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THE INTELLECTUAL AND SPIRITUAL EXPRESSIONS OF NON-LITERATE PEOPLES

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THE AGES OF MEMORY,
THE MEMORY OF AGES

EDITORIAL NOTE

THE AGES OF MEMORY, THE MEMORY OF AGES

How old is our memory? Each nation or tribe remembers the story of its origins, its fathers, its patriarchs, its heroes, and its crucial events. The traditional stories of the inhabitants of a small Pacific island, the genealogical tales of an African chieftain, the cult of ancestors in a mountain village of the Andes and the myth of origins of Eskimo fishermen in the Arctic are all chapters of the common heritage that makes up the identity of the human species, that gives us the dimension of being what we are. What is the dimension of our memory? Our individual memory is part of the family, ethnic or national memories that, combined together, constitute the memory of our species. The individual memory of each one of us, together with the collective memory of linguistic and ethnic groups, tribes, nations, and countries makes up the memory of humankind: it is our common legacy, the core of culture. What would humanity be without this memory?

Memory has different ages, as expressed by an Aboriginal elder of Arnhem Land, and all the ages of the past make the present (*Guardare l'invisibile*, Atelier, 2018): "What white-men call myths are memories of the Dreamtime".

The mythologies of at least three continents tell the story of a universal flood. They are probably the elaboration of memories of natural events that took place over 12,000 years ago. Myths about the ancestor that discovered how to light a fire are common in four continents and are likely to go back thousands of years. Myths about a great migration that ended up with the settling down of the people in their promised land are present in at least three continents and often belong to populations that have been in their land for ages. Bantu mythology in southern Africa includes the migration of ancestors which took place some 2,000 years ago. Biblical mythology includes an exodus from Egypt to the land of Canaan, which may have taken place well over 3,000 years ago. It also includes tales about patriarchs that may go further back in time. The memory of ancient episodes was transmitted orally for centuries, often enriched by generations of storytellers, before being put into writing. As any other his-

torical source, they are not necessarily direct testimony of facts: they are offering to us the memories and elaborations of human minds probably inspired by facts. The core is hidden behind the tales, which are fundamental raw material for historical reconstruction. They are revealing remembrances associated with people's beliefs.

In a rock art site in northern Australia there is the figure of a totemic animal, in front of which several deep cups for offerings are carved on the rock floor. The animal figure consists of several painted lines completing the natural shapes of the rock surface. It is the image of an elephant, an animal that never existed in Australia. The painted lines have several coats of paint and repaint; the oldest may be over 40,000 years old. The cave is still considered to be a holy site and the image was still worshipped in the 1970s. This animal figure is the memory of something seen elsewhere, in another continent, before its makers' arrival in Arnhem Land. When was the last time an Aboriginal ancestor saw an elephant? The memory may go back thousands of years.

Historical memory is idealized and synthesized, thus turning into myths. And myths become part of the oral tradition, transmitted from generation to generation. Our individual memory follows similar processes, eliminating parts, magnifying others, and idealizing certain aspects. Memory is accompanied by imagination and other mental operations which reshape it.

Figurative art, both objects of mobile art and rock art, are the graphic records of memory, metamorphosed into visual concepts, attuned to senses and feelings. Pleasure and displeasure, joy and pain, grace and disgrace, wishes and hopes, give shape to memory. The graphic results, formed by memory plus other ingredients, are the testimony of processes of the human mind.

When prehistoric art is decoded, it becomes an immense and invaluable source in itself. But an additional step may be made by attempting to use the effect, the document or depiction we have in order to reconstruct the cause of its creation: what did actually happen, what were the reasons that brought about the production of the document that has reached us, and what story does it tell? "This is not the task of

archaeology!” Right! It is the task of conceptual anthropology. Archaeology has the very important role of providing the findings, the testimony, and the raw material for conceptual anthropology.

Our memory is as old as the first graphic marks. The graphic heritage left behind by the hands and minds of peoples in five continents in the last 50,000 years is a unique and precious archive of the conceptual adventures of humankind. It is the treasury of the as yet unwritten history of what is still considered prehistory. Each small story, each detail of an event, myth or concern that emerges from the decoding of a portion of this immense archive is a step toward making history out of prehistory. It is a chapter added to the recovery of the past. And recovering the past leads to understanding the present, understanding who we are. We are the effect of what we were. We are the effect of our memory. Recovering details of the memory recorded in these ancient archives that had been forgotten for ages is the role of culture and also marks its progress. The future is built on the past. Wisdom is built on understanding the past. Scholars and students can make exceptional contributions to building up a still non-existent world history covering the periods of the human adventure since the earliest examples of figurative art. When there is figurative art, there is history: history is there, hidden in the graphic messages of the past, waiting to be decoded. And it has to be decoded.

A fundamental role of the scholar in the human sciences is to offer new chapters of the past to culture. Each new acquisition is a step forward. This issue of **EXPRESSION** presents a few contributions to achieving this goal. Friends and colleagues are cordially invited to think of other specific or general pertinent topics and submit their papers to a forthcoming issue of **EXPRESSION**. ‘The ages of memory, the memory of ages’ remains an open topic, to be further considered in forthcoming issues.

Every student in prehistoric and tribal art, or in mythology, religion, psychology, linguistics, philosophy, ethnology, anthropology or archaeology has the potential to say something on this topic. We looking forward to hearing from you.

E.A.

EDITORIAL NOTE

EXPRESSION magazine is published by Atelier Research Center in cooperation with UISPP-CISENP, the International Scientific Commission on the Intellectual and Spiritual Expressions of Non-literate Peoples of the UISPP (Union International des Sciences Préhistoriques et Protohistoriques, International Union of Prehistoric and Protohistoric Sciences). The goal of **EXPRESSION** is to promote dialogue, knowledge, and ideas concerning the intellectual and spiritual expressions of non-literate societies. It is an open forum in conceptual anthropology. Colleagues having something pertinent to say will find space in this e-magazine, which is reaching people of culture and academic institutions in over 70 countries. Papers should have precise goals, conceived for this kind of audience, and possibly be well illustrated. Letters on current topics and short notes are welcome and may be included in the Discussion Forum section.

Authors are responsible for their ideas and for the information and illustrations they submit. Publication in **EXPRESSION** quarterly journal does not imply that the publisher and/or the editors agree with the ideas presented. Papers are submitted to reviewers for their evaluation, but controversial ideas, if they make sense, are not censured. New ideas and concepts are welcome; they may awaken debates and criticism. Time will be their judge. **EXPRESSION** is a free journal, not submitted to rhetorical and formal traditional regulations. It offers space to controversial issues, healthy realistic debates, and imaginative and creative papers, if they are conceptually reliable and respect the integrity and dignity of authors, colleagues, and readers.

Front page: what kind of memory, what kind of message is conveying this object, which has snakes like features in one side and spirals in the other side? (From Mal'ta, Siberia; see Lbova *et al.* in this issue).

DISCUSSION FORUM

The Discussion Forum invites readers to be active protagonists in debates of worldwide interest in Conceptual Anthropology.

CULTURAL CHANGES: OLD-NEW TOPIC, OLD-NEW DEBATE

“Changes, adaptation, and development of intellectual and spiritual expressions from the origins to present” is the topic for a forthcoming issue of *EXPRESSION* quarterly journal. How does the dynamic of change emerge from archaeological sites, material culture, art, myths, beliefs, and other traces (both material and immaterial) of human behavior? *ATELIER* Center for Conceptual Anthropology and *EXPRESSION* quarterly journal are encouraging research in the intellectual and spiritual expressions of human societies.

Nowadays it is fashionable to focus attention on climatic changes as sources of cultural changes. They are certainly important, but it would be misleading to consider them as the only cause of cultural change. Climatic changes are only one of the factors that influence life and development, and in many cases they are not even the most important ones. Migrations, changes in the geographical location and food resources of ethnic groups, conflict and peaceful confrontations with other human groups, changes in the size and composition of social units, new inventions, discoveries, developments in technology, social relations and events, conceptual elaborations, imagination, and many other factors play their role. Man as actor of his own destiny is no less relevant than man as spectator and victim of climatic changes.

ATELIER Research Center and *EXPRESSION* journal are not only recording the changes, they are also stimulating the search to understand the processes and reasons that caused changes and development, and the detection of trends in human conceptual evolution. In previous issues of *EXPRESSION* some major pertinent issues have already been faced, like the function of fire in cultural evolution, the query of how an age of hunter-gatherers in Tanzania suddenly turned into a period

of vegetarian food-collectors, or how the conceptual content and the syntactic structure of rock art changed with the introduction of the bow and arrow.

The arrival of new ethnic groups has changed the cultures of the Americas, Australia, and many other corners of the planet. The succession of different thematic horizons in the rock art sequences of Tanzania, Spain, Azerbaijan, Madhya Pradesh (India), Arnhem Land (Australia, NT), or Serra da Capivara (Brazil, Piauí) reveals the dimension of cultural changes in early human societies in five continents. What can we learn out of all that, about the dynamic of cultural change? Asking questions is as important as proposing their eventual solutions. Do not hesitate to ask questions. Asking questions is the source of conceptual evolution. Proposing solutions to queries is the source of debate and clarification. Convincing solutions are the end of a debate. Until then, let us keep the debate alive. Colleagues and friends are invited to contribute with specific themes, sharing their experience, knowledge, and ideas. When possible, consider the dynamic relations between cause and effect. It will be a pleasure to receive your proposals for titles and short abstracts.

E. A.

DID MODERN MAN REACH AUSTRALIA BEFORE REACHING EUROPE?

The presence of *Homo sapiens* in Europe is today considered to go back some 40,000 years. Physical traces are provided by skeletal remains but are they sufficient to define the conceptual wisdom of *sapiens*? How may we define the many skeletal materials of living populations today that show anatomical features not fully corresponding to the *sapiens* stereotype? Are Pygmies or Hottentots *sapiens*? Of course, they belong to a *sapiens* society, despite their particular physical characters.

Conceptual anthropology considers that the intellectual abilities, define the *sapiens* identity, as well as the skeletal features. Among other tangible expressions of cultural identity is the habit of producing figurative art as a pattern of culture. This is a major trend of the *sapiens* identity, implying the capacity for synthesis, abstraction, and conceptualization.

In Europe as in Africa, there are earlier signs of visual

markings, in the form of non-figurative signs and stencils, printing of hands and other items not intentionally traced by the human hand. Figurative depictions intentionally shaped by human hands appear later and they are the tangible expression of the conceptual abilities defining *Homo sapiens*.

According to present dating, such expressions of figurative visual art in Australia and Borneo, representing animals and/or human beings, are considered to be 20,000 years earlier than in Europe, going back c. 60,000 years. Is *Homo sapiens* present in Australia so much earlier than in Europe?

Two vital queries arise. First, is *Homo sapiens* a single racial stock or are there several different cores of *sapiens*? Second, if indeed *Homo sapiens* derives from a single core, as currently maintained, where is he coming from? Where did he originate? So far, the origins of *sapiens* have been considered to be in Africa. Early traces of his figurative art are present in Tanzania. Stylistic features of animal figures and a rich succession of different stylistic phases are hinting at an early age for the earliest phases. But no precise dates are presently

available. The earliest dates of figurative art as a widespread cultural pattern so far come from Australia. Where did figurative art first start?

Another query concerns the dynamics of diffusion. How come early *sapiens* walked all over the planet, from the African Cape to the Tasmanian Cape and the Fuegian Cape? When the three capes were reached, the population density was most likely less than one soul per 100 sq. km. It was not overpopulation that caused migration. Other primates did not have the same diffusion. They still survive in their original piece of tropical forest. *Homo sapiens* was most likely pushed on by his curiosity, another of his characteristics, that is, looking beyond the horizon to discover the unknown.

Despite various opinions, two queries seem to remain unsolved: where is the place of origin of *Homo sapiens*? And what were the dynamics of his diffusion? A forthcoming issue of EXPRESSION will consider articles on this topic. Colleagues and friends having something to say or to ask are welcome to participate.

E. A.

FORTHCOMING NEW DEBATES

Readers are proposing themes for debate. When at least three articles are submitted on the same theme, the topic is considered for a forthcoming issue.

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| <p>1 - THE AGES OF MEMORY, THE MEMORY OF AGES: tracing back the ages of myths and events</p> <p>2 - CULTURAL CHANGES: OLD-NEW TOPIC, OLD-NEW DEBATE: tracing back the dynamics of cultural changes.</p> <p>3 - WOMEN: their presence in prehistoric and tribal art. The changing role of dominance of male and female figures.</p> <p>4 - SOCIAL STRUCTURE AS REVEALED BY PREHISTORIC AND TRIBAL ART: how depictions reveal social relations and social organization.</p> <p>5 - PERSONAL IDENTITIES OF ARTISTS: Identifying the hands of a specific artist, school or tradition in prehistoric and tribal art.</p> <p>6 - BURIAL CUSTOMS AND PRACTICES as expression of beliefs in afterlife. How did they imagine the world of the dead?</p> <p>7 - IMAGES OF WARFARE AND FIGHTING IN PREHISTORIC AND TRIBAL ART: THEIR COMMEMORATING ROLE AND THEIR HISTORICAL VALUE.</p> | <p>8 - SEAFARING DEPICTIONS: RECORDING MYTHS OR EVENTS?</p> <p>9 - REGIONAL PATTERNS IN ARTISITIC CREATIONS</p> <p>10 -THE ORIGINS OF RELIGION AND THE ORIGINS OF ART</p> <p>11 -VISUAL ART AS A MEAN TO EXPLORE THE HUMAN MIND</p> <p>12 -WHEN AND HOW PEOPLE FROM THE NEW WORLD (AMERICA AND AUSTRALIA) DISCOVERED THE OLD WORLD (AFRICA AND EURASIA)?</p> <p>13 -MYTHS OF ORIGINS: WHERE DID THE ANCESTORS COME FROM?</p> <p>14 -THE PRIMARY MYTHS AND THEIR COMMON ROOTS</p> <p>15 -IS HOMO SAPIENS THE INVENTOR OF FIGURATIVE ART?</p> |
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Proposals for papers and suggestions on these and other issues are welcome.

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THE TYPOLOGY OF ROCK ART¹

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Introduction

In 1983, the United Nations Educational, Scientific and Cultural Organization (UNESCO) commissioned a World Report on the State of Research in Rock Art: the paintings and engravings in caves and on rock surfaces. It was the first attempt at a world-view on the most ancient art. After ten years, in 1993, another State of Research in Rock Art was commissioned by the International Council on Monuments and Sites (ICOMOS). In 2008, UNESCO commissioned another World Report on Rock Art to update the previous ones and to advise on the strategies for nomination of new rock art sites in the World Heritage List. Having been the author of these three reports, I had the opportunity to assess the enormous progress made by rock art studies in the last decades. From the first descriptive texts attempting inventories and dating to the elaborate studies on its contents and conceptual background, research on rock art is becoming a well-structured discipline.

This paper presents the main evaluations from the three world reports. It is a short summary of some chapters of the book *World Rock Art* (E. Anati, 2015, Capodiponte, 5th revised edition, Atelier Edit), which presents a synthesis of the world reports. A new discipline is evolving, exploring the meaning of symbols, identifying the main types of syntaxes in rock art and looking at the future, analyzing what uses research in rock art might have and how rock art is contributing to world culture and to human sciences.

The Australian Aborigines of Arnhem Land say that rock art tells us the story of 'Dreamtime'. This is probably true for rock art everywhere. The Aborigines consider Dreamtime to be the time beyond our direct memory, the mythic age of creation. According to Aborigines, it includes true history. Recent events, like the arrival of newcomers or the events of the last few generations, are considered chronicles, rather than history. Rock art is the record of history beyond

direct memory, documenting whatever impressed and concerned the early ancestors.

The pictographic and ideographic systems used in rock art are reminiscent of dreams. Written history came much later and concerns only a short time and a small part of humanity, the one that became urban and literate. The early systems of organized writing are just 5,000 years old, while the earliest figurative rock art is over 50,000 years old. Only 500 years ago, a large majority of humankind in five continents still used rock art as the main means of recording and this pattern had persisted for 50,000 years.

A number of recurring elements, present in the rock art of all continents, indicate that the basic grammar and syntax respond to universal patterns of cognition, logic, and communication. Rock art appears as the expression of a primordial language of communication, with different dialects. It can be decoded and read disregarding the language in which one thinks and communicates. Theoretically, pictographic protoscript can be read and understood in any spoken and written language. Its reading requires, however, an acquaintance with its elementary associative and metaphorical systems.

To reactivate the use of a method of pictographic and ideographic writing that can be read in any language in the world would open up a new horizon for human communication and may appear as a sort of utopia. And yet our cultural heritage is providing very old examples of successful attempts in communicating messages with figures and signs that can be understood in any language. The system applied by the rock art makers is simple and follows some elementary principles. The same kind of logic is widespread both geographically and chronologically, but each period and each culture have their own peculiarities. Such local features enable us to detect the common denominators. Could we reactivate primordial picture writing? How could linguists and epigraphers contribute to the progress of such a revolutionary concept?

Rock art reveals the human capacities of abstraction, synthesis, and idealization. It describes economic and social activities, ideas, beliefs, and practices, providing unique insight into the intellectual life and cultural patterns of mankind. Long before the invention of methodical writing, rock art recorded the most ancient testimony of human imaginative and artistic creativity. It constitutes one of the most significant aspects of the common

1 Introductory text for lectures, China, Oct. 2018

heritage of humanity. Rock art may become a valuable source of touristic and economic development. For the administrators, these expected economic results are often more convincing than the cultural value of the sites. But it is an immense cultural heritage, a source of history, education, and scientific research.

Definition of sites

Rock art was produced and is now found in special locations. Two terms have to be defined: a site of rock art and an area of rock art.

Site: A rock art site is any place where there is rock art. Its boundaries are traced 500 m beyond the last decorated rock in every direction. Two clusters of depictions, which are separated by a figureless area over 500 m long, are considered two different sites. In the year 2008, 68,000 sites were documented around the world. In Italy alone there are over 3,000. At that time, many of the Chinese rock art sites had not yet been recorded in the World Archives.

Area: A rock art area may include several sites. It is defined primarily by its cultural and topographic characteristics. Rock art areas coincide with geographical features such as valleys, plateaux and mountain ranges. In order to be distinct from one another and form different areas, two assemblages of rock art should be at least 20 km distant from each other (about one day's walking). 820 major areas were located during the world survey in 2008, in 70 countries all over the world. The global data tell us that over 180 countries around the world have rock art, many of which are not yet classified. The real number of rock art areas in the world is likely to be much higher.

Rock art areas usually include other archaeological remains. They are relevant for the understanding of the role played by the area at the time of the execution of rock art. Each area has a landscape and topographic features. They should be preserved and protected as part of the patrimony, as they are the natural setting selected by the ancient artists in which rock art was produced. The choice of producing rock art in a certain locality was usually motivated by the nature of the place.

The world production of rock art documented at the time of the last world report (2008) counted over 75 million figures, but we may safely estimate that the total number of preserved and visible rock art figures in the world would be well over 100 million. This constitutes an extraordinary archive of human intellectual adventures.

Typology of the subject matter

The entire world rock art presents five main themes: anthropomorphs, zoomorphs, objects, structures, and symbols. The frequency and the kind of association of subjects are a means to construct a hierarchy of the artist's values. One of these five subjects is usually the dominant theme of a rock art assemblage, which may change from one period to another as well as from one site to another. The gamut of subject matter is always well defined and consistent within specific cultural and tribal patterns. There have been defined impulses to paint, draw or engrave in a certain way, and both subject matter and style are reflections of the identity of their makers.

Rock art may help in defining patterns of culture. When assemblages can be defined, each assemblage represents a specific stage of the cultural sequence. Hence, through subject matter and associations, rock art can reveal many aspects of human life. The depiction of the species of the hunted animals and of the kind of food gathered tells us much about the ecosystem in which man lived. The depiction of weapons, tools, and other objects reveal the technical abilities of the period. The illustration of myths and beliefs brings back to our consciousness essential aspects of our intellectual roots and displays the existential relationship between man, nature, and the conceptual elaborations of the human mind.

Each assemblage illustrates the identity of its maker. Hunters of elephants or wild oxen and collectors of snails, pastoralists breeding goats, and coastal fishermen are likely to have different themes in their rock art, revealing their diet and economic activities. A snail collector is unlikely to depict oxen and a hunter of wild oxen is unlikely to depict snails.

Comparative studies help identify similar kinds of societies around the world. Certain kinds of hunting societies, for example, tend to depict specific animals in a particular style and often use a consistent system of association of symbols. Pastoral societies from different regions have style characteristics in common and focus their representations on the animals they breed. The art of fishermen or of pastoral populations from distant areas may show similar stylistic traits. Daily concerns and specific patterns of activities have parallel impacts on peoples with similar activities and backgrounds, resulting in similar trends of figurative or graphic output. Similarity in subject between two different groups may

indicate similar concerns, similar economic resources, and similar diets, but not necessarily cultural relations or similar antiquity. Patterns of style and subject matter in the visual arts indicate specific horizons of mentality, hence enabling us to detect the typology of their economy, daily activities, and culture.

Rock art studies may have a relevant impact in the future by providing a new insight into unexplored aspects of the history of mankind and of specific ethnic or cultural entities. Style, typology (grammar), and associative system (syntax) may reveal also the makers' social, economic, and intellectual identity. Experts in various disciplines, like psychologists, sociologists, semioticians, and historians, are becoming increasingly interested in the results of rock art studies, applying the new research methods to their disciplines as means to analyze economic, social, and cultural backgrounds of both living and extinct human groups. The advanced studies in rock art are proposing new systems to define patterns of dominant concerns and the typology of psychological trends of specific populations from the images they produce or produced.

Categories of economic and social context

The hunters' way of life has conditioned human habits for over 2 million years, leaving profound marks on the intellectual nature of mankind. Many aspects of human behavior still reveal the nature of a hunter today. Life still demands hunting: hunting for economic and social positions, hunting for mating partners, hunting for space and hunting ground.

The fundamental human processes of association and logic developed throughout the ages in which the human species acquired its basic behavioral patterns (Postulate EA1). This is the first of a series of postulates that will appear in this article.

A number of elements of style, subject matter, syntax, and content have been shown to be constant on a world level. They are usually divided into five categories of economic lifestyles, reflected by rock art, each responding to universal typological characteristics. Visual art is a mirror of the artist's cognitive system and rock art is a fundamental source for understanding the conceptual setting of early and tribal societies. Social and economic background strongly determines associative mental processes, which condition art. The graphic results are the effect of mental processes.

The five categories of prehistoric and tribal art are the production of:

- Early Hunters
- Food Gatherers (or Collectors)
- Late Hunters
- Pastoralists and Animal Breeders
- Populations with a Mixed Economy (or Farmers)

Each rock art area is the output of one or more of these categories, but each figure may belong to only one of these categories.

The earliest figurative art presently known is over 50,000 years old. At first, figurative art displays a great similarity in different regions of the world. Diverse manners developed out of these primary styles. Toward the end of the Pleistocene, between 30,000 and 12,000 years ago, regional styles began to emerge; they are markedly different from one another, though all of them are still within the context of Hunter-Gatherers, Early Hunters or Early Gatherers (Food Collectors).

At the end of the Pleistocene and at the beginning of the Holocene, about 14,000–12,000 years ago, the first groups of Late Hunters (using bow and arrow) emerged in various parts of the world. New trends of artistic expression appeared in a later period, characterizing the art styles of Pastoralists and Animal Breeders and of populations with Complex Economies, practicing agriculture. Visual arts are the mirror of a gradual cognitive and conceptual diversification in human culture.

As mentioned above, typological patterns are the expression of conceptual mental structures. They do not necessarily indicate a specific age. Hunter-Gatherers, Pastoralists or Farmers may present similar typologies in different areas and in different ages, but this does not mean they had direct connections with each other. Similar styles are found in Africa and America, belonging to different periods, and any direct connection may be excluded, but they suggest similar conceptual conditioning, and similar basic activities and concerns. The typology indicates conceptual horizons, not necessarily specific ages.

Proto-figurative Hunter-Gatherers

The presence of non-figurative marks related to archaeological contexts earlier than 50,000 years ago are present in four continents: Africa, Asia, Australia, and Europe have such signs, in some cases dating back to over 70,000 years ago. The earliest datable examples

of figurative representation were depicted in later periods, in assemblages defined as proto-figurative. When stratigraphic sequences are available, stencils of tools and human hands, which are printed, not drawn, on the rock are among the earliest figurative art (figs 1, 2). In other cases, the artists chose natural stones having a human or animal shape, then human hands complet-

ed them, adding the missing anatomic details, such as eyes or other body parts. Hand prints continued to be stencilled also in later periods, but such assemblages of proto-figurative art in some cases appear to precede fully figurative phases.



Fig. 1. Rio Pinturas, Santa Cruz, Patagonia, Argentina. Rock paintings. Hand stencils and other symbols of Early Hunters. Human hands and stencils of animal feet are accompanied by a long zig-zag (Archaic EH syntax). The animal figures and the rows of dots are later additions. Length of traced part 2.60 m (drawn from a photograph of G.C. Ligabue; cf. E. Anati, 1989).



Fig. 2. Nabarlek, Arnhem Land, Australia. Rock paintings. Association of ideograms of Early Hunters. Stencils of three elements: hand-prints, animal footprints, and tools. Three of the four hands are mutilated. Later two more ideograms were added: disc (female) and *arbolet* (male). it is not unlikely that the later addition explains the significance of the tool being held or superimposed by the hand (D. Lewis, 1988, p. 199).

Early Hunters

The art of Early Hunters (EH) is typical of hunting populations that use hand tools (like hand-axes) and throwing weapons (like spears). Images of bows and arrows are nowhere to be found. Figures and signs are associated, but there are no true descriptive scenes. Human figures are rare or absent, while animal figures are dominant. Associations are simple and appear to refer to an allegoric system giving additional meaning, besides the figurative one, to the relation between figures and signs. This group includes three main typological categories of art production. They are widespread over five continents: the first is likely to belong to a mixed economy of Hunter-Gatherers, while the others are the typical art of bands of specialized big-game hunters. They usually hunted wild fauna like elephants, oxen or horses, with the help of spears and other throwing implements. There is no evidence of the use of bow and arrow.

EH1, appearing as the early typological category, is primarily made of association of signs: handprints, vulvar and phallic signs, elementary ideograms like dots and lines, circles and the zigzags. This category may include also partial animal figures, like animal heads or footprints. It is present in five continents

(figs 3a-b, 4, 5).

EH2, defined as Classical Early Hunters, is more concentrated in certain areas and often acquires specific regional characteristics in various continents. It focuses on animal figures, often accompanied by symbols or ideograms (figs 6, 7).

EH3, tentatively defined as Final Early Hunters, is characterized by schematization. Animal figures are often represented with synthetic, well-defined outlines. The presence of anthropomorphized animals or zoomorphized humans represents a specific animistic conceptual vision, still present in some surviving hunter-gatherer societies, related to totemism (fig. 8). In the past, the art expressions of Hunters and Gatherers were considered together as one category. Recent studies show consistent stylistic and conceptual differences in the art expressions of Food Gatherers, Early Hunters of big game and Late Hunters of medium-sized game. They represent different lifestyles, different models of social structure and interplay, and their art shows differences in the visual output, styles, patterns of syntax, and subject matter.

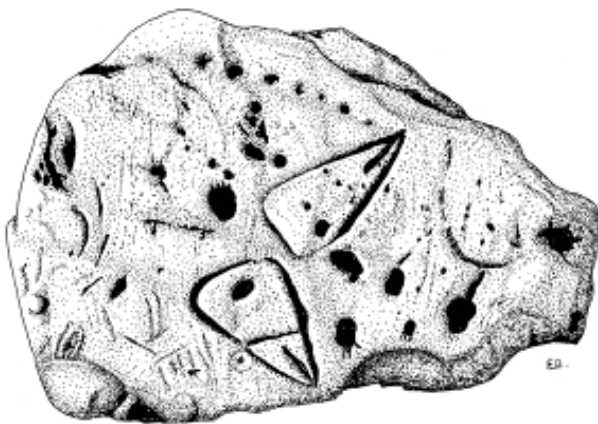
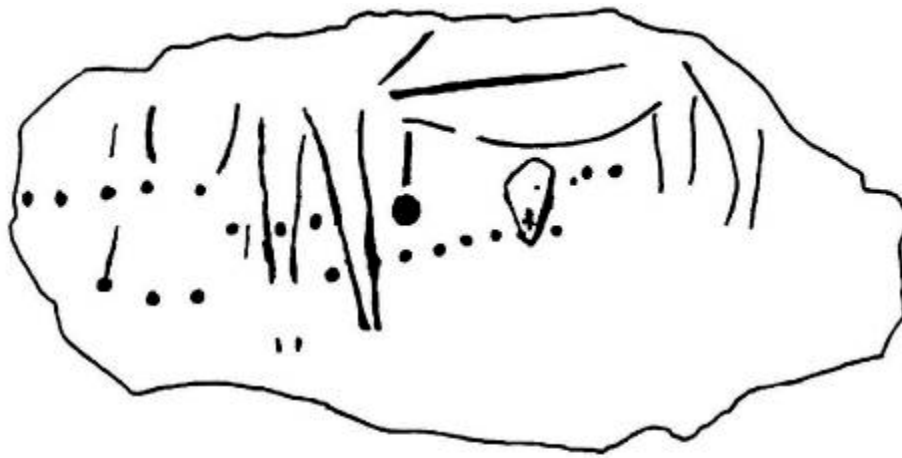


Fig. 3a. La Ferrassie, Dordogne, France. Choice of natural shapes by Early Hunters. A stone block having a natural shape reminiscent of a bison's body has been completed by engravings of the horns and the eye (see left). On its surface two vulvar ideograms and cup marks have been added (archaic syntax). Female (vulvar) signs associated with animal figures are widespread in the archaic syntax. The animal image indicates the totemic identity of the female sign (drawn by E. Anati, 1989, p. 93).



Fig. 3b. Abri Collier, Le Mouster, Dordogne, France. Block 2. Association of animal shape (horse) with vulvar symbol. (After Anati, 2007b).









Pictogram	Ideograms				
					
Schematic quadruped	Vulvar sign	Sequence of dots	Association dot-and-line	Conjugation dot-and-line	Coupling dot-and-line

Fig. 4. La Ferrassie, Dordogne, France. A stone block with engravings displaying the archaic syntax. A schematic quadruped outline is surrounded by ideograms. A vulvar sign occupies a central position. Rows of dots, lines, and groups of lines and the ideogram dot-and-line are present (Anati, 1989, p. 96).







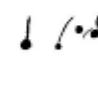
Pictogram	Ideograms			
				
Schematic quadruped	Vulvar sign	Sequence of dots	Association dot-and-line	Coupling dot-and-line

Fig. 5. Murray River, Australia. A rock-shelter surface with engravings displaying the archaic syntax. A schematic quadruped outline is surrounded by ideograms. What appears to be a vulvar sign (and probably another one) occupies a central position. Rows of dots, lines, and groups of lines and the ideogram dot-and-line are present. As in the previous illustration, the main protagonist is an animal outline, the second important subject or object is the vulva, and similar ideograms are similar notations at two opposite corners of the world (drawn from a photograph by E. Anati in Anati, 1989, p.96).

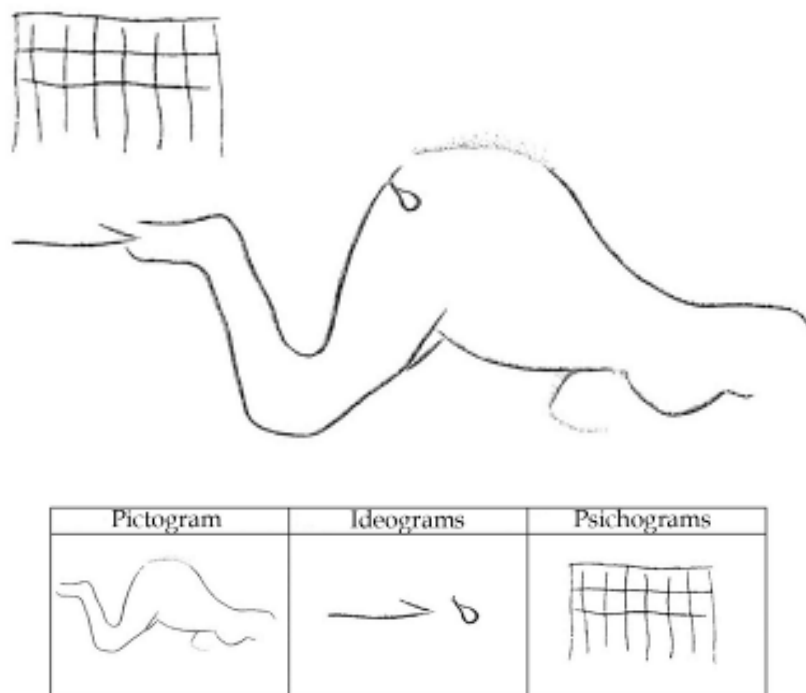


Fig. 6. Gabillou, Sourzac, Dordogne, France. Female figure with the indication of the vulva opening. An arrow-shaped ideogram reaches her foot. Over her there is a psycho gram made of a rectangle and vertical signs (J. Gaussen, 1964, in Anati, 1995, p. 104).

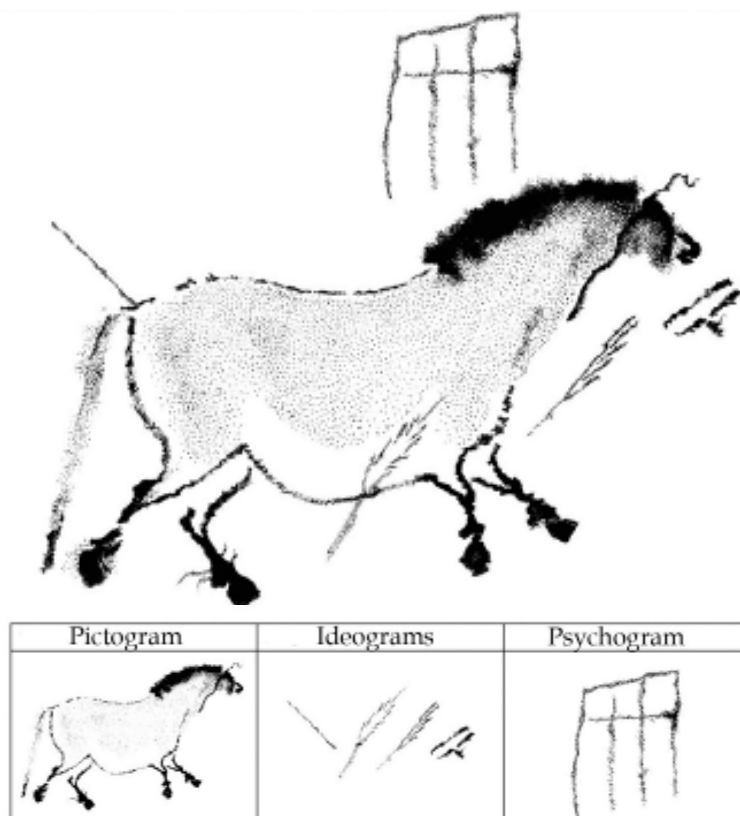






Fig. 7. Lascaux cave, France. Horse painted with black outline and ochre-yellow base painting. This pictogram comes with yellow *bâtonnet* ideograms (male) and black lips ideogram (female). Over the pictogram there is a brown-red psychogram made of a rectangle and vertical signs. The grammatical analysis shows the similarity of the message to that of the previous illustration. The subject is now a horse, replacing the female figure. The horse may be a name or a totemic symbol of a person or of a human group (Anati, 1993).



GRAMMAR ANALYSIS
 <p>Pictograms: two animals figures (horses) one vertical, the other horizontal</p>
 <p>Ideograms: two male signs (branch and arrow)</p>
 <p>Ideograms: two female signs (lip and ear)</p>
 <p>Psychogram: sinuous lines bundle</p>



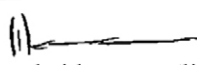

SYNTAX ANALYSIS
 <p>Vertical animal with male ideogram</p>
 <p>Horizontal animal with female ideogram</p>
 <p>Union of female ideogram (lips) and male ideogram (arrow)</p>
 <p>Psychogram. exclamation or omen</p>

Fig. 8. Altamira cave, Santander, Spain. Wall engraving of the archaic-type Early Hunters. Two animal figures, one vertical and the other horizontal, are associated with two repetitive type ideograms with the value of a male, the branch, and a female, the eye-shaped sign. Under one of the animals there is a group of sinuous lines. Over the two animal figures the union of two ideograms, one a male (the arrow), the other a female (the lips) (tracing by H. Breuil, 1912).

Food Gatherers

In sharp contrast with the animal art of Early Hunters, the main subjects of Food Gatherers are anthropomorphic beings, sometimes related to vegetal themes such as fruits, leaves, and tubers. Anthropomorphized plants and tubers reflect a specific animistic conceptual vision. The style is often characterized by idealization and a high sense of aesthetics. It is the graphic expression of peoples whose economy was mainly based on the gathering of wild fruits, leaves, tubers, and other edible vegetables. This art is also characterized by a peculiar style, probably a depiction of the deformed vision produced by the use of hallucinogenic plants. They depict scenes with a metaphoric sense (figs 9, 10, 11, 12).

Several such groups probably collected snails and other small animals, and may or may not have had a prevailing vegetarian diet. Animal depictions are not current features in the art of Food Gatherers. In some cases, animal figures appear to represent the names or totemic symbols of individuals, clans or localities.

While Early Hunters had a pattern of life based on dynamic team-hunting activities, Gatherers relied

on individual activities and this is reflected by their visual expressions. Their syntax is characterized by metaphorical sequences, simple associations of graphemes or simple scenes of allegoric nature, depicting a surreal world. Human faces are often transfigured. The subject matter mainly concerns social events, epic events, and interactions with what appear to be super-



Fig. 9. Nabarlek, Arnhem Land, Australia. Rock paintings. Depiction of vegetalia by Food Gatherers. Anthropomorphized yams, with limbs and heads composed of yam tubers. The painting is in dark red while the natural color of the yam is yellowish-brown. The color is used for its symbolic meaning, not for reproducing naturalistically the anthropomorphic yam (D. Lewis, 1988, p. 290).

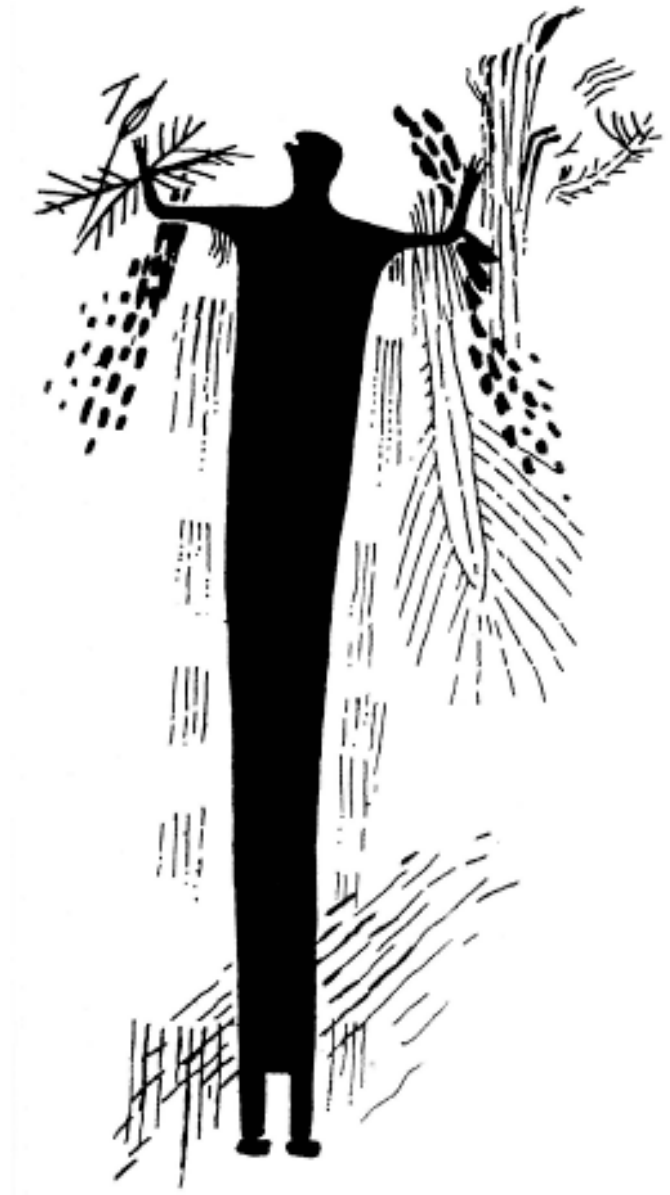


Fig. 10. Panther cave, Seminole Canyon, Texas, USA. Rock painting of Food Gatherers. The anthropomorphic figure over 2 m high has a mask or a zoomorphic face and is likely to represent a spirit or its totemic identity. The arms are branches, which produce fruits and emanate energy rays. In the art of Gatherers, ideograms, pictograms, and psychograms often appear in a syncretic composition (tracing by Wellman, in Anati, 1995).



Fig. 11. Tassili, Algeria. Rock art produced in a state of hallucination. Early Gatherers, General tracing (cf. fig. 17 detail) of a painting illustrating the effect of hallucinogenic mushrooms. Series of dots lead from the mushroom to the head. Horizon of the Round Heads style: c. 5,000 BC. (G. Samorini, 1989, fig. 9).



Fig. 12. Madzangara, Mtoko, Zimbabwe. The shaman communicates with roots. Rock paintings of Late Gatherers. The shaman is addressing a kind of edible tuber, 22 of which (rounded with a tail) are surrounded by a line, while longer tubers are left out. Food Gatherers may represent plants or roots to refer to their qualities or powers. Similar metaphors are common with animals in hunters' rock art (E. Goodall, 1959, p. 83).

natural anthropomorphic beings. Trends of depicting monstrous and deformed human shapes are considered to reflect alterations in the state of consciousness. Some of the Food Gatherers' rock art seems to have been produced in a condition of hallucination, likely derived from the use of hallucinogenic plants.

Late Hunters

The art of hunting populations that use the bow and arrow is characterized by descriptive and anecdotal scenes. It represents mid-sized game, such as wild goats, antelopes, deer or elks, according to the fauna of the area. The main subjects are human and animal figures in interplay, often depicted in a realistic dynamic style. Hunting scenes and other descriptions of daily activities show both men and animals moving in dynamic postures. The earliest expressions of this style, in Africa, may be 14,000 years old, while in the Arctic areas it was still performed a few centuries ago (figs 13, 14).

Pastoralists (Animal Breeders)

The rock art here is of populations whose primary economic activity is raising livestock, with a focus on domestic animals and scenes of family life. Ethnic identity and wealth, in the form of livestock, are major issues. It is a most widespread typological pattern all over Asia. Human figures are given specific shapes and attributes, including hats, body decorations, and associated ideograms, likely to define their social status and ethnic identity. The main theme concerns domestic livestock and scenes of human beings taking care of animals (fig. 15).

Complex Economy (agriculturists and farmers)

The art of populations having a diversified economy, including farming, has specific characteristics focusing on ethnic identity. Typologically different

groups display their own specific styles that may vary from naturalistic, to schematic, to abstract. Schematic groupings of signs are repetitive. Mythical and commemorative scenes describe memorable beings and events (figs 16, 17, 18).

This is the art practiced by non-urban and frequently non-literate peoples with a diversified economy, including farming. Two main trends can be identified: the first is characterized by the presence of mytho-

logical and commemorative scenes, while the second is characterized by symbolic compositions made up of signs and patterns.

Anthropomorphic divinities and/or supernatural beings are frequently represented. The Complex Economy group has a variety of styles, from the narrative scene to schematic compositions, with a range of themes much broader than the other categories. Like their economy, their art is characterized by diversity.



Fig. 14. Wadi Ramliye, central Negev Desert, Israel. Rock engraving. Late Hunters using the bow and arrow are helped by domestic dogs. A hunting scene. The arrow is repeated in the air to show the trajectory. Dots near the arrow are a sign of action. In many cases dots and series of dots seem to represent the verb 'to do' or some of its extensions, like 'to be well aimed' or 'to reach the goal' (Anati, 1979, p. 42).



Fig. 13. Msana, Zimbabwe. Bow and arrow hunting of Late Hunters. The entire space available on a small flat and smooth surface in a rock-shelter has been used to paint this scene (E. Goodall, 1959, p. 19).



Fig. 15. South Africa (site unspecified). The relationship between man and his animals. Rock paintings. This scene describes pastoral people on the move. A man is giving some food or medicine to a bovine while the others are continuing on their way (tracing in M. H. Tongue *et al.*, 1909).



Fig. 16. Comanche Gap, New Mexico, USA. Narrative rock engraving evocating a myth, of people in an early phase of complex economy. The spirit in the lower left side of the panel has, above him, an ideogram which identifies him. He is sending a mythic ancestor on his way. The ancestor, upper anthro pomorphic figure, is holding corn in his hand: he is bringing corn. Near his legs he has his own ideogram of identification. He is shown the way by Kokopeli (a mythic positive spirit of the Great Plains), who is playing a flute (telling stories) (drawn from a photograph by E. Anati, in Anati, 1989, pl. 35).

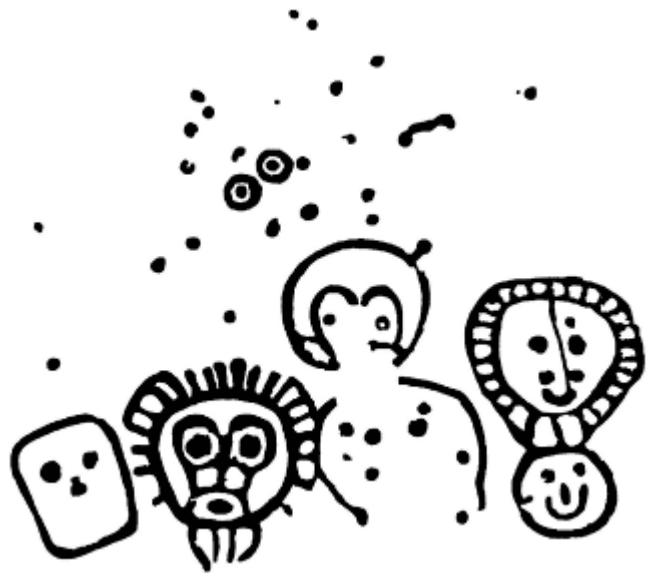


Fig. 17. Helan Shan, Ningxia, China. Rock engravings. Spirits on the rocks. Each one of the masks appears to have its own personality. The surrounding rock surface is covered by cup marks. The rock surface is steeply oblique (Chen Zhao-Fu, 1988, p. 162).



Fig. 18. Sonico, Valcamonica, Italy. The so-called Sonico Idol, rock engraving of Early Agriculturists. A vaguely anthropomorphic baby god is surrounded by its ideograms. The body is subdivided by horizontal lines. The upper one separates the mask-like rounded head (sky) from the upper part of the body which is made of two rectangles (territory). Inside them are the indicative symbols, among which are a bucranium and an axe. The lower part, vaguely triangular, has a net-like pattern with dots (likely to indicate the third part of the universe, (the underworld). The baby god includes all the three parts of the universe: sky, earth and underworld (Anati, 1982, p. 183).

The typological classification

The typological classification is intentionally schematic. There are transitional phases and groups that display a mixture of characters, with marked differences within each given category. Minor groups include also the art of Fishermen, Late Food Collectors, Shell-Collectors, and other specialized groups. However, the present classification enables us to give a definition of over 90% of known rock art.

The rock art analysis relies on three principal criteria: grammar, syntax, and style. Grammar is based on themes and typologies; syntax relates to associations, intentional sequences, and scenes; style considers the emphasis given to certain wild or domestic animals, the presence or absence of certain symbols which act as “fossil guides”, the emphasis on specific features, such as the stylization of animal horns or human genitals, and the degree of schematization and synthesis of the images. The use of these criteria has led to the iden-

tification of a series of significant, recurrent elements. These comparative studies suggest that living conditions, economy and patterns of way of life influence associative processes, behavior, thought, ideology, and consequently artistic manifestations. Visual art seems to be a synthesis of human wit.

Criteria based on themes and typologies, the nature of the associations, and the presence of scenes or of figurative, schematic, and abstract styles, the importance given to certain wild or domestic animals, the presence or absence of certain symbols which act as fossil guides have all led to the discovery of significant recurrent elements.

This has brought us to the working hypothesis that: “Universal reflections conditioned by the way of life influence behavior, thought, ideology, associative processes, and consequently artistic manifestations” (Postulate EA2).

A thorough analysis of the essential elements of rock art groups at a world level is necessary to determine universal factors and to identify and distinguish them from local factors. Five elements are taken into consideration: 1. Subject matter; 2. syntax, that is types of associations, compositions, and scenes; 3. stylistic characteristics; 4. technical patterns; 5. type of location on the rock surface.

In almost all cases recorded so far, rock art is a phenomenon of non-urban, non-literate societies (Postulate EA3).

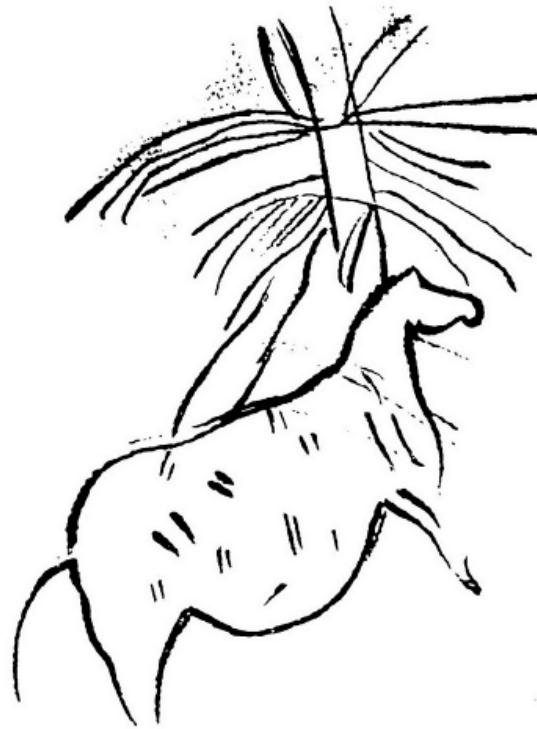
In all the examined zones, there are areas of great concentration of rock art which do not reflect an analogous concentration of people (Postulate EA4).

On the contrary, it seems to be a universal pattern of rock art that it is scarce where the population is more concentrated. There are some zones where people went for artistic reasons or for other ritual and social activities, where little or no trace of living and daily activities besides rock art have been found.

Pictograms, ideograms, and psychograms

Each category of rock art (representing respectively the production of Early Hunters, Early Gatherers, Late Hunters, Pastoralists, and people with a Complex Economy) displays a limited typological range of subjects, recurring in the rock art of all continents (Postulate EA5).

Three types of signs are grammatically different from each other. They are pictograms, ideograms, and psychograms (Postulate EA6).






Pictograms	Ideograms	Psychogram
		
Horse	Two parallel lines defined 'lips' are repeat 10 times	Rectangle that emanates energy rays

Fig. 19. La Pileta cave, Spain. Prehistoric art elementary grammar. Pictogram, ideogram, and a psychogram. Painting referred to the art of Early Hunters, classic syntax. The pictogram is a brown horse, on his body an ideogram made of two parallel lines is repeated ten times. Over the horse a black psychogram appears, a rectangle radiating outward. What is the message behind this composition? An elementary reading would suggest: 'Pleasure or satisfaction or wish (the psychogram) for the horse clan or totem, that has provided or received 10 females.' Each 'lips ideogram' is made by a different hand. A possibility is that each beneficiary left his sign. Can we imagine that this panel, as others, may be part of a ritual or a practice, of an event that took place in the place where it was painted? (tracing H. Breuil in Breuil *et al.*, 1915).

They occur not only in rock art, but also in mobile art. The same three types are present in other fields of artistic creations, such as music and dance. The associations and combinations of the three types expose the elementary patterns of the human cognitive system.

Pictograms (and mythograms): figures in which we may recognize identifiable forms of real or imaginary objects or anthropomorphic and zoomorphic figures. They are often the subject of sentences in which the ideograms are the verbs and/or the adjectives.

Ideograms: repetitive and synthetic signs, such as zoomorphic and anthropomorphic schemes, sticks,

tree-shapes, phallic and vulvar signs, discs, groups of dots and lines. **Repetitiveness and constants of association indicate the presence of conventional concepts in a number of ideograms (Postulate EA7).**

Psychograms: signs which are not recognizable as (and do not seem to represent) either objects or symbols. They are strokes, violent outputs of energy that may express sensations or even more subtle perceptions. They often appear to be conceptual exclamation marks.

Pictograms are images whose shapes can be identified. They may have metaphoric meanings.

In the rock art of non-literate people, pictograms

belong to four main types:

1. Anthropomorphs;
2. Zoomorphs;
3. Topographic figures and tectiforms;
4. Implements and Weapons;
5. Other (Postulate EA8).

Only rarely do other types occur, such as vegetation, landscapes or realistic portraits, and in very specific contexts only. Thus, the fifth denomination is labeled as 'Other'.

The three main types of ideograms are tentatively named:

- Anatomic (such as phallic and vulvar signs or hand prints);
- Conceptual (such as the cross or the disk);
- Numeric (such as groups of dots or lines).

These terms are used for the benefit of analysis and communication. They do not necessarily imply their literal significance.

Most of the ideograms used for millennia by prehistoric groups are later found as characters in the first writing in various parts of the world, such as China, the Near East, and Central America (figs 19, 8).

Universal patterns

When the meaning of an ideogram can be traced back to a single common core in more than one continent, a universal pattern is established (Postulate EA9).

Some ideograms appear to have a universal meaning and may be considered as archetypes.

In at least two continents the rectangle or the square appears to mean "land", "site" or "territory", both in most of the early scripts and in most rock art areas. Two or more wavy lines mean "water" or "liquid"; the rayed disk means "sun", "light" or "day"; the non-rayed disk means "sky" or "air". It may also mean "hut" or "site" or "water source". In some early ideographic scripts from different continents, from the Middle East to China and Mexico, and also in rock art (Complex Economy), the triangle with its point turned downward indicates the pubic triangle, sex, fertility or birth. In some cases, it appears to indicate the chthonic world, the world of the dead, the residence of the ancestors, but in more than one continent it may also signify reincarnation or rebirth.

In many instances, in the rock art of Late Hunters, Pastoralists and of human groups with Complex Econ-

omies in Europe, the Near East, North Africa, and beyond, the dot, depicted near an anthropomorphic figure, is a verb of action, like "to do". Then, if it is near the foot of a person it may mean "to go" or "to walk"; if it is near the penis or the vulva - "to have intercourse"; if it is near the bow and arrow; - "to shoot"; if it is near the head, "to think" or "to decide". The significance of the "accompanying dot" emerged from the rock engravings of Arizona and New Mexico, which are still read by the local population. Subsequent tests appear to indicate a similar meaning in other parts of the world.

The fact that the reading of a specific sign has been proved to be correct in five cases is a good hint but, alone, it does not give any certainty that the meaning must be exactly the same in other cases.

Psychograms are signs that convey sensations from the artist to the observer. For us, this level may appear to be more abstract than the symbolic level, that still has its own well-defined meaning. In several cases, they result to be expressions of feelings like pleasure, desire, wonder, gratification or something else.

Pictograms, ideograms, and psychograms make up the grammatical structure of rock art; the variations in the recurring patterns of their associations and combinations are diagnostic elements for the identification of the associative processes and the conceptual context of the human groups that produced them.

Certain rock art techniques are broadly repeated throughout the world, even though they do not seem to reflect processes of acculturation or diffusion (Postulate EA10).

Regarding rock paintings, a few basic colors are used in rock paintings all over the world, red being by far the most common in all continents (Postulate EA11).

We may postulate that, even in the absence of direct communication between different populations, similar outcomes were reached in places far apart (Postulate EA12).

The same range of figures is found in Africa, America, Asia, Australia and Europe. Certain aspects of the environment, economy, and social life simply do not enter into the artists' thematic range. The artists, hunters or otherwise, made precise choices in terms of the themes they chose to represent, they did not paint or engrave just anything. And their choices follow similar standards in different continents. As

mentioned above, over 90% of the entire repertory of millions of prehistoric pictograms from five continents is made up of four subjects: anthropomorphs, zoomorphs, structures and topography, and tools. Anthropomorphic and zoomorphic figures together make up more than 75% of the figurative subjects. Signs and symbols also have a limited number of standard shapes, found in five continents.

In all categories, primary and secondary subjects can be found. There is an initial choice of the main subject and then minor complementary themes are added.

There are repetitive elements, ideograms, and pictograms, which appear to accompany the dominant figures (Postulate EA13).

These are the premises for yet another paradigm: in the art of hunters there is the presence of dominant animal species, with dialectic relationships between them (Postulate EA14).

Archetypes

The system of association of graphemes varies consistently between different categories of prehistoric and tribal art. Assemblages of graphemes without an apparent order, sequences of graphemes, simple associations, associations in sequence, spot-scenes, anecdotal and descriptive scenes are all different ways of associating ideas and concepts. The definition of the type of syntax applied by the art-makers reveals their cognitive system.

Changes in style and associations in the visual arts illustrate changes in the cognitive processes, which in turn reflect modifications in the choice of priorities (Postulate EA15).

This postulate may well apply to all kinds of art, including dance and music, and to all continents and periods. Reversing the words of Postulate EA15, we may state that changes in the cognitive processes cause changes in style and syntactic associations.

The decoding of rock art is the key to acquiring knowledge of elementary cognitive systems based on universal characteristics of constant associations which go beyond, indeed precede and define, the limits of linguistics.

Thus, the existence of logical archetypes may be postulated (Postulate EA16). This is the base for future understanding: through rock art, we may come to recognize some of the fundamental elements of man's cognitive dynamics (Postulate EA17).

Conclusions

The article intends to present significant constants in rock art. It is a short synthesis of the book *World Rock Art* (Anati, 2015), proposing a systematic method of typology and study of rock art. The main tendency of rock art researchers had been the mere description of finds and attempts to date them. For half a century, research in rock art showed more interest in describing the images than in understanding their meaning. The tendency was to identify exceptional finds or features rather than to find the motivations for constants, paradigms and archetypes. Recent developments are stressing the necessity of acquiring a global vision of the phenomenon of rock art in order to find the proper frame of each specific site in terms of its cultural context, in a global view.

At a certain moment of man's conceptual evolution, he started leaving his markings, probably on various elements of his environment, like wood, earth, sand, and animal and human skins. Most of these records had a short life and decayed. The markings left on more durable supports, like stone, were better preserved. Rock art is a phenomenon of non-urban, non-literate societies.

In all the examined zones, the areas of great concentrations of rock art do not reflect an analogous concentration of population. Each of the five categories of rock art (representing respectively the production of Early Hunters, Gatherers, Late Hunters, Pastoralists and people with a Complex Economy) displays a limited typological range of subjects, which recurs in the rock art of all continents.

Three types of signs are grammatically different from one another. They are pictograms, ideograms, and psychograms. Repetitiveness and constants of association indicate the presence of conventional concepts defined by the cultural and economic context. Diet is a fundamental factor in determining conceptual standards.

The query that motivated this study was about the phenomenology of rock art. This visual expression of the human mind is present in 180 countries, in all continents, and the habit of producing it lasted for over 50,000 years. It is ten times longer than the habit of conventional writing and far more widespread than the habit of eating from a dish, sitting on a chair in front of a table, or using hats, shoes or toilet paper. Many tribes who do not have those habits are still producing rock art.

What are the common denominators of this immense archive? What are the motivations for producing millions of depictions and signs on tens of thousands of rock surfaces? And what are the contents, the messages of rock art? We are starting to create some order and a basic conceptual structure as the core of a scientific discipline, out of descriptive bases of data.

The new methods of rock art research, according to conceptual anthropology, are defining social, economic, and conceptual identities of human groups through the analysis of their artistic output. They suggest analogous research methods for other disciplines like psychology, sociology, history, and ethnography. New possibilities of analysis are emerging also for living tribal minorities of isolated human groups, allowing a better understanding of their worries, needs, and states of mind. Rock art studies are opening up new trends to reconstruct the cause from the effect, to go deeper into the spirit of the rock art makers and their conceptual background.

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ROCK ART AS A MNEMONIC PROCESS AMONG NON-LITERATE SOCIETIES

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Introductory note

Non-literate societies did not have writing to preserve their memories. But in those human groups, rock art seems to have functioned as a primordial language, transmitting memories of special events such as comet phenomena and eclipses or daily events such as music and dancing sessions, among other narrative representations, such as hunting and ploughing. This way rock art can be considered the oldest archive of humankind, preserving memories for future generations (Coimbra, 2012b).

In this paper we focus on two themes: rock art and its capacity to record unusual events, rock art and the depiction of daily life. These two subjects of representation had certainly a mnemonic function. Regarding the second theme we will only consider music and dancing scenes, leaving out other images of daily life represented in rock art, which may have also mnemonic characteristics.

Rock art and the record of unusual events

Among prehistoric societies, unusual happenings in the sky such as comet phenomena and eclipses must have left a deep impression on the minds of the observers, due to the visual impact that they produced. Probably they could have been interpreted as manifestations of the gods and thus represented on rock surfaces in order that future generations should remember the presence of the divinity. They can have been used as historical milestones, being remembered by several generations and used at the same time as a mnemonic process (Coimbra, 2012b).

In previous articles we already mentioned some examples of the representation of comets and meteors in rock art (Coimbra, 2007, 2010, 2012a, 2012b; 2017). Therefore we are not going to repeat here a list of those engravings, but instead focus on cases that may be related to mnemonic processes in rock art, some of

whose more interesting examples are found among the San in South Africa (Woodhouse, 1986; Fraser, 2007; Ouzman, 2010).

According to Fraser (2007) the San, living near nature, would be extremely attentive to unusual events happening around them. Astronomical events such as comets and meteors probably would have made a deep impact on them, as a happening in the sky that should be remembered and transmitted to future generations by depicting it over a rock surface. As a matter of fact, in San rock art, the panels with the depiction of cometary phenomena represent these events integrated into scenes of ritual character, for example, some paintings from Bethlehem District, where a meteor is associated with three anthropomorphic figures with feathers in their arms, which are simulating a flight attitude (Coimbra, 2008: Fig. 5.2), a representative image of the San astral voyage (Ouzman, 2010).

Another example, from Fouriesbourg, is the representation of a fireball (a meteor with a highly visible tail), which is being observed by a group of people, some of them clapping hands, two figures adopting “the ‘arms-back’ posture diagnostic of attainment of altered states of consciousness” (Ouzman, 2010: 20) and two cattle-headed therianthropes, among other figures with feathers typical of trance dances (fig. 1).

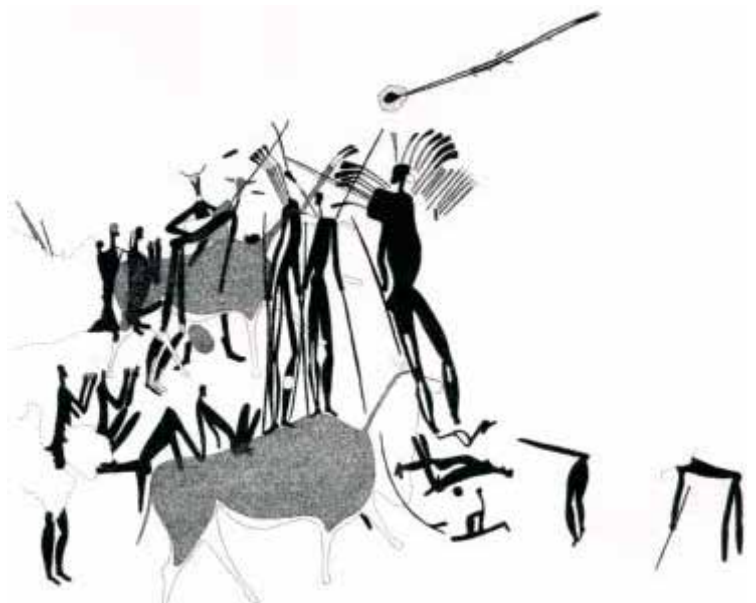


Fig. 1. Meteor and trance dance from Fouriesbourg (after Ouzman, 2010).



Fig. 2. Paintings from Pala Pinta interpreted as a cometary representation (left) (photo: F. Coimbra).

The topography of these rock art sites is “a mnemonic for the San cosmos” (Ouzman, 2010: 28), being also large spaces with abundant evidence of intense socialization, suggesting a culture centre of the San world. Interestingly, each site is located near deep waterholes or natural springs. According to San beliefs, “water provides an earthly anchor for heavenly bodies. Structurally, heavenly bodies have their origin in an upper spirit world. They then travel brightly and ominously through the sky before falling into a waterpit, which constitutes an earthly access to the underworld” (Ouzman, 2010: 29).

Comet phenomena are also represented in rock art in other parts of the world. For example, several tribes of Native Americans interpreted comets and meteors as the voyage of a shaman’s soul to the afterlife (Coimbra, 2010), an event that surely should be registered and remembered. Could this be the interpretation of some comet rock paintings from the cave of Burro Flats, in California?

In Europe there are also some depictions of comets in rock art. Among other possibilities, one of the best studied cases is the painted rock shelter of Pala Pinta (Alijó, Portugal). These late prehistoric paintings (fig. 2), were the subject of some multidisciplinary research, involving archaeologists, astronomers, and

technicians of 3D photography, arguing that some figures may depict the passage of a comet (Coimbra, 2017).

A database of known comets shows that in the period between 5500 BC and the year 1 BC, about 680 comets passed the area of Pala Pinta. Among them, four comets had a trajectory similar to the paintings depicted on the rock shelter: Comet Biela, Comet Kowal-Vavrova, Comet Väisälä 1, and Comet P/2004 VR8, which is the one with most possibilities of being represented, since it was visible during 143 days in the year 4626 BC (Projecto Pala Pinta, 2014). Such a long period of visibility certainly would have been a fact to remember.

It is not easy to find unambiguous examples of the representation of eclipses in rock art. Indeed, some published examples are too speculative. Nevertheless, astronomical research done by NASA provides maps of visible eclipses (total and partial) since the fourth millennium BC (Espenak, undated). For example, between the fourth millennium and the third millennium BC, 634 total eclipses occurred, which means 63.4 eclipses by century and 6.34 by decade. This means that in a lifetime of about 40 years, 25 total eclipses would be visible in the world (Coimbra, 2017). Surely these examples were not seen everywhere at the same

time, but certainly there were enough cases to constitute a reason to be remembered and registered in prehistoric art.¹ Interestingly, traditional Aboriginal Australian cultures provide less subjective information, which “includes a significant astronomical component, perpetuated through oral tradition and ceremony (Norris and Hamacher, 2010: 1). Indeed, some of these cultures explained eclipses as a conjunction of the sun and moon (Coimbra, 2017), “caused by the Sun-woman being hidden by the Moon-man as they make love” (Norris and Hamacher, 2010: 4).

Rock art and the record of daily life

Rock art has many narrative scenes such as ploughing and hunting, which may have mnemonic characteristics.² Besides these examples we must be aware that in many prehistoric cultures music is an integral part of daily life, used to keep and transmit knowledge, to summon protection, to remember ancestors or to regulate social and economic activities (Torres, undated). Interestingly, several late prehistoric paintings from different parts of the world depict dancing scenes (certainly using some kind of sound or music), that were registered on rock surfaces possibly to remember some rituals connected with those dances. It seems to be the case of the Neolithic paintings from Wed Mertoutek (Algeria), showing two girls dancing in a very dynamic way (Anati, 1994: fig. 76). Also from North Africa, an example from Tadrart Acacus (Libya) depicts three girls, one of them clapping hands and the other two holding tree branches (Anati, 1994: Fig. 53), probably in order to produce some sound. From Saimaly-Tash (Kazakhstan) there is a group of engravings, dating from the second millennium BC, which seems to show a ritual dance in front of a man holding a sun image (Coimbra, 2012a: fig.3), a figure with an intense symbolic meaning.

Dance scenes with different chronologies have been studied by the Italian researcher G. Ragazzi, who argues that “in the analysis of a dance scene we are facing a representation which is ... reproducing a continuous series of images epitomizing a real event occurring in

time, and which remained alive in the memory of the person who has experienced it. The sequence of movements linked to that event is rendered with a unique mark in such a way that its observer (believer, member of the society, priest) can recognize the image as a formalization of the event” (Ragazzi, 2015: 312–13). Dance scenes appear, therefore, with a high mnemonic characteristic, and there are also many examples represented on ceramics since the Neolithic in many parts of the world.

However, it is important not to forget that generally these dances certainly had the sound support of drumming or some kind of music. As a matter of fact, the archaeological record shows the existence of clay Neolithic clay drums covered with animal skin, from several parts of Europe, for example Sjöne (Sweden), Knabstrup and Garup (Denmark), Mecklenburg (Germany), and Mrowino (Poland) (Aiano, 2006). Furthermore, rock art depicts some drums, such as in the Bronze Age engravings from Bhimbetka, in India (Meshkeris, 1999). Smaller drums can be seen on a Neolithic wall painting from Çatal Hüyük (Turkey), where a man is represented holding a hand drum (Mellaart, 1967: figs 61–63), and also on a rock art scene from Wadi Harash (Negev, Israel), dated from the second millennium BC, where a human figure is playing a hand drum, together with two persons playing lyres and four people dancing (Anati, 1994: fig. 156).

Recent research in sound archaeology (or archaeo-acoustics) has been paying attention to mind/bodily experiences caused by sound. Interestingly, back in 1967, the anthropologist R. Needham (1967: 610) had already mentioned that “there is no doubt that sound-waves have neural and organic effects on human beings, irrespective of the cultural formation of the latter. The reverberations produced by musical instruments thus have not only aesthetic but also bodily effects.” For example, B. Watson (2009) argued that frenetic dancing (to the sound of drums), which was probably used in several prehistoric rituals, may have resulted in a trance, or maybe in altered states of consciousness. There are several San paintings from the Ukhahlamba-Drakensberg National Park that appear to relate to trance dances, healing rituals, and rain-making, and often show therianthropes such as elongated human figures with antelope heads and hooves (Bradshaw Foundation, undated).

1 For more complete examples of eclipses in rock art see Coimbra, 2012b; 2017.

2 Due to the limit of space for this article we will focus only on dance scenes.



Fig. 3. Dance scene from Toca do Estevo 4, Serra da Capivara (photo: F. Coimbra).

In South America, some cases of dance scenes can be found in the painted rock shelters from the region of Serra da Capivara (Piauí, Brazil), dating from the period of early agriculturalist peoples (fig. 3).

There is an interesting example with a similar chronology³ at Toro Muerto (Peru), with some figures dancing, each one having “a different mask which indicates his identity (or the identity he represents in the dance)” (Anati, 1994: 153; fig. 157).

Final statements

In their need of survival, non-literate societies had to be aware of changes in time. Besides the use of calendars based on moon and sun observation (Coimbra, 2012a), they would need a mnemonic to explain and control crucial events such as comet phenomena and eclipses, which could be provided by rock art images. Indeed, prehistoric societies had a cognitive need of explaining and controlling astronomical phenomena (Boyer, 1993), which resulted in many cases in the creation of myths and beliefs.

One interesting example, among many others,⁴ appears in a more recent society, that of classical Greece. It is the myth of Phaeton, who asked his father if he could ride the sun's chariot, but lost control and fell

into the Eridanus River, which is considered by several astronomers as the fall of a meteorite.

In daily life, prehistoric societies believed in the presence and actions of evil beings, which could bring illness, disaster, and natural catastrophes. Probably these people thought that certain actions such as music and dance could protect them against such things (Lund, 2018), so that these activities became organized as rituals and therefore necessary to be known by all members of society and remembered for the future. For this purpose, nothing better than to register those actions, rough paintings or carvings, on rock surfaces, which seem to have an everlasting durability.

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(Undated) The Rock Art Archive of South Africa http://www.bradshawfoundation.com/south_africa/south_africa_gallery.php.

³ There are also dance scenes in Chile with the same chronology (Marcela Sepulveda, personal communication).

⁴ For more examples see Coimbra, 2010.

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TRACING BACK THE AGES OF MYTHS BEHIND CALENDAR ERAS

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Among civilization founding myths, some can be traced back to the origin of the new calendar era. The founding event will be calendrically retro-dated at the very time the myth becomes accepted by its concerned community. Such retro-dating might reach a dozen or even hundreds of years prior to the actual launching of the new calendar.

As a starter, one can bet that Marcus Terentius Varro one day decided that the foundation of Roma occurred exactly seven centuries earlier, and named the current year 700 Ab Urbe Condita (AUC). Unfortunately no dated artefact has so far been found to confirm the date of this invention, although it is sure is that the Roman emperor Claudius organized the celebration of the 800th year AUC, a historical event reported by Dio Cassius in his *History of Roma* (Book 60, Chapter 29):

Ἐν δὲ τῷ ἑξῆς ἔτει ὃ τε Κλαύδιος ὀκτακοσιοστοῦ τῇ
Ῥώμῃ ἔτους ὄντος
(in the 800th year of the foundation of Roma)

Fortunately, in expectation of the solar eclipse of +45.08.01 CE, his 54th birthday, Claudius gave out a

decree unique in the history of mankind, explaining in detail that this solar eclipse had been predicted to occur on his birthday and that it was a totally natural event!

There is an amazingly similar story to Claudius' celebration, which again took place in Roma. It is the celebration of the rebirth of the Roman empire. The chosen date for the coronation of the emperor of this Holy Roman Empire was the 800th anniversary year of the Incarnation of the Lord, a week after the winter solstice.

In those days of millennialism before the year 1000, to be sure to jump over the supposedly apocalyptic year 800, the celebration day was recorded by the Laurensheim annalist as New Year's Day 801, DCCCI in Latin (fig. 1).

Actually, before acceding to the highest rank, the ambitious Charlemagne, under the guidance of Alcuin, patiently wove a plot: they first invented schools, then late in AD 789, in Aachen, the Council confirmed the command for schools to teach *computus*. The elaborate staging of the rebirth of the Roman empire had to include the education of the future subjects, at least on one point: they had to be aware of the dates of the new Christian calendar!

The Varro-Claudius dyad had as its counterpart the Bede-Charlemagne dyad. Just like the fog surrounding the date of the invention of the AUC calendar by Varro, the invention of the AD calendar by the Venerable Bede, remains supposed to be the original manuscript of *De Temporum Ratione*, got lost. The sure thing is that four years after the defeat of the Islamic invaders at the Battle of Tours (732), the "year 736

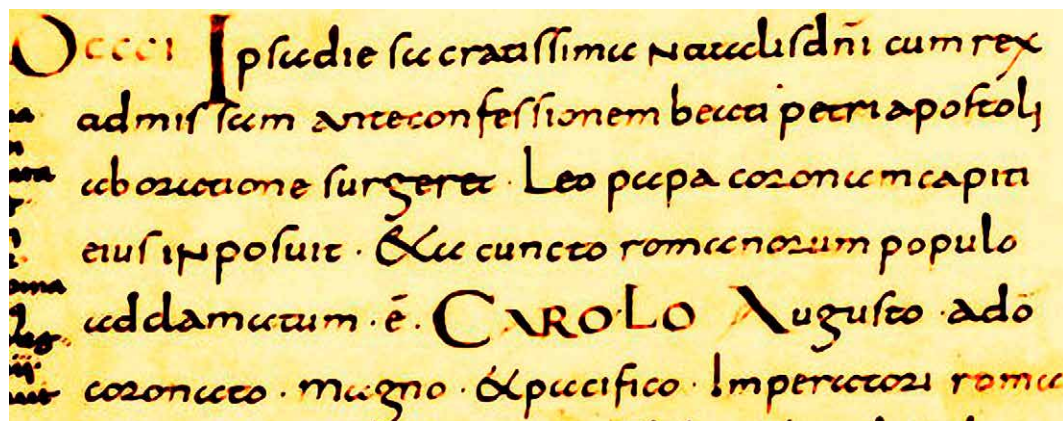


Fig. 1. Extract of Laurensheim Annals for the year DCCCI AD (+801 CE).

Fig. 2. Colophon of the Ismere Diploma dated +736 CE.

Fig. 3. Extract of St Gallen Annals for year ω.xl AD (+840 CE).

of the Incarnation of the Lord” on the colophon of the Ismere Diploma (fig. 2) is the very first Christian calendar date.

An important issue in chronology is how to anchor human history to the time of the earth, of the moon and the sun. Solar eclipses are the ideal tools for this mission. As soon as free access to Google Earth was granted, Xavier Jubier posted on the web his powerful freeware, called 5MCSE (5 Millennium Canon of Solar Eclipses). It combines Google Earth with the most sophisticated algorithms for the accurate retrodiction of all the phases of solar eclipses, and offers to the researchers choices of how to deal with the rate of the earth’s rotation slowing down. The very first total solar eclipse recorded in terms of Anno Domini we analysed was the one (fig. 3) which occurred shortly before the death of the Emperor Ludovic, son and successor of Charlemagne.

The date mentioned in the Codices Electronici Sangallenses is year “ω.xl” (with the character ω for 800), the third day before the Nones of May (5 May) and daylight time between the eighth and the ninth hour (let us assume 8:30 ± a quarter of an hour). One should add to this time that of sunrise in St Gallen on +840.05.05 CE (which was 03:51 UT). Therefore, the time of the totality retrodicted by the freeware of 12:38 UT is in perfect agreement, with 12:21 UT, considering the quarter of an hour uncertainty in the reported time. Let us note here that the St Gallen Annals have some entries as early as AD 708. In our opinion, those calendar dates have been retrodated using Bede’s AD Christian Calendar.

To complete this discussion of the genesis of calendar eras AUC and AD, we turn now to the calendar era AH. Hijri dates appeared on coins some years after the migration of a Muslim tribe. The rear of this migration was claimed to have been brought up, on

+622.07.16 CE, by the “Prophet Muhammed, Allah’s Messenger”. The first dated reference to this Messenger, its “birth certificate”, appears on the obverse side of a coin (fig. 4), minted by Governor Abd al-Malik b. Abdallah b. Amir in Bishapur (Persia), in the year 67 AH. In addition to the name of the governor, this dirham carries the effigy of King Khosro II. The bilingual texts are in Pahlavi and Arabic, to be read from right to left.

On the reverse side the mint date 67 AH is given (written in Pahlavi, from right to left, as “seven sixty”), the workshop sign “•BYŠ” for Bishapur and the Zoroastrian fire altar flanked by its two attendants. By the way, this bilingual coin exhibits an amazingly high degree of religious tolerance. In contrast, by calendar year 93 AH, texts on dirhams appeared without any effigy, highly proselytizing, and in Arabic only.

In 98 AH, bilingual texts showed up again on coins minted in Andalusia, but this time, in order to be better accepted locally, in Arabic and Latin. Let us remind ourselves that dates in Spain were written following the calendar of the era Augusto, EA, an era celebrating the invasion of the Iberic Peninsula by Emperor Augustus. This use has been confirmed by the Council of Tarragona in year +516 CE, to be finally abolished in year +1351 CE.

98 AH corresponds to calendar year DCCLIV EA. Probably, in order to avoid confusion among the Spanish subjects, the Latin text on the obverse side of coins (fig. 5) does not specify which year: FERITOS/SOLIDus/IN/SPANia/Anno (?).

For the AH calendar a solar eclipse provides its chronological anchorage without ambiguity. The Persian astronomer Abu al-Abbas al-Iranshahri in Neyshapur observed a solar eclipse, early in the morning of the 29th day of the month of Ramadan of the year 259 AH. Despite the fact that this precious manuscript is

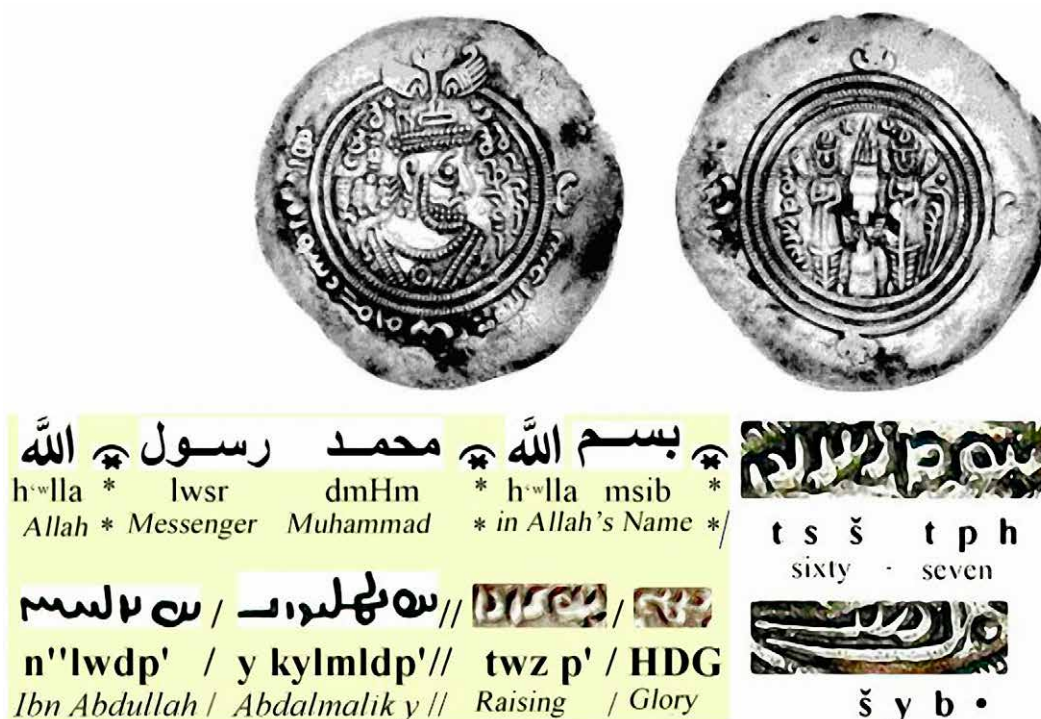


Fig. 4. Arabic-Sassanian dirham dated 67 AH.



Fig. 5. Arabic-Andalus dinar dated 98 AH.

On the reverse side margin of the coin the Islamic date is given (from right to left)

نيسيت و نمت قنس سلدنلاب رني دلا اذه ب رض
nyst w nmt h'ns sldnalab rnydla ad'h b rD

In the name of Allah this Dinar was minted in Al-Andalus year 98 (AH)

now lost, the retrodiction by *Jubier's freeware* of the annular solar eclipse of +873.07.28 at 01:42 UT over Neyshapur confirms these observations. As a conclusion we suggest that the devastatingly fast introduction of the Islamic calendar in southwestern Europe was the spark triggering the invention, by Bede the Venerable, of the Christian calendar.

Note

The source of the iconographical material presented here is the recent work in French, entitled "La chronologie éclipse des ères culturelles", posted on 14 July 2018 at the url: <http://www.archaeometry.org/eclipse.pdf>

HUMAN MEMORY AS ARCHETYPE: IMPLICATIONS FOR ROCK ART

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Introduction

Designed as a vehicle for cultural registration, rock art stands as a type of social or collective memory, originating in a very distant past, before the advent of any form of sedentarism. Like a tool, this memory is externalized and contained within the ethnic collectivity (Leroi-Gourhan, 1965). However, once this memory is developed within the diversity of systems of signification, it cannot be accessed, or remembered by outsiders of other cultural systems.

The human memory differs from that of other animals, because beyond the retention of content there is also its transmission through oral or written language. Oral transmission is related to the development of oral literature and figurative practices in general, while written transmission matures within the systems of mythographic representation, recording what constitutes the basis of an urbanized society.

On the other hand, it is thought there is another type of memory, based on a dichotomy that has generalization and particularization as parts of the same system. In this case, these are structures of representation that would be shared by all, but with a content core that can develop only individually, according to the particular life history of each human being. This memory would be what Jung called archetypes: unconscious structures containing primordial images and ideas, the latter conceived as an a priori and fundamental factor (Jung, 1976).

Since these archetypes, or images, consist of primary structures related to the mind, it is necessary to ask whether it is possible to access their contents, considering their importance for the study of rock art and, in a deeper way, the mind and primordial human memory. Here is what will be briefly presented. The conceptual discussion of archetype is based on Grinberg (2006). After this discussion, we will present the methodological limits of attempting to look for the archetypes in the past graphic records, such as rock art.

The archetypes and their scope: a problem of semiotics. Archetypes are often used indiscriminately in archaeology as a way to understand the meaning of images made in such an ancient time. However, these were first understood by Jung as an “inner image”, that is, an unconscious fantasy that imposes itself and arises spontaneously in consciousness (Jung, 1946). According to Grinberg (2006), this mode of understanding was similarly employed by other researchers contemporary with Jung, for instance Adolf Bastian (1826–1905), who believed in a general psychical unity of humanity that would give rise to certain elementary ideas, uniform in all peoples.

For Jung, the archetypes would not only be disseminated through tradition, language, and migration, but could resurface spontaneously, at any time or place (Jung, 1990: 153). However, this spontaneity would not be random. It should correspond to the consciousness experienced at a given moment and would carry a sense of intentionality within the individuation process of the subject and culture.

In its initial assumptions, Jung considered image and meaning to be identical, so that as the former takes form, the latter becomes clear. Thus, interpretation would not be necessary for the archetype, since it would depict its own meaning (Jung, 1981: 402).

With the publication of *Metamorphoses and Symbols of the Libido*, in 1912 (after Grinberg, 2006), Jung inaugurated the comparative method with the main intention of freeing medical psychology from the subjective and personalistic bias that characterized this approach, in order to collaborate in an objective understanding of the unconscious, through a collective psyche (Jung, 1990, pp. xxiii). However, after analyzing his own dreams, by which he sought the meaning for current experiences in the past, the content (or archetypal image) became differentiated from the fundamental form, or structure (the archetype). The results of this new approach were published in *Psychological Types* in 1921 (Jung, 1946).

Although Jung based his work on philosophy in order to try to clarify the concept, considering as main exponents Plato and Schopenhauer, the archetype would not ultimately be a rational concept. He would admit that in the various schools of thought throughout history the term was reduced to categories of cognition, consisting of disguises of the original term (1981:

275–7). In this way, it is not possible to consider the archetype in a pure way free from the presuppositions, prejudices, values, and the scope of our own conscience (Grinberg, 2006).

For Jung, the archetype would work as a living organism endowed with a generating power (Jung, 1946). In this case, instinct represents the visible and material portion of our behavior, while the archetype, the invisible and immaterial part (Grinberg, 2006: 115). It should be noted that although instincts are represented by archetypes, it is only the form, or structure, that is hereditary, not the content of its manifestation (Jung, 1990). Such recognition is consistent with the study of possible interpretations for cultural findings with long-term references in space and time. Although their forms may be associated with representative structures of our time, their content, or more subjective memory, cannot.

The treatment of the archetype as an ensemble composed of form and content, the latter also formed of elements belonging to various cultural and individual contexts, allows it to be considered as a structure similar to that of the linguistic sign. This would have limiting implications, for the archetype, rather an objective means of reaching the socially shared unconscious, would now be susceptible of several subjective interpretations, according to the individuality of who observes it. The character of the archetype would still find in the symbol (Jung, 1946: 601) its greatest association with the problems posed by semiotics, especially that presented by Peirce (1981).

The symbol in Peirce and its implications for the study of the sign

As a symbol, the archetypal image should establish a bridge between the unconscious and the conscious, reflecting the global psychic situation of a given moment, but having as its structural basis the primordial image common to peoples and epochs. These images may be expressed from superstitions or mythologies (Jung, 1946). However, they are based on the dynamic character of the symbol, which is semiotically found in constant transformation.

For the archaeologists Hodder and Hutson (2006), the semiotic view of Charles Peirce is “a fruitful approach in archeology because of its ability to incorporate material culture and agency” (Hodder and Hutson, 2006: 63).

Peirce called the idea, or foundation referred to an object, which in other words, is the sign itself, the *representamen*. This sign, when observed or read by someone, creates another sign equivalent to the first one, called *interpretant*. For a sign to be so, it must represent something else, which is its object. These three entities – the sign, the interpretant, and the object – form the triadic relation of the sign. In this way, the representation, or sign, is linked to three elements: the foundation, the object, and the interpretant.

The signs are divisible into three trichotomies (Liszka, 1996). In the second trichotomy of signs (Peirce, 1981: 2.275), the most important among the three, the sign is analyzed in relation to its object, which can be directly associated with various graphic constructions, for instance rock art. In this case, the sign is divided into arbitrary (symbol) and non-arbitrary (icon and index) (Hodder and Hutson, 2006: 64). The latter may be read formally by any person, since they have no meaning but rather indications of the manifest and universal reality, such as the painting or photo of an animal (icon), or the image of a dark cloud, indicating cloudy weather (index). The definition of symbol for Peirce is of a conventional sign, or of a sign that depends on a habit (acquired or born) (Peirce, 1981: 2.297–2.307). The symbol still cannot indicate something, because it denotes a sort of thing.

Despite the fact that Peirce’s approach is reiterated by Hodder and Hutson (2006), it is difficult to distinguish icons, indexes, and symbols in archaeological remains, in particular rock art, because the choice of meanings for the figures depends on the arbitrariness of the researcher. Even when representing something with perfection, icons may not be neutralized in relation to the social context or perspectives of the subject-observer. The inevitable attempt to interpret the icon and index causes them to be taken as symbols, endowed with meaning, usually latent. An example of this situation in the contemporary world refers to the representation of the cow. For us it is only an animal, but it has a mystical meaning for Indians, since they conceive of it as a deity (Zimmer, 1951). From this it follows that since icons and indexes may indicate another element, they become symbols, and then, they may not be correctly understood according to its original meaning but only by its visual forms.

Conclusion

Taken as symbols, the representations of rock art constitute archetypes of humanity. Such primordial images may be expressed in the representative systems of any culture, and are therefore brought to contemporaneity from the reproduction of its original formal structure. However, the internal content of these figures would be, *per se*, individualized and subjective, and in turn difficult to be reached.

Lévi-Strauss even indicated a more complex problem around the objectivity in the interpretation of any sign. According to Barthes, it would be a clear critic to Jung's archetypes (Barthes, 1983: 25). For Lévi-Strauss the unconscious side of the human subject would be present in forms (signifiers) rather than its contents (meanings) (Lévi-Strauss 2012: 32–3). Thus, the observer of ancient rock art would never reach its meaning, because he would be first and foremost barred by the incongruity of the signifier itself, which would be re-read and re-signed by him.

The existence of limits for interpreting the archetype indicates that any orientation that is made to the content of a prehistoric sign is, at least in part, arbitrary. Thus, there is no way to get access to the social memory of the archetypal type, based on the collective unconscious, without there being any noise. It is not known, however, whether such a memory becomes lost. Perhaps it is also very well stored in a chest that we do not have the correct key to open.

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ORNAMENTAL ARTEFACTS AS A WAY TO TRANSFER AND STORE INFORMATION IN THE UPPER PALAEOLITHIC: THE MAL'TA COLLECTION (SIBERIA)

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Introduction

Prehistoric Palaeolithic art objects have been found on all inhabited continents, not only in western Europe. Modern studies show that for at least 30,000 years people used the same types of symbols in different combinations, allowing us to assume that these signs are means of communication. Possibly they are early steps to the creation of writing (Anati, 2015).

Several publications, inspired by this novel interdisciplinary approach, have found the support of readers, among them *Beauty and the Brain* (1988), *Homo Aesthetic* (1992), *An Anthropology of Art* (2006), and *Art as Behavior* (2014). In the process of evolution a system of signs was formed, from simple simulation of natural phenomena to complex cultural systems. Ritualization is the next step. During the process of the ritualization of behavior into expressive movement, behavioral patterns undergo specific changes, with the characteristics of conspicuousness, distinctiveness, and lack of ambiguity. Simplification and exaggeration of behavioral sequences and amplitudes of movements occur as well as rhythmic repetition. Cultural symbols, along with the symbols for the body, gestures, and language are constants of human communications.

Northern Asian and Siberian Upper Palaeolithic assemblages display cultural traits and symbols similar to those of the European Upper Palaeolithic. However, this superficial similarity does not provide grounds either for the correspondence of meaning, or for speculations on long-distance migration of prehistoric populations. Siberia is also relevant to the timing and conditions of human adaptation, as well as to the initial colonization of the north of Asia and the American continent (Pitulko et al., 2004; 2014).

Mal'ta, the classical stage of Upper Palaeolithic in Eurasia, is located in the Lake Baikal zone (South Siberia) (Fig.1 - 1), and is key to understanding Palaeo-

lithic migrations the Northeast of Eurasia and then to America, especially in relation to the DNA of the Mal'ta local group (Raghavan et al., 2014).

The artefacts reflect more than their utilitarian way of life. Upper Palaeolithic sites show evidence of intense hunting of reindeer, mammoth, and woolly rhinoceros, and some evidence of specialized reindeer hunting. The middle Upper Palaeolithic assemblages such as of Mal'ta, Buret', Ust-Cova, and Achinskaya, with the majority of tools on small blades, were contemporaneous and similar to other Upper Palaeolithic sites of east and west Siberia. However, despite some shared features, mostly in stone technology, there are marked differences. Similarities in tool types, ornamental designs, and art styles, however, gave rise to the definition of a Mal'ta culture by A. P. Okladnikov (Okladnikov, 1968). Worth mentioning here is the appearance of microblade technology, which became ubiquitous in Siberia and the rest of Asia in the Final Palaeolithic. To summarize, Mal'ta is the typical site of this stage of Siberia's Ice Age, especially in the Last Glacial Maximum. As such, the Mal'ta culture is now regarded as having local roots (Medvedev et al., 1996; Lipnina, 2012; Lbova, 2014).

M. M. Gerasimov (1931, 1941, 1958) excavated this site between 1928 and 1958. Currently, Mal'ta has presented stratified culture deposits dating (^{14}C) from 43,000/41,000 to 12,000 BP. The "classical" component from Gerasimov's excavation, characterized by ivory artefacts, anthropomorphic sculptures, and habitation features, dates between 19,000 and 23,000 (^{14}C) BP, including strata 8 and 9 of the geological section (Medvedev et al., 1996; *Stone Age in Southern Cis-An-gara Region*, 2001; Lipnina, 2002, 2012). The anthropomorphic figurines are a historical source for our understanding of the characteristics of the population of Siberia during the Ice Age (Abramova, 1995; Marshack, 1991, etc). In this article, we show our results of microscopic analysis of the ornamental blades and discoids (Fig. 1- 2-7) in reconstructing the technical process (Lbova and Volkov, 2015; Lbova, 2017, etc.).

Materials and method

Our current investigation of the ivory samples was focused on morphology, technical and typological classification, experiment, and microscopic analysis (Gerasimov, 1941; Semenov, 1964; Filippov, 2004). We used dry, wet, and frozen ivory to replicate the orna-

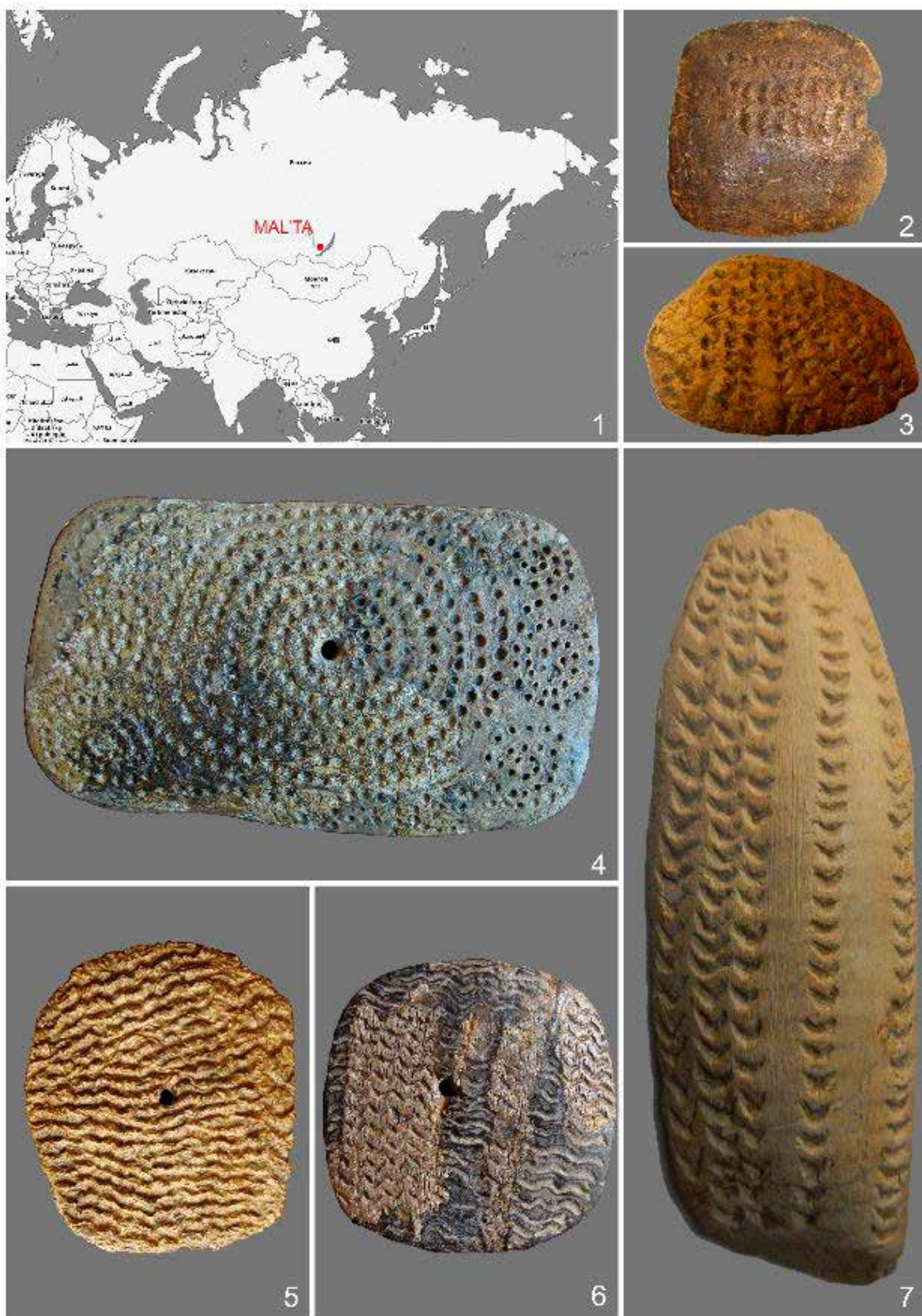


Fig 1. Ornamented objects from Mal'ta presented in the publication.

1-map of locality; 2 - disk No. 1407/254 (State Hermitage); 3 - disk No. 1820/191 (State Historical Museum); 4- large Mal'ta plate, No. 370/732 (State Hermitage); 5 - disk No. 370/733 -39 (State Hermitage); 6 - disk No. 1408 / 337-41 (State Hermitage); 7 – plate "cigar" No. 5406-405 (Museum of Anthropology and Ethnography)

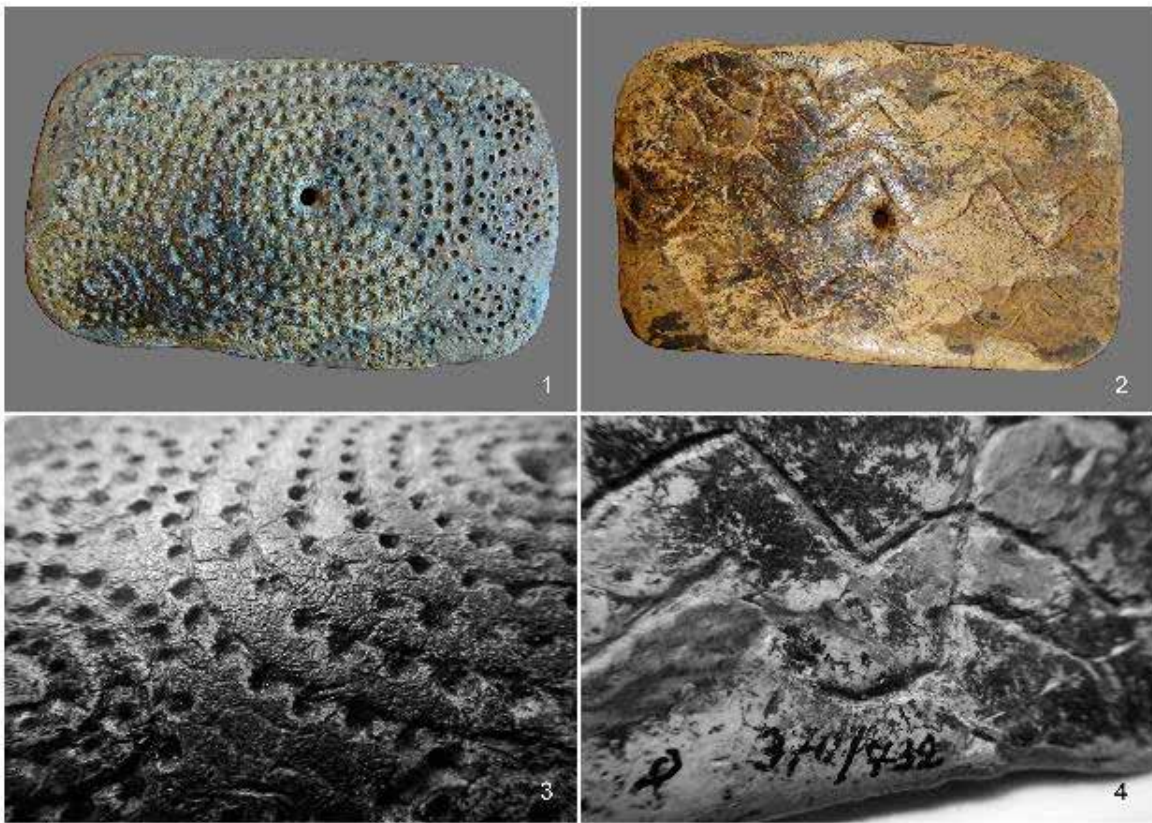


Fig. 2. A large Mal'ta plate: 1- front side; 2 - reverse side; 3 - macro photo of ornament elements on the front side (10x); 4- macro-photo of traces of cutting lines on the reverse side (10x).

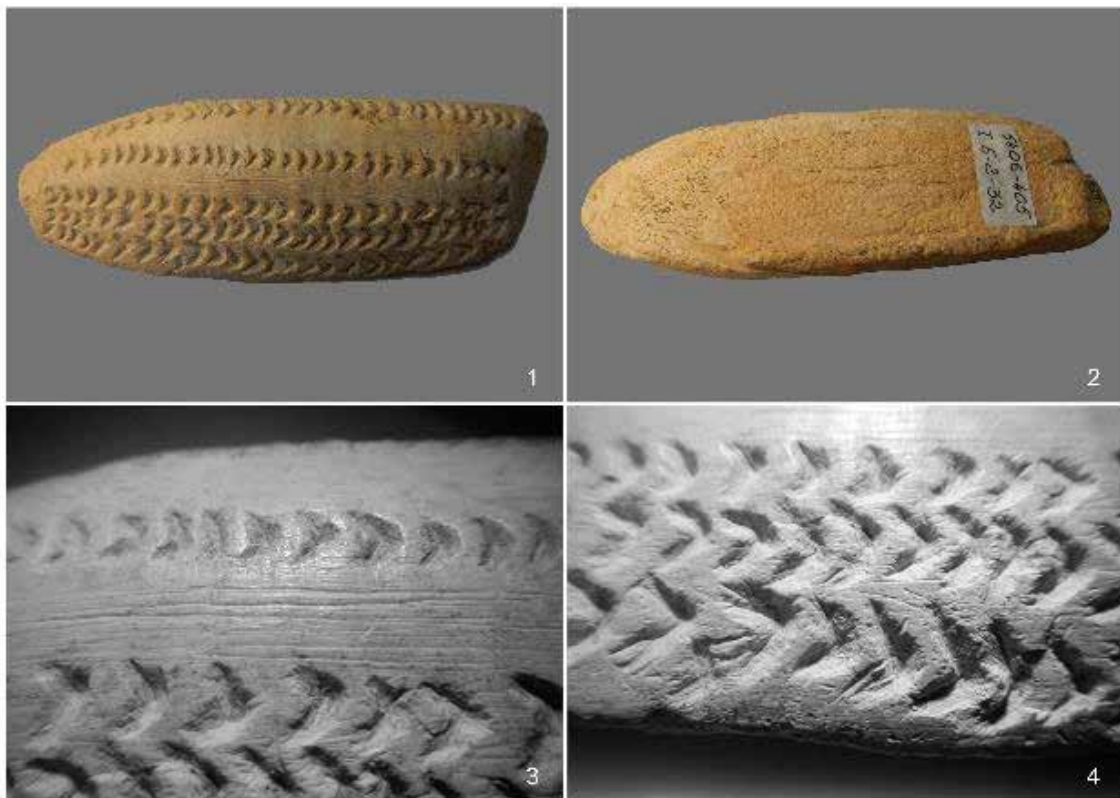


Fig. 3. Large blade, "cigar", 1- front side; 2- reverse side; 3, 4 - macro photo of ornament elements (10x).

mental technology, and believe the decorative surfaces of moister ivory were easier for work. One of our tasks is to find continuity to understand if there is retention and stability of techniques, elements, and composition. Six items on ivory flat flakes and blades can be defined according to the type of blank, the shape and the way of decorating. A group is that of elongated blade blanks (Fig.1 – 4,7). Round- or square-shaped disks are assigned to a second group (Fig.1 – 2,3,5,6).

The first big blade (146 x 89 x 12 mm) has slightly arched trapeze shape with rounded corners and a hole in the center (Fi. 2 – 1,2). The front side of the blade is covered with typical Mal'ta ornament, which consists of spirals composed of rounded dimples (or "cupules"). The ancient sculptor carved lines along which the dimples then line up. In the center of the blade, there is the spiral, which takes more than half of the blade's area. It consists of seven spiral rows, made of 242 cupules (Fig.2 - 3). To the right and left of the central spiral there are two smaller spirals. It is remarkable that indistinguishable forms are symmetrically located on each side. In the bottom corners of the spiral (which has a trapezoidal shape) there are two simple spirals. The left one consists of 63 dimples (11 holes are for the wavy line which continues the spiral), and the right one contains 43 dimples. Two complex S-shaped spirals are located above the simple spirals. The right spiral has 46 dimples and the left one contains 57 dimples (Larichev, 1986).

The concave side of the blade is decorated with six parallel wavy thin lines arranged in groups of two (Fig.2 –2,4). They are presumably the images of snakes. Whereas two snakes have enlarged heads, so that they resemble cobras with spread-out hoods, the third snake is depicted in a calm state. All the snakes' heads are turned in the same direction and their wavy bodies occupy the entire length of the blade.

The item (127 x 42 x 18 mm) is a large blade flattened to the side borders and reminiscent of a cigar (Fig.1- 7; Fig.3). The front side is covered with C-shaped marks in five parallel lines (Fig. 3- 1). The first three ornament rows are carved close to each other (Fig. 3 – 4), whereas there are small distances between the third, fourth, and fifth rows (Fig. 3 - 3). The first and the third row consist of 25 marks each, the second contains 27 marks, the fourth one has 30 marks, and the fifth one 23. The elements are directed towards the wide border of the blade. The back side is not ornamented, but is covered

with mild traces of dendrites (Fig.3 - 2).

The second group consists of rounded, flat or convex-shaped items (disks/discoids) (Fig.1 – 2, 3, 5, 6). The first sub-square shaped disk (52 x 45 x 4 mm) has a pass-through hole in the center. The front side is covered with 18 parallel wavy lines. Deeply carved lines stay close to each other so that it seems as if the ancient artist wanted to draw attention not to the deep lines, but to the convex ones (Fig. 4 – 1,3). The back side is not ornamented, but covered with dendrites.

The second disk (48 x 49 x 5 mm) was found in the child's burial (near the shoulder joint). It is similar in size to the previous one and has a rounded flat shape (Fig.1 - 6). The front side is covered with a zigzag pattern (Fig. 4 – 2,4). The ornament contains 18 parallel lines, which are a short distance from each other. Lines are not deep. On the back side there are about ten small indentations; the pass-through hole is located closer to the center.

The next item has a sub-square shape (35 x 40 x 5 mm); the top is broken off, and borders are flattened. The front surface of disk is partially ornamented (Fig.1 - 2). The front decoration consists of one row with round dimples and two rows with C-shaped marks continued with round dimples. In the first row there are 12 round dimples, the second row contains nine C-shaped marks and two dimples, and the third row consists of eight C-shaped marks and two dimples. C-shaped marks are directed towards the dimples. The back side is not ornamented; it is partially covered with dendrites.

The last item is a disk of a sub-triangle shape with widening to the bottom. It looks like a large seashell (47 x 32 x 13 mm) (Fig.1 - 3). The disk is covered with C-shaped marks. The elements look somewhat deep. They are grouped in nine rows and fully cover the front side of the blade. In the first row there are six marks, the second row has 9 (10) marks, the third, fourth, and fifth have 12 elements each, the sixth and seventh ones consist of 11 marks, the eighth has 7 elements and the ninth has only 4. It is remarkable that all marks are directed towards the same side, namely, to the bottom, the wider part of the disc. The back side is not ornamented and partially covered with dendrites.

Thus, three categories of decoration are present. The categories of marks are typical of Siberian Palaeolithic art, especially the Mal'ta-Buret' culture (Lbova, 2017) and also of the matrix of signs compiled by G. van Petzinger

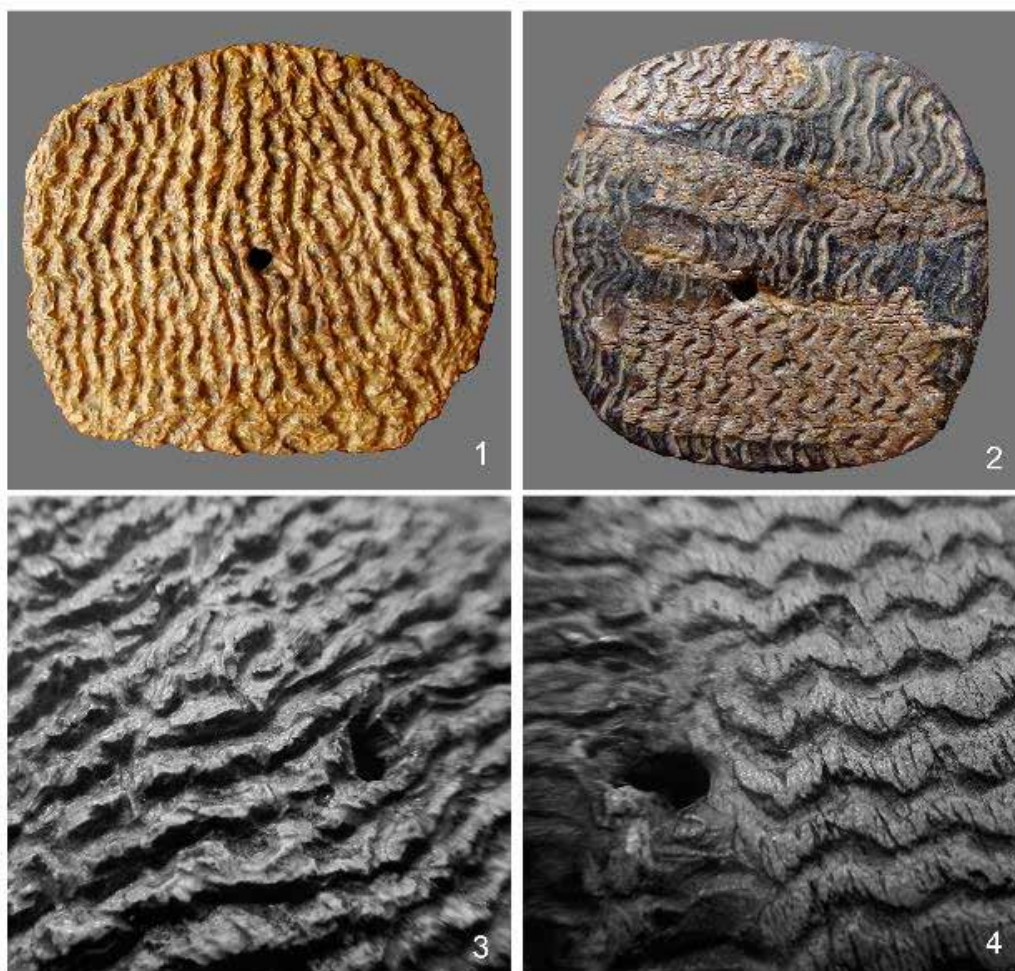


Fig.4. Disks with a wave-like ornament: 1 - a disc with a wave-like ornamentation; 2 - a disc with a zigzag ornament (from the burial); 3, 4 - a macro photo of the ornament elements (10x)

(Petzinger, 2016): C-shaped or scalloped marks, zigzag (or wavy lines), and round indentations (cupules). C-shaped marks are found on three disks, zigzag is presented on three blades, one blade is fully covered with cupules, and one more is covered partially. Undoubtedly, important information was being addressed to the “reader”; these objects of sacred importance were in the dwelling space. We can assume the use of such objects both as subjects of prestige and as ways of recording priestly mobile texts. Perhaps these plates and disks could be a kind of matrix of information, which formed the basis for the decoration of sculpture and other objects.

Discussion

To date, the position has been established that any Palaeoart image is a complex information system, a kind of text, the disclosure of which is possible only if you

refer to certain rules for working with it. Semiotics is engaged in research of information systems of any nature of origin (objects, images, sounds, smells). The concept of a mark is at the base of semiotics, which is represented differently in various scientific traditions. Transferring it to the field of archaeological knowledge requires additional adjustment, but still it does not go beyond its perception by the linguistic-literary school (F. de Saussure, V. Ya. Propp, B. M. Eichenbaum, V. V. Ivanov, V. N. Toporov, Yuri M. Lotman, etc.). Among the archaeological research can be identified classic works by H.-G. Bundy, H. Bozinski, G. Kühn, A. Laming-Empereur, A. Leroi-Gourhan, O. Mengina, J. Ozols, M. Raphael, A. Salmoni, A. M. Tallgren, E. Anati, C. Hentze, and A. Marshak. Interpretations are proposed in the works of archaeologists, historians, and art historians. In Russia, B. Frolov and V. Larichev developed interpretation techniques.



Fig. 5. Table of products with a spiral ornament. 1-4 – Mal'ta-site (1- image of fish No.370/729 (State Hermitage); 2 – macro photos of hairstyle on the head of an anthropomorphic figurine; 3 - 8-shaped suspension (from the burial) No. 1408/6 (334/335) (State Hermitage); 4- anthropomorphic figurine No.1820-209 (State Historical Museum)); 5 – Isturitz cave (private collection); 6 - Australian churinga.

In relation to the archaeology, semiotic reasoning loses its theoretical relevance, as we do not know all the elements and participants of the process. The archaeologist has at his disposal only the object, not the message. Images of a geometric nature, often accompanying Palaeolithic artistic forms, or ornamental objects of an unknown purpose are often excluded from consideration, or are adapted to mythological reality and Palaeo-shamanism.

There is a humanistic tendency to make interpretations based on ethnographic living culture. However, the continued development of this direction does not offer any other form of reading, or well-founded assumptions for reading the text.

Nowadays, we know a large number of numerous various and skillfully crafted ivory artefacts found in Stone Age in from northern Asia (Abramova, 1995; Lipnina, 2012; Lbova, 2014; Pitulko et al., 2014).

Cupule-ornamented items can be distinguished in the collection of the bone industry of the Yanskaya site. The most common collection form is the tiara, or headband, which is created in one whole piece and many fragments (more than 40). All of them are flat or convex in cross-section and have a flat back. Holes may be drilled from both the outside and the inside' also biconical drilling is noted. But these holes are larger in diameter than the Mal'ta disks' holes. Several fragments of headbands have decoration similar to Mal'ta's blades. Tiaras are decorated with dots, which are located linearly and parallel to the border, usually along the longitudinal axis, in one or several rows (Pitulko et al., 2014). Corresponding ornament (cupules) is found also in the Upper Palaeolithic Sungir site. In 1957, while the first excavations of the site were in progress, a flat bone figurine covered with a pointed design and painted with ocher was found. It is a bone slab (56 x 47 x 4 mm); the upper front part of the head is sharpened almost like a blade. On both sides of the blade the animal figurine is repeated even more schematically with lines, consisting of shallow drilled round dots with a diameter from 1–2 mm. On one side there are 48 dots; the other side has 44 dots. At the same time the body is given in two rows of dots, and the legs have one row. Some holes have bright red ocher on both sides (Bader, 1967).

The *baton de commandement* from the teenager's burial in Sungir also has similar ornament. The pole has a quadrilateral head, with round drilling in the center

of the head. On the front side there are round dots, which are positioned along the hole, from two sides of the head to the middle of the handle. Along the circumference there are 23 dots; along the sides of the head 9 and 10; along the handle 18 and 19 (they form two parallel lines); 4 additional dots between parallel lines form the third line, and on the left there are three more dots. Similar items are also found in other Palaeolithic sites. They are bone artefacts with one or two drillings, sometimes decorated with ornaments. Items with cupules are present at the Kostenki-1 site. Among the numerous finds, blade fragments display rows of deep round-shaped indentations (Khlopachev, 2016).

Among the finds at the Yudinovo-1 site the oval decorated badge blade shape and pass-through hole are similar to the Mal'ta blade. A badge of a sub-oval shape is cut out of a rectangular tusk blade. The corners of the item were cut aslant and then rounded. Both surfaces were carefully aligned. The front side is covered with ornament. A line is cut along one of the long borders, on one of the lines there are nine symmetrically located zigzags, constructed of five sloped lines about 0.5 cm long. The zigzags form rows of horizontal "firs". Along the opposite border there are 10 short parallel streaks slanted to the same side. The rows of the transverse lines along the borders form a composition with central zigzags. They are made so that the first and third lines continue the zigzag line, and the second one is strictly between them. After making the ornament, a hole was drilled in the center. The hole was made with a double-sided carving. The drilling from the non-ornamented side was significantly deeper than from the front side (Khlopachev, 2016).

Deeply carved elements of the ornament were made only on the front side of the handle. In one section, the ornament is created by rows of "firs" forming vertical zigzags; in the other section, similar elements create horizontal zigzags.

The spiral as a common Stone Age symbol is interpreted in different ways. Often the spiral is considered to be the image of a snake (Golan, 1993). The spiral is also seen as a graphic symbol of ascension as a series of returns to previous states, but at a higher level. Thus, the spiral describes the changes of the soul's existence in physical body and-between death and rebirth. The spiral is also a syncretic phenomenon containing opposing ideas: openness outside and isolation in itself, concentration around a certain center. The spiral

may be a symbol of time: the cycles of life and death, eternity and time, are close to each other with similar symbols (Kabo, 2002).

The spiral design items from the Mal'ta site are also presented outside the described objects, like the image of fish on a small ivory blade (Fig.5 - 1). The massive head is separated from the body by three grooves, which can be considered as the marked borders of the gill slits. On the sides of the tail, there are remains of fine rays, which are depicted as parallel grooves. In the center of the blade there are four concentric circles composed of cupules, which are located on a spiral line. The second circle from the outer edge smoothly passes into the tail of the fish. The decoration in the center of the fish was made in two parts: previously the sculptor carved ring-shaped (spiral-shaped) line ornament with a burin or a cutter (like on the big Mal'ta blade). Then indentations were made along the lines. The indentations were carved by rotating a burin up to 180 degrees. On the tail part of the fish indentations were made without previous engraving. The spiral is also found on Mal'ta anthropomorphic figurines (Fig.5 - 4). Similar ornamentation is made on the back of the figurine's head (Fig. 5- 2). The spiral begins on the nape and widens, framing the face part. Indentations are applied on the surface after the previous engraving.

There is a spiral on 8-shape pendants from a child's burial (Fig. 5 - 3). Small blades are decorated with 10 cupules, constructing a small spiral. The pattern was made in two parts: previous line engraving and then drilling cupules along the line. Six items were included in the set, named the "necklace from the burial of the child" (Gerasimov, 1958; Larichev, 1989).

In Palaeolithic art of the Russian Plain spiral is met not only as a drawing or engraving, but as a form of sculpture. At Kostenki-1 a flat sub-spiral shaped item has one end-narrow and pointed, the other, facing the imaginary center, is wider and triangular. The artefact may be a sign-symbol, schematic image of curled up snake. One more find from the Kostenki-1 site is a flattened disk ornamented on both sides, and is similar. On the front side there is a ring and a ring-shaped semi-spiral, which encircles the circle located in the center of the item. The artefact is considered not only as an image of a snake, but also as a schematic sketch of a snail (Khlopachev, 2016).

The spiral design is also found on Palaeolithic western

European items. One of the prime examples is Isturitz's rods. These rods, which are made of deer horn, are covered with a series of drawings consisting of concentric circles and different types of spirals: simple, S-shaped and double spirals (Fig.5 - 5). Similar rods were also found at Arudi (Atlantic Pyrenees) and Lurdi (High Pyrenees) (Passemard, 1920).

The main trend in the development of Neolithic art is the transition from a realistic to a schematic image. Schematic images of the Neolithic age are found so widely: on southern European rocks, on the grave-stones of England, Ireland, France. Then there are the petroglyphs of the rock art of the Caucasus, the Middle East and Central Asia, the Far East, Korea etc. The images consist of symbols: crosses, swastikas, C-shaped marks and spirals. Among the Neolithic petroglyphs of the Far East at Sikachi-Alyan, there are also images of spirals, which are interpreted as images of snakes or an element of a tattoo (Okladnikov, 1971).

In ethnographic materials the spiral is often found on the churinga, one of the most important worship items for Australian aboriginals. Churingas are stone, bone or wooden oval-shaped bars covered with various geometric decorations of parallel lines, circles, and spirals (Fig.5 - 6). Thickening or holes at the end of some items from the Palaeolithic complexes made it possible to use them as hooters (Kabo, 2002).

Figurative and symbolic images are involved in the analysis of the principles of decoding. Techniques combine arithmetic, the calendar, astronomical hypotheses, and language (Weis, 2003). There are variations in the explanation of the semantic nature of the cipher (the problem of the fidelity of the chosen key to the sign decryption remains open). The same subject demonstrates the beginnings of mathematical knowledge, the existence of a developed metric system, and the extraction of calendar and astronomical information from it (Frolov, 1987; Weise, 2007).

According to V. Larichev (1986, 1989, 1999), ornamentation on Mal'ta's items is an ancient countable calendar/astronomical system. Exploring the big Mal'ta blade, V. Larichev counted the number of cupules in every spiral. He noted that every indentation of the blade is informational polysemantic indentation, so that the cupule system has also several meanings. Foremost, the system is the strict numeral-ornamental record of a calendar/astronomical period, the duration of which is nine "big saros" or 468 tropical

years. At the same time, when the calendar significance of each indentation changes at the right moment, the pattern turns into records of eclipse repetition cycles (Larichev, 1986).

More often than not, an archaeologist is not ready at the proper level to reason about informational content and reading of non-utilitarian material found. Nevertheless, a specialist is able to clarify an extremely important context for its analysis, including stratigraphy, spatial situation, tool-kit complex, etc. Our opinion is that items have meaning as an intertextuality phenomenon, and are special objects of transfer and storage information, and objects of social prestige.

Conclusion

Examples of Palaeolithic visual art from beads to highly artistic works are extremely capacious information systems that are understandable to both parties in the dialogue (Lbova, 2016). Palaeolithic information can be read and interpreted, like any other information system. However, with all the optimism of this thesis, we are not sure of the accuracy of our understanding or the accuracy of reading the text, due to the specificity of the archaeological source.

To improve the methodological and methodological strategy of this procedure, it seems necessary to move it beyond the framework of practical archaeology. This methodical principle is explained by E. M. Meletinsky (1998, p. 34). Its main goal is to schematize the nature of the object under study, particularly the method of image interpretation. The operation further simplifies its structuring and reveals the specifics of the whole, beyond archaeology in general. The specifics of archaeological knowledge and the trends of its development are most often excluded from the field of their interests, which continues to be pictorial activities of the primitive era.

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MEMORIES OF THE OCEAN

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Introduction

Most indigenous peoples from the Argentinian Gran Chaco state that there is an ocean under their feet. They are right: there is an ocean underground. Or, more precisely, there was an ocean there. The Gran Chaco was covered by the salty water of the present Pacific Ocean in geological times, before the Cambrian period, when the Andes mountain range was not even visible. Currently, subterranean waters are mostly salty, the remnant of prehuman times.

The knowledge of the presence of the ocean is well rooted in time, although its origins are not clearly defined. However, both vocabulary and myths, as well as some material representations typical of Chaco aboriginal peoples, refer to the ocean as an ordinary feature of the surrounding landscape.

The South American Gran Chaco

The Gran Chaco area is located at the heart of South America (Figure 1), on the borders of the Mato Grosso massif, an environment that persists as a tropical forest despite modern capitalist efforts to destroy it.

Broadly speaking, the region may be divided into two sectors depending on rainfall: the semiarid Chaco to the west, with an annual rainfall of 600 mm, and the humid Chaco to the east, where rivers and marshes are common (Vargas 2006). A large variety of habitats developed in both sectors, ranging from arid steppes to tropical forests. They are populated by myriads of mammals, birds, insects and reptiles, and an equal variety of vegetation.

Several indigenous cultures have the Grand Chaco as their homeland, although not all of them can enjoy their traditional hunter-gatherer way of life, due to the uncontrolled advance of soy agriculture and the consequent destruction of the native forest by tree cutting, burning of the vegetal carpet and dissemination of agrototoxic products which destroy, either immediately or by accumulation, any living creature – even human beings – except for genetically manipulat-



Fig.1. Distances from the Chaco region to the oceans.

ed soy. Fortunately, some scattered patches of forest persist, usually in marginal areas, and several ancient communities manage to survive in an increasingly pauperized situation. Many ethnic groups have sadly been devastated and a large number of members of different communities decided to migrate to urban centers, leaving whole areas deserted.

In modern political terms the Gran Chaco covers the northeastern quarter of Argentina, about half Paraguay and a sector of Bolivia and Brazil. In the Argentinian part, 17 ethnic groups were censused in 2010, with diverse representation. The most numerous groups in the southern area are the Wichí (aka Mataco), Qom (aka Toba) and Moqoit (aka Mocoví), but many other groups share the territory. The first two inhabit the central and northern areas and had a late incorporation into the western social system. They also preserve a rich corpus of legends and myths that relate ethnic cosmogony and explain traditional lifestyles, as do many of the minority groups.

Being in the centre of South America implies that the region has no connection to the ocean, which is some 1,200 km away to the west (with the Andes mountain range in between), and 1,300 km to the east (Figure 1). Distances to the north and south are even longer. However, the ocean extended throughout the Chaco plains in the Cambrian period some 570 million years ago, before tectonic movements changed the landscape of the American continent by the uprising of the Andes and the depression of inner basins such as the modern Gran Chaco. At the time, the salty water which used to cover this area started filtrating to underground layers, concentrating salt and other minerals under the surface. Nowadays, one of the big problems faced by local native peoples is the increasing fresh water shortage, as underground water in many areas is not appropriate to drink due to its sea origin.

Memories of the ocean

Both in the Wichí and Qom languages there are words to describe the “sea”, which is more than 1,000 km away from their traditional territories and inaccessible to most aboriginals. Furthermore, they still call “the coast” the transitional area between the forest and the mountains (i.e. the *yungas*), referring to the sea coast which effectively was there in Cambrian times. How did the natives of the Gran Chaco gain knowl-



Fig. 2. Mermaid in Qom pottery from the end of the 1960s (Museo de América collection, Madrid).

edge of such distant events? Taking into account the age of humans on earth as well as the most accepted theories of the peopling of America some 30,000 years ago at the earliest, it is impossible that there were visual witnesses of the geological movements which segregated the area from the ocean.

This knowledge must have a more deductive nature. However, it did not result from contact with modern researchers, as the ancient local vocabularies include a series of words related to this phenomenon. It is also extremely impossible that the information about the existence of the ocean was transmitted by travelers or tradespeople from either the Pacific or the Atlantic coasts. In cultures with such a rich oral history as the Wichí and Qom universes, it would be rather unusual that no legend included mentions of these “messengers” or travelers while most of the remaining aspects in their surroundings and the traditional way of life are represented. The reason may lie in the way these cultures explain the environment they used to live in.

Evidence of the sea

Although they are not frequent, records of the ocean can be found in the Gran Chaco. Here there is no rock art evidence since rocks are foreign to this landscape, so the information must be found elsewhere. Wooden carvings, one of the most frequent artistic expressions in the area, depict modern animals, particularly birds. Decorations on pottery are rather limited and, although they may represent water currents, they look more like rivers and lagoons than vast extensions of salty water. In the case of the Qom pottery, however, a classic character connected to the sea is modeled, the mermaid, locally known as the *Pa'bla* (Suárez 2012). Some Qom potters argue that mermaids have always existed and, though nowadays they swim and hide in any water current, they originated in the sea. As Qom pottery was not figurative until the second half of the 20th century, most representations of mermaids available in museums decorate ashtrays or small trays (Figure 2) which can be offered to tourists.

Another aspect where pottery reflects the idea of the sea is in its composition. All traditional hunter-gatherer groups in Chaco modeled a specific type of water container using local clays tempered with burnt and crashed bones or shells (Vidal 2018). In the case of

the latter, potters can tell the difference between sea and river molluscs (Figure 3) just by observing them, and they assign them structural differences: fresh water specimens are selected for their properties, whereas fossil and salty water molluscs would weaken the vessel, according to the local lore.

Where references to the sea appear once and again is in familiar places and oral stories. Just a few of them are discussed here as an example of the domesticity of the idea of the sea for Chaco indigenous peoples.

Rocks are absent in this plain, so the few lithic instruments are collected from the area in contact with the Andes range. Despite the impressive size of the mountains, what is significant to most aboriginals is that this is “the sea coast” (Alvarsson 2012a: 328), erasing the limits between the past existence of the ocean and the modern configuration of the landscape.

Similarly, the origin of thermal waters is explained by the interaction of the emerging mountains and the presence of the sea in the depression: both phenomena were the mythical punishment for the massacre caused by the hero Yacu Rupaj (AA.VV. 1983). Another hero who survived a massive killing was the bird known as *chuña* (*Cariamidae* sp.). After hiding near the sea (probably indicating only a faraway place) he returned to the Chaco and discovered an underground cave where a human couple had survived the holocaust. The sea is here seen as a refuge that allowed the survival of Chaco life.

A third hero is also connected with the ocean in local oral literature (Alvarsson 2012b: 351). After being punished with ostracism for breaking a food taboo, a young man travelled to the end of the world crossing the ocean on a *yacaré* (*Caiman yacare*) and underwent many adventures. It is said that the hero resorted to a freshwater animal that is often mistaken for a sea creature in popular folklore. As regards animals, sea creatures are not absent in the descriptions and some of them are quite peculiar, such as the *niitsetaj* or sea pig (Alvarsson 2012a: 414) or the mermaids mentioned above.

Many more legends where the sea is mentioned are told by Chaco indigenous population. To end this presentation, two more are transcribed; they are some of the most popular stories due to the importance of the characters implied. The first one has as a protagonist a typical tree of the semiarid Chaco: the *yuchán*



Fig. 3. Molluscs present in pottery manufacture.

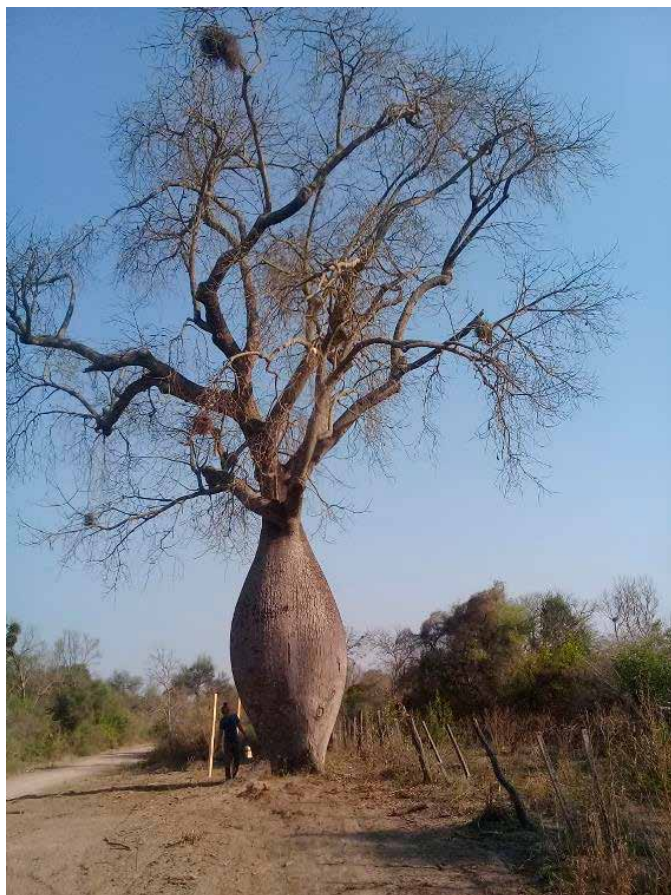


Fig. 4. The yuchán tree in Paraje 4 de febrero, Chaco impenetrable forest.

(*Ceiba speciosa*) (Figure 4). It is said that the Wichí hero Takjuaj and his son traveled to a village where this magic tree produced fish, but he killed a taboo fish and the sea started flowing from the tree (Palavecino 1940).

The last story relates to the origin of the Paraná river, the eastern border of the Chaco region. This river is associated with many events in indigenous and colonial history. According to the legend, Cambá, an indigenous warrior, was punished by the evil spirit *Añá* and mutated into a large fish. Nowadays, when it moves, this fish is responsible for the strong waves present in the river, that is consequently named *Paraná*, a Guaraní word meaning “relative of the sea” (Roverano 1955).

Closing remarks

The absence of a specific feature in the modern landscape does not necessarily imply it does not exist in

the mythological perception of its inhabitants. The memories of an event which no human being could have witnessed such as the existence of an ocean on the Chaco plains may be as vivid as any lived experience and explain the physical and supernatural world as well as any scientific argument.

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NOTES AND NEWS

ATELIER, RESEARCH CENTER FOR CONCEPTUAL ANTHROPOLOGY

WHAT IS CONCEPTUAL ANTHROPOLOGY?

Conceptual anthropology is the discipline concerned with the arts, rituals, beliefs, and other intellectual and spiritual expressions; it combines various sectors of the human and social sciences to consider the meaning of behavior, habits, and other cultural indicators, using experiences of the past to understand the present and conceive of the options for the future. The concept gestated for some time until it was formalized during the UISPP Congress in Florianopolis, Brazil, in 2011, setting new horizons for human sciences. The participants in the session CISENP “International Scientific Committee on the intellectual and spiritual expressions of non-literate peoples” decided to make the newly proposed discipline, conceptual anthropology, the concern of the committee.

The goal of this new discipline is to understand human behavior and cultural trends, recurring and isolated phenomena, and predictable and unpredictable evolution and change, not only in economics and technology, but also in social, intellectual, and spiritual life, relying on a vast assemblage of knowledge and concepts from various disciplines, from psychology to history, from archaeology to sociology. It is a permanent journey of discovery and emotions. Archaeology and anthropology, the history of art, and the history of religion can benefit enormously from cooperation with sociology, psychology, semiotics, and other sectors of the human and social sciences.

Each discipline has its own memory as the basis of research and the advancement of the discipline itself. Combining disciplines is also a union of memories and concepts for a broader base of research and culture. Today media replace technical and historical memory. But the human mind’s insights and associations are still irreplaceable. Our being and our actions are rooted in memory. Human behavior relies on memory. When mistakes are made, they often derive from

the darkening of memory. On the other hand, positive results come from its good use. Here we are not talking about an electronic memory, but the kind of memory that turns into intuition and rediscovery, the memory coming from the deep well of human minds. Every human being, like every discipline, focuses on certain aspects of memory and neglects others. Together, various disciplines share wider dimensions of memory. As it becomes clear from the contributions of over 200 authors from 40 countries, in the issues of **EXPRESSION** magazine of the last six years, such an approach offers an immense contribution to the study of the intellectual and spiritual expressions of non-literate peoples. One of the purposes is the common commitment to the understanding of intellectual and spiritual expressions, with the shared support of multidisciplinary research. As students of various disciplines, anthropologists and archaeologists, psychoanalysts, educators, sociologists, semioticians, philosophers and historians, we all wish to face questions which a shared commitment can help clarify. The meeting of different disciplines offers a new dimension of knowledge and greater capacity for analysis and synthesis. Faced with the fashion of extreme specialization, which risks reducing scholars to technicians, conceptual anthropology goes against the tide. No doubt technicians are needed, but we seek a cultural vision and a broad overview in the common work of the humanities and the social sciences. Let technicians and intellectuals be aware of their different roles, let them do their own jobs and then enrich each other through the output of their efforts. Research has a real social function when it produces culture. When culture is creative and innovative, it promotes the growth of intellect and stimulates new thought. The dialogue is open to all disciplines of the humanities and social sciences as well as to those who do not identify themselves with any specific discipline or who just want to listen. Each listener is a potential transmitter of ideas: ideas grow and spread not only

through those who produce them, but also through those who listen. The dialogue does not stop and is a source of growth and enrichment, and also of co-operation and friendship. Research is a provocative, stimulating, and inspiring source of awareness.

The world crisis is a cultural crisis, a crisis of values and wisdom that has economic, social and political consequences. Economic problems may find solutions but without strong cultural bases society will not solve the cultural crisis and the long-range problems of social and economic stability. Reviving the role of culture is our modest joint effort to contribute to overcoming the crisis.

RETHINKING EINSTEIN: KNOWLEDGE VS. IMAGINATION

"The true sign of intelligence is not knowledge but imagination." This strange quotation found on the internet is attributed to Albert Einstein. May we claim that both of them are needed?

Imagination without knowledge and knowledge without imagination are the two extremes of dullness.

E. A.

APPRENTICESHIP IN CONCEPTUAL ANTHROPOLOGY

Atelier Research Center for Conceptual Anthropology is a workshop for research, experiment and debates on the intellectual and spiritual expressions of cultures. It is a meeting place for the arts and sciences. The apprenticeship, under the guidance of Prof. Emmanuel Anati, the founder of conceptual anthropology, may last from a minimum of two months to a maximum of one year. It grants the apprentice the title of Research Assistant. The apprenticeship is oriented to the acquisition of practical operational abilities and conceptual formation; it includes participation in research, editorial activities, compilation, the organization and layout of exhibitions and publications, the arrangement and cataloguing of ethnological collections, and the planning of cultural and scientific projects. It is a way to touch the practical work of producing culture with your hands and your mind. Traditional learning as an accumulation of theoretical notions is enhanced by applying the notions in practical activities, learning to do by doing.

During their stay in the Camonica Valley, the student has access to self-catering accommodation on campus,

at a student fee. Preference is given to graduates and other seriously motivated young people with knowledge of the English language and operational abilities on a database. Application in an informal letter should specify the motivations and skills of the candidate, and be accompanied by a curriculum vitae, a copy of a record of studies, a copy of an identity card or passport, a recent passport-standard photo; and a letter of presentation or recommendation from a university professor or a previous employer. Applications should be addressed by email to: <atelier.etno@gmail.com>.

LEARNING TO BE AN EDITOR

Readers interested in learning editorial work may apply for three months' editorial training at **EXPRES-****SION** Quarterly Magazine. Skills required: perfect knowledge of the English language; ability to manage various relevant computer programs; ability in public relations; and a special interest in anthropology and archaeology. For applications or further information, please address a letter expressing your interest and motivation, including a copy of an identity document, to: <atelier.etno@gmail.com>.

POSITION OF ASSISTANT CURATOR OF ETHNOGRAPHY

Graduate students in anthropology and ethnography are given the opportunity to train as a curator of ethnography. The engagement consists in classifying old ethnographic collections of art objects from Oceania and Africa. The expected result is the compilation of a catalogue of a given collection, eventually to be published under the name of the compiler. The successful experience gives the apprentice two important additions to his/her curriculum vitae: the publication of a scientific work; and the position of Assistant Curator of Ethnography for the period of time of his/her engagement. The experience takes place in the Camonica Valley, northern Italy, and is expected to last a minimum of three months. Candidates should have a perfect knowledge of the English language and possess a university degree in the human sciences. During their active presence, the accepted candidates have access to self-catering accommodation on campus at a student fee. Applications should include a letter expressing motivation, a record of studies, a copy of an identity document and any other document worthy of consid-

eration. Applications should be addressed by email to: <atelier.etno@gmail.com>.

HOW TO BECOME A MEMBER OF THE UISPP

EXPRESSION, this e-journal, is produced by ATELIER Research Center in Conceptual Anthropology, in cooperation with the UISPP-CISENP (International Scientific Committee on the Intellectual and Spiritual Expressions of Non-literate Societies), an organ of the UISPP (International Union of Prehistoric and Protohistoric Sciences). UISPP also offers other facilities, including participation in its World Congress. Membership of the UISPP will ensure your status as a UISPP Active Member of CISENP. If you are a member of UISPP, please confirm your status to <atelier.etno@gmail.com>. If you are not yet a member, and wish to attend the World Congress, you should become a member of the UISPP. For further information contact the office of the General Secretary: loost@ipt.pt.

CISENP: *Commission Internationale Scientifique pour la recherche des Expressions Intellectuelles et Spirituelles des Peuples sans Écriture*

Visual arts, music, dance, rituals, myths, traditions and other aspects of the conceptual expressions of humankind reveal the particularities of each society and, at the same time, the common intellectual and spiritual heritage that unites humanity. CISENP, *Commission Internationale Scientifique pour la Recherche des Expressions Intellectuelles et Spirituelles des Peuples sans Écriture* (International Committee on the Intellectual and Spiritual Expression of Non-literate Peoples), welcomes people from different disciplines to share their experiences, ideas, and scientific approaches for a better understanding of human creativity and behavior and for a broad-minded study of what forms the roots of the present. Prehistoric archaeology is in urgent need of this new landscape, conceptual anthropology, in order to take a step forward. It is a new academic approach for building up a solid future for the study of man. Archaeology, both prehistoric and historic, needs a constant and open dialogue with other disciplines. The study of man includes anthropology, sociology, psychology, human geography, semiotics, art

history, and other disciplines that should unite their efforts. This is the aim of conceptual anthropology. What will be the image of prehistoric sciences in the future? How can we convey to a large public the notions and wisdom accumulated by generations of scholars in the study of the roots of human societies? Understanding the past is necessary to build up a future. And not only for that: it is also necessary to understand the present, our present. Knowing one's roots is the elementary base of culture. In the tribal world, young people have been and still are being initiated into the knowledge of their past. The study of prehistory must awaken interest and passion in the public: there is nothing more fascinating than discovering the background of human behavior, the emotions and passions that have caused the intellectual and spiritual adventures of humankind. This is the message that we can convey to our society. Let us join efforts to develop public awareness, education, engagement, research, for a broader understanding of our past and our present. We can convey this passion only if we share this passion. You are welcome to join: <atelier.etno@gmail.com>.

HOW TO BE A MEMBER OF CISENP

Very simple! Be active and you are a member. Express your ideas, participate in debates, and develop dialogues with other members orally, by email, or through the pages of EXPRESSION magazine. If you have something to say this is your home. Membership of CISENP is free of material charges; no fees are requested, no formalities; it just implies your active conceptual presence. Membership is not exclusive to prehistorians; it is open to all human and social scientists. It is advisable, but not compulsory, to be a member of UISPP. CISENP is a free association, and is free also from bureaucratic procedures. You become a member if you decide to be and ask <atelier.etno@gmail.com> to be included in the list of members.

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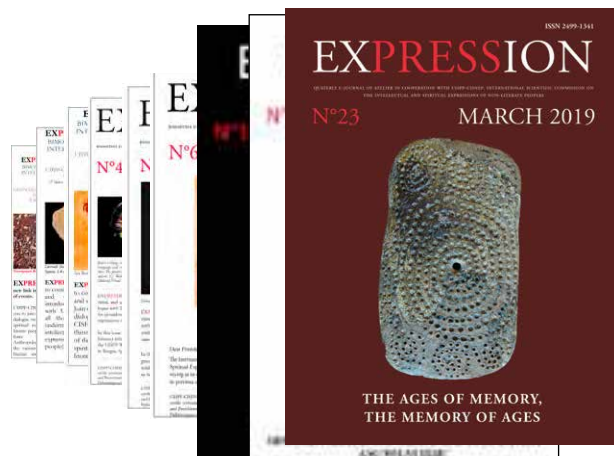
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201 AUTHORS from 40 COUNTRIES

COUNTRY	NUMBER OF AUTHORS	COUNTRY	NUMBER OF AUTHORS
Argentina	7	Kosovo	1
Armenia	3	Malta	1
Australia	9	Mexico	3
Austria	3	Morocco	1
Belgium	5	Namibia	1
Botswana	1	Netherlands	1
Brazil	8	Norway	2
Bulgaria	1	Poland	2
Canada	4	Portugal	8
China	29	Russia	4
Colombia	1	South Africa	4
Denmark	2	Spain	8
France	12	Sri Lanka	1
Germany	1	Sweden	1
Hungary	1	Switzerland	4
Israel	3	Tunisia	1
India	9	UK	9
Italy	14	Ukraine	2
Japan	1	USA	16
Jordan	1	Zimbabwe	1

EXPRESSION

N°23 March 2019



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September 2013

An Introduction to Conceptual Anthropology and topics to be discussed in the following issues of Expression Magazine



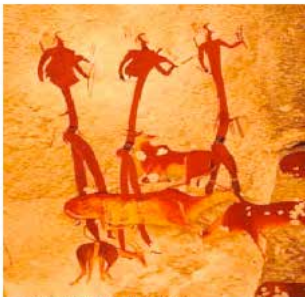
Maori chief with moko, Captain Cook expedition.

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November 2013

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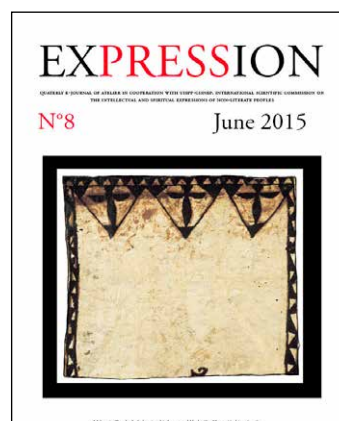


Figure 1. Toca do Salitre, Serra da Capivara, Piauí, Brazil. Symbolic male character with his acolyte character, a pregnant woman.

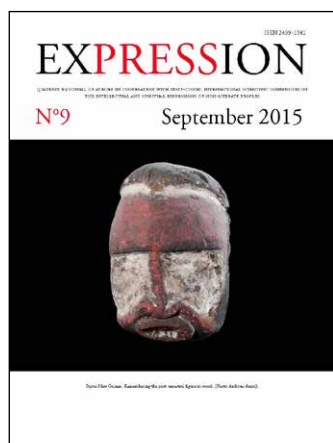
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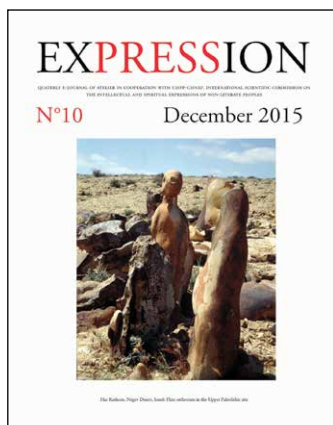


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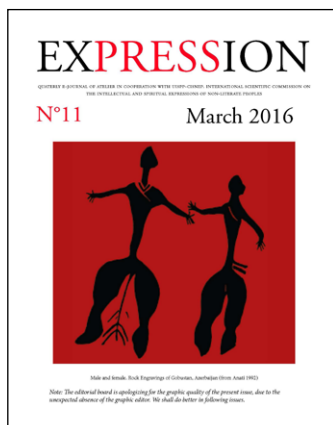
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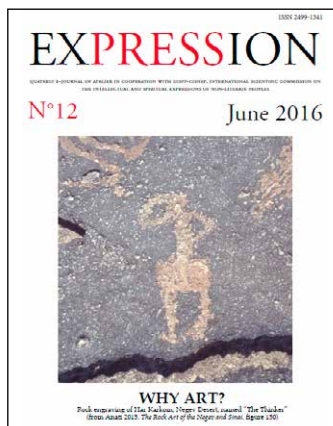
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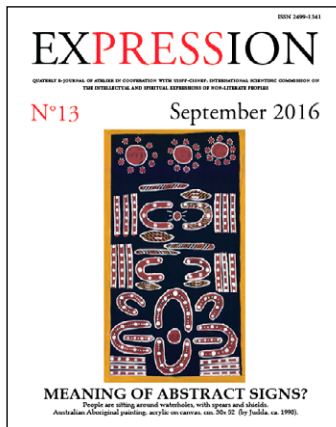
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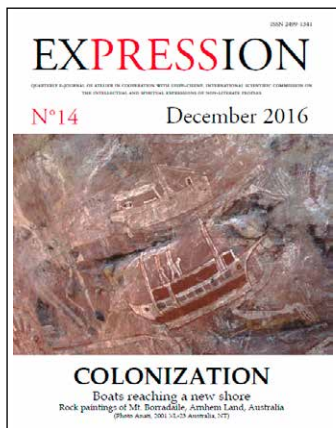


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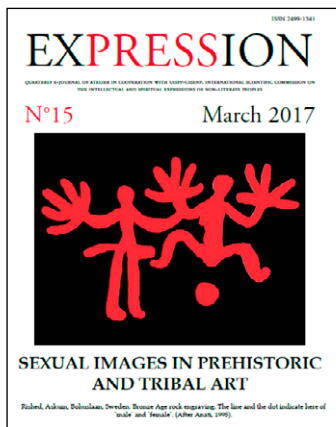


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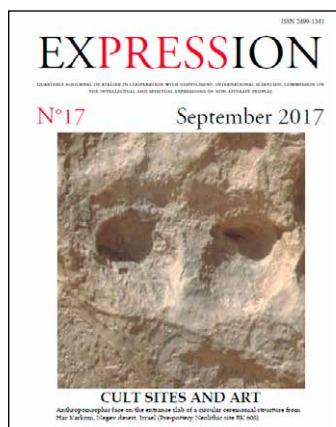


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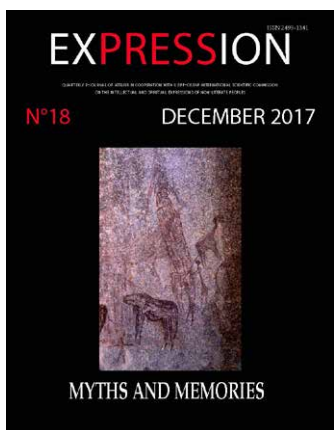
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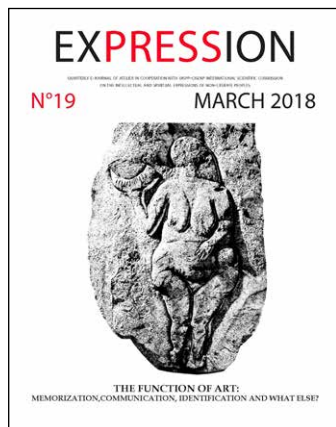
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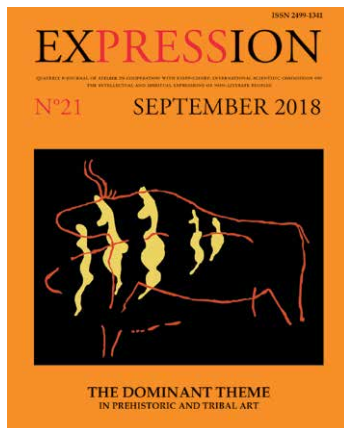
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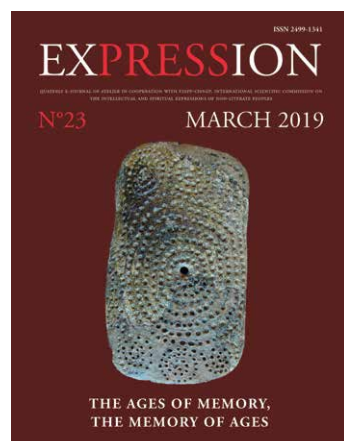
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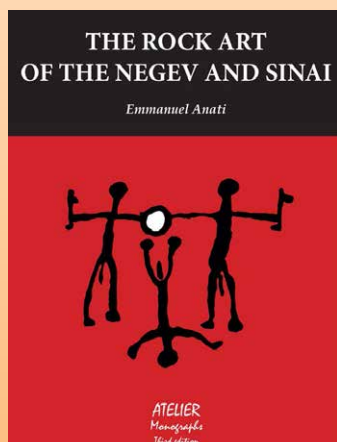
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ARCHAEOLOGY AND THE BIBLE

Atelier is pleased to present

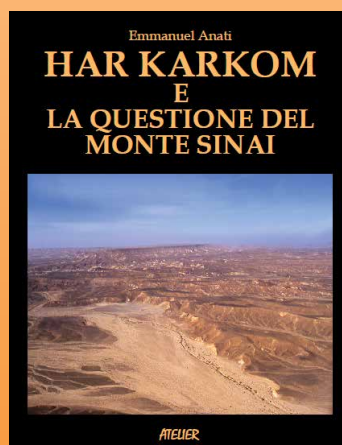
ARCHAEOLOGY IN THE DESERT EXODUS: NEW DISCOVERIES RELATED TO BIBLICAL ARCHEOLOGY

From excavations and explorations in the deserts that separate the land of Canaan from Egypt, Emmanuel Anati, the scholar who for half a century is exploring these deserts, sums up new discoveries in the following volumes. Richly illustrated books bring new light on the events that inspired the Biblical narrative.



Anati, E., 2015, *The Rock Art of the Negev and Sinai*, Third English edition, Capodiponte (Atelier), 248 pp. 248; 196 ill., €20,00

The book deals with a new theme of Neareastern archeology: the rock art of the Negev and Sinai. It presents new discoveries and reconsiders contents and assumptions of previous articles and of a book by the same author that dates back to 1979. The richly illustrated book is offering a new vision of this immense archive engraved and painted on rocks that reveals events and beliefs of the desert. The rock art of the Negev and Sinai illustrates stories and customs of the Sinai Peninsula over the past 10,000 years. Some depictions of the Bronze Age may refer to people mentioned in the Pentateuch. Others, of Roman-Byzantine times, illustrate life and customs from the age of early spread of Christianity.



Anati, E., 2016: *Har Karkom e la questione del Monte Sinai* (*Har Karkom and the Question of Mount Sinai*), Italian edition

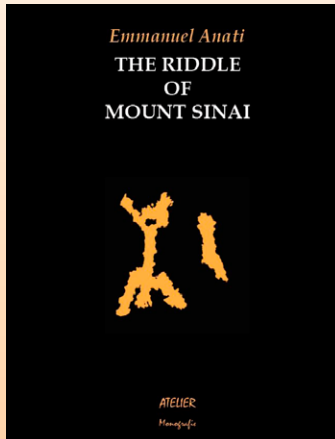
Capodiponte (Atelier), pp 220; 138 ill., €30,00

The findings of shrines and encampments of the Bronze Age at Har Karkom, a mountain located in one of the driest places and inhospitable parts of the Negev desert, in the north of the Sinai Peninsula, arouses a global debate on the hypothesis that this mountain can identify with the biblical Mount Sinai. The book presents a summary of the discoveries; it calls into question previous assumptions about the reliability of the Exodus Biblical narrative, both on the location of the mythical Mount Sinai, and on the chronological discrepancies proposed by various researchers. The book is richly documented by photographs, maps and other illustrations, it updates on recent discoveries, analyzing their possible historical significance, suggesting a new vision of the events narrated in the Bible.

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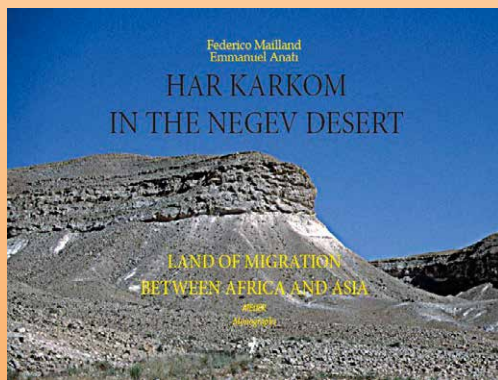
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Anati, E. 2017, *The Riddle of Mount Sinai*, Second English Edition

Capo di Ponte (Atelier), 260 pp. 141 pls. € 40

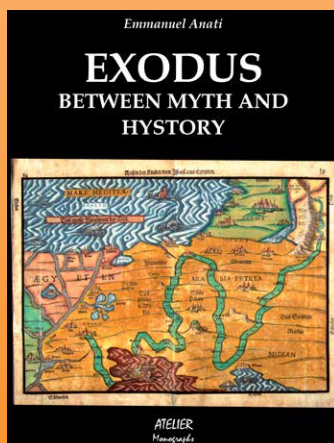
What is the true story behind the biblical narration of Exodus? The discoveries of the Italian archaeological expedition at Har Karkom, in the Negev Desert, tell the hitherto unknown story of the sacred mountain in the heart of the desert of Exodus, reflecting surprising similarities to the events and conditions described to us, albeit in mythicised form, in the Old Testament. The mountain was a paramount cult site and the archaeological discoveries go far beyond the expectations. This well documented volume also helps to clarify a major question: to what extent may we consider the biblical narration as a source of historical documentation.



Anati, E.; Maillard F., 2018, *Har Karkom in the Negev Desert. Raw Material for a Museum on Two Million Years of Human Presence*

Capo di Ponte (Atelier), 130 pp., 534 pls., € 110, English Edition

A mountain located in the land-bridge between Africa and the rest of the world yielded traces of ages of human presence ever since the first steps of the human ancestors out of Africa. The archeological discoveries tell us of two million years, from the earliest stations of archaic Pebble Culture, to recent Bedouin camping sites. The site became a holy mountain with shrines and other cult structures already in the Paleolithic; it developed into an immense cult site in the Bronze Age, likely to be the biblical Mount Sinai. The present book is displaying the results of over 30 years of fieldwork, the raw material of the sequence of ages, for a museum on Har Karkom in the Negev Desert, presenting the story of humankind as concentrated in a mountain of a few square miles in the middle of one of the most arid and nowadays most inhospitable spots in the Near East.



Anati, E., 2018: *Exodus Between Myth and History*, English edition

Capodiponte (Atelier) pp. 388; 138 pls., Analytical Appendix., € 40,00

Different opinions divided the academic world about the historic reliability of the biblical narrative of Exodus. The events in Egypt, the wanderings in the desert under the leadership of Moses and the events at the foot of Mount Sinai are they based on facts or are they just legend? Broad and systematic explorations on the ground and new archaeological discoveries open up the possibility of tracing back the geographical and environmental context, by providing elements that bring new insight on the historical roots of this magnificent epic passed down from the Bible.

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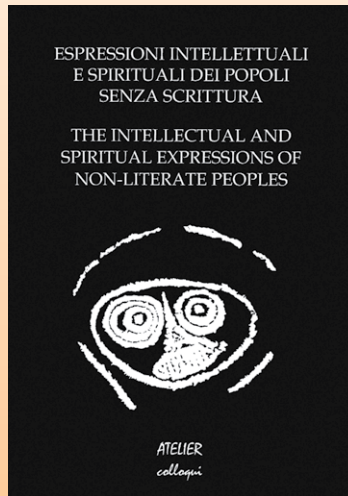
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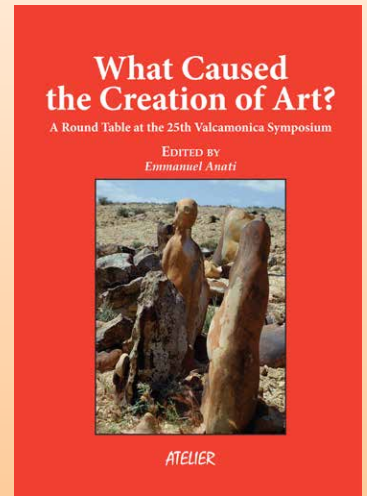
Il segni originari dell'arte (In Italian)

Proceedings of the Colloquium held at the University of Urbino in 2010. Essays by nine authors who deal with the theme seen from various disciplines: Anthropology, Archaeology, Art History, Semiotics, Psychology, Psychoanalysis, Sociology.



Espressioni intellettuali dei popoli senza scrittura (In Italian, English, French)

Proceedings of the Colloquium organized in Valcamonica by the International Union of Prehistoric Sciences in 2012. Essays by 30 authors from 11 countries on the intellectual expressions of the primary societies.

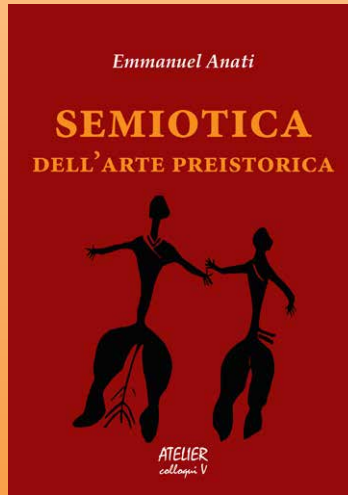


What Caused the Creation of art? A Round Table at the 25th Valcamonica Symposium
What caused the creation of art? People from different disciplines and different cultural backgrounds present contrasting views. And yet, the same question has bothered thinkers for generation



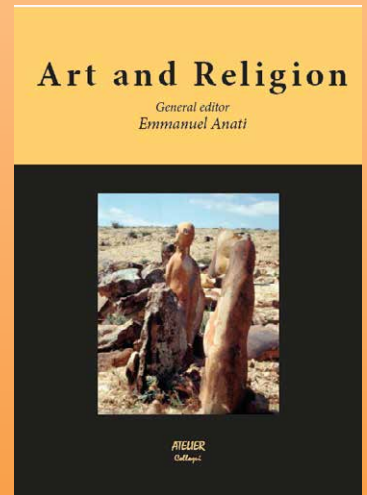
Sogno e memoria: Per una psicoanalisi della Preistoria (In Italian)

A series of papers presented at Congresses of Sociology, Psychology and Psychoanalysis concern. The analysis of human behavior and of graphic art externalizations is opening new perspectives to the social sciences and multidisciplinary cooperation.



Semiotica dell'arte preistorica (In Italian)

The conceptual meaning of the forms, the metamorphosis of shapes into sounds, sounds in forms, ideas into images, thoughts in words, it is the very basis of identity of the intellectual being, of 'Homo intellectualis'. This mechanism stimulated, over the years, some of the author's papers and lectures in congresses and conferences of semiotics, sociology and psychology.



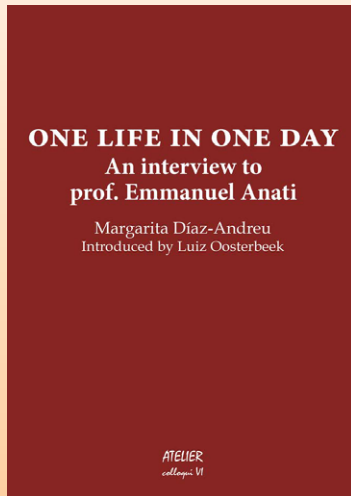
Art and Religion

What is the role of religion, magic and witchcraft in prehistoric and tribal art? The intellectual and spiritual motivations of art produced various theories since the first attempts to explain prehistoric art over a century ago. Recent research is revealing more complex conceptual connections. In this book, authors of different backgrounds and countries, from four continents, present examples of specific aspects, providing first-hand data.

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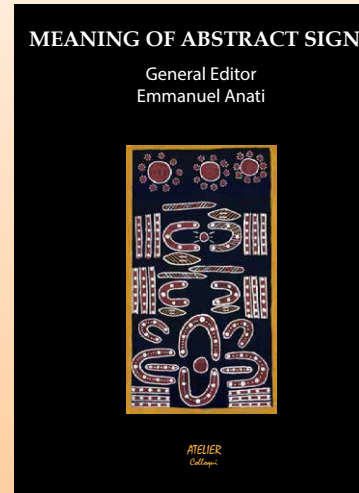
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One Life in One Day.

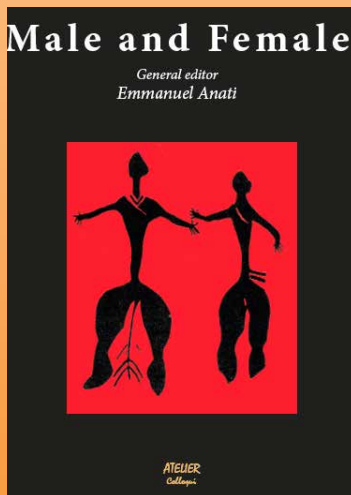
An interview to prof. Emmanuel Anati

In the gardens of the campus of Burgos University, while delegates were moving from sessions and lectures to coffee breaks and back, Margarita Díaz-Andreu recorded, for hours, the words of Professor Emmanuel Anati. It was the 5th of September 2014 and when the electric lights of the evening replaced the sunlight, a life-long story was drafted. It concerned just one aspect of Anati's life, that of his experiences as a scholar in the human sciences.



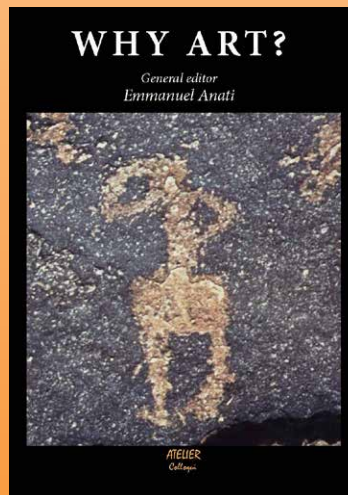
Meaning of Abstract Signs

The clan was planning a fight against another clan that had abused hospitality hunting kangaroos in a reserved ground. The painter recorded the gathering of the elders to decide the expelling of the guest clan. He represented the elders and the warriors by standard signs. The art-dealer sold the painting as an "Aboriginal abstract composition". The meaning came from the people of the clan who saw the painting explaining the recorded event. Other examples and studies attempt at defining the meaning of abstract signs.



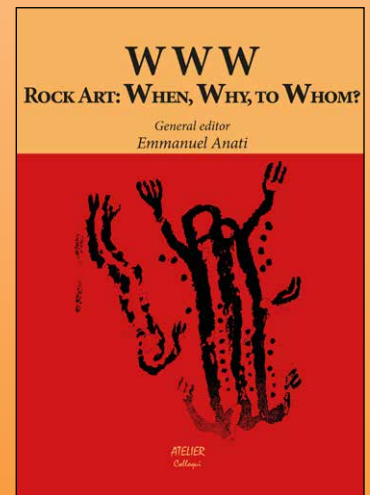
Male and Female

The book includes papers of 20 authors from five continents. It considers human representations in prehistoric and tribal art presenting a broad landscape of different views and cases. In each age and culture a specific choice is emerging in the visual arts, between preferring male or female images, and between having or not the human figure as the main concern. The book presents different cases and views from experts of five continents.



Why Art

The volume presents a search of contents by scholars from different continents with different experiences. Prehistoric art is like the literature of more recent times, some depictions may concern science, others religion, some may be school textbooks and others fiction. The decoding of prehistoric art helps to approach the understanding of contents and motivations



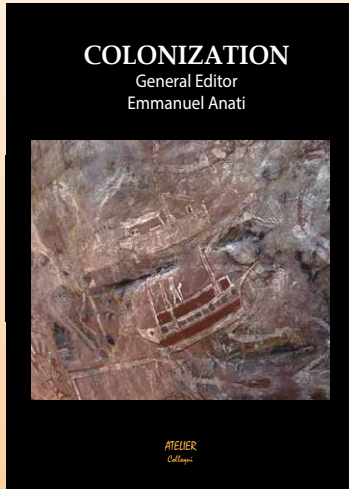
WWW - Rock Art: When, Why and to Whom

How come that Rock art is widespread in five continents? Some sites, in South Africa, Australia or Brazil, count well over one million figures. They were produced over centuries and millennia. What made generations persist in this tradition of marking the stone surfaces with the records of their minds? Why did they invest on it such immense time and energy?

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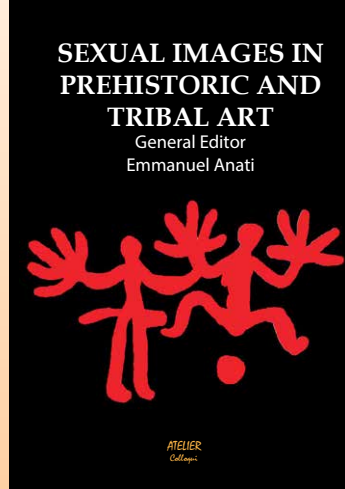
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Colloqui



Colonization

From an original land of origins, likely to have been in Africa, the ancestors of humankind colonized all corners of the globe. Other primates still survive in their limited habitat; humans live in the equatorial regions as well as near the Arctic pole. How did such colonization take place? Authors from five continents replied to this question: a selection of their papers appears in this volume.



Sexual Images in Prehistoric and Tribal Art

Since the earliest figurative art, sex appears to be a theme of primary concern in every corner of the world. Why were such depictions made? In some cases oral traditions allow us to identify the cause or the inspiration. Can we trace back the stories behind the images? Sharing knowledge is favoring an overview on images, myths, rituals and customs related to sex, in prehistoric and tribal art.



Etnogastronomia - La cucina dei popoli (In Italian)

Tra le 10.000 popolazioni che vivono negli oltre 200 Paesi del pianeta Terra, abbiamo scelto le cucine di undici punti del globo, descrivendole nelle loro caratteristiche essenziali, fornendo ricette accettabili dal gusto occidentale, e realizzabili con prodotti facilmente reperibili. Capire il sapore del diverso, è saper apprezzare non solo i cibi, ma anche i sorrisi dei popoli.

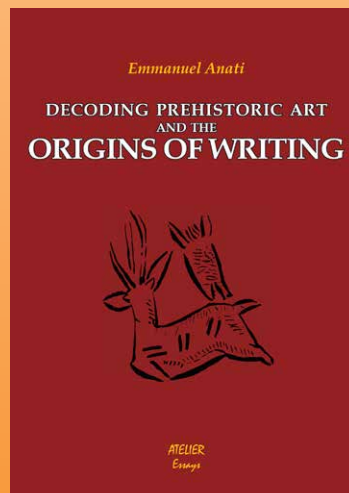
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Essays



Nascere e crescere da nomadi. La relazione madre-figli nelle società primarie (in Italian)

A study of constants and variants between human societies of hunters-gatherers and urban societies in the mother-child relationship reveals archetypes and variants. The mother-child relationship is the backbone of all species of mammals and acquires special rules in primates.



Decoding Prehistoric Art and the Origins of Writing

This text examines the cognitive process that led to the invention of writing and highlights constants of memorization and associative synthesis held in the mind of *Homo sapiens* for thousands of years. Some examples of decoding prehistoric art give a new vision for the beginning of writing.



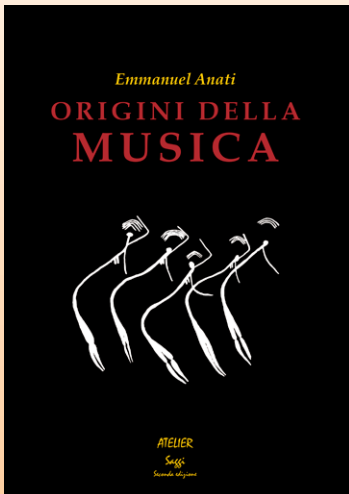
Ordine e Caos nelle società primarie. Uno studio sugli aborigeni australiani. (in Italian)

Order and chaos are compared as a principle of the binary concept that characterizes the search for an elementary logic of what man is able to hypothesize about the behavior of the world around him. To what extent does the order of nature determine social order in primary societies?

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Essays



Origini della Musica (in Italian)

How and why did music originate? What function did it hold for the individual and for society? The book presents the oldest documentation of prehistoric art and archeology on the presence of music, dance and musical instruments. The text is accompanied by figures of the oldest musical instruments known to date and images depicting music and dance.



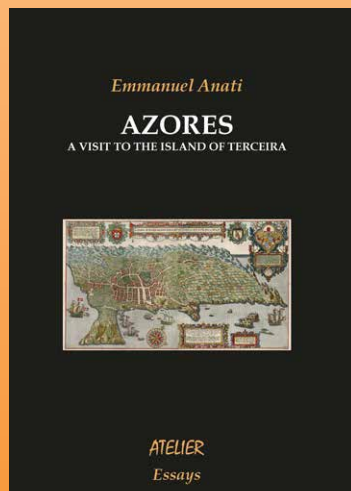
Iniziazione e riti di passaggio (in Italian)

What are the origins of baptism, circumcision, marriage and burial? The practices of initiation and rites of passage of certain Aboriginal clans of Arnhem Land, Australia, reveal the archetypes of accepted practices which are still common to many peoples of the world. The ritual has the dual role of educating and socializing. It has maintained stable their life of clans for millennia, serving as the glue between individual and group.



Chi sei? Chi sono? Alla ricerca dell'identità (in Italian)

The problems arising from the search for identity begin in the infant and accompany the human being to the last breath. Defining the identity of the person, of the nation or "race", concerns all people from the Early Hunters to the most advanced urban, literate cultures. The present study is proposing a historical dimension to an archetype of the cognitive system. When does the need to define the identity start, and why?



Azores: a Visit to the Island of Terceira

When did man first arrive to the Azores islands? The Portuguese colonization in the 15th century marked the beginning of the official history. Is there a history before this history? The controversy, between the traditional history and the advocates of a previous human presence, finds partial solutions in the dating and decoding of traces indicating ancient human presence.



Comunicare per esistere (in Italian)

This text, inspired by travel notes of about 40 years ago, seems now to refer to prehistory. Aboriginal people have made a jump of millennia in two generations. Today they speak English, live in houses, drive cars and use the shotgun. Their lives changed since the 70s of the last century.

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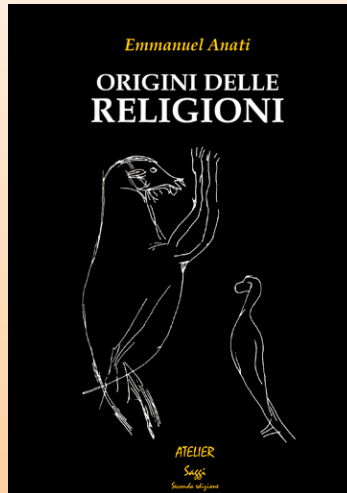
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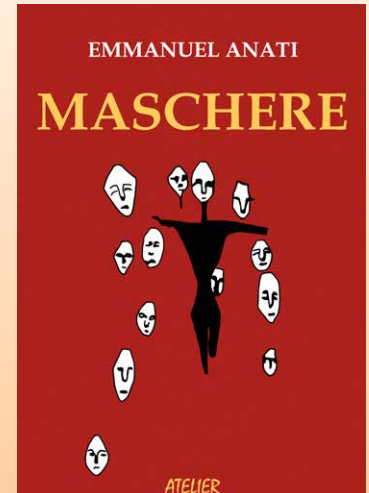
Mito tra utopia e verità (in Italian)

How do myths originate? The production of myths proves to be a constant of the cognitive process of all human societies. Parameters of this process are examined: the roots of a distant memory, the itineraries of idealization, sublimation and structuring. Similar myths from different cultures reveal recurring conceptual criteria. From the beginning man feeds the myth and the myth feeds the man. Myths feed myths.



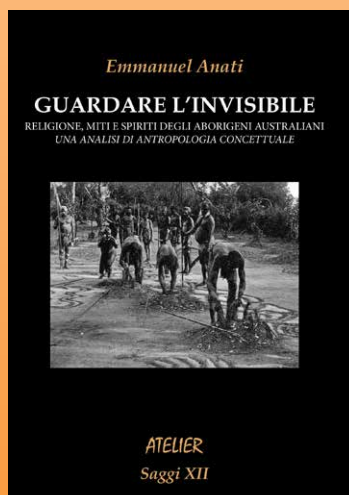
Origini delle religioni (in Italian)

How and when did religions originate? The study of prehistoric art is bringing a revolution to our knowledge of the origins of religious thought. Rock art sites have held for millennia the function of places of worship and tribal identity, serving as archives of myths, beliefs and rituals. Visual art, however, is not the oldest evidence of the presence of religion. Burial customs and other material traces are bringing us further back to the origins of religious behaviour.



Maschere (in Italian)

What is behind the mask? The mask can hide the identity, but can also reveal an identity submerged, both as an object-mask or a conceptual-mask. Going back to the roots, an aspect of the cognitive process of the mask awakens questions on the comparison of human tendencies, between globalization and individualism. Tracing the history of the mask reveals recurring phenomena of man's relationship with his own identity.



Guardare l'invisibile. Religione, miti e spiriti degli aborigeni australiani. (in Italian)

Some scholars in the history of religions affirm that religion was born in the Neolithic age. People coming directly from the Paleolithic bluntly contradicts this preconception.



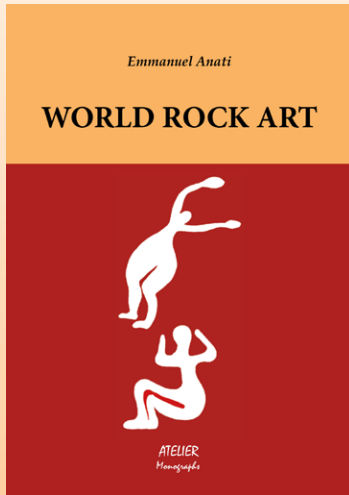
Amore e sessualità (In Italian)

Love and sexuality, a theme of all lives and many books, is considered under the aspect of conceptual anthropology. Biological impulses, cultural rules and individual feelings meet in different cultures, in different formulas and lead to a vision of how they work and interact socially, psychologically and emotionally on the human being and on the social context.

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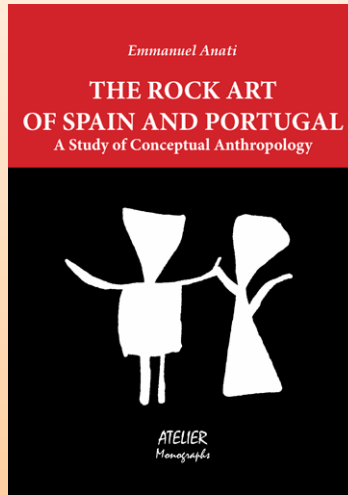
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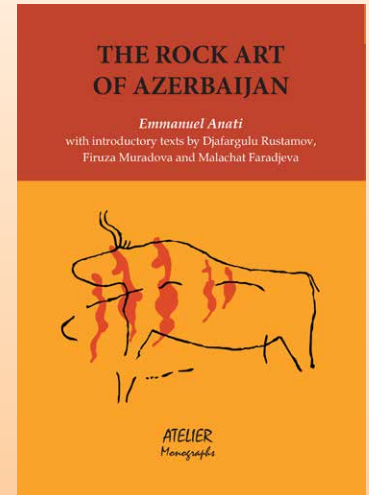
World Rock Art

This book is a fundamental introduction to rock art studies. It marks the starting point of a new methodology for rock art analysis, based on typology and style, first developed by the author at the Centro camuno di Studi Preistorici, Capo di Ponte, Brescia, Italy. It can be seen at the beginning of a new discipline, the systematic study of world rock art.



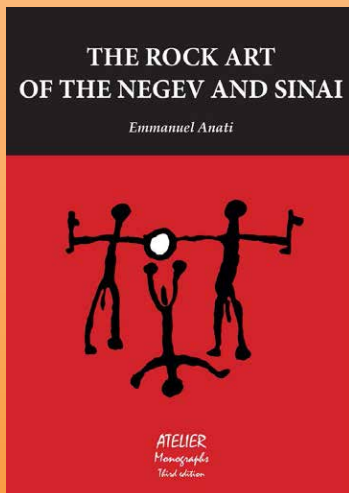
The Rock Art of Spain and Portugal

An analytical synthesis of the rock art in the Iberian peninsula from the conceptual anthropology approach. The major concentrations of rock art are considered as expressions of their different cultural and social patterns.



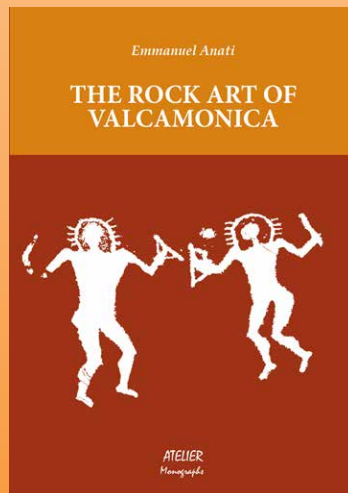
The Rock art of Azerbaijan

Over the course of centuries, Azerbaijan, was a great centre of rock art. This gateway of Europe, between the Caucasus Mountains and the Caspian Sea, was a major way of migrations from Asia to Europe. Showing influence and connections with both Europe and the Near East, the succession of phases of rock art illustrate the movements of cultures and ideas from Paleolithic to recent times, shedding new light on the early movement of *Homo sapiens*.



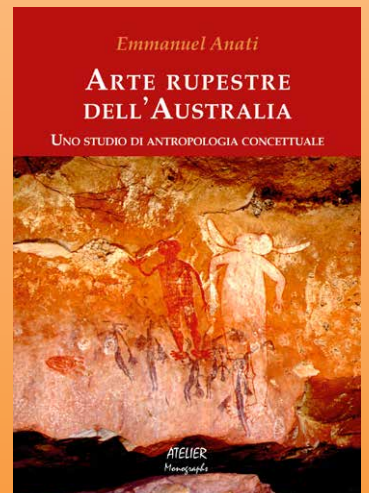
The Rock Art of the Negev and Sinai

The present volume is concerned with a new theme of archeology and anthropology: the rock art of the Negev and Sinai, which never had before a general analysis in English. It elaborates on articles and a book written in the last 60 years, to produce a synthesis and an overview.



The Rock Art of Valcamonica

Valcamonica, in the Italian Alps, with over 300,000 images engraved on rocks, is the major rock art site in Europe. It is the first 'World Heritage Site' listed by UNESCO in Italy and the first rock art site listed in the world. Its study reveals the largest archive left behind by the ancient inhabitants of Europe.

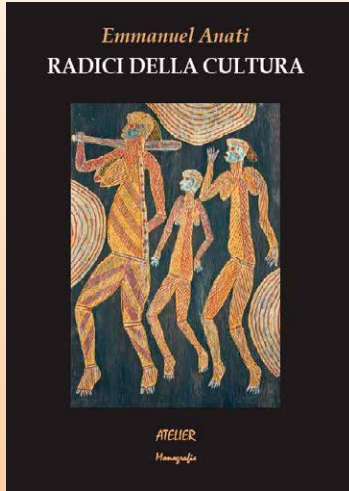


The Rock Art of Australia

The Australian aborigines until yesterday were hunter-gatherers, creators of visual art according to ancient traditions and beliefs. The rock art tells their story and the history of art of 50,000 years.

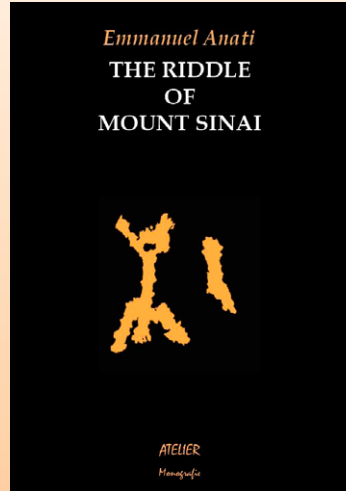
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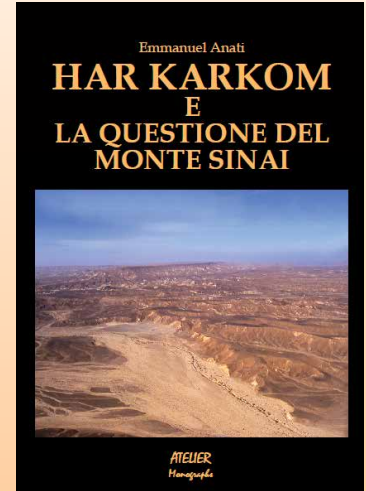
Radici della cultura (in Italian)

The history of culture is the history which unify the whole humankind. As Yves Coppens wrote in the preface, from the very first flint tool four million years ago to the conquest of space, the human adventure shows an hyperbole, which from the beginning of history, through the ages, builds the reality of present and project us to the future.



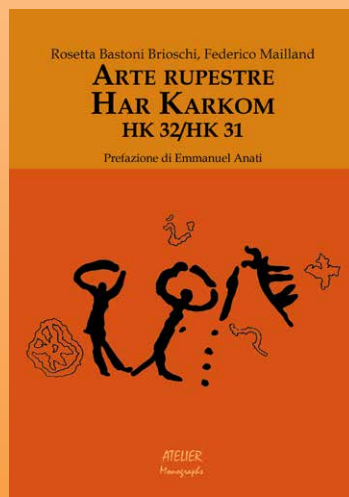
The Riddle of Mount Sinai

What is the true story behind the biblical narration of Exodus? The discoveries of the Italian archaeological expedition at Har Karkom, in the Negev Desert, tell the hitherto unknown story of the sacred mountain in the heart of the desert of Exodus, reflecting surprising similarities to the events and conditions described to us, albeit in mythicised form, in the Old Testament.



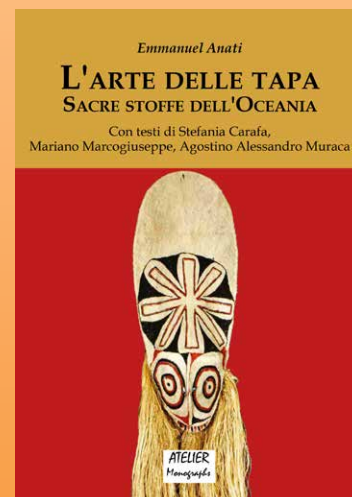
Har Karkom e la questione del Monte Sinai (in Italian)

The findings of shrines and encampments of the Bronze Age at Har Karkom, a mountain located in one of the driest places and inhospitable parts of the Negev desert, in the north of the Sinai Peninsula, arouses a global debate on the hypothesis that this mountain can be identified with the biblical Mount Sinai.



Rock Art - Har Karkom **HK 32/HK 31** (in Italian)

Within the frame of the Archaeological Italian Expedition in Israel, the present book is a record of rock art in two adjacent sites on the plateau of Har Karkom. The rock art is in the same area with tumuli, altar stones, stone circles and other megalithic structures. Some of the rock engravings are on these monuments. The rock engravings are described and illustrated by numerous photos and tracings.



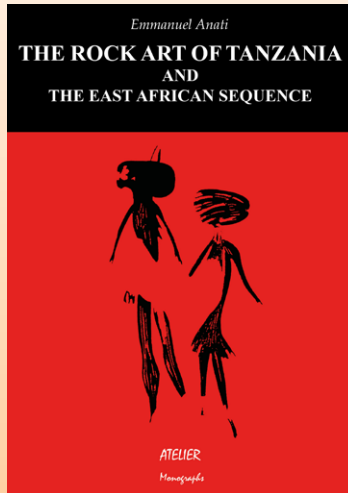
L'arte delle tapa. **Sacre stoffe dell'Oceania** (in Italian)

The tapa is a non-woven fabric, a kind of felt produced from the bark of some species of trees. Their origins are much earlier than the invention of weaving. Their roots go back to the Old Stone Age. Indirect testimony of their antiquity are provided by the discovery of tools used for the manufacture of tapa in archaeological layers and by figures of tapa cloths in the rock art.

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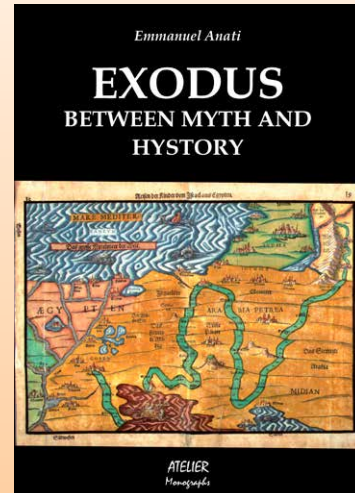
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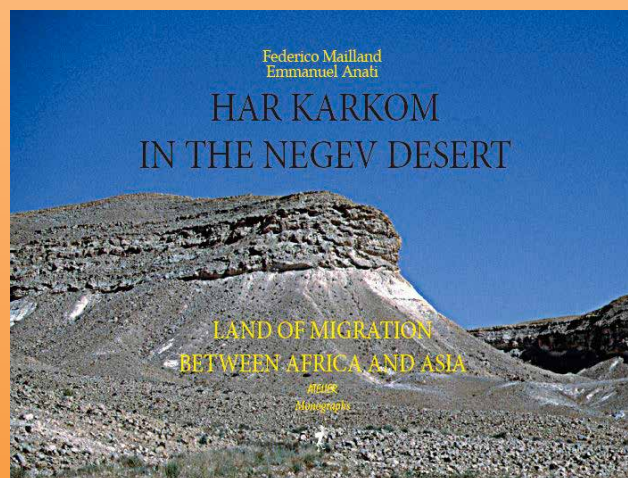
The Rock Art of Tanzania and the East African Sequence

The rock art of Tanzania, in over 200 caves and rock shelters, is presented in this book using the analytical method of Conceptual Anthropology. Stylistic phases and periods are covering millennia.



Exodus Between Myth and History

The epic of Moses: is it myth or history? The Biblical narrative of the exodus and the revelation of Mount Sinai are a monumental literary work that has been passed down for well over two millennia, after being transmitted orally for centuries. What would have really happened during the Exodus? How did monotheism emerge? Who were the mentioned people of the desert met by the children of Israel? The central episode of the epic is the revelation at Mount Sinai.



Har Karkom in the Negev Desert

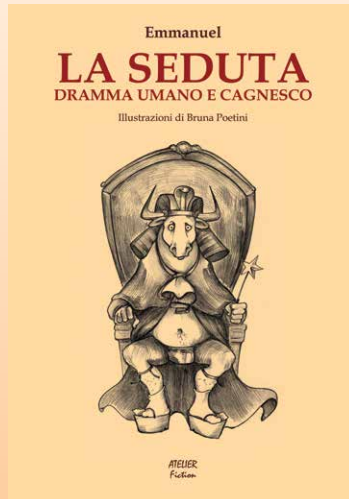
A mountain located in the land-bridge between Africa and the rest of the world yielded traces of ages of human presence ever since the first steps of the human ancestors out of Africa.

The archeological discoveries tell us of two million years, from the earliest stations of archaic Pebble Culture, to recent Bedouin camping sites.

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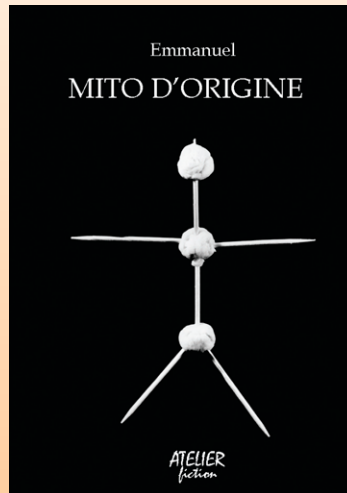
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Fiction



La Seduta (in Italian)

This work of the author's youth reflects a biting social commentary that after half a century seems to have not lost its charge. It was written in the 60s of the last century, in the climate of postwar youth revolt. It was published for the first time in 1979 in a bi-monthly magazine. It now comes out in a revised edition.

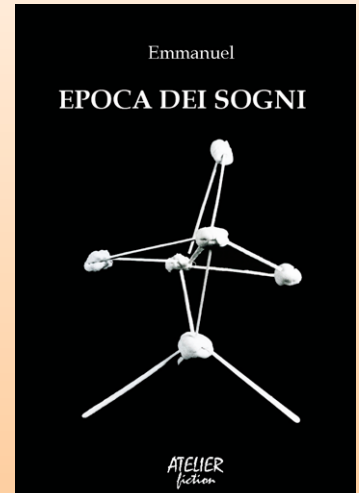


Mito d'origine Epoca dei Sogni (in Italian)

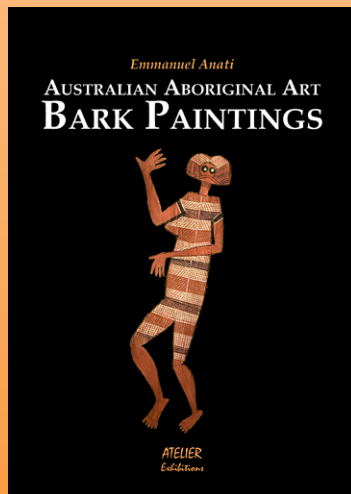
The first works of Atelier Fiction, Mito d'Origine and Epoca dei Sogni, tell stories that at first sight seem to come from another world.

Between reality and dream, realism and myth, symbols and metaphors, they accompany us in the space of flooded memories. Balls and sticks wander, meet and multiply in black space, always accompany the shadows and the lights of thought.

They are works created by the author at a young age now published for the first time, a few decades after since they were first conceived.

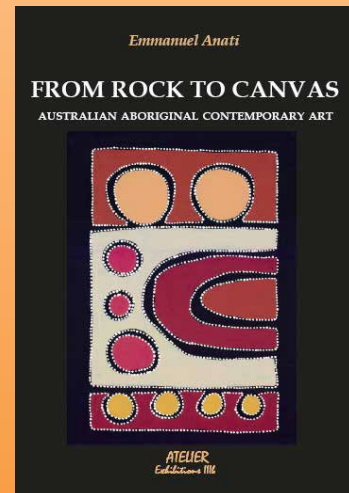


Exhibitions



The Art of the Australian Aborigines Bark Paintings

Australian Aborigines have produced paintings on tree bark that, in addition to being remarkable artworks, store myths and memories, emotions and human relations. What remains today of authentic bark paintings, made by Aborigines for themselves, is an extremely small group.



From Rock to Canvas

Australian Aboriginal Contemporary Art

Turning from the Stone Age to the age of air-conditioning in a generation is an experience which leaves its mark on artistic expression. The canvas paintings made by contemporary Aboriginal artists, whose fathers painted on rocks or tree bark, display a momentous revolution in the spirit of a generation that has leapfrogged millennia.

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