98 known assemblages of this type. This theme remains rare in the inventory of sites, and most that do exist are attributed to the Magdalenian. The most common supports are stone walls and slabs. Only 8 osseous material supports have been identified. Does this indicate a desire to transmit this motif through time, or to keep it alive in the long term memory?

- In the case of the animal/animal assemblage, what was the mental process of dismembering and reconstructing the figure? What was the relationship between the species joined together? Does it have a symbolic meaning? Do the most common species (equid, bovid and cervid) represent stability? Are the rare species linked to a place-specific expression? The fusional horse-rupicapra assemblages found at Fontalès and Pekarna, located 2500 to 3000 kms from each other, show many technical and stylistic similarities. Based on these convergences, can we propose the minimum hypothesis that a myth was shared by more or less related groups, and represents a significant mental link between them?

- In the case of the animal/human assemblage, which species and which anatomical parts are most often adjusted to humans, according to what criteria: sex; the nature of the identified/feared animal? What are the advantages for the individual who thus absorbs the quality of the species to which he/she is linked? The anomaly of the “new creature” reveals the disappearance of the rigid boundaries between animals and humans. Is this the root of metamorphoses?

Carriot Cave (Lot): cervid (head)/humain (legs) assemblage (after Lorblanchet 2010).
Or the birth of ambivalent deified beings? What is the status of these composite anthropomorphic creatures? They are rare, difficult to see and often found in places that are difficult to access. Does this indicate that they had a religious or symbolic function?

Conclusion

These heterogeneous images inspired by the real world isolate anatomical parts of animals and humans: the bodies are dismembered into segments (always identifiable) that are then assembled to construct abstract hybrid entities that evoke other worlds. This solidarity implies a philosophical process of intentionally confusing identities, in which humans participate, and which can correspond to the archaeology of symbols. Realized by human groups that were linked through exchanges or alliances, their similarities reflect a common reference that could nonetheless be expressed with variants reflecting variability through time and space. Could the choice of these themes, mostly involving large mammals and birds, thus reveal a system of original myths – nonetheless fundamental to human thought – which were already sophisticated and expressed orally and graphically, and whose evolution we may be able to follow in later mythologies?
FROM THE ICONOGRAPHY OF ROCK ART TO ITS ANTHROPOLOGICAL INTERPRETATION

Georges SAUVET, Robert LAYTON, Tilman LENSSEN-ERZ
Esther LÓPEZ-MONTALVO, Paul TAÇON, André WLODARCZYK

The aim of this collective study is to examine the hypothesis that the iconographic structure of rock art traditions will vary as a function of the socio-economic organisation and belief systems of the societies in which they are developed and used. To that end we have assembled, mostly through our own fieldwork, bodies of data on motifs from different continents and different periods of prehistory. These data come from Africa – Brandberg/Daureb (Namibia) and Ennedi (Chad) –, Australia (Kimberley, Arnhem Land and North Queensland), and Europe (Upper Palaeolithic and the Levantine art of Spain). All are drawn from hunter-gatherer and pastoral societies. In order to compare rock art traditions that are largely devoid of human representations with traditions in which humans predominate, we have chosen only to take account of animal representations. Because the animal world is an important source of symbol and metaphor in all living hunter-gatherer and pastoral societies, animal representations are a component of all rock art traditions.

In this study we consider two fundamental structural parameters:
1. the frequency of motifs depicting different animal species in the total corpus drawn from any case study;
2. the distribution of motifs between sites, in other words, the proportion of sites at which each motif appears.

Two forms of graphical representation are adopted. The first takes the corpus of sites from a case study and plots the frequency of all motifs as a function of their spatial distribution. We call this the complete thematic profile. An important methodological problem to consider here is the granularity of the typology adopted. If, for example, the Aborigines of Arnhem Land take care to distinguish twelve species of fish in their rock art, it would be a mistake to reduce these to the generic category “fish”. The granularity of the typology must be adapted so as to be appropriate to the features of each particular case.

The thematic profiles reveal two very different situations. In one, a large number of motifs is deployed differentially, each being represented in only a limited proportion of sites. In the other, one or two motifs predominate and are present at virtually all sites. Reference to ethnographically documented cases suggests we could equate these two extreme configurations with, respectively, totemic societies (the Kimberley case) and to societies practicing shamanism (the Drakensberg case). It is, however, unlikely that the method has predictive power, since the same observed patterns could have very different causes. Systems of belief characterised by a strongly hierarchical body of actors, active across the entire area of study, cannot universally be classified as “shamanic”, as a study of the decoration of Christian churches would yield the same configuration!
A second mode of graphical representation consists of only plotting the numerically predominant motif in each case study. This method makes it possible to compare dozens of rock art traditions at a glance. It also has the advantage of demonstrating heterogeneity between different regional sub-assemblages that constitute a culturally-defined area. The archaeologist can then explore the causes of the observed heterogeneity. While it is most likely to be chronological in origin, it may also arise from contemporary regional differentiation. The differences observed between the two Levantine art regions (Valltorta-Gasulla in the north and Taibilla in the south) are no doubt of this kind. Detecting such cases of regionalization is in itself an interesting archaeological finding, although it must of course be confirmed by other analyses, particularly the examination of corresponding variation in style and techniques.

The frequency-distribution graphs also allow us to detect “anomalies” produced by the presence of sites with an unusual preponderance of a particular theme such, for example, as a site of Ennedi, containing 84% of the camel representations present in the corpus, and the case of Rouffignac, “Cave of 150 Mammoths”, in the Magdalennian of Périgord. In this latter case it is interesting to refer to the complete thematic profile for the region, which demonstrates that Périgord has the same profile as neighbouring regions, with the exception of mammoths, which is the only anomalous element in the overall configuration. Such observations are valuable aids to interpretation.

We expect that the structural analysis of rock art traditions such as are presented here will provide an important means toward the anthropological study of prehistoric societies, placing another tool at the disposal of archaeologists.
HER AND HIM, EXPLORING THE CREATION MYTH AND SYMBOLISM OF GENDER IN UPPER PALAEOLITHIC PORTABLE ART OF EURASIA

Liliana JANIK

Trying to interpret prehistoric reality with its unique historical and cultural identity within our own cultural modes of interpretation and understanding of the world around us brings two concepts of self and the other into archaeology. Despite their understood opposition in the context of interpreting the past, I would suggest the apparent complementarily of these ideas. Here, the self is us, with our way of communicating particular understandings of contemporary and past societies and the other the past communities that can only be understood by us in this space and time through our own concepts, as in understanding of self. Such interpretations of the past allow us to use our contemporary concepts (e.g. gender) and try to look at how such ideas could be interpreted via the material culture which we archaeologists study. Further, by acknowledging and accepting that the past communities had their own unique historical and cultural identities our contemporary concepts become a heuristic device to communicate between ourselves through an understanding of the past. By combining understanding of self and the other in interrogatory processes, the historical evolutionism that encouraged the 19th Century use of analogy becomes redundant and the different possibilities of the unknown or the other are open to our understanding. By using notions of gender as a culturally defined category I looked at multiple relationships between images of the human female and other representations embodied in the figurines of Complex 1 at Kostenki (ca. 24000 BP), the material they were carved from, as well as the context in which they have been found. In particular, I have focused on the specific depiction of a human female, so called Venus / self portraiture. In this process I have used three concepts, those of “performativity”, “fragmentation” and “dividuality”. Performativity was introduced to the study of sex and gender by Judith Butler: sex and gender are culturally defined categories rather than naturally given. This allows for flexibility in understanding prehistoric figurines in terms of their independent cultural characteristics. Most of the figurines from Kostenki have been deliberately broken. The breakage of figurines in a process of fragmentation has been introduced to archaeology by John Chapman: through the intentional breaking of the visual representation the particular qualities embodied in those images were shared. This idea is related to the third concept of dividuality, borrowed by him from Marilyn Strathern, reflecting the multiple relationships between people, material culture and the ideas they represent.

Drawing on the three concepts I have suggested a preliminary interpretation of the archaeological data. The interpretation is based upon the observation that the remains of the 19 figurines and 104 figurine fragments at Kostenki result from an apparent diversity of acts, choices and categorisations: the choice of female self portraiture, deliberately anonymised through the removal or nondepiction of the face; the choice of material from which the female and the other figurines were made; the multiple acts of intentional fragmentation; the choice of not-to-break relating to particular images and the materials with which they were made. By looking at these acts, choices
become embodied as performances that left some images or parts of others on the site while others were taken away: through this we discern the dividuality of the female sculptures in relation to self and the other. In contrast the mammoth images were never broken and the non-broken female figurines were made from the tusks of those animals: in a way they shared the same substance. The sculptures share the substance of the mammoth’s physical being, by being carved into it and creating the embodied self portraiture. They were never intended to be broken and taken off site. In the same way the mammoth figure was never intended to be fragmented or taken from the site, despite being made out of marl. Perhaps in a way they shared the substance. The relationship between the female and the other creatures such as cave lions, bears, wolves, horses, birds, rhino and “rhino or horse”, differed from the mammoth, their symbolic significance being expressed through the act of fragmentation. At the same time, there was a difference since all their body parts were left on the site. The mammoth itself shared the substance it was made from with the other representations. But it was not fragmented in a deliberate process of breaking, always remaining complete.
GROTTA DI POZZO (AQ, CENTRAL ITALY),
A CAVE DECORATED WITH A “WOMAN’S TOUCH”

Margherita MUSSI

Grotta di Pozzo, in the center of the Italian peninsula, is a rock shelter 13 m long and 4 m deep (figure A). The Upper Paleolithic levels are dated from 23 000 to 14 000 cal BP. They contain an Early Epipaleolithic lithic industry with shouldered pieces, followed by a Final Epigravettian industry. The Late Dryas is represented by a very poor level, overlain by a snail shell layer with a Sauveterrian industry and a few mixed artefacts from the Neolithic. In the slope, the levels date up to 20 000 cal BP.

The semicircular shelter ends with a small vertical wall at least one meter high, on which the parietal works are found at a regular distance of 2-3 m from each other, and at the same height:
1. horizontal incision – 47 × 5 × 5 mm – just next to a poorly preserved part of the wall;
2. vertical vulva number 1 (figure B), in low-relief, 90 mm tall, with a relief varying from 15 to 35 mm. It is symmetrical, in the form of an elongated triangle surrounding a central hole, whose origin is natural, in the upper part. The surface is polished, but marks when the stone was worked are visible on the surrounding wall;
3. vertical vulva no. 2 (figure C) – 50 mm tall and up to 20 mm wide – made from a natural crack on a part of the wall that creates a relief. The surface is polished, but laterally, we still see the deep parallel grooves that accentuate the relief;
4. female silhouette of the Gönnersdorf-Lalinde type (figure D), 75 mm tall, and made on a vertical ridge on the wall using percussion and abrasion. In front, it is partially delimited by a vertical, wide and shallow groove.

The vertical vulvas nos. 1 and 2 can be compared to those at Gouy and Bédeilhac. In Italy, some engravings at the entrance of Grotta Romanelli may be similar, but no Paleolithic figures with relief are known. The Gönnersdorf-Lalinde type, a theme that has been identified across all of western-central Europe, is present in Italy at Grotta Romanelli.

While there are no similarities with Holocene art, the themes at Magdalenian sites in France and the age of Gönnersdorf-Lalinde type figures, between 15 500 and 13 000 cal BP [personal communication Bosinski], suggest that they can be attributed to the Late Glacial period. The elements found are situated at the height of a human relative to the Final Epigravettian levels, dated to between 16 000 and 14 000 cal BP. Their position would be difficult to reach from the levels containing an Early Epigravettian industry. They thus most likely belong to the upper levels, whose dates indeed correspond to those of the Gönnersdorf-Lalinde. Finally, the consistent high position and the thematic coherence suggest a single phase of realization, or at least different moments within a short time period.

At the foot of this wall in full daylight, there are hearths and domestic structures. The hunted fauna is dominated by chamois and red deer, but other species are present as well (marmots, birds and trout).
A. General view of Grotta di Pozzo. The parietal art works were discovered on the vertical wall in the back, under which we see the beginning of the ceiling of the back part of the cave, which is filled with sediments.

B. Vulva no. 1.

C. Vulva no. 2.

D. Silhouette of the Gönnnersdorf-Lalinde type.
For this parietal art with a very explicit feminine nature, fully in the habitat zone of the site, hypotheses referring to erotic activities or paleo-pornography, such as those proposed by D. Guthrie do not appear valid. The position opposite a fully open porch does not argue in favor of a sanctuary, as defined by Leroi-Gourhan, nor of any interpretation involving paleo-shamanism, as described by Clottes and Lewis-Williams. We must also consider the symbolic distribution of the space within Grotta de Pozzo: the two vulvae were created by modifying natural features of the wall, a practice well known in Paleolithic art, indicating that this location itself was seen to represent the female world. The function of the cave, or at least this part of the cave, must be taken into account. There is no current evidence to indicate that this location was dedicated to activities concerning only women, such as puberty rituals. The presence of complete human groups is suggested by the archaeological remains (habitat structures, diverse tools and diverse resource procurement). The decorated wall, with a clear female signature, could thus correspond to division of the daily space according to the sex of the occupants, as was practiced in numerous pre-industrial societies. The back of Grotta di Pozzo, near the hearths and other domestic features, would thus be associated with the females.
PALAEOLITHIC CAVE ART IN ITALY:
from the Iconography of Signs to the Underlying Symbols

Dario SEGLIE

In a particular moment of Man’s history on our planet, the phenomenon of rock art appeared, more or less 40,000 years ago, consisting of signs inscribed on rocky surfaces, in caves, in shelters or in the open air. Their typology is vast and varied: from figurative naturalistic and descriptive signs to abstract geometric and symbolic notations.

This huge amount of signs that men have impressed on the surrounding world is not the result of an immediate transformation of *Homo Sapiens*’s intellectual activity, but is the effect of the maturation of a long cognitive process based on the psychic dimension and comporting stages leading to a more enlarged self knowledge, grounded in reflexively deepening thought associated with the knowledge of another world perceived as separate from or discontinuous with human personality.

Rock art is the vehicle of intermediation and of communication between two worlds, one transcendent, spiritual, the kingdom of the sacred and divine versus the kingdom of man, the effective world, real, tangible and concrete, where the daily drama of life unfolds.

Romito Shelter: near Papasidero in Calabria, on a boulder in the shelter, a large figure of bovid or bull is carved by a deep V line, sure and masterly delineated in a lateral profile (tracing: D. Seglie – Tere Grindatto, CeSMAP, 1974).
The universe represented by the whole complex of rock art requires pragmatic research or empirical study of the origins of the signs used and of the effects in relation to the hypothetic or conjectured behaviour that they may have provoked; our semantics is therefore the analysis of rock signs taking into account the different manners of making sense by material signs; a syntactic approach is the combinatorial study between signs, over and above their specific significance and their relation to behaviour (the expressions and the gestures intended or induced).

Today rock art is a mere relict, the surviving datum of a complex cultural construction from which time and memory have erased nearly all the vital component parts; rites, sounds, songs, mimed actions, do not leave traces; oral tradition and bodily gesture don't fossilize! In the light of these considerations, landscape is not simply a portion of territory or a geographical notion, but assumes the valence of the highly spiritual building up of Humanity. In particular the ceremonies organically linked to rock 'art' cannot be seen to-day but thanks to hermeneutical horizons it is possible to plausibly (in homage to the Plato's Cave) highlight and throw into relief the silhouettes figuring on the stage of Prehistoric Man.

Palaeolithic cave art in Italy is present in various sites located in the peninsula and in the Mediterranean islands. The iconography encompasses different types of signs carved and painted on rock surfaces, usually inside dark caves and not in the open air. The signs represent naturalistic figures and geometric or abstract forms.

During the last century, and particularly after the Second World War, the evidence of prehistoric art in caves and on artefacts has increased in Italy, in particular relative to the Upper Paleolithic and to the Post-Paleolithic.

In Italy, a pioneer in the prehistoric art field was Pr. Paolo Graziosi, an archaeo-anthropologist of Florence University, supporter of the Istituto Italiano di Preistoria e Protostoria, the Italian department of the international UISPP–UNESCO. Graziosi's professor in Florence was Pr. Silvio Pons; with Giovanni Marro and Piero Barocelli, they founded CeSMAP, the Study Center and Museum of Prehistoric Art of Pinerolo, together with the Anthropological Institute at Turin University.

Since the 1950's in Italy only one cave with parietal engraved figures has been thoroughly investigated: the Romanelli Cave, near Castro in Terra d'Otranto, discovered in 1905. In the succeeding decennials further discoveries were made: the Paglicci Cave, in the Gargano Peninsula, Puglia; the Cala dei Genovesi Cave, in the Levanzo Island; the Addaura and Niscemi Caves, at Monte Pellegrino near Palermo, and minor sites in the Palermo and Trapani area (Za Minica, Dei Puntali, Racchio and Isolidda caves); the Romito Shelter in Papasidero, Calabria; the Caviglione Cave, at the Balzi Rossi in Liguria.

The caves containing parietal art, linked to the Upper Palaeolithic and Epipalaeolithic horizons, host mainly carved signs; only few possess paintings. In a few grottoes it was possible to connect the archaeological levels to the wall decorations. The parietal Pleistocene art in Italy constitutes an ensemble of forms presenting naturalistic, sub-naturalistic (zoomorphic and anthropomorphic) stylemes and abstract or geometric signs.

Chronologically, this important phenomenon extends over a long period of time – over 10 000 years, starting from a complete facies of the Gravettian Era dated 22 000 years BC to the end of the Epipalaeolithic, about 11 000 years ago.
FUNCTIONS, MEANING AND SYMBOLISM
OF EUROPEAN UPPER PALAEOLITHIC
ANIMAL REPRESENTATIONS

François DJINDJIAN

The explanation of Palaeolithic art is always a particularly difficult field of research, at the origins of numerous scientific debates: The “Art for Art” of the 19th Century scientific materialism following G. de Mortillet, the “Magic of hunting and fecundity” issued from the ethnographic comparison of S. Reinach, R. Bégoûen and H. Breuil, the “Totemism” from M. Raphaël, the “Social systems” of A. Laming-Emperaire, the “Sexual dualism” of A. Leroi-Gourhan, the “Kraft und aggression” of J. Hahn and more recently the “Shamanism” of D. Lewis-Williams and J. Clottes, for the best known of these interpretations. In 2001 Liege UISPP congress, we have revisited the correlation between Palaeolithic art (styles) and Palaeolithic cultures, which had been decorrelated by A. Leroi-Gourhan in 1965. Then, we have studied the correlations between zoocenoses (association of animals in their territory), taphocenoses (bone remains in the archaeological levels) and iconocenoses (bestiaries figured in mobile, rock and cave art), replaced in the context of the territory of circulation of the hunter-gatherer groups at different periods.

Several prehistorians had already pointed out the large difference between mammal species recorded in the taphocenoses and the iconocenoses of the cave art (Delporte; Sonneville-Bordes, Mourre-Romanillo). Shortly written, why are they figuring horses and bisons when they are eating reindeers? Then the association bison/horse (and the others) may only be symbolic! We have shown previously that the error of such an approach is the correlation between taphocenoses and iconocenoses at the level of the site, while the good approach is the correlation between zoocenoses and iconocenoses at the level of the territory. During the upper Palaeolithic, the climate has changed and then both the zoocenoses and the hunter territories have changed, at the origins of different iconocenoses through time and places, because human groups are figuring the mammals they see during the circulations inside their territory. If, in the Middle Europe mobile and cave art, the zoocenoses are changing rapidly defining various iconocenoses, at the opposite, in the Southern Europe (Subpyrenean and Subcantabrian Iberian peninsula), both the zoocenoses and then the iconocenoses are constant through time. Statistics using multidimensional data analysis of bestiaries figured in the European Upper Palaeolithic mobile, rock and cave art, has shown several types of iconocenoses, which are different upon the cultures.

We have identified three iconocenoses for the period 34000-21 000 BP. Actual known data cannot distinguish any separation between Aurignacian and Gravettian (figure).

- Iconocenose 1, correlated with a Continental zoocenose: 60% of the iconocenose is represented by the association mammoth/rhinoceros/feline/bear (cf. the “Kraft und aggression” model of J. Hahn and the derived “not hunted and dangerous animals” model of J. Clottes).
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- Iconocenose 2, correlated with an Atlantic zoocenose: more than 50% of the iconocenose is represented by the association horse / bison-aurochs / mammoth.
- Iconocenose 3, correlated with a Mediterranean zoocenose: association horse / aurochs.

The unique iconocenose of Solutrean and Badegoulian is an association horse / aurochs / deer and doe / ibex, corresponding to the flow back of human groups during the maximum ice age into the Subpyrenean and Subcantabrian area: Iberian rock art, cave arts and also rare cave art of Aquitania (Lascaux, Gabilllou, Bourdeilles, Badegoule), corresponding to summer travels to the north.

The three Magdalenian iconocenoses are much more diversified, due to the progressive colonisation of the Middle Europe by Magdalenian groups from 16 000 BP.
- The iconocenose A is an association horse / bison dominating, mainly found in the northern slope of Pyrenees, Basque country and Cantabrian and Asturian coast, as in the sculptured rock-shelters of Aquitania and Charente.
- The iconocenose B is an association horse / reindeer dominating, showing two variants following the mode of migration of reindeers (down-up the valleys for B1; north-south for B2):
  - B1 from valleys of Perigord / Quercy;
  - B2, associated with mammoth / rhinoceros, from open areas of Middle Europe.
- The iconocenose C is an association horse / bison / aurochs / redder and doe dominating, corresponding to the upper Magdalenian occupation during the Bölling episode when Mediterranean faunas are coming back in Aquitania and the Rhône valley.
A very particular iconocenose is an association horse/bison and mammoth/rhinoceros, known only in four caves located near the Eyzies: Rouffignac, Font de Gaume, Combarelles I/II and Bernifal, mixing the three middle Magdalenian iconocenoses (A, B1, B2), perhaps resulting in seasonal meeting points.

The iconocenoses are revealing a characteristic association which has a chronological value, helping to date the cave art and identify mixed figurations through time, all but in the Mediterranean areas where the zoocenose is always the same through all over the Upper Palaeolithic.

The obtained results are not in opposition with the spatial analysis of figured animals of the cave art proposed by A. Leroi-Gourhan and A. Laming-Emperaire, but they are detailing them iconocenose by iconocenose and not globally due to the overrepresentation of the Magdalenian A iconocenose (horse/bison). The interpretation is also refuting the sexual dualism of A. Leroi-Gourhan by replacing it by a functional and symbolic interpretation: the cave is a symbolic image of the territory of human groups and the figured animals are the species from the zoocenoses which are seen in the territory. The geographic space of the territory is then the topographic space of the cave (for cave art), of the open area (for rock art) and of the dwelling (for mobile art).

Inside the cave, the “composition centrale” is symbolising the large open spaces: horse/bison in the Aquitaine large plain, horse/aurochs in the Mediterranean open spaces, mammoth/rhinoceros in the steppe northern areas. The “pourtours” are symbolising the animals centred in latitude or altitude from the central area: deer/doe along the Cantabrian/Asturian coast, reindeer/deer along the valleys from mountains (Massif Central, northern Pyrenees), ibex/chamois from the rocky and mountain areas, mammoth/rhinoceros from the northern areas. The “zones de fond/diverticule/passage” are symbolising the less accessible areas, where the cave faunas are based: felines, bears, owls and others but also the humans.

The spatial distribution of mobile art sites and cave art sites, which are sharing the same iconocenose, are contributing to identify the territories of hunter-gatherer groups. The location of the art caves is often chosen at the limits of the territories or along the path of a circulation and owns a role of an identity marking for human groups. The double function of symbolisation of the territory and identity marking are present at the beginning of Palaeolithic art. The birth of art is then not the result of some new cognitive ability to make “art” but the answer to a functional need which has been declined at different levels: individual (ornaments), enlarged family (decoration of open air and rock-shelter dwellings), human groups and territory.
ARTISTIC MANIFESTATIONS: 

a Vector of Sociocultural Knowledge in Upper Paleolithic Societies

Lioudmila IAKOVLEVA

An overview of Upper Paleolithic sites reveals that the varied forms of artistic manifestations are systemic components of several site types. Historically, in interpretations of the function of sites with prehistoric art, the theoretical starting point has been the definition of a sanctuary according to H. Breuil. Since the formulation of the hypothesis that a sanctuary was a sacred and secret location that was rarely visited, a formal separation has been made between these sites and occupation sites, the latter being seen as a location occupied by a human group for a variable duration, thus creating a “sacred versus profane” opposition. However, several types of occupation sites (cave entrance, shelter, open-air) have rich and complex parietal decorations (figurative and non-figurative), along with portable art objects and personal elements in their occupation levels. This suggests a link between the art of occupation sites and that of sanctuaries, which is expressed in socialized and symbolic places by a group or network of human groups circulating over a territory.

This approach is illustrated here by a few examples selected among those most representative of European Upper Paleolithic occupation sites.

Aurignacian sites in Europe include two occupation types: those in the front part of a cave and those in rock shelters. These sites sometimes have diverse parietal decorations and carved rings, as well as portable art objects and personal ornaments in their occupation levels: Fumane (Veneto), Castanet-Blanchard, Cellier and La Ferrassie (Périgord). The occupation levels of these sites, which also contained portable art and especially varied personal ornaments in ivory, teeth and shells, show the importance and richness of group identity marking through personal ornaments, complemented by the parietal decoration of the habitat.

Another parietal decoration tradition (engraving, sculpture and painting) is seen in Middle Magdalenian rock shelter sites around 15 000 BP, at Cap Blanc, Reverdit, Angles-sur-l’Anglin and La Chaire-à-Calvin. This monumental engraved, sculpted and painted parietal decoration played an essential role in the daily life and festivities of Magdalenians in their habitat sites. The “vivacity” of the socio-symbolic aspect of parietal decoration during the occupation of a site is illustrated by changes and / or modifications of some figurative representations. This is the case at Le Roc-aux-Sorciers (Bourdois shelter), where the frieze is preserved in situ on the wall. The complexity of the decoration and the successive stages of its realization also reveal different concepts in terms of the visual reception of fine engravings versus deeper engravings. This suggests that engravings were observed from a close distance relative to high-relief and low-relief sculptures enriched with color, which had to be observed from a certain distance to see their full amplitude. In fact, these sites, decorated with engravings and especially large sculptures, made the site visible in the natural environment of the rocky valley with a long, steep cliff face.
In eastern Europe, in Gravettian open-air sites, there is a very rich portable art tradition involving the sculpting of mammoth ivory, which coexisted harmoniously with soft stone sculpturing, as well as with decorated ivory and bone tools. The apogee of this sculpted art in habitat sites occurred between 24,000 and 21,000 BP, especially in the regions near the Middle Don and the Desna at Kostenki 1, Kostenki 4, Kostenki 11, Avdeevko, Gagarino, Khotilevo 2, and further north at Zaraisk, near the city of Vladimir. The diversity of these statuettes in-the-round and of these decorated tools is manifest in the choice of raw materials (ivory, bone, limestone), styles (realistic and schematic) and figurative subjects (females, animals, zoomorphs, composites and anthrozoomorphs), which varied from one occupation to another. The fabrication procedure of the assemblage of around one hundred statuettes from this site, as well as their intensive use, is seen in the large number of pieces of local limestone stored and discarded at different stages of their manufacturing, as well as by the finished statuettes. A specificity of the limestone sculptures at Kostenki 1 and Avdeevko, is the ritual practice of completely or partially breaking several finished objects. An intra-site spatial analysis of objects during the excavation of habitat structure 1 (Kostenki 1, level 1) revealed a pattern in the location of the statuettes in the site. The female statuettes were dispersed across the entire surface of the occupation, while the sculpted vulvae were located only in the central part. The carnivores (bears and felines), composite zoomorphic and anthropozoomorphic statuettes were located in the same part of the site, while statuettes of herbivores, and especially mammoths, were located in another part.
An original parietal decoration tradition (in architectural and pictorial forms) of huts made from mammoth bones and tusks exists at the open-air sites of Mezinian, dated from approximately 15 000 to 14 000 BP. They are concentrated in the upper and middle Dniepr basin: Gontsy, Dobranichivka, Mezhirich, Iudinovo, Elisseevichi 1, Timonovka 1, Timonovka 2, Mezin, Suponevo, Kiev-Kirilovskaia, Boujanka 2 and Obolonnia. Only one site is known in the middle Don, at Kostenki 11, level 1a. A geometric parietal decoration, realized with sets of bones from the hut, is visible in the huts of Mezhirich, Iudinovo, Suponevo, Mezin and Kostenki 11/1a; it has the same geometric motifs as those engraved on portable art objects: vertical and horizontal parallel lines, chevrons, and zigzags. The same type of ornamentation is found in the parietal decoration of mammoth bones, painted at Mezin and Mezhirich, and engraved at Gontsy (unpublished). This decoration, coherent with that of the statuettes and certain types of personal ornaments and tools, confirms the existence of a coded system that was employed in the occupation sites.
TOWARDS A MORE RIGOROUS DEFINITION OF TERMS:

Are there Scenes in European Palaeolithic Art?

Livio DOBREZ

The paper focuses on definitions of terms used somewhat loosely in rock art research: composition, juxtaposition, association, scene. Its argument is synchronic, so historical layering of sites is not relevant to it. Definitions are based on an analysis of perception, so it is phenomenological, though not in the popular sense of “postmodern”. But isn’t perception subjective? Certainly it is not objective. Evolution ensures that our seeing works, but not merely subjectively – since subjective perception would not guarantee survival. One way rock art research has sought objectivity is by appeal to neurophysiology and while this is very helpful, it cannot “explain” our seeing, only its mechanics. To date stress has been on low order activities in the visual cortex (e.g. phosphenes). My interest is in higher order perception, e.g. a scene.

I define composition as a pattern (intentional or not) which I perceive; juxtaposition as a minimal relation between elements of a composition, such that removal of one element leaves others formally unaffected; association as a formal relation such that removal of one does affect the rest. Thus most of the Salon Noir at Niaux consists of juxtapositions, but its two panel 6 “facing” bison constitute an association. An association is more likely to be intentional than a juxtaposition. But are the two bison facing formally or facing as in “doing something”? Only the latter would constitute a scene.

I put forward the following visual markers for perception of a scene, pointing out that, contrary to common assumption, a single figure suffices for a scene: figural asymmetry (e.g. movement markers in figures); group asymmetry (e.g. diagonal composition); orientation of figures; size (small figures are perceived as more active than large ones); profile depiction (especially for the exclusion of the viewer from the scene). A scene is not necessarily intentional, but is more likely to be so than an association.

Is a dynamic composition enough to constitute a scene? With respect to Lascaux, Altamira and Chauvet (this last characterized by group compositions), I argue it is not. Most scenes in these caves are of single figures (e.g. the Lascaux “leaping cow”). Scenes of more than one figure (e.g. the two confronting Chauvet rhinos) are relatively rare. Of course all these animals are full of life, but this is not the same as constituting a scene. A figure may be animated without depicting an action.

The above holds for most European Palaeolithic representations: the Font-de-Gaume bison, the rhinos and mammoths at Rouffignac, the Pech-Merle Frise Noire, the ibex and megaceros lineup at Cougnac, the Niaux images, the horse panel at Tito Bustillo. We find single figure scenes...
in some of these, as also at Les Combarelles. But how clearly to decide: is it a scene? First, I allow that markers of "something happening" may be subtle: the lifting of a tail (Altamira) or turning of a head (Pair-non-Pair). Second, I allow Clottes' point, in connection with e.g. the felines at Chauvet, that an informed viewer of animal representations will see more than the uninformed. Nonetheless my criterion is perceptual: inferring "something happening" does not suffice. Thus we may call the "roaring stag" at Lascaux a scene because we see activity, i.e. its open mouth, whereas with the Lascaux "swimming deer" we do not perceive "swimming" but merely infer it. I conclude that, for various reasons, European Palaeolithic artists generally chose not to depict narrative action and especially group narrative, unlike e.g. the artists of the Spanish Levant or the Drakensberg. Instead they chose large, i.e. tending to be static, representations, suggesting an interest in Canonical Form, that is, the typical look of an animal.

There is more to say about representational ensembles which encourage us to infer a scene while being too static to depict one. Using the example of the Lascaux Shaft figures, I suggest that at times we may be dealing not with the depiction of an event (which would constitute a scene) but a composition which signifies that event. However, there are no visual markers for signs or symbols – you need culture-specific knowledge in order to identify these. Of course my perception-based (i.e. Reception Theory) methodology cannot comment on signs or symbols. What it can do is to provide clear definitions for the discourse of all representations, including rock art ones, based not on ad hoc convenience but on analysis of what we see. This involves the reasonable assumption that, despite neuroplasticity, the human visual system has not altered in the time span with which we are dealing. The visual markers I put forward as criteria for a scene are not liable to objective measurement. At the same time they may be tested by any other observer and to that extent are open to falsification, i.e. may not be taken as merely subjective.
MIXED HUMAN-ANIMAL REPRESENTATIONS IN PALAEOLITHIC ART:

an Anthropological Perspective

Enrico COMBA

Since the first discoveries of cave art sites in France and Spain, modern scholars have been surprised by the admirable naturalism of the prehistoric artists. Horses, bison, mammoths and many other animals are depicted, painted or engraved, on the cave walls and ceilings with a remarkable mastery of forms and proportions. The animals represented are generally recognizable at ease, with few or no ambiguity and vagueness. This art seems to represent with immediacy and efficacy the world of the Paleolithic hunters, living in an environment densely populated by a vast and varied fauna, including many great animals, from which they had to get their own livelihood.

The human figure, by contrast, is rare: more common are handprints and geometric signs of doubtful meaning. A naturalistic representation of the human world, of people, family scenes or daily activities is totally absent, while in many cases, as in the cave of Les Trois-Frères, one finds a strange kind of composite figure: a conflation of human and animal elements. This situation generates a striking contrast between the plainly identifiable animal figures, that cover the major part of the painted walls, and this minority of images which seem strange and unreal. Can we hope to get something of the significance of these images? Is it possible to find the meaning of this stunning difference in the representation of beings? Let’s start from a far distant place, from the Native peoples of the Americas. We hope that, through the observation of their way to represent and to relate themselves with the animal world, a heritage of a hunter-gatherer tradition which goes back to millennia, we can perhaps gain some glimpse to interpret the disappeared world of the Ice Age hunters of Europe and Asia.

Although presenting a wide range of varieties in social organization and cultural details, the societies of the Great Plains of North America can be combined in a single Plains culture area, with a number of common elements based on a particular way of life. All Plains cultures were more or less dependent on the buffalo for subsistence and the animal was integrated into all aspects of life: hides for making clothing, shelter, and containers; horns and bones for tools, and so forth. The spirit of the animal was important too, as one of the fundamental aspects of religious life.

The way of life led by hunters on the Great Plains is a very ancient one, and it persisted with remarkably little change from Clovis times of 11 500 years ago until the historic arrival of the Old World horse, which diffused north from Spanish sources near Santa Fe. The horticultural groups, furthermore, are latecomers to the Plains scene, for villagers were present for only the last millennium of Great Plains history, whereas the nomads represent a way of life that endured for more than ten times that period and persisted on the Western Plains even as the Eastern and Central Plains horticultural tribes developed.
Taking into consideration some widespread cultural representations of hunter-gatherers (especially from the Americas), the scholar is solicited to put into question the usual opposition between a “nature” out there and a “culture”, identified with the world of humans, and consequently the clear boundary line separating humankind from other animal species. Rather, in the Amerindian mythologies we can find a universal notion of an original undifferentiation between humans and animals: the original condition of both animals and men is not conceived as animality but as humanity. Each species is an envelope concealing an internal human form, visible only to those persons having special powers. The world is a highly transformational one, in which the changing of form and aspect is always possible.

Perhaps these considerations can suggest a more complex and fruitful approach to Palaeolithic art, in which the scholar must be careful not to project onto the peoples of the prehistoric past some of the self-evident oppositions derived from our own cultural background, such as nature/culture, human/animal, real/fantastic, and so forth.

A human figure with a bison head and forelegs has something near the mouth, which has been interpreted as a musical instrument (in Les Trois-Frères, Ariège).
In conclusion, what here we would like to suggest is:
- that the approach to rock art moves too often from a uniquely Western perspective of what art, or religion or an animal is;
- that peoples like the Plains Indians are the heirs to a long tradition of hunting cultures, which goes back into a remote past, and has survived into the contemporary world;
- that insights from these cultures can be extremely useful for enriching our view of European prehistory;
- that taking into account a notion like the “perspectivism” of Amerindian cultures and suggesting that it was relevant also for the Prehistoric hunters can give us a more complex view of their arts and artifacts.

Finally, we can suggest that Paleolithic cave art seems to express less the representation of a relationship of hunters with their prey or of humans striving to obtain a livelihood from an external “nature”, than the relationship of human persons with “other-than-human” persons in a highly complex spiritual, moral and cultural universe.
COMPARISON OF TWO CONTEXTS OF CLAY USE IN THE EUROPEAN UPPER PALEOLITHIC

Estelle BOUGARD

In the Upper Paleolithic in Europe, there are two major traditions of clay use: in the Pavlovian (Gravettian) of Moravia and in the Magdalenian of the French Pyrenees. Despite clear cultural, chronological and geographic differences, in both cases we observe the invention of new techniques in association with clay materials and the use of this material for symbolic purposes only (according to current knowledge).

Though some instances of clay use in Paleolithic contexts have long been known, such as the clay bison at Le Tuc-d’Audoubert (1912) and the ceramic figurines at Dolní Věstonice (1924), we have little understanding of their global technological context. This subject has been studied very little, or not at all. Clay nonetheless constitutes one of the rare materials worked during this period and preserved until today, in addition to stone, bone and ochre. In this paper, I summarize the results of a thesis that revealed the important potential of this neglected subject.

I compare two Paleolithic contexts of clay used with the goal of learning more about the individual and social meaning of this art. This comparison is based on a technological analysis including the reconstruction of chaînes opératoires and technical schemes. It is combined with a formal study of the art works and artifacts made through clay working.

In the Pyrenees, clay was mostly used in its plastic form and highly diverse techniques were employed and sometimes combined: modeling, engraving, finger marking, impression and sculpture. We find them at 14 sites: Le Tuc-d’Audoubert, Enlène, Labouiche, Niaux, Le Mas-d’Azil, Fontanet, Bédeilhac, Massat (Ariège), Montespan (Haute-Garonne), Labastide, Le Bois du Cantet (Hautes-Pyrénées), Erbérua, Oxocelhaya-Haritzoya and Etcheberri (Pyrénées-Atlantiques). The technical processes are thus extremely varied and nearly all of the graphic units studied display some specific feature(s). A technological study does not enable us to show the transmission of specific skills related to clay working, but only the associated knowledge. A degree of technical individuality appears to have been tolerated, or even encouraged in this context, and it is possible that it played a role in the social status of the individual. On the other hand, the broader Magdalenian artistic framework determined the forms given to clay art works, to which they strictly adhere, thus ensuring the unity of the ensemble.

In Moravia, clay working was complex and standardized: more than 11 000 fragments of baked clay figurines, which we qualify as ceramics, have been found there. These objects were made between 27 000 and 25 000BP at the sites of Dolní Věstonice and Pavlov. The great uniformity of this very particular technical process throughout this occupation duration implies an organized transmission of knowledge and skills. More precise elements are contributed by the study of the forms of these ceramics, showing very different levels of expertise, perhaps linked to different stages of apprenticeship. A detailed study, conducted by Czech researchers, of the finger prints
found on ceramics supports the hypothesis that the ceramics of Moravia were manufactured by women and children. In this framework, the technology of clay respects a strict model that was transmitted from one generation to the next. In the forms of the pieces, we nonetheless see a degree of tolerance for individual variations, even if precise and elaborate models exist. In any case, this information indicates a social context that was strictly organized.

This comparative study of a single material, clay, in two different cultural contexts thus contributes significant information, concerning in particular the roles of the actors of the technologies in the broader social context. The first element is an inverse tendency that distinguishes the Moravian and Pyrenean productions from each other; while in the Pyrenees, there is technical diversity in association with a unity of forms in the Pyrenees, in Moravia there is a technical unity that is often accompanied by formal diversity. The second element consists of an interpretation of the first element: I propose the hypothesis that in the Pyrenees the forms adhere to a general model, even if each individual is allowed to invent (or at least make choices) at the technical level, while in Moravia, the weight of the social context is imposed on the manufacturing process, but allows the individual a certain degree of liberty in their choice of forms. This inverse situation indicates a very hierarchical society during the Gravettian in Moravia, and a less strict social organization in the Magdalenian in the Pyrenees. We must nonetheless remain cautious since these conclusions cannot be extrapolated without further examination of the other material supports (stone and bone materials). It would thus be useful to further this study by submitting the hypotheses presented here to the scrutiny of an analysis of the other supports.
Maltravieso is located in the south west of the Iberian Peninsula in the town centre of Cáceres, in a district known as “El Calerizo”. Geologically it extends over 135 m.

The different stages of rock art at Cueva de Maltravieso

The rock art at Maltravieso includes handprints, zoomorphic representations, and symbolic elements.

Both painting and engraving techniques were used to make the figures.

The superimpositions and different techniques and styles that have been documented have enabled us to identify at least four different chronological stages in the rock art:
- stage 1: the small caprid’s head and the two triangles that face each other at the base, engraved on panel III in the Sala Pinturas. Chronology: Aurignacian-Gravettian;
- stage 2: a collection of handprints distributed over the different panels in the cave and the undulating red figure on panel V in the Galería de la Serpiente. Chronology: Gravettian;
- stage 3: rows of black dots on several panels, paired finger markings, and the bovid in the Sala de las Columnas. In addition, the red triangles on panel XXII, the cervid on panel XXVII, the zoomorphic engravings on panel XIII, the new engravings in the Galería de la Serpiente and the Sala de las Chimeneas (the cervid, the horse’s head, and the quadrangular symbol), and the symbols in the Galería Inversa. Chronology: Solutrean-Magdalenian;
- stage 4: the schematic paintings on panel XIV in the Sala de las Chimeneas. Chronology: Neolithic-Bronze age.

The topographic distribution of the Palaeolithic art at Maltravieso

The topography of Maltravieso means that it can be divided from the entrance into three zones:
- in the Initial Zone, painting is the only technique that was used. Red pigment for the handprints is alternated with black pigment for the zoomorphic motifs and for an unidentified grapheme on the panel in the Sala de Entrada. The motifs are not concentrated together, but are distributed in a scattered form that clearly corresponds to the areas of passage. In this zone, older motifs (stage 2 hand stencils) are found alongside zoomorphic figures of a more advanced style (the stage 3 cervid on panel XXVII and bovid on panel XVIII);
- the Middle Zone is technically more varied, and includes incised linear engravings, red and black lines, and hands. This zone has the largest quantities of rock art and the greatest thematic variety. As well as the hands and zoomorphic motifs, the majority of symbolic graphemes are
also found in this zone (triangles, paired finger markings, meandering lines, and series of dots). It is an area that was repeatedly reused and is the part of the cave where the majority of graphic superimposition is found and where the graphemes are not exclusively found in areas of passage but also on panels that are further away, including areas that are difficult to reach or view. In chronological terms, the motifs correspond to stages 1, 2 and 3, although all of them have been made in older patterns and styles; – the Final Zone is the deepest part of the cave. No hands have been found here, and only symbolic and zoomorphic representations have been documented, all of which correspond to Maltravieso stage 3.

As with the initial zone, this zone involves dispersed iconographic groupings, however they do not correspond to the areas of passage and are difficult for the viewer to see, not only because of their technical characteristics, but also because the location of the panels means that they do not catch the eye in relation to the vast size of the Sala de las Chimineas.

Conclusions

1. In Maltravieso there are signs of rock art dating from the oldest stages throughout all of the areas of the cave, although the largest quantities are found in the middle zone.

2. Rock art with more recent stylistic characteristics is only seen in the initial zone of the cave.

3. There appears to be a graphic structuring to the cave, not only in terms of the techniques used (exclusively painting in the initial zone, painting and engraving in the middle zone, and exclusively engraving in the final zone), but also because of the public or private nature of the panels. Thus, in the initial zone and at the beginning of the middle zone the figures have
been made on relatively large surfaces, which are always well defined and which clearly correspond to the areas of passage, and it can be inferred that this art was made to be seen by those who entered the cave. Further into the cave however, the concept appears to change, and the panels are increasingly located further from the areas of passage and made on small- or medium-sized surfaces, with some figures positioned in places that are relatively difficult to reach and view.
MUSICAL INSTRUMENTS IN SIBERIA
(EARLY STAGE OF THE UPPER PALEOLITHIC)

Lyudmila LBOVA, Darya KOZHEVNIKOVA, Pavel VOLKOV

Music activities are an important part of sign behavior and characterize a complex culture and behavior of Modern humans. The total in Eurasia of what are interpreted as musical instruments (flutes, whistles, drums, rattles, ideofony…) is now more than 225 units. In Siberia, discoveries of musical instruments dating from the early Upper Paleolithic are unique.

In 1993, in the archaeological context of Kamenka, were found what the discoverers classified as whistle and fragments of whistle. Particular attention should be paid to a relatively large artifact 2.5 cm long and 1 cm in diameter found in a bone objects concentration (31 items on 1 m² in square A-2). It is made from fragments of a long bone of a goose with a flattening on one side. It is cut at both ends and its surface is slightly polished. There are two series of parallel cuts, perpendicular to the axis of the object, the first consists of two deep grooves (8 mm long), the second, the second is less deep. Its technological analysis revealed traces of its making and probable traces of utilization.

This object is part of a long bone, cut off with a relatively narrow tool, like a knife. Areas of polish at one end and the surrounding area could be the consequence of contact with a relatively soft, flexible organic material.

A similar artifact might be represented by two longitudinal fragments discovered in the cluster of bone objects. On the surface of one of them were made two series of cuts (4 mm to 3 mm long) perpendicularly to the axis. It comes from the same part of a long bone as the one above-mentioned, but the way it was cut off is difficult to determine precisely.

The exact dating of Kamenka complex A is problematic. At present, given the data series from natural sciences, from the discovery and study of chronologically similar complexes, we would favor the more ancient date for the cultural layer (35 000-40 000 BP).

Another example is a fragment of a flute discovered in a cluster with non-utilized objects in Khotyk, level 3 (32 000-38 000 BP). It is a piece from a bird bone (perhaps a swan), its length is 4.5 cm, and its diameter less than 0.5 cm. In its middle is a deliberately cut rectangular hole (figure). Microwear analysis revealed traces of production and of utilization. In particular, it was found to represented only a fragment of a larger initial object, because of the clearly visible traces of breakage at one of its extremities. The hole was made in several stages, as we can tell after studying linear micro traces on its surface, probably resulting from abrasive particles. In addition to these linear traces, there were traces of polish. The section and the surface of the bone has a natural, slightly “gritty” polish, which might indicate prolonged contact of the bone with a soft organic material, possibly with the hand of man.
The whistle and fragments of such objects in Kamenka A are broadly similar. Others are known in Kostenki 14, Denisova cave (layer 11), the Aurignacian layer of the Spy cave. The Khotyk artifact, fairly confidently identified as a fragment of a flute, can be considered as the oldest musical instrument in Siberia. Nearly identical others were found in the Aurignacian layers of Hohle Fels, Vogelherd and Geissenklösterle (Aurignacian, 36 800 BP) in Germany, as well as at Isturitz in the French Pyrenees (17 subjects, interpreted as flutes; 35 000 BP).

Also, in Transbaikalia, on the Podzvonkaya-site, was found an object similar to others found in a number of early Aurignacian complexes in Europe: a phalanx of an animal (possibly a gazelle) with obvious holes drilled on one side.

Modern humans in North and Central Asia thus made and used musical instruments at a very early date, which complements their accomplishments.
SOCIAL MEMORY INSCRIBED IN ROCK ART:
Bear Restoration Complex in Pleistocene-Holocene Transition Siberia and North America

Lynda D. McNEIL

Using a poststructural practice approach to rock art interpretation, this paper seeks to reconstruct an understanding of the social and cognitive processes involved in the transmission of an ancient Angara rock art style from central Siberia to North America. Tungusic Manchu-speaking Evenki in Siberia produced rock art at ceremonial sites and inscribed images intended to communicate a regional Bear Restoration Complex and bear-human ancestry religious beliefs. The ancestral Evenki clans' shared practical and discursive knowledge was grounded in hunter-gatherer lifeways, bolstered by bear restoration cycle beliefs and ritual practices. A similar style with probable connections to this ideology, appears to have been replicated in North America (Wyoming) during the Pleistocene-Holocene Transition (PHT) or Early Holocene.
Both Siberian and Wyoming (USA) rock art data sets are based upon a combination of personal observation in the field and published photographs. The Siberian data set for this analysis is based upon personal field observation of rock art on the Middle Yenisey River (Minusinsk Basin) in the Soviet Republic of Khakassia, Siberia (July to August 2002), in addition to over 100 published photographs from the following Middle Yenisey rock art sites: Oglakhty I-II, Tepsej I-II, Ust'-Tuba II-III, and Shalabolino. The Wyoming data set is based upon field observation of the Archaic Hunting style rock art at Legend Rock and of photographs taken by archaeologist Richard Wheeler in 1950 of the relevant rock art panel (48FR99) at the Boysen Reservoir site prior to the panel’s inundation.

The paper addresses the following research question: what social and cognitive processes could account for the reproduction of PHT Siberian Angara rock art style and bear restoration themes in North American (Wyoming)? Based upon a theory of structuration and materiality (idea-embodying style), I argue that the rock art’s emplacement and inscription both in central Siberian (Middle Yenisey) and in Wyoming (Wind River / Big Horn Basins) functioned to preserve and transmit collective social memories integral to the Bear Restoration Complex (cosmology, beliefs, and ritual practices) and their bear-human ancestry and identity.

To support this claim, the paper first gives an overview of its theoretical assumptions drawn from a poststructural theories of the structuration of meaning, materiality, and the agency of the subject. Secondly, it discusses the issues of probable timing, route, and rapidity of a migration during the PHT from Siberia to North America. Next, it defines Angara style rock art in terms of its physical characteristics and method of production and compares it with Archaic Hunting style rock art at two sites in North America. Finally, it reviews the practical knowledge shared by Siberian emigrants and other hunter-gatherers who lived under similar conditions and engaged in similar habitual activities. In contrast to practical knowledge, discursive knowledge (religious beliefs, ancestry, cultural norms and principles) is built from the situated understandings of people living under a constrained set of conditions and transmitted intergenerationally. Alternative views, such as lost social memories over great expanses of time and space or the independent creation of Wyoming rock art with new meanings are viewed as less plausible.
FROM PLEISTOCENE ART TO THE WORSHIP
OF MOUNTAINS IN CHINA:
Methodological Tools for Mimesis in Paleoart

Patricio BUSTAMANTE DÍAZ, W. Fay YAO, Daniela BUSTAMANTE

In 2009, Bednarik described the Makapansgat jasperite cobble, a rock shaped as a human face dating to 2.5 to 3 million years ago. Tsao et al. demonstrated that face perception is a crucial skill to primates, humans and macaque monkeys. Applying two methodological tools of the Entorno Archaeology – Psychological and Geographical Entorno – may allow to understand the process that probably led Pleistocene humans to sacralize rocks – Mimetoliths – and objects – Mimetomorphs – with natural forms that resembled animals or human beings, in increasing scale, from small rocks to mountain ranges, in the early Chinese culture, where we have found that three mythological characters: Pan-Gu, Fu-Xi and Shen-Nong, probably were sacralized mountains.

Mimesis, by the psychological phenomena of Pareidolia, Apophenia and Hierophany (The PAH triad), might explain the many instances when humans between Pleistocene and early Chinese culture attributed religious significance or extraordinary connections to ordinary imagery and subjects. On the other hand, Mimetoliths and Mimetomorphs might contribute to explain the origins of Palaeoart, animism and religion.

The question: “What does it look like?”, regarding an object or event is currently oriented towards searching for mimetoliths and mimetomorphs in archaeological contexts, changing the way to see and therefore the validation criteria.

Psychological phenomena presented

Pareidolia (related to the Rorschach test): involving a vague and random stimulus perceived as significant.

Apophenia: Describe the experience of seeing patterns or connections in random or meaningless data.

Hierophany: The perception of a manifestation of the sacred.

PAH Triad: Pareidolia-Apophenia-Hierophany working simultaneously is part of the unconscious mechanisms inherent to human beings, early present in the development of human conscience. It shows how celestial elements, features in the landscape and others can be transformed into gods.
New kinds of concepts described

**Mimetolith** (M): A natural topographic feature or rock whose natural shape resembles something else – human, animal, plan.

**Mimetomorph** (Mm): Any kind of material (bones, wood, mud, others) with a natural shape that resembled animals, human beings or others.

**Entorno’s archaeology**: cultural/geographical/climatic/astronomical/psychological/atmospherical/biotic phenomena associated to an archaeological site. It provides entrees to link information from ethno-archaeological data in small, medium and large scale.

The paper presents a selection of Mimetoliths and Mimetomorphs sorted by date from 3 million BP to 2000 BP. Each object represents a period not a specific date:
1. Makapansgat, 3 millions BP;
2. Groß Pampau, 500 000 BP;
3. Bhimbetka (India), 500 000-200 000 BP;
4. Tan-Tan Venus (Morocco), 500 000-300 000 BP;
5. Berekhat Ram, 470 000-230 000 BP;
6. Erfoud (Morocco), 200 000-300 000 BP;
7. Hamburg-Wittenbergen, ca. 200 000 BP;

Three mythological characters, possible sacralized mountains in the formative period of the Chinese culture (5 000 BP): Fu Hsi Shen Nong and Pan Gu, whose body became the five sacred mountains of China after his death. The Makapansgat mimetolith is the earliest evidence of the pareidolia, 3 million years BP. The Pan Gu mimetolith is the largest mimetolith found at present (1 150 km by 660 km) (figure).

Mimetoliths: A) Makapansgat, the smallest. B) Pan Gu, the biggest.
Pareidolia does not depend on the size of the brain. Examples of pareidolia in animals suggest that this process may have started earlier in the development of the brain. The paper presents five examples: ant-mimicking spider, frog, sea urchins, Indo-Malayan octopus, monkeys.

There are no specific studies regarding pareidolia in animals, but a high percentage of animals may use it to recognize their predators, preys, members of their own species or others, as a survival mechanism.

Probably, when early human beings tried to decipher the “language of nature”, thanks to Pareidolia, they read the cosmos as a gigantic Rorschach test that allowed them to see figures in the sky and the land.

Possibly, whoever had this special ability turned into the interpreters of “God’s plans”, with a special knowledge of the sacred and a particular power over the sky, the land and people’s future, likely as the origin of structured religions.

The PAH triad may explain the origin of art and symbols; at some point, natural forms (mimetoliths – mimetomorphs) might have triggered the shapes created by humans, “transforming the given by nature into the created by man”. Modern aniconic cultures (Islamism, Judaism…) still consider sacred certain symbolic figures, sites, rocks and others, indicating that it is a strong natural tendency with deep roots in psychology.

The PAH triad applied to surveys is a useful tool to explore the cosmos. Three examples show how this method is unconsciously applied in today’s science:
1. Astronomy, cosmic hand (PSR B1509-58);
2. Medicine, hummingbird in brain;
3. Ecology, the face of Mother Nature.

The PAH triad offers a conceptual framework that allows to explain the origin of paleoart, its relation with animism and the possible origin of shamanism and religion, based on psychological mechanisms, independent of altered state of consciousness, but maybe favored by them.

PAH appears to be ubiquitous, we have found evidences of this phenomena in different locations around the world, in the five continents and from all periods of history.
SIGNS, WALLS AND SPACES

Modalities of Expression
in the Western European Upper Paleolithic

Éric ROBERT

Omnipresent in the graphic space of the Paleolithic, signs reflect the mental complexity of ancient societies. This type of expression is found on objects, and on the walls of rock shelters and caves. Though this particular dimension of prehistoric art is often relegated to the background in research, it is nonetheless imbued with meaning that is linked to individual and cultural activities.

Though we lack the keys for understanding the meaning of signs, we can address the question of their status within decorated ensembles. This status is accessible not only through their morphology, but through the supports that were selected for their realization. In the Paleolithic, the preferred natural context was cave walls.

The spatial and parietal dimensions are inseparable from the graphic message left by prehistoric artists. Long neglected in research, their role was reevaluated by the structuralist analysis of André Leroi-Gourhan, the development of recording methods, and internal analyses of the most recent discoveries.

The renewal resulting from this work enables us to see beyond the morphological characteristics of signs to consider their role within decorated ensembles. The question of the function of signs is thus addressed for the first time through a different approach to typological classifications and ethnographic comparisons, taking into account the non-random choices of their locations within caves.

An analysis of a sample of nearly 700 signs in the European Paleolithic indicates that the majority participated in a true semantic exchange with their supports, both at the scale of the cave wall (through three distinct modalities: integration, volume, framing), and the cave as a whole. This tendency, visible for 60% of the sample, is seen throughout the Upper Paleolithic and for all categories of signs, regardless of technique and size. This is even more true given the influence of the contours and volumes of the reliefs on the form of the images.

Variations among the types of signs reflect the original constructions and modalities of expression of the artists, which occur once, or are repeated within a space with identified limits. There are both regional systems – such as the spots in Quercy during the Gravettian – and local systems, created by a repeated link between one or several type(s) of signs and a type of relief – such as at Chufin for spots, or Combarelles for tectiforms. The selection of repeated preferred locations helps to distinguish these signs, and to raise the question of their status, especially for the most original motifs, which we cannot clearly designate as signs. The location of these sometimes unique motifs appears to have been chosen with great care and is rarely neutral.
The compositions are also seen at the scale of the underground space itself, with no uniform structuration, but following several modalities: continuous distribution along an entire path, concentration in one sector, aggregation on the wall, or selection of strategic locations. The repetition of some of these constructions, for certain types or territories, confirms the intentional nature of the procedure and reveals specific variants in the use of signs.

Parietal and spatial dimensions are frequently combined to construct a specific status for the image, as can be verified for the signs. At Niaux, claviforms and angular signs provide an example of the combination of morphological, technical and contextual features (figure). While the former occupy a favored location on original supports that structure the decorated space, most of the latter are located in association with animals, constituting an original dichotomy within the Magdalenian in the Pyrenees-Cantabria region.

A triple dimension, sign-wall-space, is found in Upper Paleolithic decorated caves. Present at several scales (territories and sites), it reveals the logic of a construction that enables us to address the question of the function of signs. This complex construction reflects the “manners of saying” of prehistoric artists in Paleolithic Europe, composed of a true codification, which, lacking the necessary keys, we are still unable to understand.