

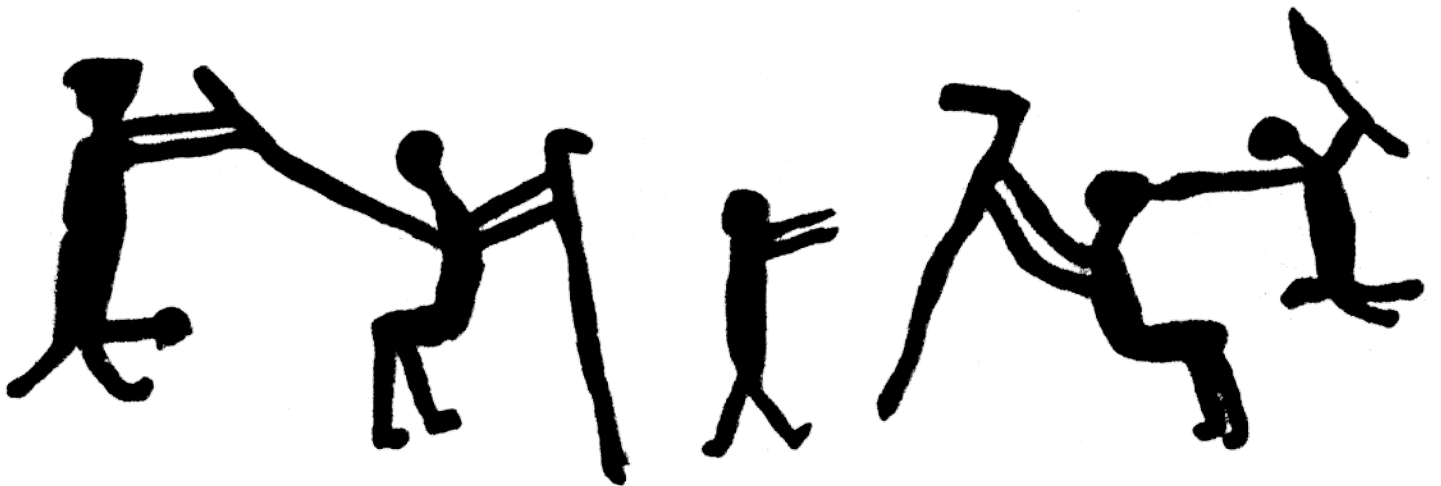
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THE INTELLECTUAL AND SPIRITUAL EXPRESSIONS OF NON-LITERATE PEOPLES

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CULTURAL CHANGES

EDITORIAL NOTES

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

How does the dynamic of change emerge from ancient sites, building structures, objects of daily use, art, myths, beliefs, and other traces, both material and immaterial? It depends on the ability of understanding them. The findings become discovery when the human mind succeeds in decoding them. Cultural changes are expression of the human conceptual pattern which is not static. They acquire meaning in the scenery of the context: place, time, type of culture and intellectual abilities.

What are the causes of cultural changes? Nowadays it is fashionable to focus attention on climatic variations as sources of cultural changes. We live in the age of a climatic change and of a cultural change: to what extent are these two main changes related to each other? Are they really related?

Over ten thousand years ago, at the end of the “Ice Age”, a more temperate climate contributed to the birth of new patterns of economy and of society in certain areas of the world. In other areas, it was the time of rise of the sea level, of inundations and deluges, where populated lands were submerged by water. Before and after, in the course of tenths of millennia, climatic changes caused modifications of fauna, flora and human presence all over the planet. Processes of desertification or of growth in rainfall are no doubt factors requiring adaptation, they may cause modification of resources and daily habits, or even migrations. Climatic variations are certainly an important factor in cultural change, but it would be misleading to consider them as their only cause. Cultural changes may take place even where there are no substantial changes in the environmental setting.

Climatic modifications are only one of the factors that influence life and development. Natural calamities like earth-quakes or volcanic eruptions, plagues and epidemics or sudden lack of water or food resources, are some of the causes. No doubts Pompeii underwent a cultural change when it was caught by the eruption of the Vesuvius Vulcan: simply it was eliminated. But migrations, changes in the geographical location of the human entity, conflict and peaceful confrontations with other human groups, changes in the size and composition of social units, change in regime or leadership, new inventions, discoveries, developments in technology, social relations and events, conceptual elaborations, imagination, Changes in religious beliefs and

practices, and many other factors play their role in cultural change. 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 quarterly journal are concerned not only with recording the changes, they are stimulating research to understand processes and reasons that caused changes and development, and the detection of trends in human intellectual, social and cultural evolution. For conceptual anthropology, the decoding of common or isolated behavioral tendencies is a source of broadening the understanding of ethnic, regional or global identity and cultural patterns. Cultural change is a dynamic factor in act ever since the production of the first man-made tool, over two million years ago. It is the result of both, innovative solutions of the human mind and adaptation to needs, due or not due to changes in the vital resources and environmental conditions.

Local cultural changes are expression of processes that may contribute to a global overview. Regional cultural changes that took place in the last one hundred years, in the regimes, politics, economy and social life of South Africa or Russia, of China or Germany, are cultural storms, strong indicators of local cultural trends. In each case the causes and the effects of a new regime and the further evolution thereafter, are local evolutions that may contribute to an overview of cultural processes.

Even more drastic cultural changes have taken place at the same time on the economy and social life of Pigmy populations of Central Africa, Aboriginal populations of Australia or of Amazonia, or Eskimos of the Arctic. Such changes are as strong indicators of cultural tendencies; probably they are even more meaningful for the definition of an epoch and for the understanding of world cultural changes, as they mark the end of an age and the beginning of a new age in cultural evolution. But they tend to be ignored or almost by the current versions of world history. Such limitations of overview are restricting the ability of conceiving cultural trends. Local cultural changes are essential for conceiving broader currents. A perspective of time, looking into events of different ages and different social and economic structures, should contribute to a better ability of conceiving causes and effects of cultural changes.

In back issues of EXPRESSION journal some major pertinent topics have 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.

In historic times, the arrival of new ethnic groups has changed the cultures of America, Australia, and other corners of the planet: the European colonization has changed the cultural mosaic of humankind. The Vedic penetration of India, in the second millennium BC, changed the ethnic and cultural identity of India. The colonization of Europe by the Neolithic “extra-communitarians” coming from the East, changed its ethnic and cultural identity. The present grows of the extra-communitarian population in Europe, could mark again changes in the ethnic and cultural identity of this continent.

In pre-historic times, from a single place of origin, men colonized the entire planet. And cultural changes took place constantly in all the human colonies spread over the globe. Variations in the living structures, such as cave dwellings, huts, tents or permanent habitation units, expose a relevant aspect of cultural horizons. The typology of tools for daily use, vary from period to period and tell patterns of cultural changes and evolution in technology. The changing size of the human co-living units is another variable indication of cultural identity.

One of the most eloquent testimony of cultural changes is provided by the succession of different styles and thematic horizons in rock art. In previous issues of *EXPRESSION*, examples of typological sequences of rock art are demonstrating the succession of cultural patterns in Tanzania, Spain, Azerbaijan, Madhya Pradesh (India), Arnhem Land (Australia, NT), Serra da Capivara (Brazil, Piauí) and other regions.

The shifting from the art of hunters to that of food collectors, to pastoralists or to tribal agriculturalists, reveals the dimension of cultural changes in human societies. What can we learn out of all that, about the dynamics of cultural change? What are the causes and effects of cultural change? This is a topic to elaborate, it is the intent of the present project and the call for articles. This issue is the first one of the topic. Others will follow.

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 and papers.

E.A.

EDITORIAL NOTE

EXPRESSION journal 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 Internationale 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.

An issue of terminology: the identity of *Homo sapiens*.

Conceptual anthropology considers that the intellectual abilities are defining the sapiens identity (besides the skeletal features). A main expression of cultural identity is the habit of producing figurative art as a pattern of culture, which is implying the ability for synthesis, abstraction and conceptualization. Earlier signs of visual markings include non-figurative signs and stencils, printing of hands and other items not intentionally designed by the human hand. The terminology used by Conceptual Anthropology is naming *Homo sapiens* the maker of figurative art of the Upper Paleolithic, what traditional terminology labels *Homo sapiens-sapiens*, thus eliminating the second redundant *sapiens*. Neanderthal and other human groups of the Middle Paleolithic are defined as *Proto-sapiens*.

Front page image: What is the story behind the image: myth or event? What is the identity and destiny of the character at the center of this dispute? Rock art of Serra da Capivara, Piauí, Brazil.

DISCUSSION FORUM

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

ROLE OF WOMEN IN PREHISTORIC AND TRIBAL SOCIETIES

What can we learn on the role of women in society from prehistoric and tribal art? What are male and female images revealing to us about the gender relations in the course of ages? This topic will be considered in a forthcoming issue of *EXPRESSION* quarterly journal and submission of pertinent papers is welcome. Human society has a variety of social structures, where crowded urban congregations exist along with tribal agricultural villages and nomadic clans of hunters. These three and other patterns of society can also live in the vicinity of each other. Near the town of Darwin in Australia, there are clans of semi-nomadic Aboriginal hunter-gatherers, near the town of Beer-Sheba in Israel, there are tribes of semi-nomadic Bedouin pastoralists, near the town of Dodoma in Tanzania, there are tribal farming villages, and semi-nomadic clans of hunters-gatherers. Each society has its own behavioral habits and male and female roles vary.

Urban societies are a cultural pattern of the last 5.000 years, farming villages developed in the last 12.000 years, beforehand the entire humanity was made of hunting-gathering semi-nomadic groups. These various patterns of societies have the common feature of being all composed of groups or families, nuclear or larger, where the actors are men and women. What kind of relations existed between men and women in these different societies in the past? Social structures, economic activities, ritual and ceremonial performances, usually concede different tasks to males and females. How can art, and in particular rock art, contribute in this search for a vital aspect of human relations?

The roles of the two genders vary in different types of social assemblages or ethnic groups, but some functions are permanently assigned to one of the two genders. Men cannot become pregnant and have children; they cannot milk newborns and in various societies they are considered unfit to take care of them. Pregnant or milking women are unfit for fighting or heavy tasks. Among hunter-gatherers, women are considered to be unfit for elephant or buffalo hunting. Following up the prey, killing it, cutting its meat,

separating it from the carcass, carrying the quarters of meat for miles to the gathering place of the clan is the task of men. Each gender has its specific function in society, which may vary from society to society.

Other gender tasks may vary according to the social patterns. Cooking food is a primarily male task among hunting societies and female task among farming societies, building huts and other structures is usually a male task, decorating such buildings is frequently a female task. Every gender has its own ritual and ceremonial practices which vary in different ethnic groups. In the art production in many different regions of the world, different typologies and types of decoration allow to recognize the visual art produced by females from that produced by males.

Millions of images of men and women are present in rock art and in mobile art of five continents. They have been made by different people, men and women, of different human societies in the course of millennia. What can we learn from all that on gender relations and in particular on the role of women in different societies? In some groups of prehistoric and tribal art female images are dominant, in others they are ignored. In some groups of rock art, female divinities are represented, in others, women appear as sexual objects, in others again, they appear in gracious dancing and in ritual scenes. Colleagues and friends, males and females, from different countries, are cordially invited to propose their ideas and their articles, each on his/her study or concern, for reaching together a global overview, on a fascinating theme, relevant for understanding ethnic, local and also global trends. Please join us in the trial of understanding the variability of a vital aspect of human relations: gender relations. Present your article, ideas and suggestions, or ask for additional information to <atelier.etno@gmail.com>.

E.A.

WHERE IS HOMO SAPIENS COMING FROM?

Is *Homo sapiens* a single racial stock or are there several different cores of *sapiens*? If indeed *Homo sapiens* derives from a single core, as currently maintained, where is he coming from?

The presence of *Homo sapiens* in Europe is today currently 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 the *sapiens*? How may we classify 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 *sapiens* societies. Despite their distinct physical characters, they have the pertinent conceptual abilities and they are producers of elaborate

music and of visual art. Conceptual anthropology considers that also the intellectual abilities define the *sapiens* identity, besides 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, in Africa and Asia, there are earlier signs of visual markings, in the form of non-figurative signs and stencils, printing of hands and other items not intentionally designed 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 presently available chronological date obtained by laboratory analyses, 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. If he is present in Australia so much earlier than in Europe, where is *Homo sapiens* original homeland?

Where did he originate? So far, the origins of *sapiens* have been considered to be in Africa. As defined in a previous issue of *EXPRESSION*, 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 wide-spread 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 features, that is, the need to 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.

- 1 - **WOMEN:** their presence in prehistoric and tribal art. the changing role of dominance of male and female figures.
 - 2 - **SOCIAL STRUCTURE AS REVEALED BY PREHISTORIC AND TRIBAL ART:** how depictions reveal social relations and social organization.
 - 3 - **WHERE IS HOMO SAPIENS COMING FROM?** Is visual art the sign of his presence?
 - 4 - **IS HOMO SAPIENS THE INVENTOR OF FIGURATIVE ART?**
 - 5 - **PERSONAL IDENTITIES OF ARTISTS:** Identifying the hands of a specific artist, school or tradition in prehistoric and tribal art.
 - 6 - **BURIAL CUSTOMS AND PRACTICES** as expression of beliefs in afterlife. How the world of the dead was conceived?
 - 7 - **IMAGES OF WARFARE AND FIGHTING IN PREHISTORIC AND TRIBAL ART:** their commemorating role and their historical value.
 - 8 - **SEAFARING DEPICTIONS: RECORDING MYTHS OR EVENTS?** Considering the story of seafaring and the earliest documentation.
 - 9 - **REGIONAL PATTERNS IN ARTISITIC CREATIONS:** what is producing local characters in artistic expressions?
 - 10 - **THE ORIGINS OF RELIGION AND THE ORIGINS OF ART:** possible connections.
 - 11 - **VISUAL ART AS A MEAN TO EXPLORE THE HUMAN MIND:** the conceptual anthropology of prehistoric minds.
 - 12 - **WHEN AND HOW PEOPLE FROM THE NEW WORLD (AMERICA AND AUSTRALIA) DISCOVERED THE PRESENCE OF THE OLD WORLD (AFRICA AND EURASIA)?** What did they know of the Old World before recorded contacts?
 - 13 - **MYTHS OF ORIGINS: WHERE DID THE ANCESTORS COME FROM?** Global and local versions.
 - 14 - **THE PRIMARY MYTHS AND THEIR COMMON ROOTS**
 - 15 - **VERNACULAR DECORATIVE PATTERNS AND THEIR SOURCE**
- Proposals for papers and suggestions on these and other issues are welcome.*

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NO GREENER GRASS IN THE ARCTIC

Robert G. Bednarik
IFRAO (Australia)

To begin with, I wish to thank and congratulate Emmanuel Anati for having chosen such an excellent and important topic, particularly as it is a subject that has generated so much misinformation. Since genetics research has confirmed what some of us had always believed, that we are the same species as our robust ancestors, Anati's two questions need to be answered from the perspective that at least Denisovans and Neanderthals are *Homo sapiens* subspecies. The definition of a species is that its members can produce fertile offspring, hence the correct names of the two are *Homo sapiens denisova* and *H.s. neanderthalensis*, contrary to the African Eve hoax (Bednarik 2008). However, some credible palaeoanthropologists would include also *heidelbergensis*, *antecessor*, and other post-*erectus* fossils in that exclusive club (or, indeed, even *H. erectus*). That renders the answer to both questions somewhat difficult, unless Anati could rephrase them thus: "Where did *Homo sapiens sapiens* originate, and what were the dynamics of their diffusion?"

Let us first explore the implication that *H.s.s.* appeared in Australia 20,000 years (20 ka) earlier than in Europe. If, as the African Eve advocates used to try and convince us, these came from sub-Saharan Africa, that would seem a bit hard to accept: it is a long way to the Antipodes, and there were several sea crossings. But to be a little pedantic (my apologies), we also need to remember that there is no evidence of fully gracile people in Europe until around 27,760 years BP at the earliest. Several of the tool traditions of the Early Upper Palaeolithic of Europe (Aurignacian, Châtelperronian, Uluzzian, Proto-Aurignacian, Olschewian, Bachokirian, Bohunician, Streletsian, Gorodtsovian, Brynzenian, Spitznian, Telmanian, Szeletian, Eastern Szeletian, Kostenkian, Jankovichian, Altmühlian, Lincombian, Jerzmanovician) have yielded Neanderthal remains, and there are numerous human skeletal remains that are intermediate between robust and gracile humans (e.g. Lagar Velho, Crete, Hahnöfersand, Drigge, Mladeč, Peștera cu Oase, Peștera Muierii,

Bacho Kiro, Starosel'e, Rozhok, Akhshtyr', Romankovo, Samara, Sungir', Podkumok, Khvalynsk, Skhodnya, Narmada, Jinniushan, Tianyuan). Since the clinal change from robust to gracile coincides with a similar gradual transition of all of Europe's tool traditions it stands to reason that the latter developed *in situ*, and none was introduced from anywhere else. Besides, the Middle Stone Age/Middle Palaeolithic continues across northern Africa up to about 20 ka ago, so how did the African superhumans tiptoe through their continent's north without a trace? Let us bear in mind that by 135 ka ago, robust people in Europe were so short of space that they deliberately settled inside the Arctic Circle (Pavlov et al. 2001; Schulz 2002; Schulz et al. 2002), while other Robusts resided in the Tibetan Plateau (Chen et al. 2019). How should these "superhumans" have wiped out the very numerous Neanderthals? The latter were superior to the hypothetical Africans (of whom we have no proof) in every conceivable way (including brainpower: their brains were 13% larger than ours; Bednarik 2014). And let us be quite clear: there is zero evidence for population densities and demographic information of any kind. And if people chose willingly to live in an area of minus 40°C or at very high elevations, we can be quite certain that the better parts of the continent were settled to capacity.

So let us rethink this a little: we have Neanderthaloid and "intermediate" people in Europe until the Gravettian, often with Upper Palaeolithic tools; and we have no fully gracile types in that time. Would it not be wise to refrain from attributing the traditions I have listed above to so-called moderns (conversely, "we have never been modern"; Latour 1993) when apparently they were not even there at the time? To attend to Anati's questions, this factor is in any case moot, since *Homo sapiens* has been in Europe for hundreds of millennia. So the correct answers are first, that the various types of *Homo sapiens* that evolved over the past half million years or so did so in various continents, with gene exchange through introgression and allele drift by generational mating site distance, perhaps occasionally punctuated by genetic drift. Second, *Homo sapiens* types did not much migrating; their genes diffused by the processes mentioned. Most of the Old World was already occupied at the time, and the resident populations tended to get cranky when anyone tried to wipe

them out.

Conversely, there is no rock art dated to 60 ka in either Australia or Borneo, and no rock art has been dated credibly in Tanzania. Iconic (figurative) palaeo-art, including rock art, has been produced by robust humans, therefore the separation of iconic and non-iconic (or aniconic) palaeoart along perceived divisions between subspecies is misguided.

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WHY IDEOLOGIES AND VALUES CHANGED: THE ROLE OF AGGRANDIZER STRATEGIES AND SECRET SOCIETIES

Brian Hayden
Anthropology Department
University of British Columbia (Canada)

Cultural change is the major theoretical preoccupation of archaeologists. They have above all documented the material and technological changes of cultures over the past 2.6 million years. They have been less apt in understanding the social or ideological dynamics related to those changes or in explaining why the more obvious intellectual and spiritual changes occurred over time. The goal of this article is to present a new perspective on social and ideological changes based on my ethnoarchaeological research. I emphasize the catalytic role of people I call “aggrandizers” who, under the right conditions, develop strategies to promote their own self-interests and change community values as a result.

The most common paradigms used to explain cultural changes have been derived from animal ecological models, notably models related to stresses from environments that created new adaptations. In terms of social dynamics archaeologists’ models have largely been based on structural-functional theories that view cultures as systems adapted to their environments. Thus, the appearance of ritual structures, ritual items, or even burials in the archaeological record has generally been viewed in terms of their roles in maintaining social integration, i.e., keeping the community system functioning (Kuijt 1996; Longacre 1964; Hill 1966; Potter 2000, Grosman and Munro 2016). The emergence of different ritual traditions and ever greater monuments have largely been couched in terms of the relative power of various belief or ritual systems (Parker-Pearson 2007; Pauketat and Emerson 1997). These are nebulous psychological concepts at best. Little attention has been devoted to the question of what motivated or rewarded changes in ideologies or ritual practices.

While there is certainly a germ of truth in these traditional perspectives, they have created an idealized,



Fig. 1. Lineage heads and brokers of power gather together in this Akha “inner feasting circle” in northwest Thailand in order to reaffirm their mutual commitments of support. Reciprocal holding of such feasts is essential for membership in political factions and wielding power in communities. Photo by B. Hayden.

sanitized view of ritual and cultural life which omits important aspects of the ethnographic record. In my research, I have documented the use of feasts and associated rituals for social integration purposes (Hayden 2016). Such events certainly facilitate living together in villages; however, village-level social-integration events that I have recorded were far less opulent than the more lavish displays, feasts, funerals, or rituals sponsored by competing factions within these communities. Archaeologists have focused only on the integrative aspect of ritual and have largely ignored the factional and intensely competitive aspects of traditional small community life.

On the basis of a 30-year program of research on aggrandizer strategies, I suggest that a palaeo-political ecology perspective (which includes factionalism and competition) adds considerable understanding of why

a number of changes have taken place prehistorically. The basic premises of the political ecology framework are:

1. That there were always some individuals in large human populations who strove to create benefits for themselves according to classic Darwinian precepts, irrespective of the negative effects on others. I refer to these individuals as “aggrandizers.” They were, and are, not necessarily numerous (probably less than 10 percent of a population), but they were, and are, highly motivated to create social changes that benefitted themselves and conferred more “fitness” upon themselves.
2. Under conditions of limited resources -- such as characterized most of the Palaeolithic -- aggrandizer individuals were held in check by the common needs for survival.

3. Toward the end of the Palaeolithic and increasingly in the Holocene, technological improvements -- especially the advent of effective storage technologies -- permitted the production of food surpluses on a relatively regular basis, as indicated by the dramatic increase in population densities for the Upper Palaeolithic.
4. Under these conditions, aggrandizers devised a number of strategies to utilize surpluses to advance their own self-interests by manipulating their fellow group members into schemes of indebtedness that promised to enhance the supporting faction's power, standard of living, and biological fitness. The surplus-based strategies used by aggrandizers to manipulate people included: reciprocal feasting debts (Fig. 1), marriage payments, securing military allies via gifts and feasts, and payments required to gain access to supernatural forces (Hayden 2003, 2018).

Changes in ideologies

In order to implement the above strategies and manipulate people in still other ways, it was necessary to transform the values and practices of egalitarian foragers who did not generally recognize private property, did not tolerate the competitive use of food resources, insisted on generalized sharing of food resources and other materials, and did not store foods for any length of time.

The first, most fundamental, transformation of ideology and values was the recognition of privately owned produce, resources, and possessions. I argue that the only conditions under which this could have taken place were conditions of relative abundance such that everyone who wanted food and worked for food was assured of enough to live on. Under conditions of abundance, if someone went hungry it was because they were lazy and thus their claims on others' produce would not be recognized. A corollary of private ownership was the elimination of obligatory general sharing of food and possessions, or at least a greatly reduced obligation, e.g., to share only with close kin. However, initially, the recognition of private property and reduced obligatory sharing was certainly only "conditional," for when real starvation did occur in a community, or when debilitating sickness or accidents occurred, individuals with resources were pressured

into sharing with individuals who had none (Hayden 1994, 1996).

The development of storage technology must have been an important contributor to establishing an acceptance of the private property claims, since considerable extra work was involved in preparing food for storage, and the stored food was generally required to weather seasonal dearth periods. Thus, claims for the private control of stored food would have had greater force, especially under conditions of abundance. Privately owned possessions made it possible to accumulate wealth for use in other strategies.

The control over one's own surplus production was critical for using surpluses in strategies to increase self-benefits. However, these other strategies also required changes in values and norms in order to be effective. Giving surplus food to selected individuals undoubtedly provided a compelling inducement for the gift receivers to accept, or at least acquiesce to, demands for recognizing other new values and types of relationships. Thus, recognition of strict reciprocal gifting (vs. the generalized reciprocity of egalitarian foragers) became accepted as a central feature in the newly emerging trans-egalitarian societies characterized by considerable wealth and power inequalities, sometimes even including slavery. Strict reciprocity was the foundation of the feasting and wealth exchange networks that aggrandizers sought to establish. If I gave you a pig at my feast, you were obligated to give a comparable feast and to give me a pig, or more (Hayden 2014). I suggest that this type of implicit contract became the basis for an entirely new social structure and for establishing political power in trans-egalitarian communities.

Other aggrandizer strategies frequently involved claims of the importance and power of ancestors (Fig. 2). Typically, heads of kinship groups not only promoted the power of ancestors to benefit or punish descendants, but kinship heads also determined what had to be done to appease or please ancestors, especially in terms of surplus production and the way surpluses should be used (always portrayed as benefitting the descent group, but always benefitting the heads of the group far more than others -- Hayden 2016). Poor harvests, insect plagues, depredations of wild animals, floods, droughts, illnesses, accidents, or even deaths were often claimed to be retribution from ancestors



Fig. 2. In Tana Toraja (Sulawesi, Indonesia), erecting megalithic memorials for deceased family members is argued to give ancestors more power in the afterlife to confer good crops and wealth on their descendants. Quarrying, transporting, and erecting these megaliths is costly and can only be afforded by wealthy aggrandizers who use such displays as justifications for why they have more wealth than others. Photo by B. Hayden.

who had been neglected or whose wishes had been ignored (Hayden 2003; Hayden and Villeneuve 2010). In order for these strategies of control to be effective, the dead had to be transformed from egalitarian spirits to be avoided, or not even mentioned by name (as among Australian hunter-gatherers), to spirits who needed to be honored and feasted or even kept in the house (e.g., as among trans-egalitarian groups on the Northwest Coast and in many horticultural societies). Cemeteries, totemic poles, and ancestral shrines provide good archaeological evidence for these changes in spiritual expression.

Obtaining marriage partners via payments of surplus and/or wealth was yet another value change from egalitarian cultures (Fig. 3). This was undoubtedly promoted by aggrandizers in order to benefit themselves. Aggrandizers benefitted not only in terms of obtaining payments for giving their children to another social

group, but also in terms of increasing the marriage payments to such an extent that children had to indent themselves in order to marry. This provided the kinship heads with incomparable control over the produce and labor of younger generations (Meillassoux 1981). It was therefore in the self-interests of kinship heads to increase marriage prices to the extent possible in order to place marriage beyond the abilities of junior kin to pay for their own marriage. Competition for the most desirable marriage partners (and alliances with the most desirable kin groups that controlled valuable resources) also propelled marriage prices to ever higher levels -- as high as the productive economy could bear. Thus, competition for marriage partners based on food production became an accepted new value (values also characteristic of competitive feasts and funerals). This was totally at odds with previous forager egalitarian ethics. This system forced everyone



Fig. 3. Costly marriages are also used by aggrandizers as a strategy to obtain more (and more desirable) wives usually with families conferring desirable economic benefits. Such marriages were arranged by family heads and the cost of marriage also firmly indebted the bride and groom to the family head. Here, a marriage procession publicly displays elite wealth and powerful connections in Simbuang, Sulawesi (Indonesia). Photo by B. Hayden.

who desired a respectable marriage for their children to produce and surrender large quantities of surplus food and prestige items, thereby putting pressure on people to increase the total production of the community, which provided more opportunities for leaders to appropriate ever more wealth for themselves, especially via loans and interest payments. Typically, few families owned the necessary animals for acceptable marriage feasts or marriage payments and thus had to borrow them (Hayden 2001). In addition, wealthy families continually invested more surpluses and prestige items in their children in order to increase their marriage value and the payments that had to be made to marry them. If such children died before marriage, they were usually buried with all the prestige items that they had been given in life, especially beads and other jewelry, e.g., the children at Sungir and other Upper Paleolithic burials (Fig. 4).

Funeral feasts and displays often followed a similar logic as marriage systems (Fig. 5). In order to have a respectable burial and to place ancestors in powerful supernatural positions, lavish funeral feasts with many animal sacrifices were promoted as necessary. As with marriages, only those with wealth -- or those who could borrow the required wealth -- could afford to enter into these kinds of funerals. Funeral feasts became competitive venues for advertising the relative power and worth of kin groups in communities in order to recruit or maintain the support of other groups needed to form dominant factions (Hayden 2009). When competition between groups was stiff, those who borrowed were usually indebted for many years. Families who could not afford to borrow were subjected to another ideological change. They were reviled and called derogatory names such as: "finger in the eye," "clay face," "rubbish men," "lazy moochers,"

“dead skin,” or “abominable people” (Lowie 1916; Goldman 1975: 166; Boas 1925: 93; Hayden 2014: 68, 2018: 173). These are terms that had no equivalent in egalitarian forager societies that I know of, and they were clearly meant to distinguish those who participated in feasting or other aggrandizer strategies from those who did not. It is important to note that individuals who did not want to participate in these feasting, marriage, and funeral systems were shut out of the powerful networks that soon came to dominate community affairs. Non-participants soon became marginalized, not only in terms of derogatory names, but also in terms of their ability to marry, reproduce, defend their own interests, and keep claims over land or property (e.g., Condominas 1977). Non-participants often became targets for predatory aggrandizers

backed up by supporters, and they could be forced into indentured servitude or slavery, often via trumped-up accusations of theft, sorcery, or unpaid debts. Thus, the beginning of significant inequalities in power and wealth became established for the first time as the result of aggrandizer strategies.

Compensation payments for deaths or injuries similarly became common when this system of wealth and power became established. Under egalitarian conditions, injuries or death were dealt with by inflicting punishment in kind to the guilty party or a member of their kinship group. It was retaliatory: an eye for an eye, a tooth for a tooth. In the new system, the wealthy and powerful were able to exert enough leverage to make offended parties accept retribution in the form of wealth payments (Hayden 2014).

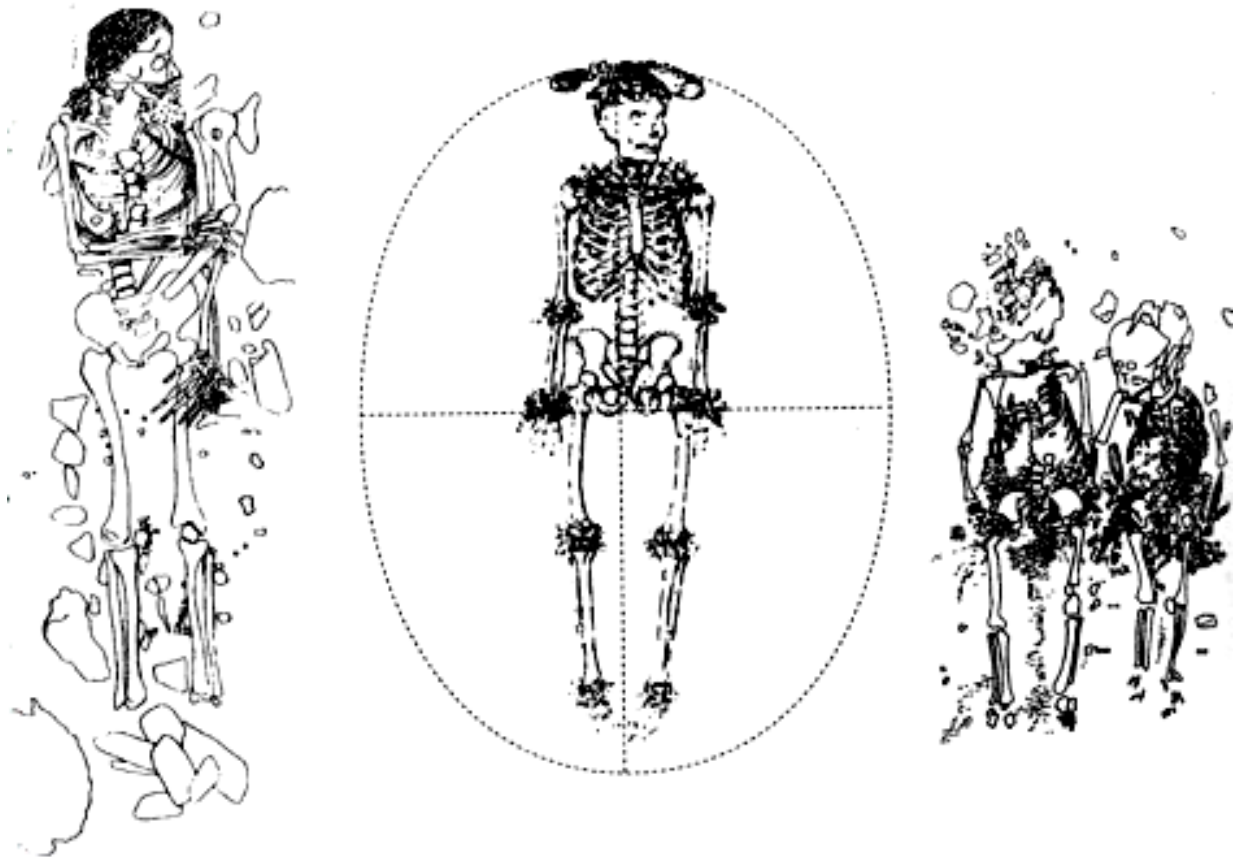


Fig. 4. Upper Palaeolithic adolescent and child burials sometimes were accompanied by lavish jewelry, including the children at Sungir accompanied by thousands of ivory beads, and the children shown here including (at left) an adolescent from Arene Candide (Liguria, Italy) accompanied by hundreds of shells decorating his head and body, (at center), a child richly covered with shell beads from La Madeleine (France), and two small children similarly covered with shell beads from Grotte des Enfants (Liguria, Italy). Such decorated clothing was probably meant, in life, to enhance the value of children for marriage exchanges between families..



Fig. 5. Another aggrandizer strategy was to make funerals costly and competitive so that only the wealthy could claim to have supernatural help from dead family members, and so that poorer families had to indebted themselves to richer ones in order to have a “respectable” burial for dead family members. Here, two (out of several dozen) high-priced water buffaloes are presented as a reciprocal gift to the dead man’s family at a Torajan funeral. The two men in the foreground are recording the debt incurred. The coffin is in the elevated structure behind the water buffaloes. Photo by B. Hayden.

Taboos and prohibitions have probably always been present in all societies. However, aggrandizers seem to have developed these to extreme extents as yet another means of manipulating and controlling community members. In effect, in many trans-egalitarian societies, there were so many taboos and ritual prohibitions concerning so many aspects of life that it would have been impossible for anyone to avoid transgressing at least some prohibitions, as exemplified by the Akha of Thailand (see Hayden 2016: 47,69–70). Guilty people would be judged by the kinship heads or community leaders, typically those with the most wealth and power, and punishments would be decided by those leaders. Punishments varied greatly and seem to have been strongly influenced by the supporters that individuals had in the community, with the rich and powerful getting off with light punishments or fines

while the unconnected and poor could be driven into servitude or expelled from the community (Hayden 2016). Typically, transgressions of ritual prohibitions were also claimed to endanger the community both on a spiritual and consequently on a material basis. This included endangering the well-being, or even the life, of the community leaders, who naturally claimed that they had to be adequately compensated for the dangers that offenders had created (Hayden 2016). There was also a concomitant shift in the way supernatural forces or spirits were portrayed. Egalitarian hunter-gatherers tended to view the spirits around them as providing the necessities of life and thus as benevolent, or at least neutral, in relation to human existence (Bird-David 1990). In contrast, secret societies were developed by aggrandizers in many trans-egalitarian cultures, and they portrayed supernatural spirits

as dangerous and destructive, even cannibalistic. This was part of their agenda to terrify the community. Secret societies then purported to provide protection from the destructive forces thus portrayed, due to their ritual knowledge.

Similarly, secret societies claimed to have special influence with supernatural entities (their “secret”), and thus claimed credit for successful hunting, harvests, health, and general community well-being. Hunting failures or crop failures could be blamed on individuals in the community who had transgressed ritual prohibitions or else blamed on external enemies. Lack of acquiescence to secret society demands and dictates could also be used to explain adversity in the community. There would also be the implicit threat of withdrawing protection if secret society demands were not met. In this fashion, another ideological change was created: material success typically became equated with supernatural and ritual knowledge. Furthermore, in order to justify their power and wealth, aggrandizers generally claimed that they obtained their wealth and success due to their ritual knowledge, including

the rituals that they performed and the ritual paraphernalia that they used, typically costly items that only the wealthy could afford. In some cases, these dangerous spirit forces were claimed to reside in the bodies of elites or ritual specialists (Hayden and Villeneuve 2010).

In more complex societies, these same ideological elements usually continued to be used or were elaborated in the form of the chief’s *mana*, the chief’s ability to taboo items or activities, the chief as hosting dangerous spirits in his body, and the chief as responsible for the productivity of the land and sea. In addition, it was claimed that warriors who died in battle ascended into heavenly realms. These were all fairly transparent self-serving elements in aggrandizers’ ideological claims, and it is highly questionable how widely accepted such claims were among the general populace (Hayden and Villeneuve 2010: 131; Hayden 2014).

Archaeological indicators of changes in ideologies and values stemming from aggrandizer strategies

As an archaeological example of aggrandizer strategies,

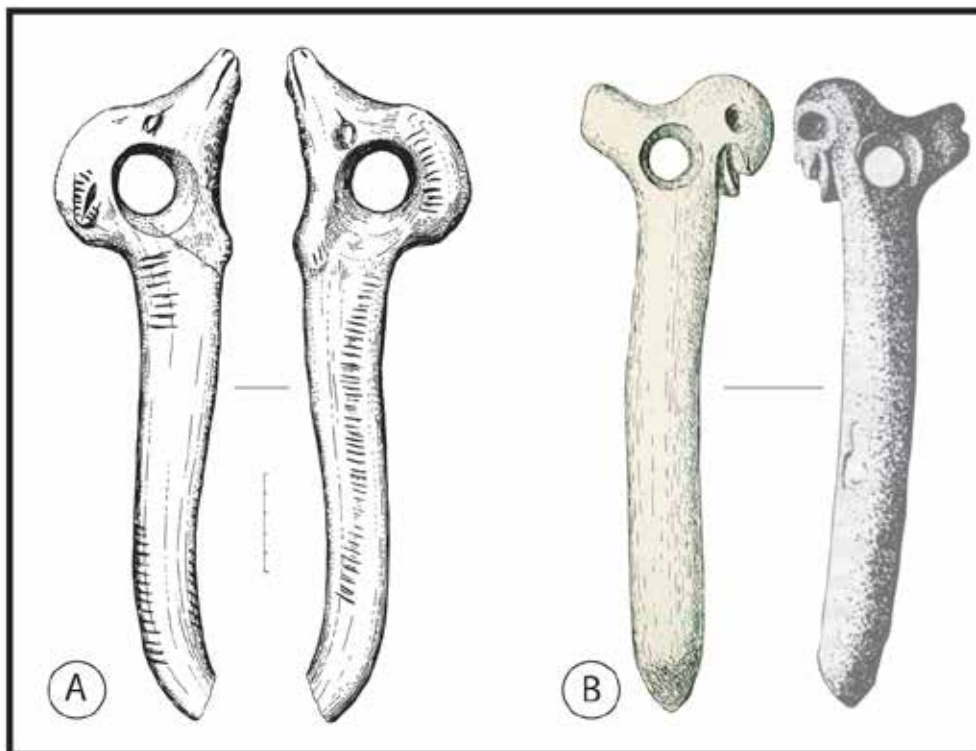


Fig. 6. *Bâtons* from the Upper Palaeolithic levels at Le Placard cave, Charente (France), illustrating the animal style of art that characterized most of the western European region as well as the unusual “*bâton*” form which may have been a practical tool (function unknown) but which was usually carved throughout this region and seems to have had a prestige function (Maret 1880).

I propose that the first material archaeological indications of aggrandizer strategies being used to a significant extent occurred in the European Upper Palaeolithic (Hayden 2018b). These consisted of:

- **economies and environments capable of producing wealth and supporting non-egalitarian (trans-egalitarian) societies** (as previously suggested in Hayden 2007, 2018b);
- **burials of select, presumably high-status, individuals**, often with wealth (Binant 1992), which were probably related to the importance of ancestor worship, and hence to the development of corporate rights over resources and wealth;
- **burials of subadults with considerable wealth** (Fig. 4), such as the boys buried at Sungir with thousands of ivory beads and carved ivory objects (White 1993) indicating the investment in children of considerable surpluses, presumably to augment their value in marriage alliances involving wealth exchanges;
- **evidence of feasting**, consisted of large hearths, unusual bone accumulations (e.g., Enlène, La Garma, El Juyo), carved spoons in bone or ivory, and prestige goods (Hayden 2014: 105);
- **record-keeping**, or notations, predominantly, I suggest, as a means of keeping track of feasting debts similar to potlatch debt records (Hayden 2014: 72);
- **prestige item** proliferation in certain areas of Europe, indicative of surplus production in favorable environments and the ability to use surpluses to commission skilled specialists to produce such objects. Prestige items included: beads, pendants, ivory, shells, sculptures (Fig. 6), paintings, buckskin clothes, ornamented headdresses, raptor feathers and talons, amber, master-craftsman blades and bifaces (see Hayden 2018b). Prestige objects typically were used in ethnographic societies to validate social contracts in aggrandizer strategies such as marriage exchanges, military alliances, membership in feasting networks, and political support groups (Hayden 1998). In essence, they were used to indebt individuals and to build political power structures.

Discussion and conclusion

It is evident that major transformations in intellectual

and spiritual expression took place in Upper Palaeolithic Europe. The most dramatic of these changes in ideologies, rituals, and materials took place in certain favorable geographic locations capable of producing surpluses in that period. The southwest of France, in particular, produced an unusual amount of prestige items, highly sophisticated art, rich burials (including subadults), unusual burial locations, decorated ritual caves, indications of human sacrifice and/or cannibalism, evidence for feasting and record-keeping, astronomical records, musical instruments, and power-animal iconographies. Are these developments to be explained by the arrival of genetically improved subspecies of *Homo sapiens*? Or can they be more usefully viewed as the product of new storage and mass-harvesting technologies that made it possible to produce surpluses which were then used by ambitious aggrandizers in a variety of strategies to promote their own self-interests and power? It is this last scenario that I have explored and which I think provides the most compelling narrative of why these dramatic changes took place in some locations in Upper Palaeolithic Europe and then spread to other areas during the Holocene as storage and extractive technologies were refined and were adopted in other areas. The major watershed in cultural, intellectual, and spiritual expression was not the adoption of agriculture, but the development of wealthy complex hunter-gatherers featuring a number of strategies to promote the self-interests of aggrandizers. Once domestication and agriculture were introduced, these same aggrandizer strategies ultimately led to even more complex sociopolitical and ideological developments based on the production of ever more surpluses and prestige technologies. But that is the topic for other analyses.

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THE CLIMATE CHANGE OCCURRING IN THE NATIONAL PARK SERRA DA CAPIVARA -PI, BRAZIL, SEEN THROUGH THE ROCK ART OF PRE-COLONIAL HUMAN SOCIETIES: A CASE STUDY

Prof. Dr Michel Justamand,
Gabriel Frechiani de Oliveira,
Pedro Paulo Funari
Universidade Federal do Amazonas (Brazil)

Introduction

Climate change is a most frequent topic of scholarly and ordinary discussion. Natural climate changes are pervasive features along the geological, long term. In the last billion years, these natural changes led to direct consequences to living species. In the recent past, human action led to rapid climate changes and to the destruction of biological diversity, with the extinction of several vegetal and animal species. There has been a growing awareness of the correlation of climate change and species extinction and this paper is part of this effort to understand the subject in a long-term perspective. It deals with climate change and mass extinction in the most recent geological past, in the early Holocene in northern South America (Funari and Noelli, 2002).

Climate change is a recurring concern today. The impacts of anthropic activities and changes in nature are causing serious environmental problems to the planet, leading to the sixth major extinction (Cordani and Taioli, 2008).

The great extinctions occurred at various moments of the history of planet earth, causing drastic changes to the environment, especially for species of fauna and flora, provoking climate change (Fairchild, 2008).

The domain of fire by hominids was the first form of radical transformation of the environment, through which it was possible to defend themselves against hostile animals, cook food and eat better, light houses at night, improve implements such as spears and allow nights of quiet sleep, giving the possibility of dreaming (Lewin, 1999).

Geological traces are a way of documenting the history of planet earth over billions of years, demonstrating

climate change and its influence on the environment (Fairchild et al., 2008). The climate change began to influence hominids between 2 million and 1.8 million years ago, leading to transformations. Some distant relatives disappeared as *Australopithecus anamesis* about 3.8 million years ago, *Australopithecus afarensis* about 2.9 million years ago, and *Australopithecus africanus* about 2 million years ago. But it also led to the appearance of other specimens more adapted to the environment like *Homo habilis* and *Homo erectus* by between 2 million and 1.8 million years ago (Neves et al., 2015).

The artistic manifestations of the hominid genus are related to their physical and mental development (expansion of consciousness and stimuli to the imagination), as they developed in the sense of adapting to the environment and climate changes in the world (Hawkes, 1966). Another type of climate change is glaciation. At the moment, the planet earth is experiencing a decrease in the temperature and concentration of large bodies of solid water in the poles of the planet, present today in decreasing quantities due to climate change (Rocha-Campos and Santos, 2008).

Development

The PNSC¹ palaeontological research aimed to identify 30 more species of Pleistocene vertebrates in the site, which we may split into two segments: macrofauna and microfauna. The palaeontological evidence indicates that the region was able to support large animals, demonstrating the configuration of a more humid climate, and it underwent a process of climate change for 12,000–9,000 years ago, causing the extinction of the macrofauna that lived with the human groups in that period (Araujo et al., 1998).

The main species identified were the following:

Giant sloth (*Catonyx cuvieri*), deer (*Mazama* sp.), Mastodon (*Haplomastodon waringi*), giant armadillo (*Glyptodon clavipes*), American horse (*Hippidion bonariensis*), saber-tooth tiger (*Smilodon populator*), alligator (*Caiman crocodylus*);

Other specimens identified in the archaeological sites Toca da Janela da Barra do Antonião, Toca do Garrincho, Toca de Cima do Pilão, and Toca do Serrote (Guérin, 1991; Guérin et al., 1996).

1 Park National Serra da Capivara.



Figure 1. Palaeontological vestiges in Quari Lagoon, São Raimundo Nonato - PI. Source: Felice; Guidon; Mendes, 2014, vol. A-II, p.80.

The first palaeontological discoveries in the place go back to 1987-88, when numerous fossils appeared in the excavations of the Toca Janela da Barra do Antonião and in the Sumidoro of the Sansão. Later, other sites such as Toca de Cima dos Pilão, Toca do Gordo do Garrincho, Toca do Serrote do Artur, Toca do Barrigudo, Toca da Moendas, the lagoons of São Vitor, Pomba, Quari, and Pigs provided a great body of study for Fumdam and allowed the identification of the main palaeofauna species in the region (Guérin and Faure, 2014, vol. II-B).

More than 2,200 fragments of mammalian bones were collected at the Toca da Barra do Antonião site, with the presence of microfauna such as marsupials (Didelphity), chiroptera, and rodents (Cricetidae, Sigmodontinae, Caviomorpha), and 45 macrofauna species, such as horses (*Hippidion bonaerensis* and *Equus neogeus*) and tatu (*Dasyrodontia pampatherium humboldti*) (Guérin and Faure, 2014, vol II-B) (see Fig. 1).

In the Toca de Cima dos Pilões were found more than 800 bone fragments, with specimens such as saber-toothed tiger (*Smilodon populator*) and jaguar (*Panthera onca*). In the Tocco do Gordo do Garrincho, archaeologists collected a further 1,500 bone fragments, including 22 macrofauna species, such as llamas (*Palaeolama niedae*), equidae (*Hippidion bon-*

aerensis) and giant sloth (*Catonyx cuvieri*). More than 400 fragments of bones appeared at the Toca do Barrigudo, encompassing several species of macrofauna, such as Glyptodon, Equus, Macrauchenia, Tayassu, Mazama, and others. The São Vitor, Pomba, Quari, and Porcos lagoons provided a significant amount of palaeontological evidence, revealing the presence of several species of palaeofauna in the southeast region of Piauí (see Fig. 1) (Parenti et al., 2003; Guérin and Faure, 2014, II-B).

The Boqueirão of the Pedra Furada is considered one of the most controversial sites in American archaeology, due to the possibility that it dates back 100,000 years, contradicting some theories about the settlement of the American continent, especially the Clóvis theory. In this archaeological site, rocky fragments were found painted and associated with vegetal coals on the same stratigraphic level (layer XIX: 303 cm). The date of this coal would go back to 26,300 ± 800 BP (GIF 6309), constituting the date for the oldest rock art in the Americas (Guidon, 1984).

A set of 67 radiocarbon 14 dates provided a stratigraphic control from 57,000 to 5,000 BP years, and the thermoluminescence dating of the rocks around the bonfire structures pointed to a date of 100,000 years BP (Guidon, 2005, 2007).



Figure 2. Skull and mandible of a Piauí Sceliododon found at the archaeological site Toca do Barrigudo, PNSC. Source: Guérin and Faure, 2014, vol. A-II, p. 149.

In the Toca Sítio do Meio, an indirect dating for rock paintings was obtained from a concentration of charcoal deposited under a rock block from the wall in section 3 of the excavation, resulting in a dating between 10,370 and 10,330 years BP (BETA 148099) (Guidon et al., 2002). Other dated archaeological remains, such as a ceramic fragment and a rock with the presence of polishing, had dates estimated between 9,000 and 8,000 years BP (Guidon et al., 2002; Martín, 2008).

In the Toca da Ema do Brás I an indirect dating of 9,290–9,000 years BP (BETA - 148100) was obtained from fragments of vegetal coals under two rocky blocks containing rock paintings. At the archaeological site Toca dos Eighty were found two large blocks of sandstone, which served as a rocky support for rock carvings, for which the indirect method, from coal concentrations, provided an absolute dating between 7,840 and 7,600 years BP (BETA-148097) (Guidon et al., 2002).

As a result of the excavations carried out at Toca do Garrincho, three human teeth and one bone fragment sent for laboratory dating were found, and an age of 12,000 years BP was found, evidencing the presence of human groups in the region. Samples of charcoal associated with the cave paintings were collected at the Baixão do Perna, with a 9650 + -100 years BP (BETA

32972) (Guidon et al., 2002) laboratory result.

Data for thermoluminescence and electronic paramagnetic resonance of calcite collected on rock paintings at the Toca da Bastiana and Toca do Antônio sites were aged 48,000 and 20,000 years BP, and 55,000 and 32,000 years BP, respectively (Ayta, 2005; Watanabe, 2002). The results of these direct dates are much criticized because the possibility of such an early date for these rock paintings was indirectly achieved, especially by the researcher Marvin W. Rowen, who collected a sample of the same layer, and using the technique of direct dating AMS, inferred a date of 2490 + -30 years BP for calcite and 3,730 + -30 years BP for the other test (Guidon, 2007).

The relationship between human groups and the palaeofauna in the region can be observed from the association between the archaeological remains found on the sites and in the cave paintings, with recurrence of animals on the rocky walls of the place (Pessis, 2003) (see Figs. 3 and 4).

The contextual content of the images points to the relevance of the palaeofauna animals as a source of food and/or risk of attack on the human communities living in the place. Scenes of collective hunting and zoophilia are recurrent in the northeast tradition of cave paintings, and thus, infer a degree of social organ-



Figure 3. The representation of a rock painting in the form of a *sauro*. Source: Authors' collection, 2017.



Figure 4. Representation of the interaction between an anthropomorph and zoomorph of the megafauna. Source: Authors' collection, 2017.

ization and social sharing of food, because of hunting activity (Guérin, 1991; Guidon, 2007).

Another segment is the attempt to associate the palaeontological vestiges and to identify the possible species represented in the rock paintings, such as seriema, cervidae, giant armadillo, and sloth, among other animals that lived there (Faure et al., 2012).

The climate change has brought a number of changes to the region, such as a more arid climate, a decrease in the variety of megafauna species that have been unable to adapt to new climatic conditions in the region, possibly because they are unable to satisfy their dietary requirements.

In the pre-colonial human societies in the region,



Figure 5. Representation of the interaction between an anthropomorph and zoomorph of the megafauna. Source: Authors' collection, 2017.

there is an increase in the representation of scenes of violence, possible rape and captivity, suggesting social and political instability (Guidon, 1991) (see Figure 7). The representation of scenes of violence, conflict, and captivity is one of the main thematic features of the Complexo Estilístico Serra Talhada. The hypothesis is supported by Guidon (1991) to demonstrate the impacts of environmental changes in the PNSC region 11,000–10,000 years ago, probably intensifying the disputes over natural resources for the human groups present, associated with the extinction of palaeofauna animals and the arrival of new human groups in the region, stirring up rivalries and conflicts. Violence is unique not only to the Complexo Estilístico Serra Talhada, but also to the Serra Branca style, especially anthropomorphs with hand thrusters and collective hunting scenes, such as Toca da Serrinha I (see Figure 5).

In studying past and present societies, Diamond (2006) found five factors that contribute to the en-

vironmental catastrophe of a society, leading it to extinction:

- 1) environmental damage caused by the non-rational use of natural resources by human groups, something very present on Easter Island;
- 2) climate change, which directly influences nature, especially agriculture, on which we are dependent, and the lack of ways of storing food, which has made these groups more dependent on climate;
- 3) a hostile neighborhood, invaders who can destruct societies, drain natural and human resources for the establishment of a defensive system, removing them from the development of agriculture and livestock;
- 4) friendly commercial partnerships, which contribute to the exchange of goods, promoting a specialization of labor;
- (5) responses to environmental problems in order to correct, conserve, and preserve natural resources to promote the sustainable use of these goods.

Final considerations

The climatic changes that occurred in the Park National Serra da Capivara in the Holocene period affected the fauna and flora of the region, promoting the extinction of megafauna species that could not adapt to the new climatic conditions. Within the context of



Figure 6. Representation of the interaction between an anthropomorph and zoomorph of the megafauna. Source: Authors' collection, 2017.

Figure 7. Captivity scene, five anthropomorphs on the rocky wall. Source: Authors' collection, 2017.



prehistoric human societies, these changes possibly caused social, political, and cultural rearrangements, observed by cave paintings in archaeological sites, especially in the Complexo Estilístico Serra Talhada belonging to the Nordeste tradition of cave paintings. Violence, captivity, and rape are recurrent themes during this period, corroborating a tendency towards social disintegration, instability or periods of disorder, where physical coercion contributed to impose the collective will of the group. In a more general perspective, it is possible to relate climate change, species extinction, and social tensions and contradictions. The ancient past continues to warn us about the challenges of the present over the future.

The climate change has become more arid, evolving into the current semi-arid and *cerrado* climates in the region; the fauna and flora have become more resistant to warmer and less humid weather. Human societies had to adapt to these changes, and some animals disappeared, like the saber-toothed tiger, the giant sloth, the giant armadillo, and the American horse.

In conclusion, climate change has led to changes in the local ecosystem, requiring social, political, and cultural readjustment. The example of climate change in the Park National Serra da Capivara region serves to illustrate how the changes affect the environment. Will we be prepared for climate change in the 21st century?

Acknowledgements

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DEITIES AND GODS: A PERSPECTIVE ON PREHISTORIC RELIGIONS IN ARABIA

Majeed Khan (Saudi Arabia)
Commission for Tourism and National Heritage

Introduction

When and how religion originated is not known to us. Our subject is to trace the earliest evidence of religion in this part of the world, that is, the Arabian Peninsula in general and Saudi Arabia in particular. From times unknown, maybe from the birth of humanity, all human societies believed in supernatural beings who created the world, a supreme authority that controls our life and death. There has always been a god, a goddess, a divine or some unseen power that runs the world.

The earliest evidence of belief in the metaphysical world and religion comes from Jubbah, one of the oldest rock art sites in the Arabian Peninsula (now registered on UNESCO's world heritage list), located north of Hail in the middle of the great Nafud Desert. Here on the vertical surfaces of the Umm Siman Mountain range is carved a highly impressive and magnificent figure of what to our modern eyes looks like the god of rain, lightning, and thunder. In addition to this earliest composition, several other images suggest that religion was practiced in the Arabian Peninsula as early as the Neolithic, c. 10,500 BCE. There is no doubt that earlier than this period people would have believed in religion, but we have no evidence of their ideologies.

As Neolithic society in this area consisted of hunting and food gathering and was generally mobile, temples were not built, but the people were smart enough to carve or paint the images of their deities on rocks. Thus, unwallied open-air temples were created and developed in the deserts, several of which still survive.

Various images of apparently the metaphysical world are located on the rocks, hills, and caves of Saudi Arabia. Do they represent prehistoric religion and belief? Whether these images represent the first step towards the creation of religion and whether these figures are those of deities is the main subject of this paper.

A number of human-like figures are located in various prehistoric rock art sites in Saudi Arabia. These

figures, although they have basic human-like physical features, cannot be treated as human representations, because some of their traits are abstract, strange, and imaginative. From these images, we may assume that the prehistoric artist did not mean to portray real human beings but his creation was based on abstract religious ideologies and mythological beliefs.

Fig. 1 represents a unique example of what apparently seems to be a deity of rain, lightning, and thunder. Carved in double perspective, with the face in profile, the upright torso and lower body in plan are seen from front. The face is ambiguous with a beak-like nose, and a prominent eye marked as a small circular dot on the beak. The shoulders are wide and muscular while arms are thin and linear; the left arm is shown in full, placed in a horizontal position on the waist, while the



Fig. 1. Representation of the deity of rain, lightning and thunder, Jubbah, northern region.



Fig. 2. Idol and ox figures, an open-air temple in the desert, Tabuk, northwestern province.

right arm is stretched forward. Small thin wavy lines near the fingers of the stretched arm as rays are associated with a star-like motif. It gives the impression that the rays are radiating from the fingers (lightning?). It is the earliest example of what appears to be the representation of a god of lightning, thunder, and rain, located at the Neolithic site of Jubbah, northern Saudi Arabia, dated c.10, 000–9,000 years before present (Khan 1985, 1988a, 1990).

Religious symbolism is more prominent in Arabian rock art where hundreds of religious icons of deities are located, particularly in the northern and southern parts of the country. Fig. 2 is an example of an open-air temple. Obviously, in the desert, where sand and windstorms are so common, it would have been difficult to build temples. For the nomads who do not stay in one place for a long time, the best way was to create open-air temples. In Wadi Damm, northwest of Tabuk, northern Saudi Arabia, a composition of idol and bull representations constitutes an open-air tem-

ple in the middle of the desert (Fig. 2). The panel is located at about 5 m high on the smooth and darkly patinated sandstone hill surface. The high skill and advanced technology used in creating this splendid and amazing work of art survived until today several centuries after its creation. Perhaps offerings placed in the crevasses located under the figures and the priest might be sitting in the narrow rock shelter (extreme left). The panel is attributed to the Chalcolithic period, c. 3000 BCE.

Idoliform representations of deities are commonly located in almost all parts of Saudi Arabia. Fig. 3 represents the image of a deity or god, superimposed on an ibex, and is associated with an ancient Arabian inscription written in Musnad al Janubi, a pre-Arabic script.

At the edge of the Al-Tuwaiq mountain range, overlooking the ruins of the ancient town of al-Faw, this spectacular panel of a large human-like figure and several ancient Arabian inscriptions is prominently vis-



Fig. 3. Icon of a god, located at Bisha, near Najran, southern Arabia.



Fig. 4. Icon of the god Khal, southern Saudi Arabia.



Fig. 5. Idols and bulls were worshipped in pre-Islamic Arabia, Tabuk, northwest Arabia.

ible from a long way away (Fig. 4). Identical figures are found at several sites in the southern region of the country. Some archaeologists believe it is the portrait of the god Khal worshipped in pre-Islamic Arabia, dated c. 2,000–1500 BCE (Ansari 1982). Another example of an abstract image of a deity and bull composition (Fig. 5) is located in northwestern Arabia.

Saudi Arabia is enriched with a variety of human and animal petroglyphs in addition to geometric and non-representational motifs. The culture in which above religious icons were created reflects a quite significant cognitive system in which all the social groups, tribes or clans appear to share a common cosmology in which a single animal species, the cow, was overwhelmingly depicted and worshipped. Ox figures dominated Arabian rock art right from the Neolithic to the Chalcolithic sites. In the Neolithic exaggeratedly large horned bovids were carved on prominent



Fig. 6. A camel superimposed on the long-horned ox figure at Jubbah, indicating animals of two different climates, hot and cool for the ox (Neolithic), dry and hot for the camel (Bronze Age).

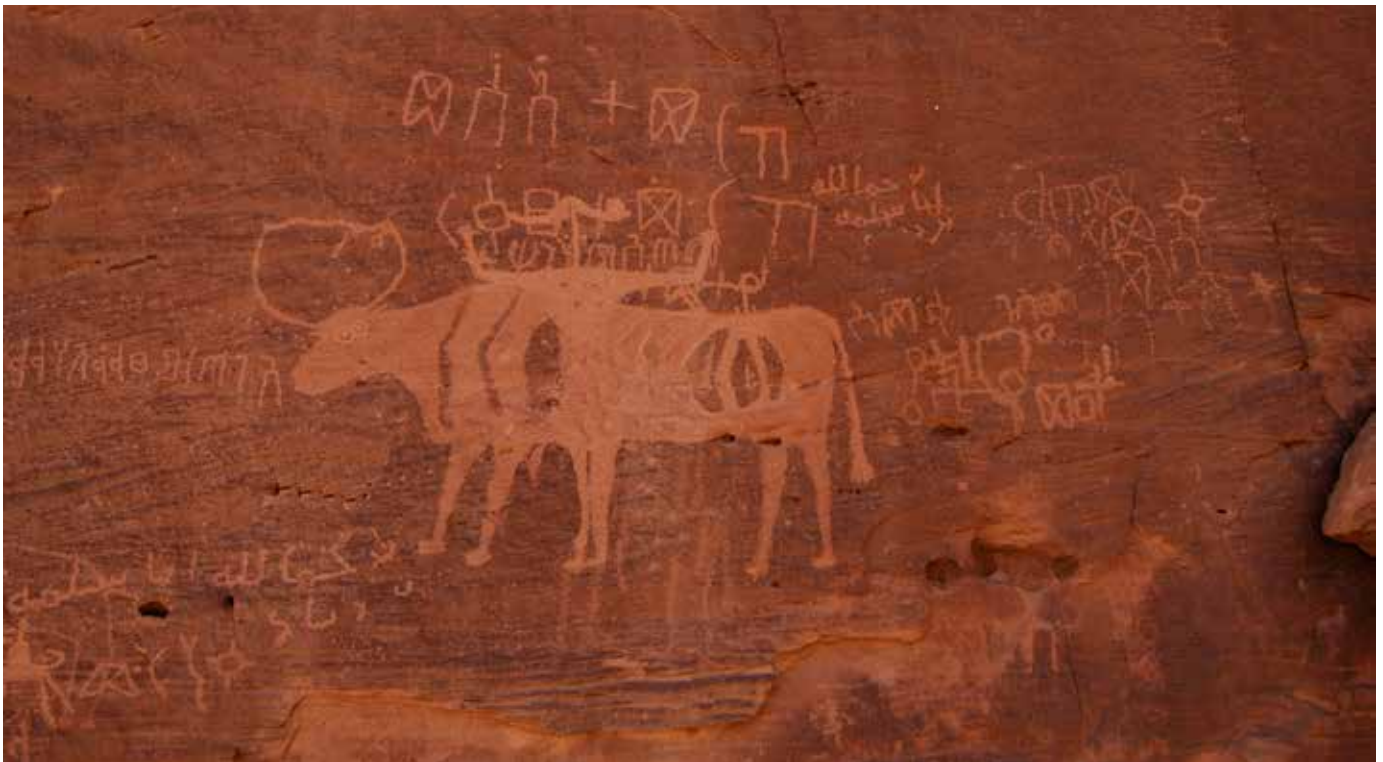


Fig. 7. Cow worship act located at Jabal Kaukab, Najran, southern region.



Fig. 8. Cow worship scene depicted at Jabal Kaukab, Hima, southern Saudi Arabia. Worshipping people around the cow with half-raised arms as if standing in supplication. Located in Najran area. Date unknown.



Fig. 9. On certain occasions the cow is decorated with circular motifs and flowers in present-day India. The cow is treated as a goddess.

Fig. 10. In the Neolithic era, c. 7500 BCE: a cow decorated with circular motifs, exactly like in India.

places. It is likely that the large horns were meant to indicate the power, strength, and might of the bull. There is evidence of cow worship in ancient Arabia like in Pharaonic Egypt, Sumer and modern India. Evidence of cow worship in Arabia is much older than in India where the cow is worshipped as a goddess. Gao Mata'a or mother cow is the most important religious icon of Hinduism, worshipped by all sects of the Hindu religion; but long ago, maybe before Hinduism in India, the cow was worshipped in Arabia. Footprints associated with the image of a cow are shown on its face like a human foot. A new perspec-

tive of the cow goddess. A unique composition of religious belief and human belief in metaphysical cosmology or visible icons of deities. Located on a large rock lying on the flank of a valley in the Tabuk area.

The deities were both male and female, thus images of goddesses were found in several locations. Female figures are extremely rare in the northern region, but they are overwhelmingly depicted in the south of the country. Almost all deities in the north are male, which is quite contrary to the rock art of the southern Arabia in which female deities considerably outnumber the males. In Najran and other parts of southern Arabia, petroglyphs of female representations are located on almost each rock art site. These are shown with half-raised arms, wide buttocks, a triangular torso, a narrow waist and a long neck. Hair is both short and long, sometimes lying on the shoulders and sometimes reaching the waist. Almost all such female figures are identical in their physical traits and style. Among the local people, these are known as the figures of Alia, a popular pre-Islamic queen and goddess well known in southern Arabia and northern Yemen. It may be assumed that the location of a group of identical mythical images on a single rock was a result of a long tradition and that each image was depicted separately on different occasions (Fig. 6).

It is obvious that the rocks and the places where images of deities were depicted would have been sacred. We can imagine that ritual ceremonies were performed in these places in the desert, in front of these images, thousands of years ago. The icons of deities created by their ancestors were approached with rituals at the same time as new images were being executed on the same rocks. The rocks, the platform in front of them, and the sacred images are still at the same place and in almost the same state of preservation as they were left by the first Bedouins of Arabia hundreds and thousands of years ago.

The open-air temples in the deserts of Arabia were created before the walled temples of settled communities. It is interesting that instead of a tradition of superimpositions and overlapping, images of deities remained untouched and undisturbed. It appears as if these images were also respected by the people of later periods, although religious ideologies should have changed in the long course of time, which is apparent from the change in the form and shape of deity representations



Fig. 11. In the Hima area of Najran, southern Arabia, images of large cows and bulls are depicted on prominent places like this outcrop on the top of a hill. Inscriptions and other images were added later when the cow lost its importance as a religious icon in Arabia.

of later periods (Khan 1987, 2009).

There is no doubt that some of the most significant advances in religious development took place in prehistory. The abstract images or symbolism in religious art is the earliest record of the Bedouin concept of spiritual and mythological beliefs, although we cannot interpret these images due to a total absence of oral or otherwise tradition, and because the prehistoric religions ceased in the Arabian Peninsula with the advent of Islam about 1,500 years ago. However, the visible evidence suggests that offerings and perhaps sacrifices were made, presumably in association with certain rituals and other religious ceremonies in front of the rocks on which are depicted sacred images of unknown deities.

In each cultural period from the Neolithic onward, a change in form, shape, traits, schematization, and abstraction in the idol figures is clearly visible. Thus, in the Neolithic, the religious anthropomorphic representations are depicted with naturalistic human-like

bodies, stick or linear arms, and bird-like or ambiguous faces. In the Chalcolithic, the faces are naturalistic, showing eyes, nose, and mouth, etc, but the bodies are abstract with no resemblance to humans, while in the Bronze and early Iron Age idols are shown with abstract bodies. This change in the schematization and abstraction of idols' representations in each cultural period could possibly be the result of change in social, cultural, and religious ideologies and beliefs. In other words, it is the cultural, social, and ideological concept that gives the meaning and the theme to deity representations. It may also be said that the artist played an important role in the origin, development, and propagation of religious ideologies in prehistoric societies.

Thus, we find different religious and mythological ideologies in different cultural periods in the Arabian Peninsula. The idea of a supernatural being is a philosophical and intellectual development of the human mind that ultimately led prehistoric people towards

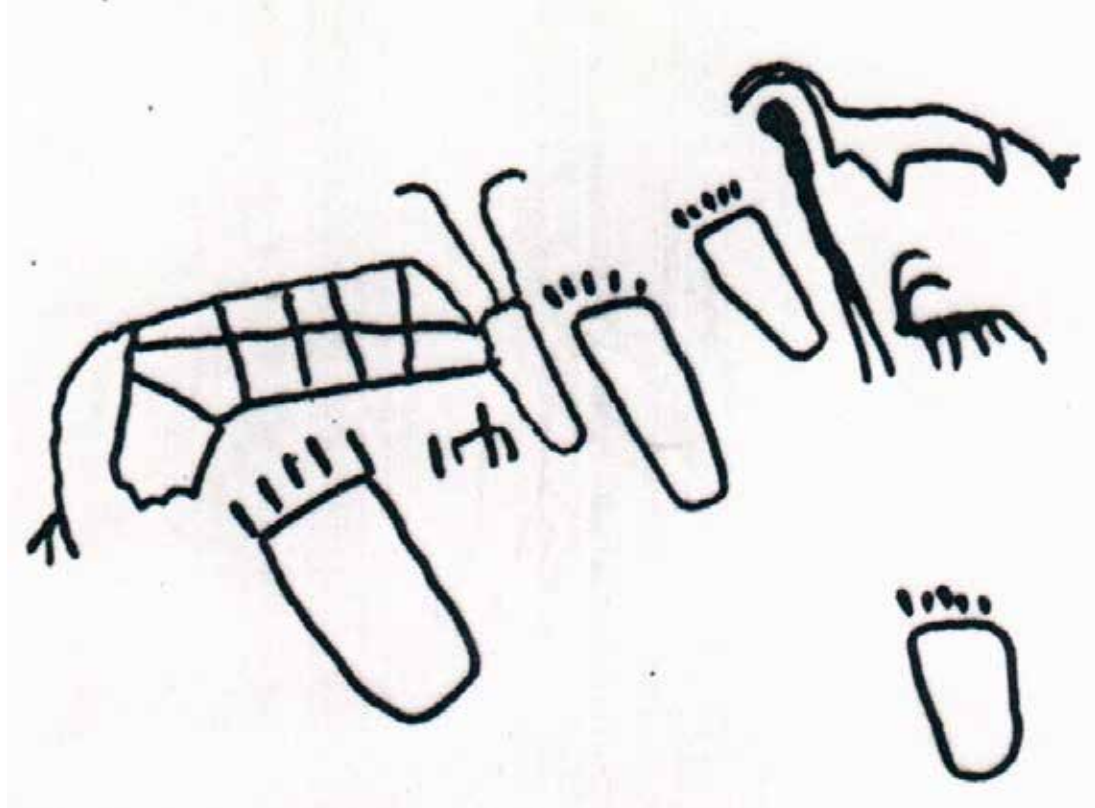


Fig. 12. Cow face as human foot associated with other footprints.



Fig. 14. The images of *Alia*, the goddess of love and fertility, are located in large numbers in the Najran area, southern region of Saudi Arabia.



Fig. 15. Goddess associated with an inscription, located on top of this hill at Bisha, south Arabia.

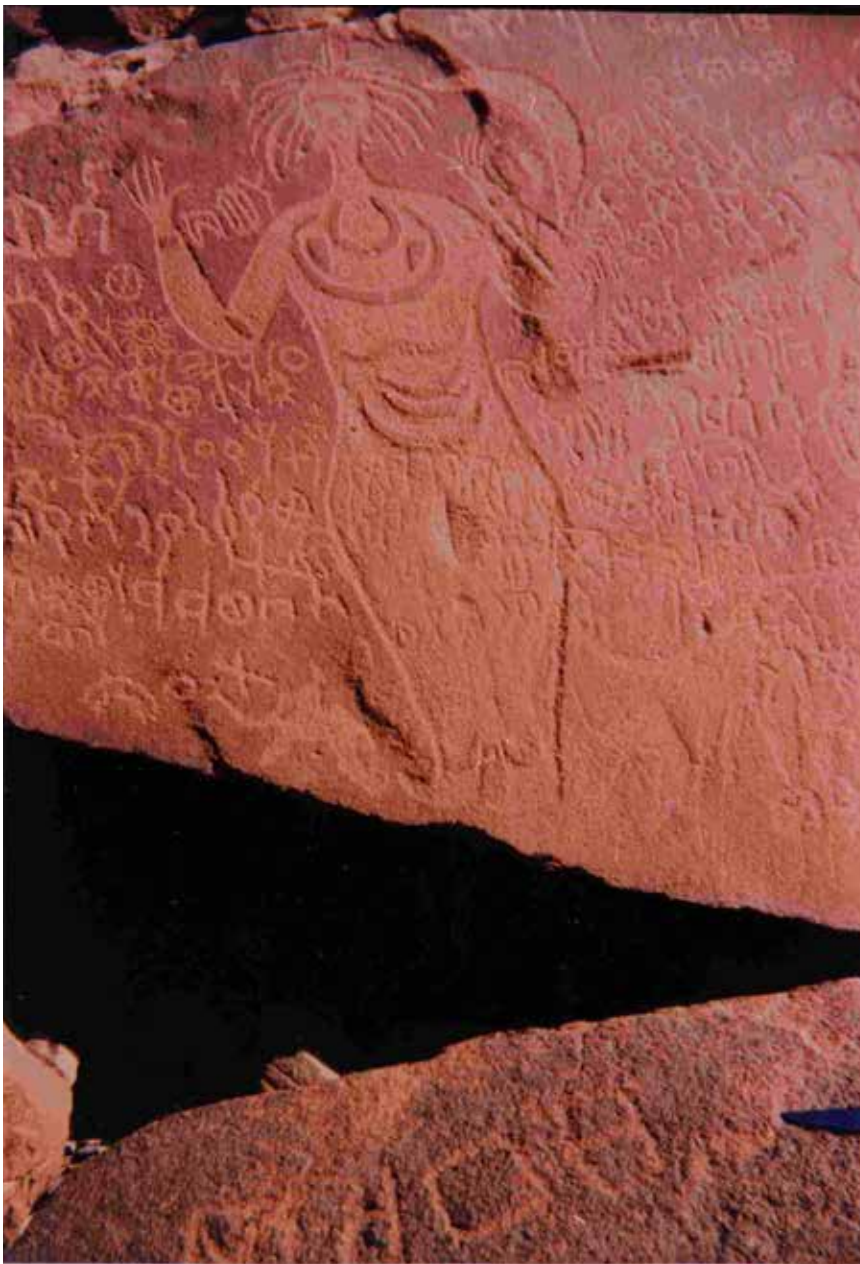


Fig. 16. Moon goddess from Najran, southern Arabia. Different phases of the moon marked over the head and body of the deity.

religions. Every tribe and people in the world seem to have developed their own ideas and beliefs about an unknown world where a supreme power controls the life and death of living beings. The manifestation of ancient Arab religious beliefs, ideologies, and expressions may be traced far back in prehistory. However, from the available evidence it is clear that there was a society with well-developed religious concepts and ideologies in Arabian prehistory. Rock art was therefore, a social, religious and intellectual phenomenon and not a leisure pastime individual activity.

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THE TLALOC PROTOTYPE: DEPICTIVE PRACTICES IN RAIN-PRAYING CULTURES OF DEL BAJIO, THE SOUTHERN FRINGE OF ARIDOAMERICA

Tirtha Prasad Mukhopadhyay
Universidad de Guanajuato (Mexico)
Armando Pérez Crespo
Universidad de Guanajuato (Mexico)

Introduction

Aridoamerica, a broad denominator for desert landscapes in the greater American Southwest and north-west Mexico, was a region in need of rain. It represents a desert aquasystem with large tracts of semi-arid vegetation, and has been a shifting homeland for migratory groups for several hundreds, if not thousands of years. At least from the point of view of linguistic affiliations, the Southwest and its arid counterpart in northern Mexico presents a prehistoric site of mainly forager societies of the Uto-Aztecan migratory groups. Linguistic indicators were identified by Lumholtz (1902), Lamb (1958), and other pioneering studies by scholars like Kroeber (1934) and Schafer (1967). In later years, especially in relation to the more southern Mesoamerican groups, Kirchhoff (1946), Swadesh (1956), Jimenez Moreno (1944) and others have investigated how some of these groups have evolved in time (Weigand 1993; Wright Carr 2017; Campos and Fernando Nava 2017). Yet these forager groups, at least some of them, like the Aztecs had settled down in water-abundant enclaves to construct some of the most amazing urban civilizations in the prehistory of the region, and the cultural interactions between these groups are still of interest in the context of the iconographic practices of these cultures and the prehistory of that art. Perhaps the most interesting precepts for a cultural semiotic study of the traditions of the Aztec groups, bonded together by language affinity as well as sustenance patterns, are to be found in the codices, written by the encyclopaedic authors of the Colombian transition, like Bernardino de Sahagun and Duran, among others, and the scribes of the Codex Borbonicus, where much of the major and complex visual iconography of the period was preserved. The codices

could help make sense of the outlying and inaccessible pictograms of the lesser known Aztecan groups for the pre-Hispanic periods.

Yet our focus for this presentation has to look for semiotic support from sources not directly preserved in the narratives of the codices. We have to look at the entire world picture from the period ranging from 200 BP to 1500 CE in order to understand the phenomenon of a wide range of lesser known or unrecovered pictogrammatical sites. Here we ask what happened to the cultures, not merely demographically, but also as they tended to memorialize their reflexes towards nature, especially in the face of a recorded natural threat to the region, the lack of rain, and the human need of animal increase and fertility. The pictograms in the proto-Aztecan arid and del Bajío regions of Mexico constitute a complex of symbols which is hard to understand, except as a reference to the climatological changes of the region. The proto-Aztecan groups constructed a system of beliefs based on the only source of their survival, and most potent crisis, namely that of rain and the threat that the scarcity of this element posed towards the survival of local fauna, like deer, or flora, including maize which was not ubiquitously, but intensively, cultivated in regions close to the del Bajío sink (Mountjoy 1992; Starr 2012). Recognition of other geoclimatic facts like earthquake and epidemic are evident in the worship patterns of these groups of people, but nothing like that of the concern and anxiety for rain. In fact, the lack of rain defines the geoclimatic trajectory of the desert Southwest from California and Nevada to San Luis Potosí and the del Bajío in Mexico, this being the context of our study for this project. Aridoamerica, as the region is called, may be seen to have nurtured an arid, rain-seeking culture, a group of cultures, some of whom were migratory and hunter-gatherer yet also often ambivalently, as happens in the case of the Nayarit petroglyph context, at least 1,000 km northwest of the del Bajío sink, that sometimes seemed to have adopted or improvised as more agricultural societies of similar proto-linguistic affiliations (Weigand 1993; Wright Carr 2007).

If we consider the post-classical phase of Aztec history as recorded in the codices we notice the same thematic concerns. The iconography includes the whole panoply of gods and goddesses, like the snake icon which is consistently associated astronomically with Venus, and

icons of the sun and the moon with cycles of destruction and harvest, or loss of harvests and deaths caused by severe climatic conditions. Thematically rain was of essence and the greatest concern, as the indigenous people moved for sustenance in search of ecosystems with better precipitation levels. The case is even still acutely perceived for the special region chosen for this analysis, namely the del Bajío. How and in what ways are the patterns of rainfall, as understood from organic fossil histories of the period, also responsible for the origins and continuity of a rain prayer culture, both forager and agriculturally adept in maize-producing eras of history of the region?

The del Bajío prehistory, which is wonderfully understood in the depictive practices of the semiotic cultures of the sink, or the del Bajío geography, a region on the frontiers of geoclimatic divisions (García 1999). Pictograms and a related network of images in the archaeological remains of this fringe topography illustrate the material cultural wealth of a rain-prayer culture among the groups occupying the region for over 3,200 years (Efrain 2015); this rain-invoking culture projects its belief through iconization of a god of rain known in the Aztec fringe groups as Tlaloc, but tendencies of this visualizational process is evident in more marginal and at times inchoate pictograms from the northern stretches of Aridoamerica. We propose to show that the Tlaloc prototype engendered in the sink cultures of the del Bajío as a direct response to the situation of settlements across a change in climatic conditions caused by shifting rains and the gradual desertification of a landscape. Pictograms, contemporary artefacts, and visual designs of perishables from the sink region of Guanajuato, Querétaro, and adjoining Michoacan are examined to demonstrate how responses to climatic changes affect the content and meaning of this rock art inscriptions. The period studied extends from a hypothetically constructed epiclassical substratum from 900 CE to 1300 CE. This was the same as that of the more central and urbanized Aztecs of south central Mexico. The whole geography may be seen as a region of contesting proto-Aztecan groups and subgroups, some nomadic, some agrarian, and some ambivalent.

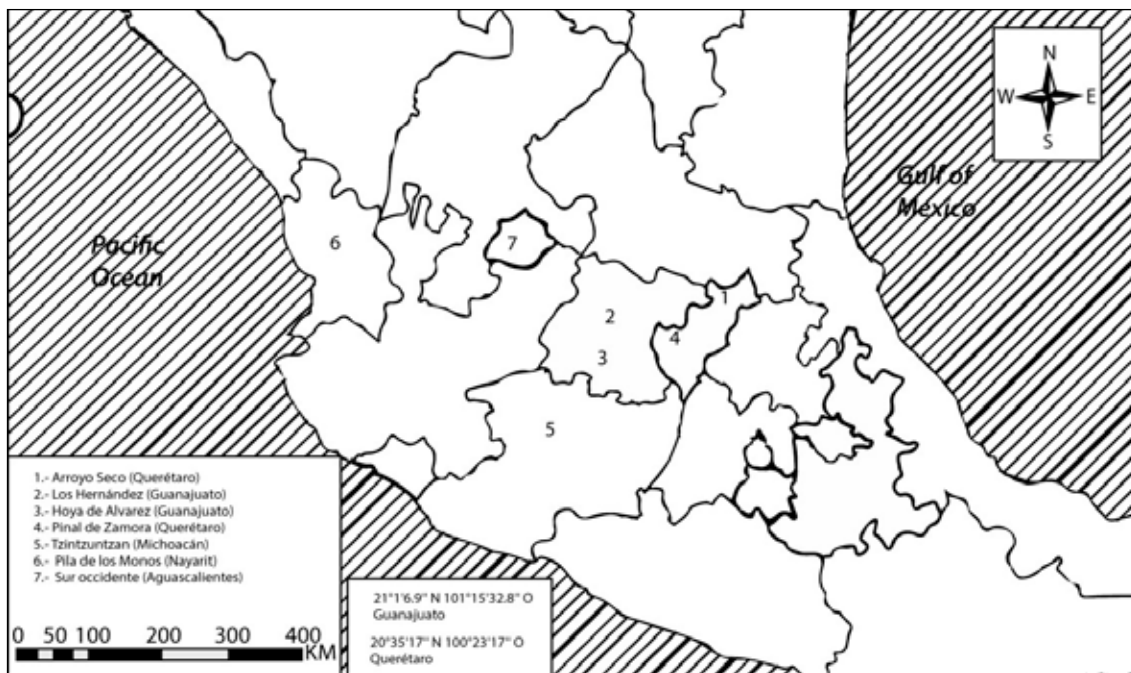


Figure 1. Map of rock art occurrences from the del Bajío sink, south of the Aridoamerican desiccated system, in the central mainland region of Mexico (based on Blancas Tome 1978; Anzures y Morales 2008).

Los Hernandez and beyond

Rock art specimens from an elevation on a painted slate packed boulder elevation from Los Hernandez, Salamanca county in the state of Guanajuato, Mexico, comprises formations which deconstructed to its constituent elements, also reflects patterns similar to other rock art sites in the del Bajío region, including pictogrammatic patterns from the adjoining states of Queretaro, Michoacan, and Jalisco.

We are looking at a pictogrammatic culture for a period of time for which there is very little ethnographic correlation, although it might be possible to search for paradigmatic elements. First, the pictograms are structurally defined by similar pigment type: this is true of the more concentrated rock art clusters in the sink topography, namely: (a) Hoya de Alvarez, Valle de Santiago; (b) Los Hernandez, Salamanca; (c) Tzintzuntzan, Michoacan; (d) Arroyo Seco, in the community of San Luis de la Paz, state of Guanajuato; (e) Las Plazuelas, state of Guanajuato; (f) Cerro de Las Chichimecas, La Piedad, state of Aguascalientes, Jalisco; and finally (g) Pinal de Zamorano, state of Queretaro (Virramontes et al. 2008). Even stylistically different, and definitely pertaining to time-bound schemas of representation (as is evident from the very localized and scarcely available variety of expres-

sions), all yet have the basic representational tools, as is evident in the pigment technology which the groups of peoples who made them possibly shared. With the exception of a lesser percentage of pecking or curvilinear grooving (as in the Las Chichimecas formations of Aguascalientes and the Tzintzuntzan, Michoacan), there is a repeated red (faded ocher) type lineation, coordinated with black and sometimes white reinforcing patterns. The literature already suggests the presence of repetitive cyclical elements in Tzintzuntzan and Las Estacas, Michoacan. Figures suggest the presence of at least five elements: (a) geometricals; (b) feminine vulva formations; (c) anthropomorphic stick figures; (d) anthropomorph; (e) serrated serpent or water/river-like visual dynamic (Hernandez Diaz 2006; Virramontes 2008; Quintero et al. 2015). Finally, (f) there is evidence of a related sixth element of drawings pertaining to a probable calendric system (Broda 1982; 1991; 2000; 2001). Recently Broda's extensive studies on Mesoamerican astro-calendrical visuals would shed more light on how similar formations in pictograms, especially of the kind found in Los Hernandez, Municipality of Salamanca Mexico, provide examples (see Figures 3 (a-d), 4 (a-e)).

Collateral evidence suggests at least three possible



Figure 2. Los Hernandez pictogram site, municipality of Salamanca, state of Guanajuato, Mexico. Part of the transmexican volcanic belt, these rock art panels seem to have pre-existed from a post-Cretaceous layer of sedimentary rocks (*Boletín de la Sociedad Geológica Mexicana* 64.3).



Figure 3. Anthropomorphic pictograms at Los Hernandez. (a) Anthropomorph (b) Vulva (c) Vulva and calendrical register (d) Tlaloc-like configurations along with calendrical markings.

artist groups pertaining to Púrepecha, Otomi and/or a Nahuatl-speaking group (Tarascan/Guachichiles) who are now known to have populated the region in a pre-Hispanic to post-Hispanic period range between the epiclassic (900 CE) and post-classic (1300 CE) time frame. All possible evidence for this period for the compositions suggests that various proto-Aztec *Chichimeca* (Spanish for certain nomadic Aztec migrants) groups were incorporating a similar calendrical pictorial complex for the del Bajío, with a diffuse but dedicated belief in the same cosmovision consisting of a cyclical/linear calendrics, a fertility or increase sym-

bolism and a divinity associated with the climatology in a form ranging from simple concentrics (including Fibonacci divinities) to a matured and sophisticated religion of a Tlaloc-like rain deity or Tlaloc itself, as is evident in Las Plazuelas or in the Arroyo Seco, Victoria in the state of Guanajuato, all included in the del Bajío sink geography typology.

Larger geoclimatic history

The study of del Bajío rock art is especially interesting because of the very complex geophysical conditions and the evident lack of precipitation expectations for

the region. Generally climatic factors identified for the region are as follows:

strong yet slow westerly trade winds slowing precipitation patterns (Jauregui 1995; Park et al 2018);

arid long dry periods producing desert like conditions (Cook 1947; Jauregui 1995; Ohara and Metcalfe 1995; Elliot 2011; Park et al. 2018;)

a river-defining landscape often producing unexpected inundations and abrupt climatic transitions (Martinez 1997).

The del Bajío is, however, more peculiar in that it is still part of a highland elevation, creating a basin-like low scooped-out formation on an elevated mountain plane *mesa*-like plate, caused by volcanic shifts. It is in the context of this topography that we study the cultural formations pertaining mostly to rock art evidence. It is, however, impossible to ascribe a more earlier dating, and instead it is tempting to place these rock art signs from the del Bajío within a context of ambivalent hunter-gatherer as well as agricultural groups representing what scholars have called an interactive history of the region between an archaic substratum and a post-classical period of around 1300 CE, marked by the fall of Teotihuacan and the inland-bound transitions of its frontier groups, who are genetically similar but who were in conflict with the

more organized Aztec-Teotihuacan culture of the early second millennium CE (Campos and Nava 2017; Park et al. 2018).

A rearrangement of the basic visual elements is necessary, based on the geographical location of the *Chichimeca* iconography. The del Bajío rock art is confined to the coordinates between 27° N and 21° N. A peculiar aspect of these designs is the presence of curved lines among others, the anthropomorphs and other animal references excluded. The curved line has been traditionally associated with either water, including a river symbolism, and/or snake symbolism, both of which indexes are common to the greater Mesoamerican/Aridoamerican rock art clusters, including that of the northern Great Basin of Nevada and Wyoming, traditionally considered as a homeland origin for what has been termed in linguistic studies of the region as a possible proto-Uto-Aztecan homeland (Laylander 2010).

In general, it is assumed that agriculture developed after a period of transition, and it should have been necessary for the more southerly cultures (since the second century BCE) to seek semiotic visuals for the psychological necessity of rain. In view of the wealth of archaeological information from the del Bajío basin of Mexico, with most evidence for early climatic

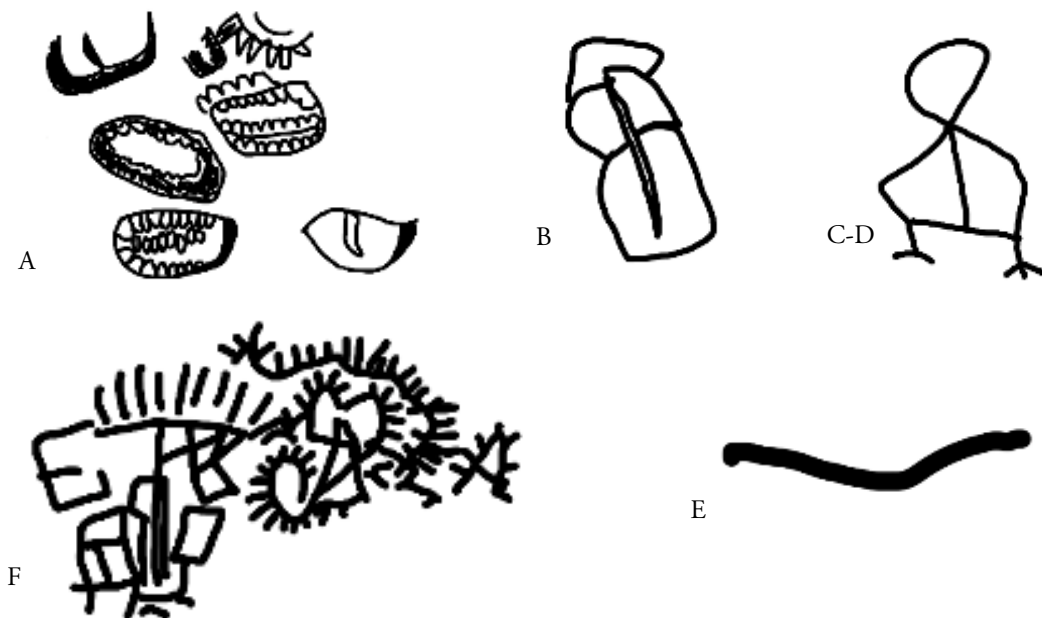


Figure 4. (a) Geometricals. (b) Feminine vulva formations. (c and d) Anthropomorph. (e) Serrated serpent or water/river-like visual dynamic. (f) There is evidence of a related sixth element of drawings pertaining to a probable calendric system.

fluctuations, it appears that the climate of the basin in the neovolcanic axis was probably relatively wet during the foundation of Teotihuacan in c. 200 BCE, although both precipitation and lake levels probably started to decline sometime after 300 CE (Sanders et al. 1979; Jauregui 1995; Lachniet 2012). Garcia (1974) also successfully attempted to reconstruct the climate during the rise and fall of Teotihuacan, adjoining the del Bajío basin. She concluded that at the city's peak, the climate was as wet as that during the wettest years (1966–70) in the period covered by meteorological records, with a very zonal circulation, with strong trade winds and westerlies. It was concluded that the decline of Teotihuacan could be related, in part, to a period of intense drought starting between 700 and 750 CE (Garcia 1974; Campos and Nava 2017). Reference to this part of the geography is again necessary in order to posit that one of the basic visual nar-

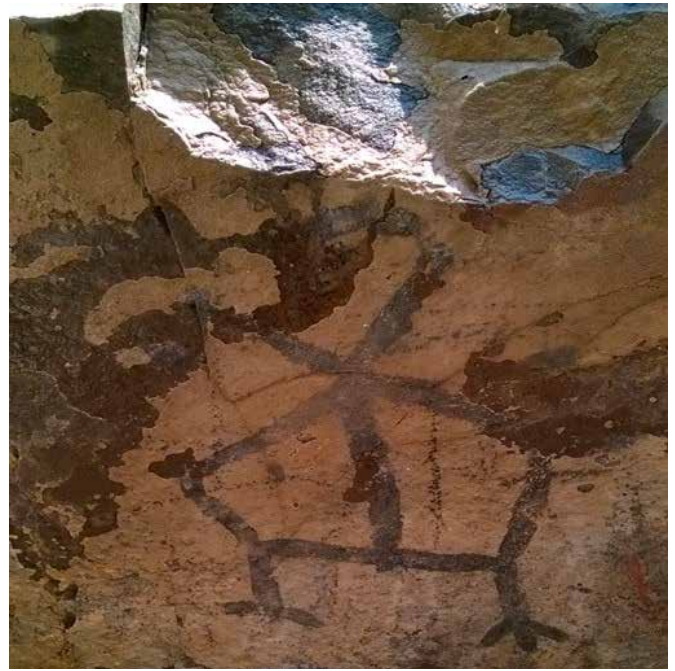


Figure 5. Stretch photography of panel from Arroyo Seco (courtesy of Museo Arroyo Seco, Tierra Blanca). The second panel is a photo of a vulva-anthropomorph motif from Los Hernandez.



Figure 6. Variations on anthropomorphs in Arroyo Seco (Guanajuato), Tzintzuntzan (Michoacán), Pinal de Zamora (Queretaro).

rative patterns points to the presence of water prayer semiotics. Water symbolism is potent among the predominant triad of anthropomorphs, rectangular to geometric patterns including circles, and curved lines (water?). This may be described with some license to the occurrence of the water trope in a variety of proto-Aztec religious symbolism, along with a stick-like and rotund shamanic deity, the sun, moon, and a host of animals, but mostly snakes. In the del Bajío context the visual trope, considered as a semiotic cluster and in several places supported by the ethnographic evidence, is a deity to whom supplication is made either for hunt animals, or for rain or water and water-based resources. An entire list of ethnographic material points to this pattern (Mountjoy 2001; Mendiola 2005; Martínez et al. 2008). Further, there is the presence of a geometrical mat-like pattern, including astronomical references, and also calendars. This pattern provides a very useful reference for the del Bajío iconography, in which at least anthropomorphs are present in some form, accompanied with patterns indicative of fertility, although this must be believed to have been the case on a more conjectural level. But all visual resemblance indicates the presence also of a vulva-like formation, the female reproductive organ, which is also simultaneously a geometrical feature of the kind not uncommon to the American Southwest and south-central Mexico (Figures 5 and 6).

The vulva shape is more specific and perhaps ubiquitous to the region. This is most likely a birth or fertility symbol, and may be associated with agrarian beliefs of the times, and in all probability points to a post-classical period of latter migratorial and also more equivocal dispersals (Figure 6). It will be necessary to combine the appearance of the Bajío iconography on a map, which will indicate strongly a connection between regions of occurrence as follows.

There are remarkable similarities in depictive elements

in the rock art of these regions, extending from the western coast petroglyphic styles of the grand Nayar, down to the Tzintzuntzan, whose late pictograms resemble those of the del Bajío. All along this trajectory a probable rain-invoking culture developed among a group of the southbound migrants, following periods of repetitive droughts and desiccation; on a macro-scale the history of desiccations is traced from the late Holocene, and probably also explains a large proto-migratory period (200 BCE–1400 CE).

Dating and character of pictograms

What therefore is the dateline suggested for these drawings? What possible pre-Hispanic groups are we considering for these pictograms? Whereas the location and geographical description for the Rio Laja pictograms are identified as 20°79' N and 71°13' S, the important question regarding these patterns relates to dating.

Indigenous groups of the del Bajío

Who drew these pictograms will always remain an open-ended question, but we can try to collate the geological history of the post-classic periods in Aridoamerica, which in all probability is indicative of the large time-frame around which the art is most likely to have been made? There is no certitude about the dating of rock art in Aridoamerica, especially in the what is conventionally termed in Hispanocentric discourse the migratory period of the fierce northern *Chichimeca*. But as all evidence tends to show an epiclassical migratory period starting from ±700 CE, it is most likely better for focus as it lends credence to possibly identifying the function of these pictograms in the context of a general epi- to post-classical period of visual indexization in the region. The thesis that long and recurrent droughts starting from 700 CE result in a lateral east–west transition of the Aztec groups shows that the period was likely to experience rapid



Figure 7. Vulva-like fertility symbolism from different cross-sections of the del Bajío sink and adjoining Mesoamerican sites, mostly Los Hernández, Arroyo Seco in Guanajuato, and Tzintzuntzan (Michoacán). Some of the motifs are represented by means of diagrams.

Rock art sites	Geographical location/ states	Groups (Wiegand and Wright Carr)	Number of existing studies	References
Tierra Blanca (San Luiz de la Paz)	Del Bajio / Guanajuato	Otomi, Oto-Pame Guachichiles	6	Somoza 2009, Castilla et al. 2015, Martinez and Anzures 2015, Velazquez 2015, Arvizu 2015
Los Hernandez	Del Bajio / Guanajuato	Guachichiles, Tarascano	–	Present article
Hoya de Alvarez	Del Bajio / Guanajuato	Guachichiles, Tarascano	–	Present article
Arroyo Seco	Del Bajio / Guanajuato	Otomi, Oto-Palme, Guachichiles	7	Viramontes and Gutierrez 2008; Somoza 2009, Castilla et al. 2015, Martinez and Anzures 2015, Velazquez 2015, Viramontes Anzures et al. 1990- 2004; 2015; Arvizu 2015
Cerro Sombrero	Del Bajio / Guanajuato	Otomi, Oto-Palme, Guachichiles	2	Taladoire 1999, Viramontes et al. 2015
Pinales de Zamorano, Queretaro	Del Bajio / Queretaro	Ota-Pame	4	Espino and Anzures 2014; Viramontes 2005; Viramontes et al. 2015; Murray and Viramontes Anzures et al. 2015
Tzintzuntzan, Michoacan	Mesoamerica / Michoacan	Púrepecha	4	Darras 1988; Turpin 2002; Dia Hernandez 2006, 2010

Table 1. A chart view of the major del Bajio rock art sites with indications of hypothetical group denominations that made them and references to corresponding research

and decisive migrations of a cyclical nature. This is a more equivocal period of history and continues up to the transitions of the Tarascanos and the rise of the Purépechas.

One of the most complicated characteristics of the proto-Aztec *Chichimeca* migrations is the constant flux of groups and contacts, the complex borrowings and lendings of artefacts and expressions. Demographic changes in the del Bajio region of Aridoamerica represents a case study in the movement of ethnological groups (of the *Chichimeca* denomination), whose reflective rock art shows a depictive practice in response to changes in human movements. While a part of that process of depictive practices depended on where it would prove much more difficult to assess the layers of an unwritten *Chichimeca* evolution, since each visual index considered stands independently anchored to the local substratum. Motifs may be omnipresent for the region, as well as for cross-cultural or intergroup manifests, but the ethnographic references are perhaps of some more specific interest, even though we cannot claim absolute

correlations for the indexes. If we consider a larger visual domain, we shall have to consider at least the cultures that have flourished in the del Bajio region. Following Kirchhoff (1946), Jiménez Moreno (1959), Weigand (1993), and Wright Carr (2017), we know of the detailed ethnic reference for the territory in the pre-Hispanic period (Figure 1).

Las Plazuelas and Tlaloc

According to the post-classical historical maps suggested, and in the context of references to the archaeo-history of the Bajio for the cultures mentioned in Table 1, it appears that the Las Plazuelas ruins point most closely to a Tlaloc-based group of worshippers. In the Plazuelas history a Tlaloc symbolism is very potent, and even if other rock art clusters from Table 1 are included in our study, there is no doubt that a Tlaloc-like formation is like a common concern for the priest-shamans who may have designed them. In the context of the map of migrations, initially drawn by Jimenez Moreno (1958), and developed with a detailed history by Garcia (1999), the suggestion is that



Figure 8. The Las Plazuelas ruins at Las Plazuelas, state of Guanajuato, Mexico (Epiclassic to Preclassic, 700–1200 CE).

the Bajío art configurations developed in a consistent manner since the sixth century. The phase of interaction between migrating southbound Uto-Aztecan groups may have resulted in the architectural achievements of both groups: the complex Las Plazuelas (near the town of Penjamo, state of Guanajuato) and the less sophisticated Los Hernandez (Salamanca, state of Guanajuato) and the Oto-Pame Pinales de Zamorano petroglyphs (state of Queretaro).

They share the same major iconographic tendencies of the period. Dating the rock art of the migratory period after the sixth century (also called the Epiclassic phase in the proto-Aztecan history of the regions) remains problematic. No hypothesis regarding dates has been suggested by Carlos Viramontes Anzures (1999), who constructed an inventory of the del Bajío rock art complexes, which is detailed for the Arroyo seco segment but not for the underdone, ritualistic pictogram concentrations of Los Hernandez, which we show for the first time. and that of Pinales de Zamorano. This

material has allowed us to suggest further that some type of contact existed between both settlements, even if we do not know anything about kinship lineages in El Bajío (Wright Carr 1999; 2017).

Iconographic styles of the Proto-Aztecan/*Chichimeca* substratum

Linguistic studies of the region have shown that the so-called sink was an inevitable link space for migrations. The study of word cognates is not of much help as far as dating the pictograms is concerned, and contiguity rather than chronology is more readily useful for locating the ritual elements. There is a theory that the Bajío was already inhabited by contiguous groups from a much earlier period, especially by the Oto-Pame (Wright Carr 2017). Oto-Pame and Nahua-speaking cultures may have both occupied the region within overlapping time frames, probably also by means of conflict patterns. Thus what is most clearly evident is the fact that the Bajío linguistic groups were both denominationally Otomi and Nahua, but the focus of the research on visual elements reveals a northwest (Nahua) displacement, from the visual evidence from other sites like Jalisco-Nayarit to Las Plazuelas around Penjamo, with an older settled regional presence of Otomi-speaking groups near the west of the del Bajío sink, i.e. the present-day Mexico City valley.

One particular element of concern is the presence of undulatory curved shapes, probably either river-like lines or snakes, which is an indexical animal. This snake-like presence, if truly a referent, in the rock arts of Los Hernandez, Pinales, and Tierra Blanca may indicate that these are rudimentary forms of a disintegrated Tlaloc-like invocation, just as postmodern theorists suggest, a dismembered or disintegrated assembly, the body without organs (Deleuze and Guattari 1988). Here we have to remember that the simultaneous and disjointed presence of snake/water symbols, were otherwise common to a more nomadic, probably *Chichimeca*-like orientations or attitudes toward questions of alimentation and hydration from natural resources. There is no direct evidence of corn iconography in the rock art except in petroglyphic engravings of the Nayarit clusters which is close to the pacific coast in the west. The major petitionary idea is of water/snake forms, calendars or seasonal shifts, and harness or increase, of agricultural produces but

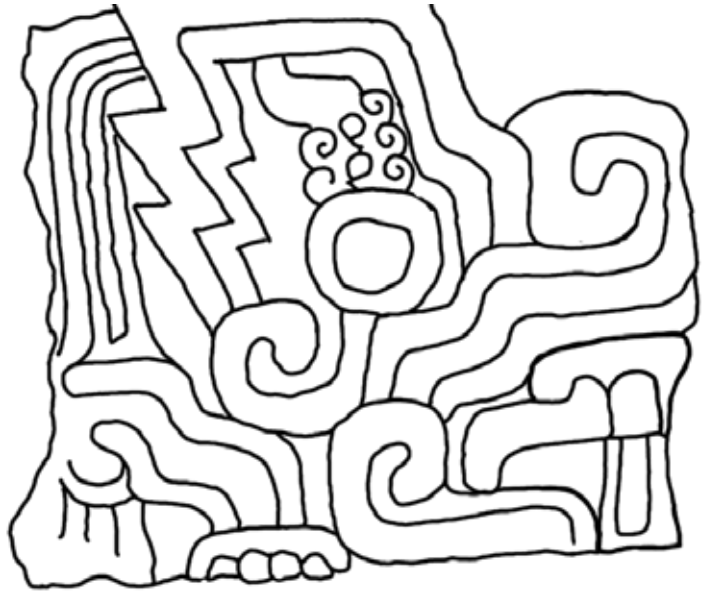


Figure 9. The Tlaloc shape with an eye and flowing features. Tlaloc symbolism from Las Plazuelas, state of Guanajuato, Mexico.



Figure 10. The Tlaloc symbol, a rudimentary but powerfully suggestive anthropomorphic symbol of an ethnographic rain deity.

more probably animals, is more predominant in the del Bajío sink. The dispersed symbology demonstrates a direct link with the Tlaloc motif, who also holds a snake / water like formation in the hand. Indeed, the Las Plazuelas icon of a near concentric quadratic shape points towards the presence of either lightning, or an irregular water line, also perhaps a snake (Figure 10 a). The Las Plazuelas concentric shape could be Tlaloc's clenched hand, a reference to divine power and symbolic of the intentional stance in human prayers. Tlaloc would symbolize the most universal deep-time symbol of divinity for Aridoamerica, including the sink and beyond. What the calendars would mean is a marker of time for the seasons, harvests and if it is part of that intentional continuum, a clock for rain and therefore for all products of sustenance for the proto-Aztec *Chichimeca* / Otopame groups.

Hence also we see the ubiquitous vulva-like formations, which for a less materially active group, such as the less sophisticated groups of the los Hernandez formations, is the nearest humanly recognized sign of fertility and abundance. The Tzitzuntzan fertility symbols in rock art already discussed are a case in point. but they really lie outside the sink geography and start to reflect concerns of a far southern Mesoamerican counterpart that includes the Tarascans (Figure 12).



Fig. 11. Tlaloc configuration at Los Hernandez.

Conclusions

We shall conclude with a reference to Preclassic ceramics of 700 CE and after, as well as references to images that help in identifying a culture centered on the Tlaloc prototype, in other words, a rain-bearing ethos. Here as well, the undulating curvy lines comprise a visual type which recurs almost universally in the pre-literate iconography of the region. The curved sinewy line is a recurring motif in the epiclassical art of the Bajío region.

As dated above, the del Bajío iconography, which would have been the home mostly of Guachichiles, reflects an obsession with the undulating line. Consider the ceramic patterns from the seventh and eighth century pottery. The Púrepecha myth also contains a symbol of the bird serpent, a myth which is contiguous with the plumed serpent motif of the Teotihuacan culture which preceded it. In any case this kind of motif reveals how the undulating curved line, associated with a serpent divinity, as well as water, as Tlaloc itself was, is a defining iconic type of the desert lands of north central America.



Figure 12. The Tlaloc style shown to be inherent in Preclassic ceramics in the inset picture. The drawings demonstrate water/serpent index consisting of undulating line formation in ceramics from Preclassic ceramics held at Museo de la Ciudad, Irapuato (8th–9th century CE). The diagram in the middle is a snake/water frieze motif from Michoacan (11th century CE).

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ROCK ART FROM THE WESTERN EDGE OF THE STEPPE: ENGRAVINGS INSIDE THE BULL GROTTO AT THE KAMYANA MOHYLA SITE

Simon Radchenko
 New Archaeological School (Ukraine)
 Dmytro Nykonenko
 PhD, National Reserve Khortytsya (Ukraine)

Introduction

The rock art of the Eurasian steppe is a well-known phenomenon in rock art science. Sites of the eastern steppe regions have been studied for a long time and much data and interpretations have been collected. On the other hand, the ancient art of the western steppe has been insufficiently presented in scientific literature. The rock art of the Circum-Pontic area on the western border of steppe zone is associated with the unique site of Kamyana Mohyla. The site is situated in the south of Ukraine, on the bank of the Molochnaya River, near the village of Terpinia in the Zaporizhzhya region (Fig. 1). It is known for 67 sites (Mykhailov 2017, 13) and hundreds of rock art engravings dated from Late Palaeolithic to modern history, that have never been thoroughly counted or catalogued.

Kamyana Mohyla and the history of study

Kamyana Mohyla is a mound of accumulated sandstone slabs. Presumably, these slabs were previously a monolithic sandstone megalith, formed on the bottom of the Sarmatic Sea during the tertiary period, approximately 14 million years ago. The stone slab cracked apart into numerous blocks because of long-term erosion (Fig. 2). Nowadays, the process continues actively, causing the destruction of grottoes and blocks containing rock art. Such a situation defines the urgency and relevance of the Kamyana Mohyla engravings study, the need for thorough documentation and the creation of full digital copies.

Besides the numerous engravings, Kamyana Mohyla is also known for multilayered settlement dated from the Mesolithic to the Iron Age. It was studied by O. Bader, V. Danilenko (1986), D. Telegin (Telegin 1985, 184) and N. Kotova (Kotova et al. 2017) for many years.



Fig. 1. The location of Kamyana Mohyla

The site is not only the one with the richest finds one among many other sites around, but also draws attention as an important point on the map of Ukrainian Neolithization and domestication processes. During the 2016 fieldwork season, two ophidian head-shaped sculptures were found in the Mesolithic layer of the settlement (Fig. 3) (Kotova et al. 2018). These are the first rock art examples that create a strong and direct connection between the settlement population and the Kamyana Mohyla mound. The finds form a substantial way of improving our understanding of this population, extremely significant for Ukrainian prehistory.

Most of the Kamyana Mohyla engravings were made on the grottoes' ceilings and walls, created by the stone slabs' accumulation. One of the most famous grottoes in the mound is Bull Grotto. Its engravings' creation date (Late Palaeolithic or Early Bronze Age) has been

an object of discussion, although the discussable images were never studied with digital methods or metrical drawings. We will try to implement 3D-methods to interpret the images and propose an explanation concerning the engravings of this grotto, their dating and analogies.

The Bull Grotto is located in the northern part of Kamyana Mohyla (Fig. 4.1). The shape of the grotto that was created by a lot of huge sandstone blocks is complex and begins with a narrow entrance. Presumably, this entrance was much bigger a few thousand years ago and allowed people to enter the grotto at full height. The images in the grotto form several groups in different places of the grotto. Many linear-geometric compositions are located there, but animal engravings are of special interest. Most of them are usually interpreted as bulls.

The images in Bull Grotto were discovered among the



Fig. 2. Aerial view of Kamyana Mohyla (made by D. Nykonenko)

first engravings on the Kamyana Mohyla by M. Veselovskiy at the end of the 19th century. However, the discovery was not considered to be interesting (Bobrinskoy 1893, 2–4). In the 1930s Kamyana Mohyla was intensively investigated by V. Danilenko and O. Bader (Bader 1941). Although the researchers had found the flint complex of the Eneolithic–Early Bronze Age period, they dated the engravings to the Upper Palaeolithic. They named this place the Mammoth’s Grotto because of the controversial interpretation of one of the images. This interpretation caused doubts among their colleagues, so that B. Zemlyakov in 1939 attempted to consider the picture as a bull image (Zemlyakov 1939). In turn, the mammoth version was supported by M. Rudinskiy (Rudinskiy 1952). Since then both interpretations and two different grotto names have formed the basis of the engravings’ dating.

In the 1960s research on Kamyana Mohyla was headed by Gladilin and Mykhailov (Danilenko 1986, 8). Gladilin studied the Bull Grotto and dated some engravings to the Mesolithic and Early Neolithic periods. Thus, he formed the third version of this grotto

engraving dating, that was disputed by Mykhailov and Danilenko (Fig. 5). This long discussion was based on one engraving interpretation and was not supported by accurate study or digital investigation, after which these researchers died before the answer was found and the question remained open.

Engravings inside the Bull Grotto

All the above interpretations and the art from the grotto have already been published in Ukraine. However, there were no metrical drawings or any accurate images of the engravings. Thus, detailed study and scientific discussion were barely possible. Publications on some engraved blocks were made by V. Gladilin (Gladilin 1969), but a large part of the most important engravings were published only in Russian or Ukrainian. The engraving groups in the Bull Grotto have been quite informative during the attempts on the Kamyana Mohyla rock art dating and typologization. They can also give information about the technical features of engravings. However, interpretation is complicated by the lack of information sources (a common situation in rock art study). Following the P. Tacon and



Fig. 3. Ophidian shape-head sculptures from the Kamyana Mohyla 1 settlement. 1, Older figurine, dated to 8379±160 cal BC; 2, Younger figurine, dated 7424±46 cal BC

C. Chippindale's (1998) concept, we should state that the analysis of these groups is possible only through a formal approach. There is no possibility of getting the absolute date, since there are no materials for analysis, although we hope that this obstacle can be overcome soon. We also do not have any sources. The only methods available are stratigraphic study and Harris matrices for relative dating (following Chippindale et al. 2000), and a search for analogies; both require detailed drawings. Drawings and 3D reconstruction are also needed for technical and typological study. Only three scenes from the Bull Grotto can be examined entirely without the risk of destroying the grotto. Our study is an attempt to create accurate drawings, plans, and models, targeted on the clarification of a number of different problems. The standard deviation of the drawings' measurement is less than 0.35 mm.

The first of three scenes is traditionally called the "Bulls in circular defense" (Fig. 4.2). This image is the most interpretation-friendly and shows a very interesting chronological sequence. Four bulls are placed on the cornice (Fig. 6), covered by ocher and numerous cupmarks. They are made of entire silhouettes (the whole figures are engraved (deepened))wiped on their whole area, later contoured by wide lines (Fig. 7). The chronological sequence reconstructed from stratigraphy is as follows:

- A) A few wide lines, filled with ocher, that do not form any obvious pattern;
- B) Wiped silhouettes of the four bulls;
- C) Wide lines that contour the bulls and create the horns, tails, legs etc;
- D) Cupmarks partially filled with ocher;
- E) Partial destruction of the cornice (Fig. 7.3).

Important information appears from this sequence: some lines were painted with ocher before the creation of the engravings. Since ocher in the steppes of Ukraine was not used during the Palaeolithic, we can finally withdraw Danilenko's idea of Late Palaeolithic dating of the Bull Grotto engravings.

This scene was partially drawn and published by Mykhailov (2005, 202, fig. 9). 3D modeling allows us to differentiate the natural cracks and scratches from engravings and makes us reconsider the description of Mykhailov and Danilenko. Although the clarified drawing contains a few more lines and completes the contour of the left bull, the semantic interpretation of the scene has not changed.

The second group of engravings is very similar technically to the first one. It consists of four animals, standing (moving?) in one direction (Fig. 4.3; 8). All of them are made by wiping and contouring, the same as the "Bulls in circular defense"; the chronological sequence of the engravings repeats the previous one.

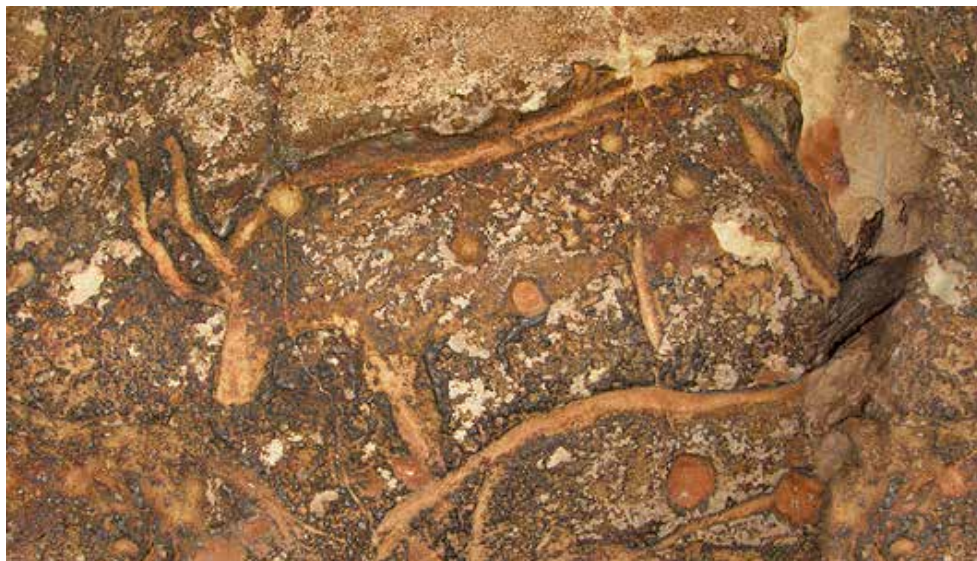


Fig. 4. The Bull Grotto. 1, Entrance to the site; 2, Part of the “Bull in circular defense” engraving; 3, “Row of animals” engraving.



Fig. 5. V. Danilenko and B. Mykhailov during the Kamyana Mohyla excavation in the early 1970s

After the figures were engraved, the area was marked with numerous cupmarks; part was made right on the animals' contour (Fig. 9). Later, part of the cornice collapsed.

One of the animals was mostly destroyed when the cornice broke, so it cannot be recognized. The second one is much smaller and probably was not noticed by previous researchers. It is less detailed and can hardly be called any species. The next one seems to be too gracile for a bull. It has small horns, long legs, and no hump on its back, which is non-typical of a bull. Instead, this engraving reveals similar features with a female deer (Mykhailova 2017, 96, fig. 33) or a horse. The last one is pictured in the same manner as the "Bulls in circular defense".

Besides the four engravings, this cornice also contains a picture of a creature that Mykhailov interprets as a dog (2005, 201, fig. 8).

The third and the last scene depicts the so-called "Rain bull." This group contains four different engravings with a controversial interpretation (Figs. 10, 11). The group of engravings is placed on the block that broke off the wall of the Bull Grotto during the prehistoric period. During his research in 1948, Danilenko decided to move the block to the Kyiv Archaeological Museum. According to his records, the whole block was covered by red ocher that was lost during trans-

portation (Danilenko 1986, 56–57). The block is now stored in the museum. The painting was covered with ocher again according to the Danilenko drawings, so today it is impossible to distinguish the real paintings from imagined ones (Fig. 12). The only valid evidence of the picture's existence is the block relief. Two pictures are small and created with a few lines. Presumably, both of them depict deer. Although they were drawn by Danilenko in the middle of the 20th century, they were never published or described in details. The third engraving on this block belongs to the same technical group. It shows a part of a huge animal. The shape of the head and nose gives a hint that this animal is also a bull.

The central engraving shows a large creature with a trunk. This feature was the reason for a long discussion concerning the dating of this engraving. Since Danilenko was assured that the engraving shows a mammoth, he insisted on the Late Palaeolithic nature of the creature. However, Mykhailov considered this creature to be a mythological being called the "Rain bull" or at least the bull with a trunk, that meets numerous analogies in the rock art of Kazakhstan. The creature's silhouette is more likely a bull than a mammoth mostly because of the shape of his back and legs. The head of the creature is bent down and the horns are directed in a straight line with the body. We doubt

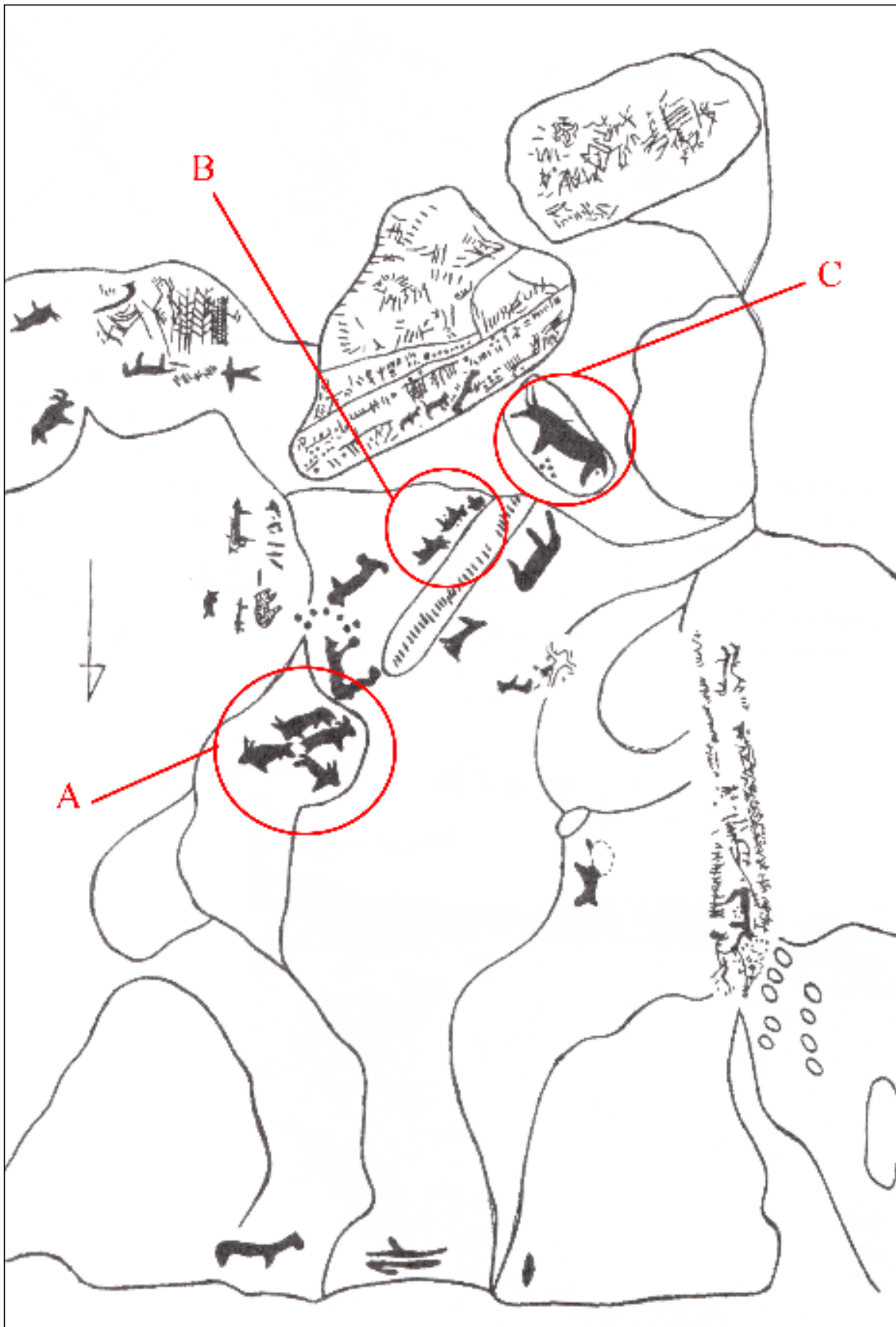


Fig. 6. Scheme of the Bull Grotto. A, image of “Bulls in circular defense”; B, “Row of animals”; C, “Rain bull” (after Mykhailov, 2005, 277, fig. 115)

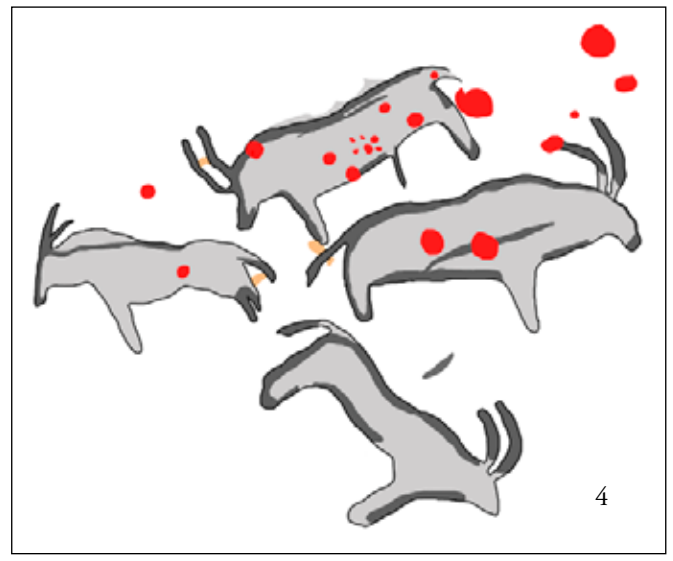
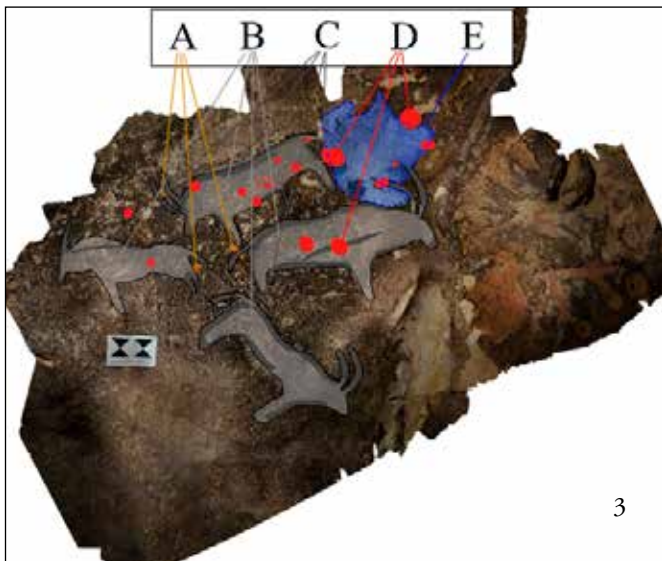
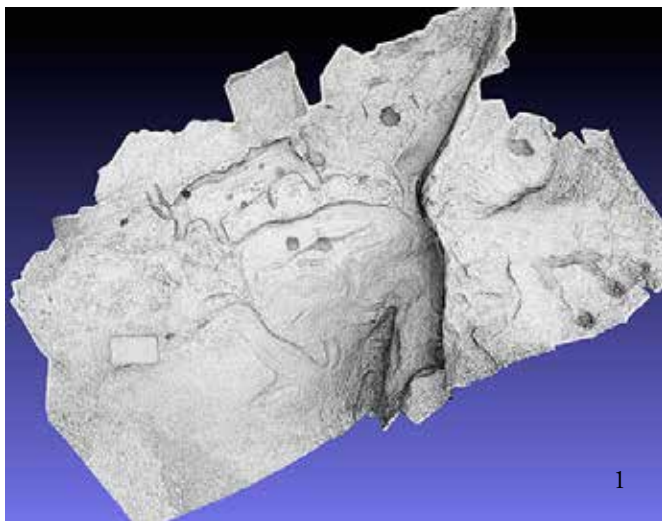


Fig. 7. “Bulls in circular defense,” Kamyana Mohyla. 1, 3D mesh of the plate. 2, Orthophoto. 3, Chronological sequence of the plate change on the orthophoto. 4, Drawing of the engraving (made by S. Radchenko)

the version of a trunk because of anatomical reasons: it is much closer to the horns than it should be. Taking into account two lines that cross the bull’s back almost perpendicularly and are interpreted as spears that pierce him, we assume that the so-called trunk is, in fact, a spear that pierces the head of the creature. This approach allows us to consider the engraving as an image of an ordinary bull¹.

The picture is much closer to engravings of bulls than to mammoths from Kamyana Mohyla. Besides, the technique of engraving is the same for two other

groups (“Circular defense” and “Row of animals”). Assuming that the same-technique in one grotto was used during the same epoch, we can find the stratigraphic proof of non-Palaeolithic chronology of the “Bulls in circular defense” engraving, where the ocher-painted lines were cut by the bull engravings. In addition, the Rain bull shows the same chronological sequence as the previous engravings: picturing the silhouette, contouring it, creating the numerous cupmarks, block with engravings breaks off. Other evidences of Bronze Age dating were shown by Mykhailov (2005, 118–119): a complex of Bronze Age flint tools found near the block; a number of Eneolithic and Bronze

¹ Decimated model is available at: <https://sketchfab.com/simon.radchenko>

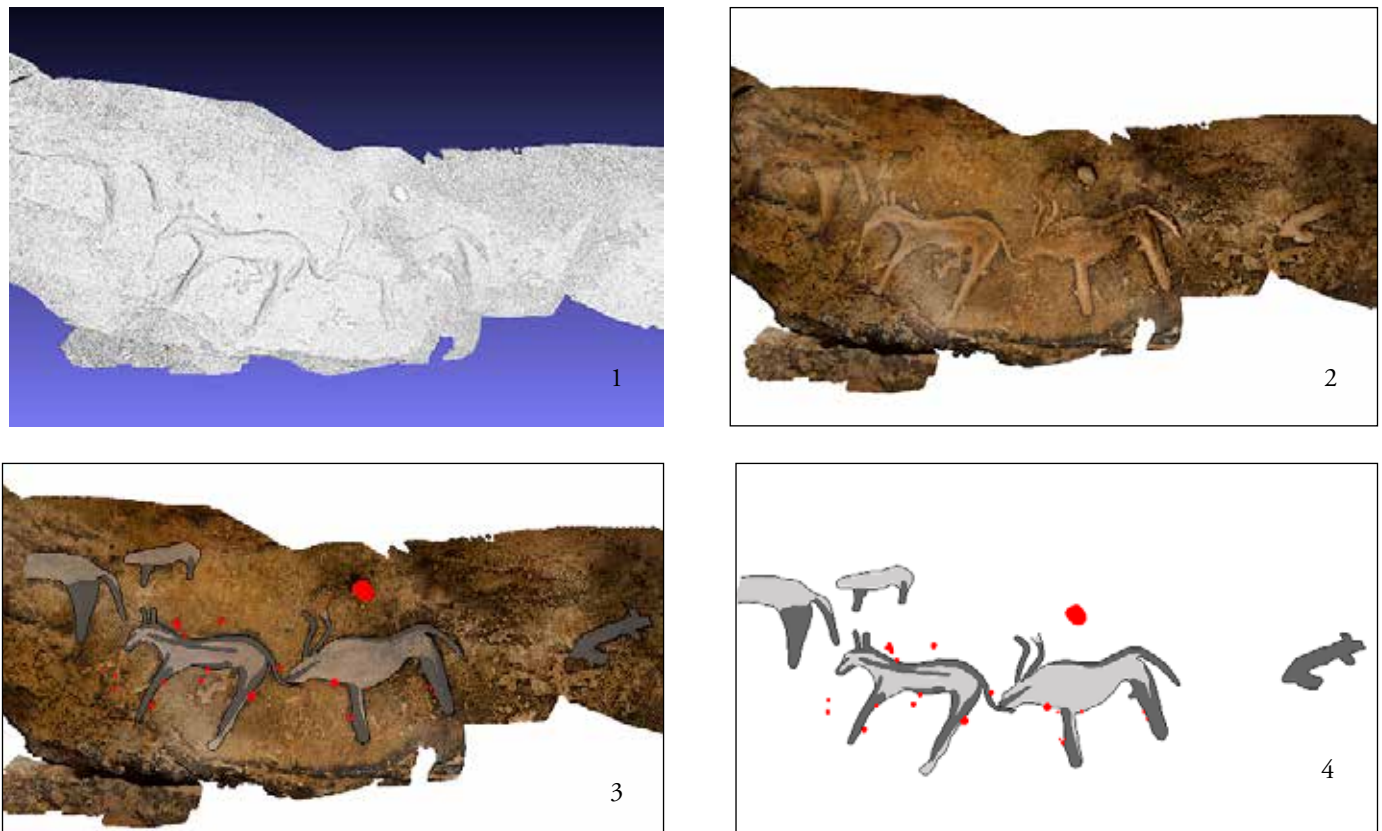


Fig. 8. “Row of animals,” Kamyana Mohyla. 1, 3D mesh of the plate. 2, Orthophoto. 3, Drawing on the orthophoto. 4, Drawing of the engraving (made by S. Radchenko)

Age analogies in the Caucasian and Eurasian steppe. Taking into consideration the existing proofs as well as the new stratigraphic information, we can end the discussion about the Rain bull’s origin soon.

Analogies and conclusions

Numerous analogies to the engravings of Kamyana Mohyla can be found in the rock art of Kazakhstan. There are also natural stone formations similar to Kamyana Mohyla in the Kazakhstan steppes. The most similar is Toleubulak in the Aktobe region, which also consists of sandstone blocks forming grottoes, some of them covered with engravings (Samashv 2006, 21–22).

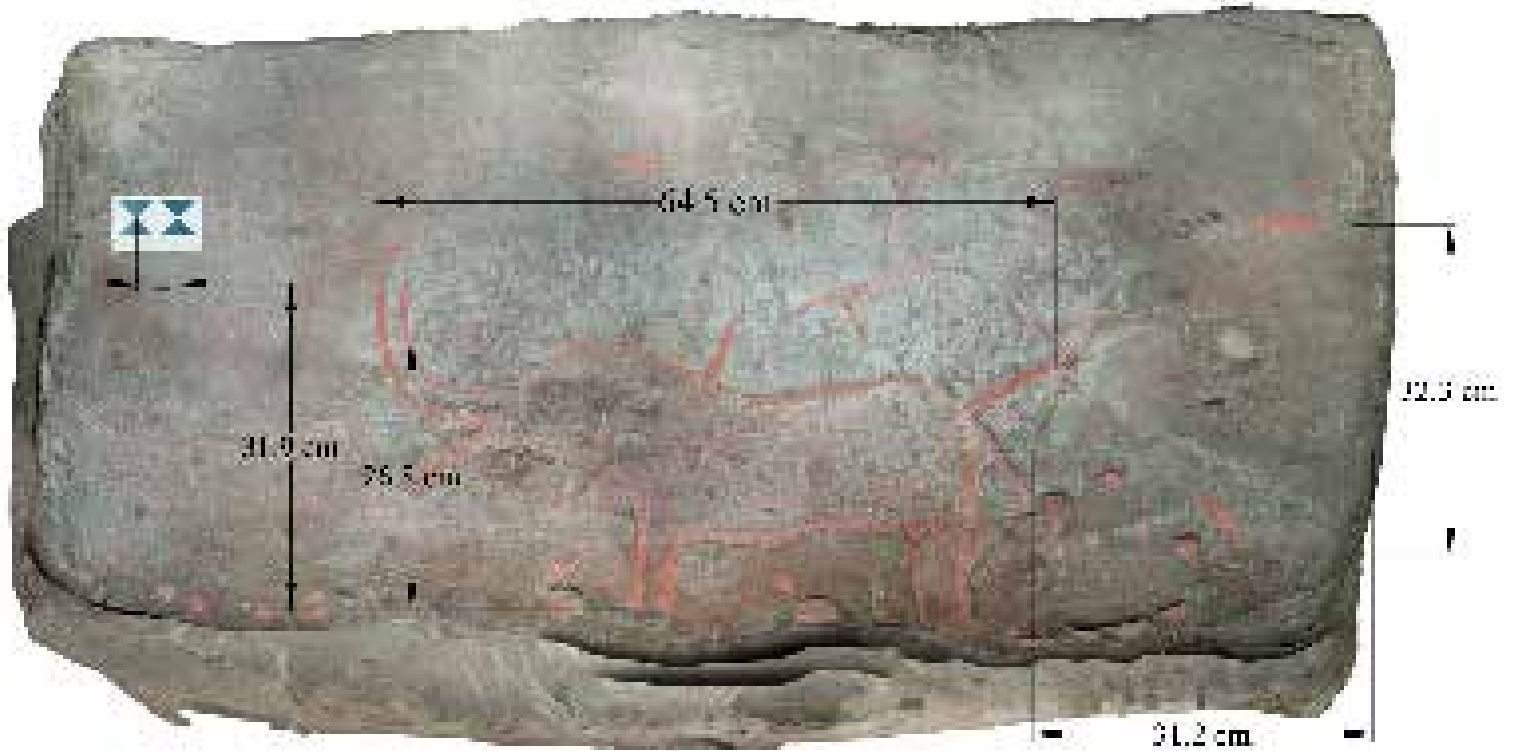
The rock art of Kazakhstan has a lot of scenes and images that are similar to Kamyana Mohyla ones. Many scenes and engravings that typologically and technologically correspond to the pictures from the Bull Grotto can be found at numerous Kazakhstan rock art sites. Tamgaly, Eshkiolmes, Akkaynar, Arpa-Uzen, Karakyr, Kuljabasi, Terekty-Auliye, Chokpar, Karasay,

Sauyskandyk, and many others are among them (Fig. 13). Besides, Kamyana Mohyla is connected to these sites by some stylistic features: unnaturally elongated and curved horns and a hollow hump, marked on a massive body. Such signs are known as the markers of the Tamgaly tradition engravings, originating from the name of the Tamgaly rock art monument (Maksimova et al. 1985).

Traditionally, researchers date these images to the Bronze Age, indicating that they are among the most ancient and most popular in this region. Taking into the consideration that the wild bull population in the steppe at the end of Bronze Age decreased significantly, the rarity of their images in the Iron Age looks quite logical (Khuzhanazarov 1995, 66–67). This observation is based on the scant number of corresponding osteological material findings on the monuments of the early Iron Age (relative to the previous period). The bull images’ prevalence in Kazakhstan, Mongolia, and Altai rock art shows the active role this animal acquired in human economy and lifestyle (Shvets 2011,



Fig. 10. The engraving of the “Rain bull” from Kamyana Mohyla. 1,— Rain bull. 2, The figure behind the rain bull considered by V. Danilenko to be a mammoth. 3, Dimensions of these engravings



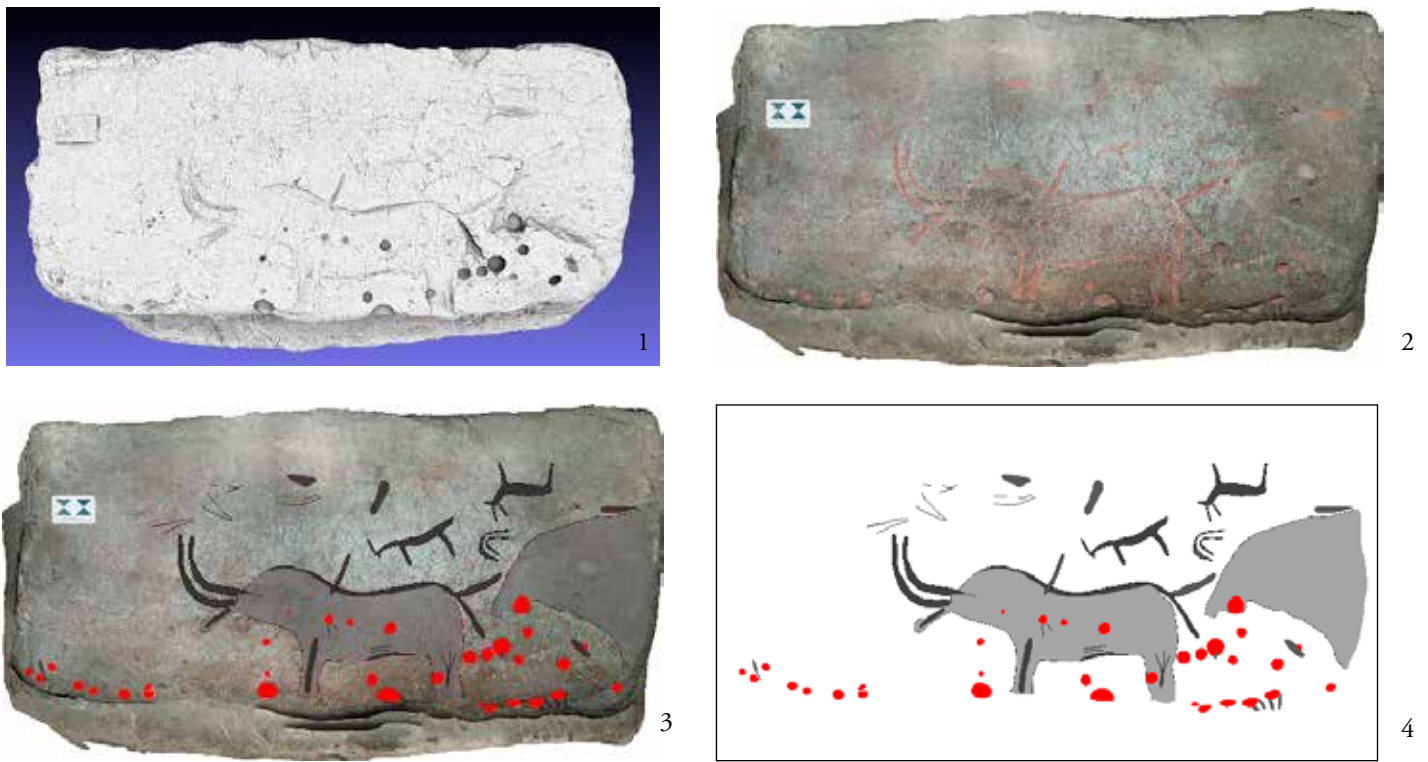


Fig. 11. “Rain bull,” Kamyana Mohyla. 1, 3D mesh of the plate. 2, Orthophoto, 3, Drawing of the orthophoto. 4, Drawing of the engraving (made by S. Radchenko)

135; Baypakov et al. 2005, 74).

All of the studied scenes, comparative to the other engravings of Kamyana Mohyla, have a lot in common; besides, they are typical of steppe rock art. To begin with, all of them are made using the same technique, which is present only in the Bull Grotto. Besides technique and location, we assume that the dates of engravings are the same, in the Eneolithic or Early Bronze Age. A large part of engravings shows the images of bulls. It marks the period of their creation as the time when the bull becomes an important part of artists’ lives. Indeed, during the Eneolithic and Early Bronze Age the Ukrainian steppe was the kingdom of ancient pastoralists; bulls and cows were the main part of their economy, so the these images must have been created exactly during this period. Later, in the Iron Age, they were replaced by engravings of horses, important animals for the Scythian and Sarmatian people. During the Palaeolithic the set of pictured animals was also different: mammoths, bisons, lions, etc. (Mykhailov, 2005, 102–103). In this sequence, Eneolithic and Early Bronze Age people were the ones the

depicting bulls they depended on. Their way of living and economy made them consider these creatures to be important and to picture them in rock art – and they did.

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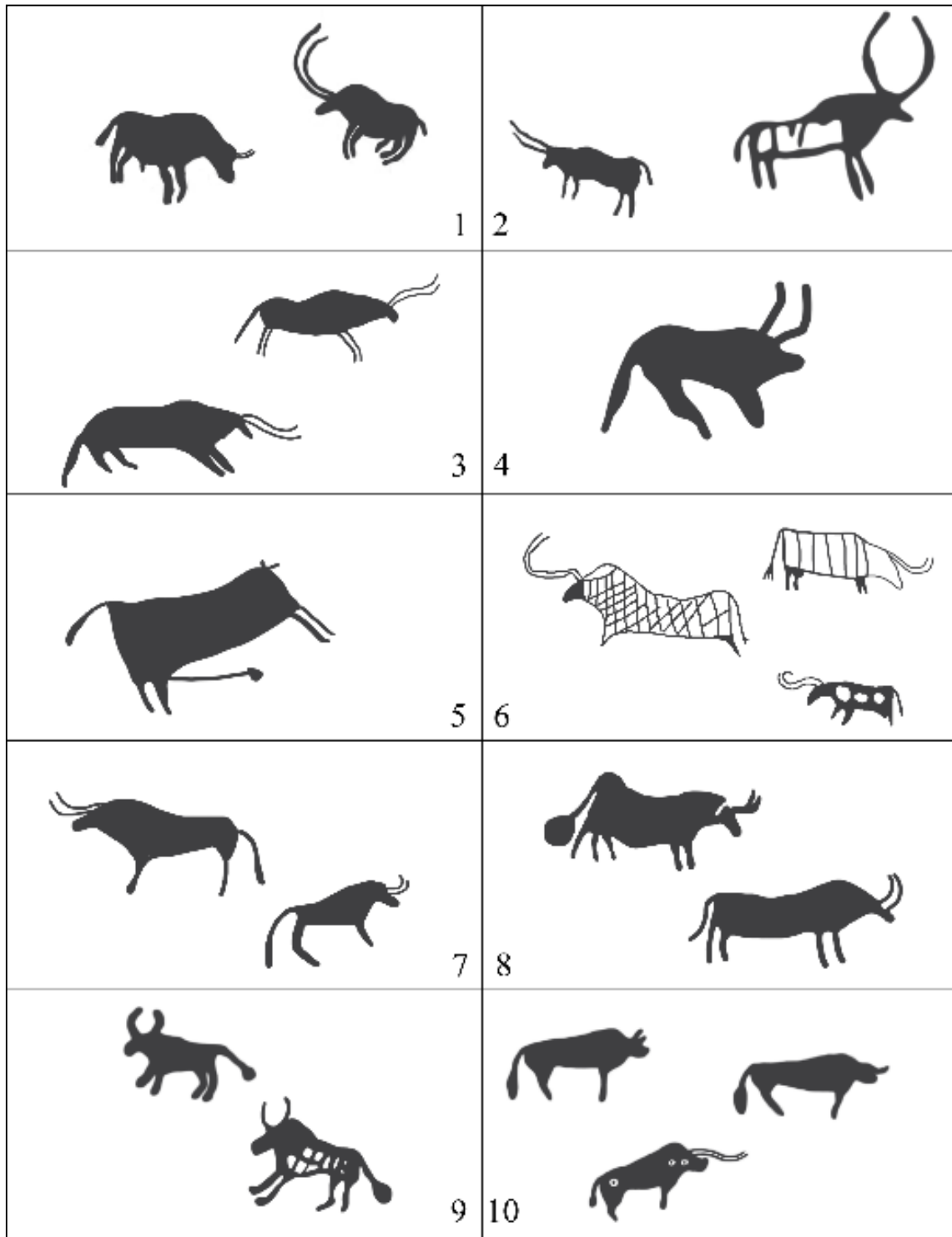


Fig. 13. Images of bulls in Kazakhstan rock art. 1, Tamgaly, 2, Eshkiolmes. 3, Akkaynar. 4, Arpa-Uzen. 5, Karakyr. 6, Kuljabasi. 7, Terekty-Auliye. 8, Chokpar. 9, Karasay. 10, Sauyskandyk



Fig. 12. Drawing of “Rain bull” plate by V. Danilenko (1986, 54, fig. 17)



Fig. 9. Cupmark cuts on the contour of an animal (picture made by A. Volkov)

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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 human conceptual expressions: arts, rituals, beliefs, and other intellectual and spiritual manifestations. It combines various sectors of the human and social sciences to consider the meaning of behavior, habits, and other cultural indicators, using the past to understand the present and conceive of the options for the future. The idea of a common roof for specialists in art, religion, and other conceptual aspects gestated for some time until it was formalized during the UISPP Congress in Florianopolis, Brazil, in 2011. 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. Further developments led to the establishment of EXPRESSION, a quarterly e-journal devoted to conceptual anthropology.

The goal of this new discipline is to understand human behavior and cultural trends, recurring and isolated phenomena, 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. Archaeology and anthropology, the history of art, and the history of religions 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, focusses 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, psychologists and 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. Technicians provide the raw material for research, humanists give them a conceptual sense.

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 cooperation and friendship. Research is a provocative, stimulating, and inspiring source of awareness.

The present 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.

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. But what will one do with imagination without a base of knowledge? Both of them are needed.

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

Knowledge is not the goal of research, it is the raw material for research. Students may try to contribute to the advancement of research by using imagination while lacking the necessary knowledge, or displaying erudition without proposing possible outcomes deriving from pertinent imagination. The results would be limited and often useless for the advancement of research. The formation of analytical minds is favored by the kind of input provided by the educator, person or system. Pertinent trends in the orientation of educators and educational institutions is vital for the progress of culture and research. Imagination is producing the dynamics of knowledge. It needs knowledge to perform and obtain creative results.

Imagination can develop in misleading directions and in such cases students are told: “You have too much imagination!” This sentence reflects the shortcomings of the teacher: it displays the lack of both knowledge and imagination of the teacher. In fact, what should be said is: “Your imagination is affected by the short-

age of knowledge”. Imagination and knowledge have to accompany each other.

In conceptual anthropology, the present is an effect of the past and the future is an outcome of the past. The present is the last instant of the past; as soon as it becomes present it is already past, and is the line joining the past to the future. The understanding of conceptual processes of the past allows the perception of the insight of the present and aptitudes of conceiving the future. All this requires a balance between knowledge and imagination.

Much of the knowledge conventionally taught by educational institutions is available on the internet and in books; it is handy even if partial or incomplete. In any case knowledge is never complete. Imagination is not provided by the internet; it is a natural mental gift that may be enhanced by stimulating conceptual awareness.

Knowledge and imagination are the body and soul of the human mind.

E. A.

APPRENTICESHIP IN CONCEPTUAL ANTHROPOLOGY

Atelier Research Center for Conceptual Anthropology is a workshop for research, experiment, and debate 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, the conception, organization, and layout of exhibitions and publications, the arrangement and conceptual definition 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 im-

agination, inquisitiveness, 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>.

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 consideration. 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 at: loost@ipt.pt

WHAT IS CISENP

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

International Scientific Commission on Research into the Intellectual and Spiritual Expression of Non-literate Peoples

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 broadminded study of what forms the roots of the present. Prehistoric archaeology is in 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 an 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 for understanding the present, our present. Knowing one's roots is the elementary base of history, mythology, and other cultural traditions.

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 a message to 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. Contact <atelier.etno@gmail.com>.

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Armenia	3	Malta	1
Australia	9	Mexico	4
Austria	3	Morocco	1
Belgium	5	Namibia	1
Botswana	1	Netherlands	1
Brazil	8	Norway	2
Bulgaria	1	Poland	2
Canada	5	Portugal	8
China	29	Russia	4
Colombia	1	Saudi Arabia	1
Denmark	2	South Africa	4
France	12	Spain	8
Germany	1	Sri Lanka	1
Hungary	1	Sweden	1
Israel	3	Switzerland	4
India	9	Tunisia	1
Italy	14	UK	9
Japan	1	Ukraine	4
Jordan	1	USA	16
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*Atelier Research Centre
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Sow Rock Art (South Africa)

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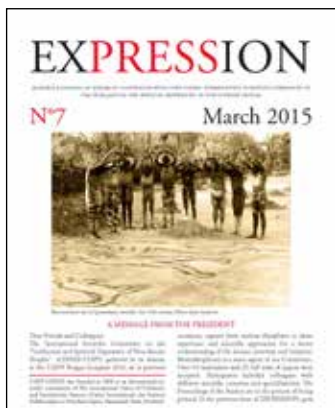


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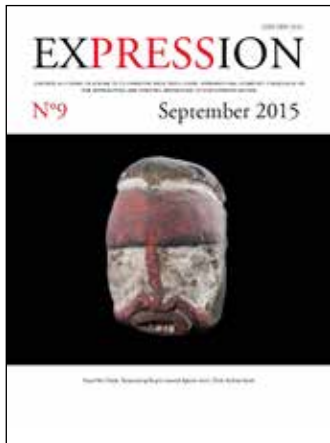


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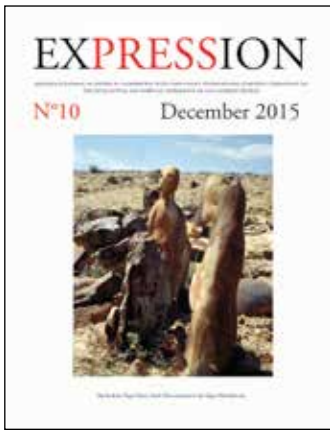
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Tribal and Prehistoric Art: When, Why and to Whom?

Presenting the WWW Project.

With articles by Monia Chies (Italy), David Delnoy and Marcel Otte (Belgium), Edmond Furter (South Africa), Chris Hegg (USA), Emmanuelle Honoré (UK), Bulu Imam (India), Shemsi Krasniqi (Kosovo), Trond Lødøen (Norway), Cristina Lopes (Portugal), Angelina Magnotta (Italy), Federico Mailland (Switzerland), Subhash Chandra Malik (India), Michel Martin (France), Elisabeth Monamy (France), Bilinda Devage Nandadeva (Sri Lanka), Alma Nankela (Namibia), George Nash (UK), Ancila Nhamo (Zimbabwe), Masaru Ogawa (Japan), Awadh Kishore Prasad (India), Riaan F. Rifkin (South Africa), Avraham Ronen (Israel), Manuel Santos Estévez (Portugal), Susan Searight-Martinet (Morocco), Kate E. Sharpe (UK), Jitka Soukopova (Italy), Radhakant Varma (India), Steven J. Waller (USA), Anne-Catherine Welté and Georges-N (Joel) Lambert (France).

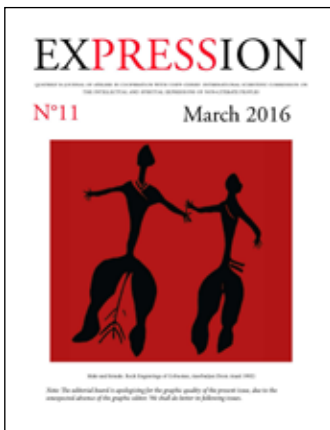


Expression 10

December 2015

The Role of Religion, Magic and Witchcraft in Prehistoric and Tribal Art

With articles by Jaâfar Ben Nasr (Tunisia), Ingmar M. Braun (Switzerland), Edmond Furter (South Africa), Arnaud F. Lambert (USA), Maria Laura Leone (Italy), J. D. Lewis-Williams (South Africa), Angelina Magnotta (Italy), Federico Mailland (Switzerland), Nataliia Mykhailova (Ukraine), Susan Searight-Martinet (Morocco), Hans-Joachim Ulbrich (Austria), Vahanyan Gregori (Armenia) and Steven J. Waller (USA).

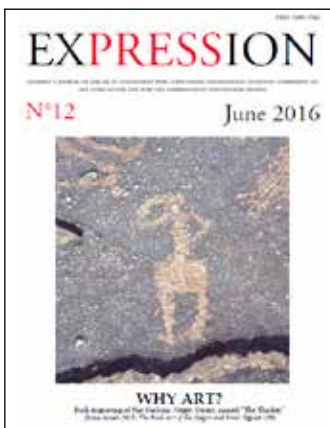


Expression 11

March 2016

Male and Female in Prehistoric and Tribal Art

With articles by Margalit Berriet (France), Carl Bjork (Usa), Pascale Binant (France), Brian Britten (Canada), Jessica Joyce Christie (Usa), Santiago Wolnei Ferreira Guimaraes (Brazil), Deb Holt and Jane Ross (Australia), Arnaud F. Lambert (Usa), Federico Mailland and Angelina Magnotta (Italy), Katharina Rebay-Salisbury (Austria), Susan Searight - Martinet (Morocco), Jitka Soukopova (Italy), Sachin Kr Tiwary (India), Maarten Van Hoek (Holland), Aixa Vidal/Lorena Ferraro and Maria Teresa Pagni (Argentina).

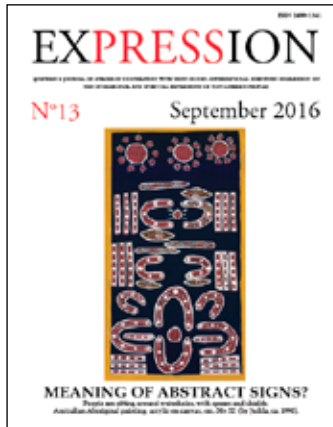


Expression 12

June 2016

Why Art?

With articles by Robert G. Bednarik (Australia), Kalyan Kumar Chakravarty (India), Liudmila Lbova (Russia), Tirtha Prasad Mukhopadhyay (Mexico) and Derek Hodgson (UK), Ancila Nhamo (Zimbabwe), Marcel Otte (Belgium), Kalle Sognnes (Norway), Jitka Soukopova (UK), George F. Steiner (Switzerland) and Tsoni Tsonev (Bulgaria).

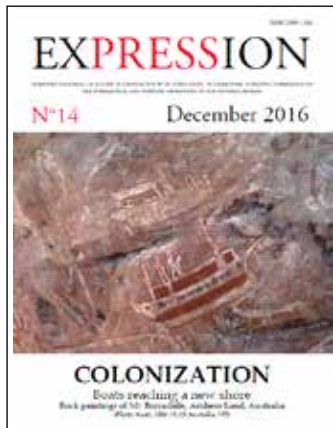


Expression 13

September 2016

Abstract Signs in Prehistoric and Tribal Art: Meaning and Problems of Interpretation

With articles by Margalit Berriet (France), Jean Clottes (France), Jagannath Dash (India), Maurer Dieter (Switzerland), Edmund Furter (South Africa), Thirtha Prasad Mukhopadhyay and Alan P. Garfinkel (Usa), Tsoni Tsonev (Bulgaria) and Leslie Van Gelder (Usa).

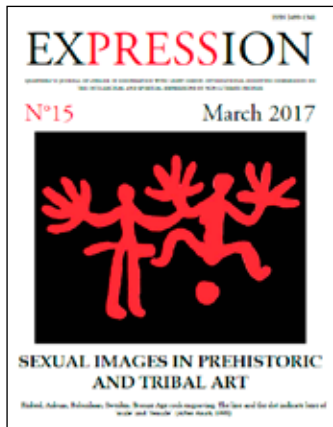


Expression 14

December 2016

Colonization: How Did Humans Reach All the Lands of the Planet?

With articles by Emmanuel Anati (Italy), Marta Arzarello (Italy), Robert G. Bednarik (Australia), Anthony Bonanno (Malta), José Farruja de la Rosa (Spain), Edmund Furter (South Africa), Marcel Otte (Belgium), Santiago Wolnei Ferreira Guimaraes and Leidiana Alves de Mota (Brazil).



Expression 15

March 2017

Sexual Images in Prehistoric and Tribal Art

With articles by Emmanuel Anati (Italy), Leo Dubal (France), Edmond Furter (South Africa), Michel Justamand and Pedro Paulo A. Funari (Brazil), Shensi Krasniqi (Kosovo), Angelina Magnotta (Italy), Marc Martinez/Michel Lenoir and Anne-Catherine Welté (France), Terence Meaden (UK), Nataliia Mykhailova (Ukraine) and Jitka Soukopova (UK).

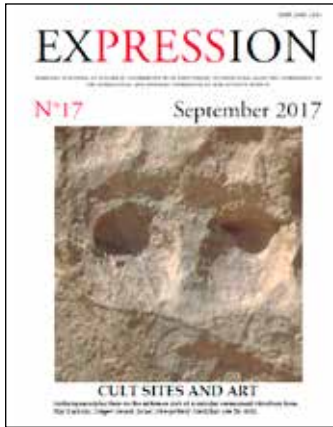


Expression 16

June 2017

The Message Behind the Images in Prehistoric and Tribal Art

With articles by Emmanuel Anati (Italy), Robert G. Bednarik (Australia), Emilio G. Berrocal (Italy), Ekaterina Devlet (Russia), A. José Farruja de la Rosa (Spain), Edmond Furter (South Africa), Alexandre Guida Navarro (Brazil), Cristina Lopes (Portugal), Terence Meaden (Uk), Cynthia Ontiretse Mooketsi (Botswana), Jacinto Palma Dias (Portugal), Radoslaw Palonka (Poland), Tirtha Prasad Mukhopadyay (Mexico), Alan Garfinkel (Usa), Luis Ramon Merchan Villalba (Colombia), Vahan Vahanyan and Gregori Vahanyan (Armenia).

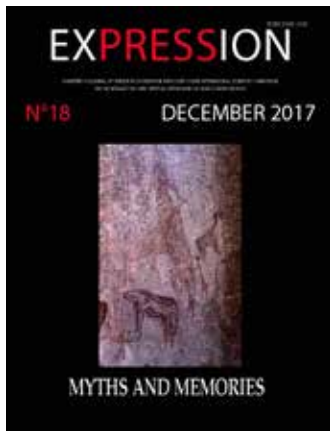


Expression 17

September 2017

Cult Sites and Art

With articles by Emmanuel Anati (Italy), Margalit Berriet (France), Jerzy Gassowski (Poland), Kempe Stephan F.J. and Al-Malabeh Ahmad (Germany, Jordan), Terence Meaden (UK), Kalle Sognnes (Norway), Sachin Tiwary (India), Gregori Vahanyan (Armenia), Wolnei Ferreira Guimarães Santiago (Brazil).

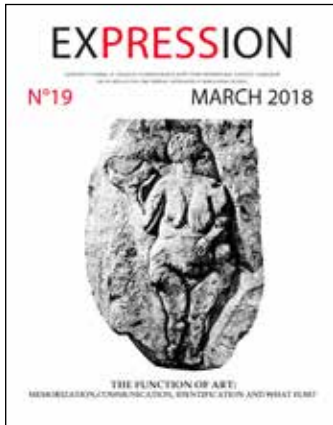


Expression 18

December 2017

Myths and Memories: Stories Told by Pictures

With articles by Emmanuel Anati (Italy), Margalit Berriet (France), Gassowski Jerzy (Poland), Kempe Stephan F.J. and Al-Malabeh Ahmad (Germany, Jordan), Terence Meaden (UK), Tiwary Sachin (India), Kalle Sognnes (Norway), Gregor Vahanyan (Armenia) and Wolnei Ferreira Guimarães Santiago (Brazil).



Expression 19

March 2018

The Function of Art: Memorization, Communication and What Else?

With articles by Bulu Imam (India), Devlet Ekaterina (Russia), Kraniqi Shemsi (Kosovo), Lopes Cristina (Portugal), Maurer Dieter (Switzerland), Moulton Susan (USA), Vahanyan Vahan (Armenia), Villa Marta and Nisi Domenico (Italy).



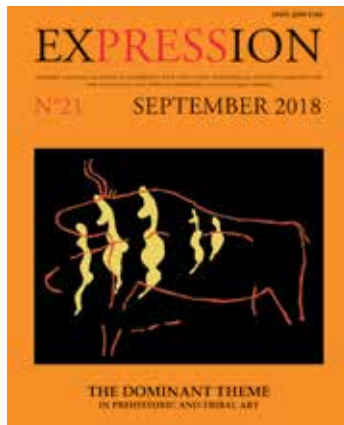
Expression 20

June 2018

The Function of Art: Memorization, Communication and What Else?

Part II

With articles by Mailland Federico (Switzerland), Marler Joan (USA), Mykhailova Nataliia (Ukraine), Prasad Awadh Kishore (India), Warland Jacinta (Australia).



Expression 21

September 2018

The Dominant Theme in Prehistoric and Tribal Art

With articles by: Emmanuel Anati (Italy), Shanandoah Anderson (USA), Sara Garcês, Luiz Oosterbeek (Portugal), Michel Justamand, Gabriel Frechiani de Oliveira, Suely Amâncio Martinelli (Brazil), Gregori Vahanyan, Vahanyan Vahan, Baghdasaryan Vard (Armenia), Jessie Van Cauter, Marc De Bie (Belgium).



Expression 22

December 2018

The Dominant Theme in Prehistoric and Tribal Art - Part II

With articles by: Emmanuel Anati (Italy), Margalit Berriet (France), Amélie Bonnet-Balazut (France), Bulu Imam (India), Carol Patterson (USA).



Expression 23

March 2019

The Age of Memory, the Memory of Ages

With articles by: Emmanuel Anati (Italy), Fernando A. Coimbra (Portugal), Leo Dubal (France), Santiago Wolnei Ferreira Guimarães (Brazil), Liudmila Lbova, Tatyana Rostyazhenko (Siberian Federal District, Russia), Aixa Vidal (Argentina)



Expression 24

June 2019

Cultural Changes

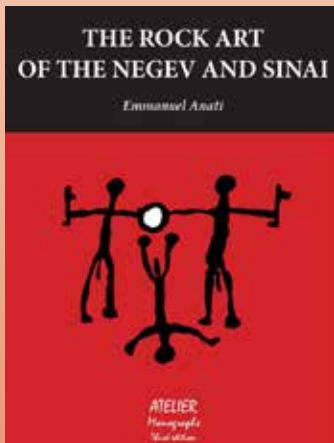
With articles by: Robert G. Bednarik (Australia), Brian Hayden (Canada), Michel Justamand, Gabriel Frechiani de Oliveira, Pedro Paulo Funari (Brazil), Majeed Khan (Saudi Arabia), Tirtha Prasad Mukhopadhyay, Armando Pérez Crespo (Mexico), Simon Radchenko, Dmytro Nykonenko (Ukraine)

ARCHAEOLOGY AND THE BIBLE

Atelier is pleased to present

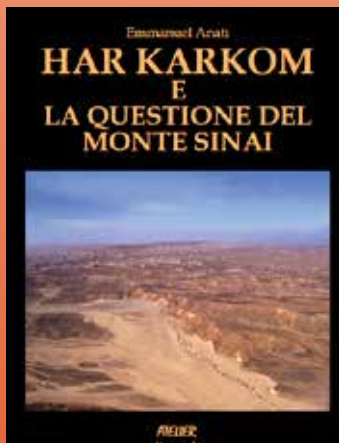
ARCHAEOLOGY IN THE DESERT EXODUS: NEW DISCOVERIES RELATED TO BIBLICAL ARCHEOLOGY

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

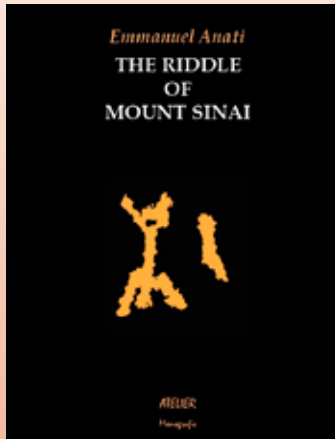
Capodiponte (Atelier), pp 220; 138 ill., €30,00

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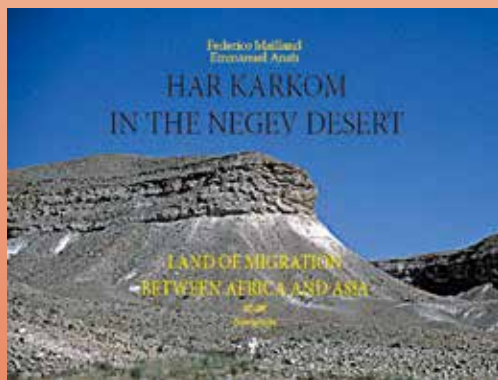
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Anati, E. 2017, *The Riddle of Mount Sinai*, Second English Edition

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

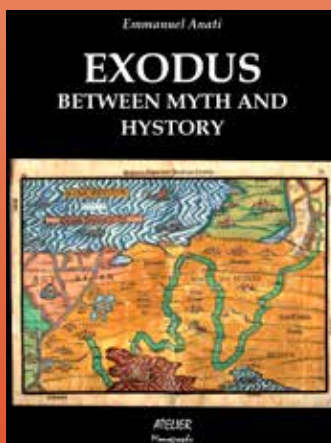
What is the true story behind the biblical narration of Exodus? The discoveries of the Italian archaeological expedition at Har Karkom, in the Negev Desert, tell the hitherto unknown story of the sacred mountain in the heart of the desert of Exodus, reflecting surprising similarities to the events and 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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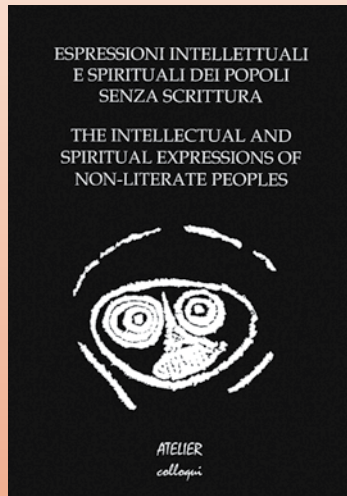
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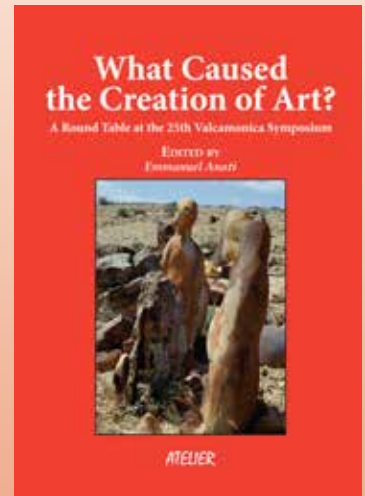
Il segni originari dell'arte (In Italian)

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



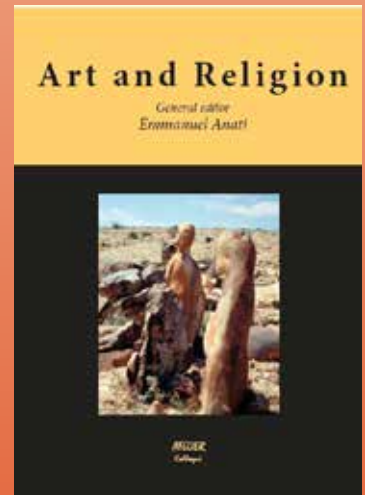
Sogno e memoria: Per una psicoanalisi della Preistoria (In Italian)

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.



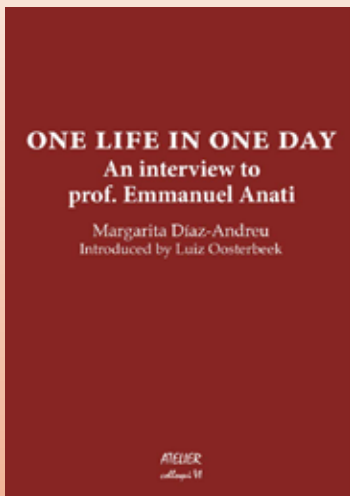
Art and Religion

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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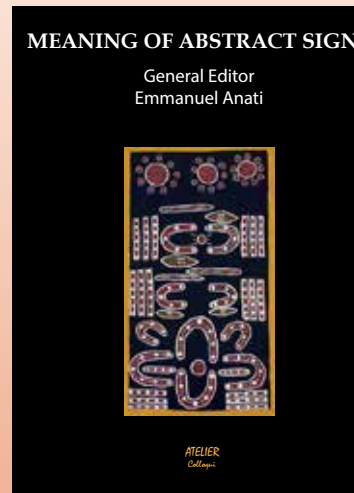
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One Life in One Day.

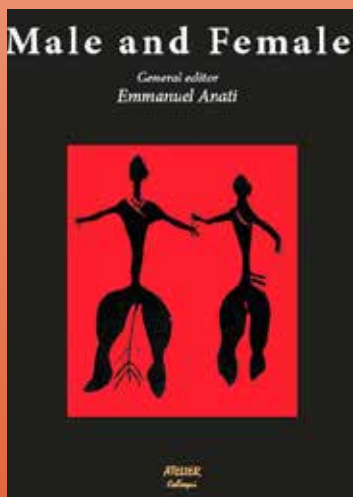
An interview to prof. Emmanuel Anati

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.



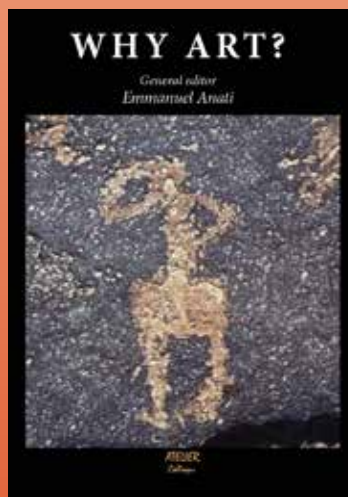
Meaning of Abstract Signs

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.



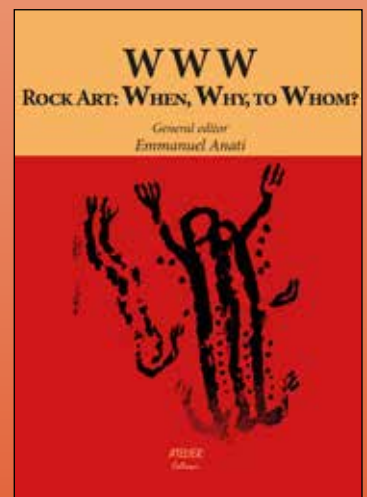
Male and Female

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:

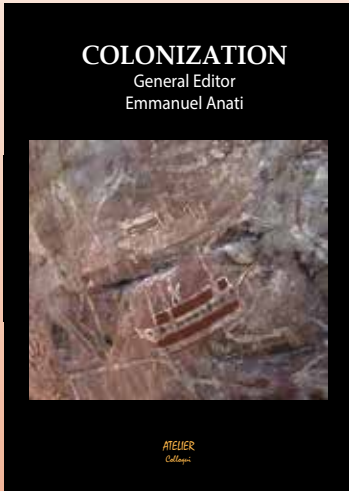
When, Why and to Whom

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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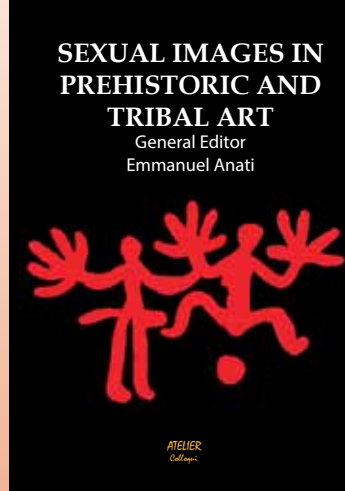
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Colloqui



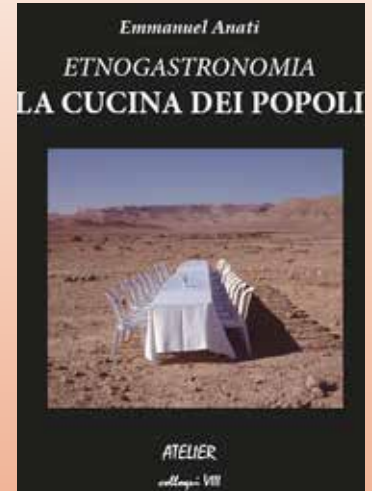
Colonization

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.

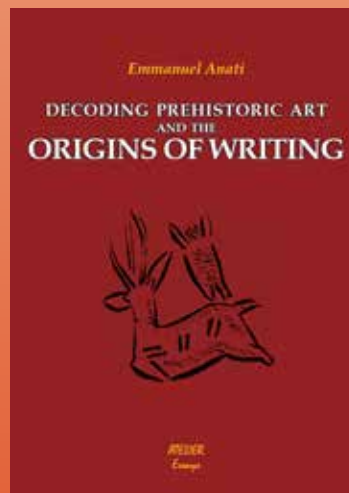
ATELIER' PUBLICATIONS

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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ATELIER' PUBLICATIONS

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.



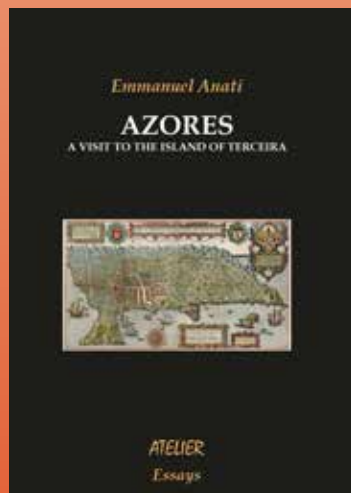
Iniziazione e riti di passaggio (in Italian)

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.

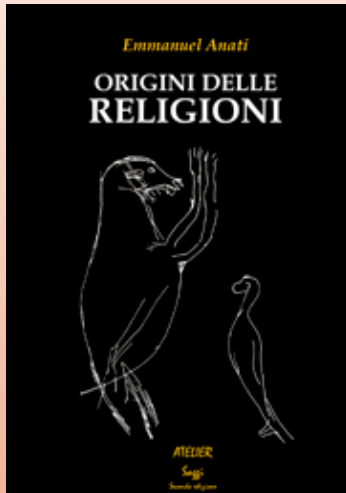
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Essays



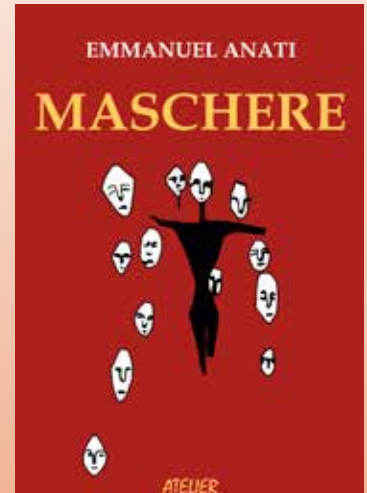
Mito tra utopia e verità
(in Italian)

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.

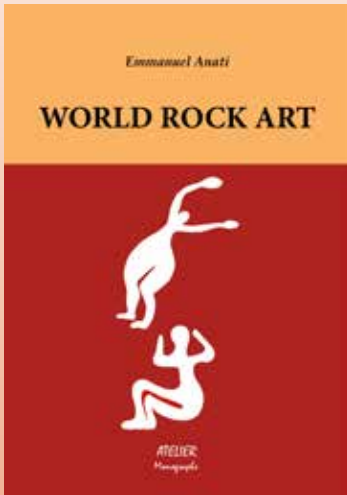


Amore e sessualità
(In Italian)

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.

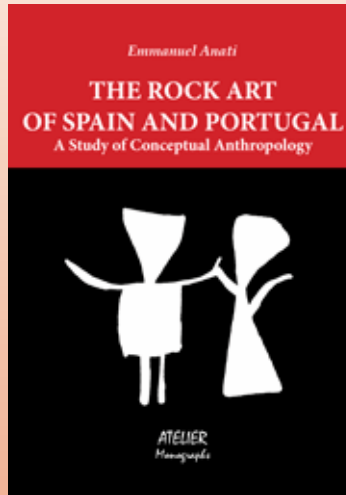
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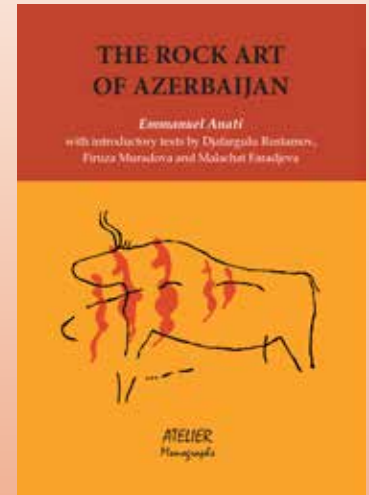
World Rock Art

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.



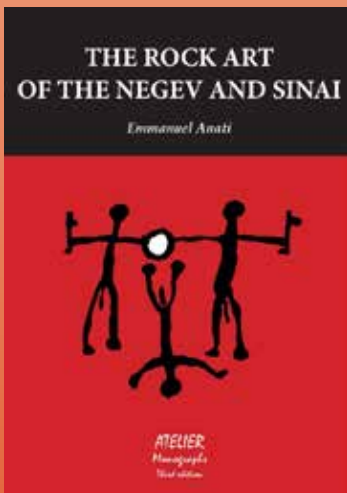
The Rock Art of Spain and Portugal

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



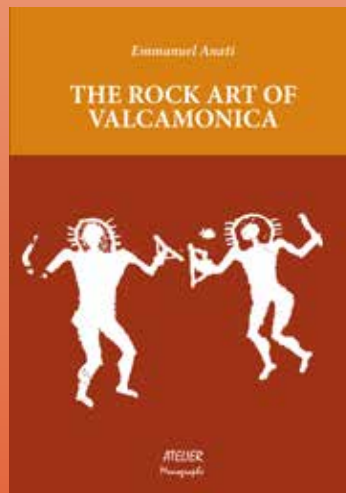
The Rock art of Azerbaijan

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*.



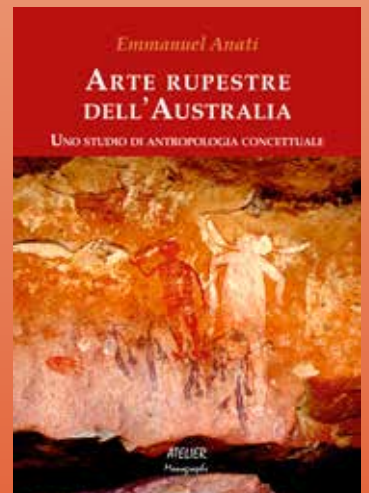
The Rock Art of the Negev and Sinai

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

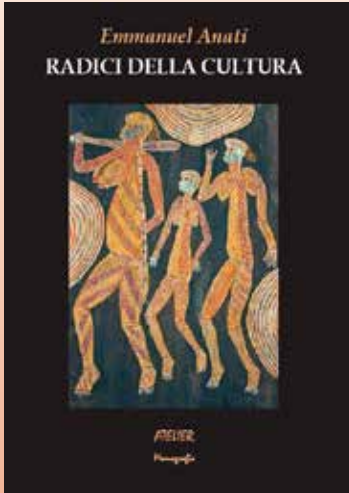


The Rock Art of Australia

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.

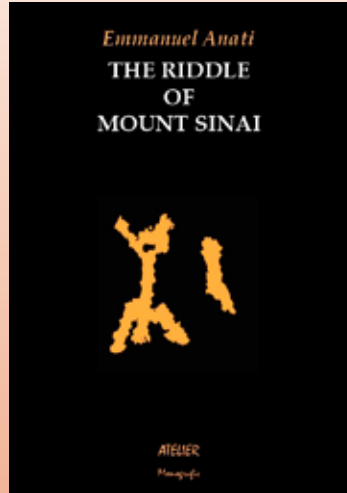
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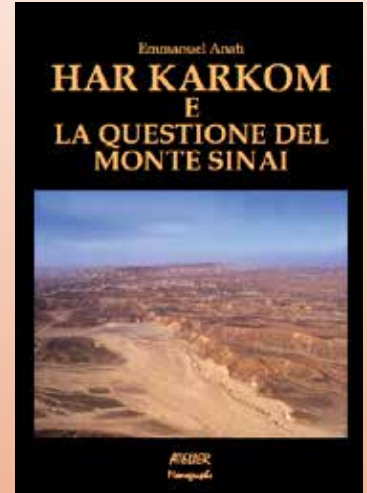
Radici della cultura
(in Italian)

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.



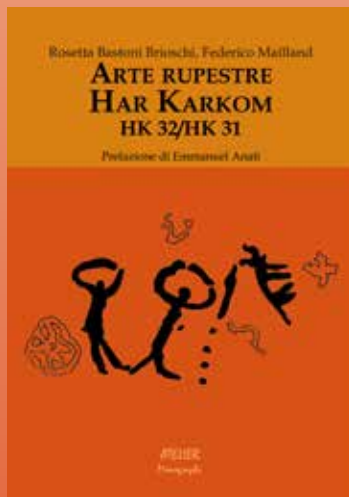
The Riddle of Mount Sinai

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.

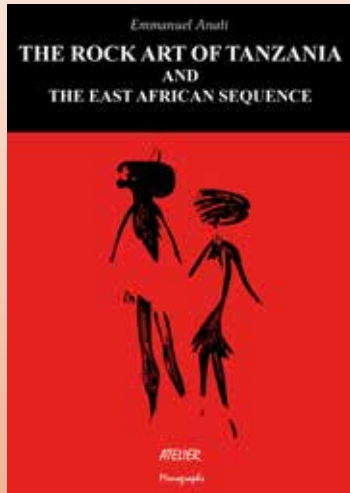


L'arte delle tapa.
Sacre stoffe dell'Oceania
(in Italian)

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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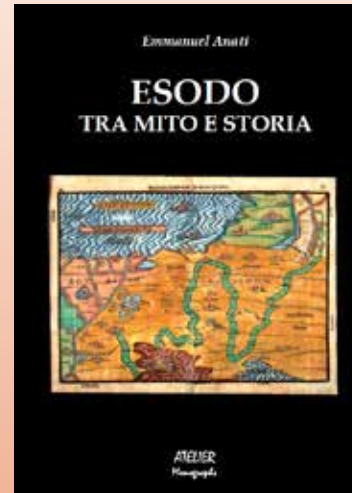
Monographs



The Rock Art of Tanzania and the East African Sequence

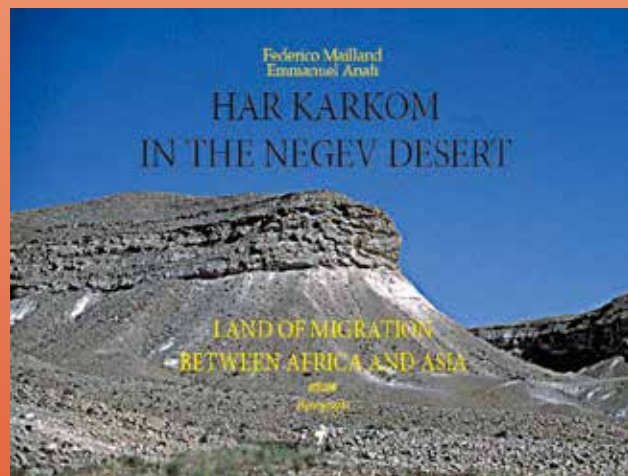
The rock art of Tanzania, in over 200 caves and rock shelters, is presented in this book using the analytical method of Conceptual Anthropology.

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

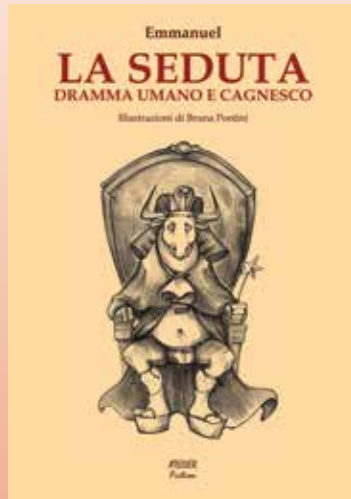
A mountain located in the land-bridge between Africa and the rest of the world yielded traces of ages of human presence ever since the first steps of the human ancestors out of Africa.

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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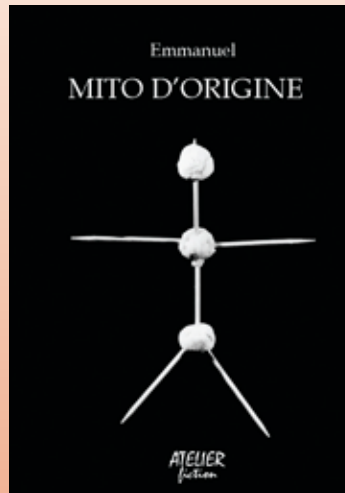
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Fiction



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.

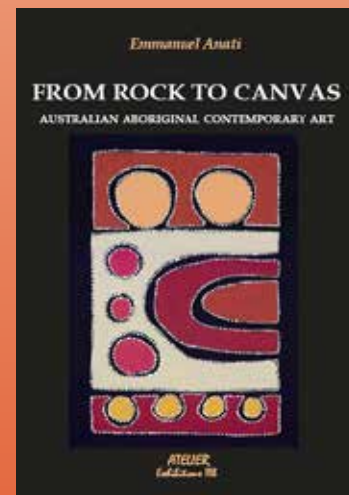


Exhibitions



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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