

EXPRESSION

QUATERLY E-JOURNAL OF ATELIER IN COOPERATION WITH UISPP-CISNEP. INTERNATIONAL SCIENTIFIC COMMISSION ON
THE INTELLECTUAL AND SPIRITUAL EXPRESSIONS OF NON-LITERATE PEOPLES

N°12

June 2016



WHY ART?

Rock engraving of Har Karkom, Negev Desert, named "The Thinker"
(from Anati 2015, *The Rock Art of the Negev and Sinai*, figure 150)

EDITORIAL NOTES

WHY ART?

LOOKING FOR A MEANING

Together with a small group of students we explored a newly discovered rock with engravings, in a wooden area of the Camonica Valley. The rock was covered by moss; after a first cleaning, about 60 figures became visible. Some of the human images were holding tools and weapons and comparing their shapes with those of similar datable objects discovered in graves and other archaeological excavated levels, a date could be established for the engravings which turned out to be about 2,750 years old.

After tracing and recording, it appeared that three human figures, located on different parts of the surface, all had the same features, the same clothing and the same weapons, but each one was in a different context, accompanied by different signs. These figures appeared to be those of the same being in three different situations. The picture was telling a story: the story of this being.

The study of the rock revealed a complex assemblage of engravings belonging to a single phase, produced with one and the same engraving tool, likely by the same hand. In a single panel are illustrated various events in a sequence. It is telling the story of an anthropomorphic being, probably a mythical ancestor or spirit, going through a journey and adventures, experiencing events connected to thunder or some other natural expression of power. This being appears as the one who gives men their sexual ability and energy, a sort of 'Lord of Virility'. The story concludes with the depiction of an enormous male sexual organ in the process of ejaculating. This phallus is over 1 m long.

Why was this engraving made? The site itself provided some suggestions. This rock is standing oblique being located in front of an almost flat small space: the rock itself appeared to us like a blackboard in a school classroom.

The makers died long ago and nobody can provide direct testimony, but the hypothesis emerged that a group of young people, probably candidates for initiation, may have sat on the floor in front of the rock, while an instructor was telling them the story.

The engravings narrate a myth and we may thus consider that it was produced in order to remember this myth, like the frescoes of cathedrals still do today. Its purpose may well have been educational.

Several other engraved rocks were found in the vicinity. Probably some others may have had the same purpose, but not necessarily all of them.

Rock art is like the literature of more recent times, some books may concern science, others religion, some may be school textbooks and others fiction. The reason for making one rock engraving is not necessarily the same as all the other rock engravings.

The decoding of prehistoric art may help us to understand why each piece of art was produced and for what purpose. But we have first to understand what message it intended to convey. Like any other communication, to understand its motivation we have first to know its content.

E.A.

Note: The decoding of the rock engraving in question appears in *Proceedings of the XV World Congress of UISPP*, Lisbon, 2006, vol. 16, 'Prehistoric Art and Ideology', pp. 3-12, and in *Semiotica dell'arte preistorica* (Anati, 2014), pp.

CONCEPTUAL ANTHROPOLOGY

Conceptual anthropology is the discipline that combines various aspects of human and social sciences in respect of human behaviour and culture, using experiences of the past to understand the present and build the future. The concept gestated for some time until it was formalized during the UISPP Congress in Florianópolis, Brazil, in 2011, setting new horizons for human sciences. It was decided to make of the newly proposed discipline, conceptual anthropology, a concern of the International Scientific Committee on The Intellectual and Spiritual Expressions of Non-Literate Societies (UISPP-CISNEP). The goal of this new discipline is to understand human behaviour and cultural trends, recurring and isolated phenomena, predictable and unpredictable evolution and change, not only in technology, but also in social, intellectual and spiritual life. It is a permanent journey of discovery and emotions.

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 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 the memory. When we err, we often owe it to our memory blurring. When we reach positive results, it is because we have made good use of our memory. We do not refer to electronic memory but to the one expressed in intuition and discovery, the memory that springs from the deep well of our psyche.

Every being, like every discipline, focuses on certain aspects of memory and neglects others. Together, various disciplines and various cultures share wider dimensions of memory. Such approach offers an immense contribution to the study of the intellectual and spiritual expressions of non-literate peoples.

One of the purposes of UISPP-CISENP, in addition to the pleasure of meeting and growing by dialogue, is to promote a common commitment to the understanding of such human expressions, with the support of multidisciplinary research. As students of various disciplines, anthropologists and archaeologists, psychoanalysts, educators, sociologists, semioticians, philosophers and historians, we all wish to face questions which a shared commitment can help clarify. The meeting of different disciplines offers a wider 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 broad overview in the common work of the humanities and 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 joint dialogue.

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 and 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. You are welcome to join.

The present world crisis is a cultural crisis, a crisis of values and wisdom that has economic, social and political consequences. Reviving the role of culture is our modest joint effort to contribute to overcoming the crisis.

APPRENTICESHIP IN CONCEPTUAL ANTHROPOLOGY

The apprenticeship, under the guidance of Prof. Emmanuel Anati, may last from a minimum of two months to a maximum of one year. It grants the apprentice the title of *research assistant*. The apprenticeship is oriented to the acquisition of practical operational abilities and conceptual formation; it includes participation in research, editorial activities, compilation, organization and layout of exhibitions and publications, arrangement and cataloguing of ethnological collections, planning of cultural and scientific projects.

Traditional learning as an accumulation of theoretical notions is enhanced by applying the notions in practical activities, learning to do by doing.

During active presence in the Camonica Valley, the student will have access to self-catering accommodation on campus, at a student fee. Preference is given to graduates and other seriously motivated young people with knowledge of the English language and operational abilities on a database. Application in an informal letter should specify the motivations and skills of the candidate and be accompanied by: curriculum vitae; - copy of record of studies; - copy of identity card or passport;

- passport standard photo; - letter of presentation or recommendation from a university professor or a previous employer. Applications should be addressed by email to:
atelier.etno@gmail.com

LEARNING TO BE AN EDITOR

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

POSITION FOR ASSISTANT CURATOR OF ETHNOGRAPHY

Graduate students in anthropology and ethnography are given the opportunity of training as 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 the curriculum: the publication of a scientific work and the position of

“Assistant Curator” for the period of time of his/her engagement. The experience is taking place in the Camonica Valley, Northern Italy, and is expected to last a minimum of three months. Candidates should master the English language and have a university degree in the human sciences. During active presence the accepted candidates will have access to self-catering accommodation on campus at a student fee. Applications should include a request letter expressing motivations, a record of studies, copy of an identity document and any other document worth consideration. Applications should be addressed by email to: atelier.etno@gmail.com.

HOW TO BECOME A MEMBER OF THE UISPP, INTERNATIONAL UNION OF PREHISTORIC AND PROTOHISTORIC SCIENCES

EXPRESSION, this e-journal, is produced by ATELIER, the Research Centre in Conceptual Anthropology, in cooperation with the UISPP-CISENP (the International Scientific Committee on the Intellectual and Spiritual Expressions of Non-Literate Societies), an organ of the UISPP. UISPP is also offering other facilities, including participation in its World Congress. Membership of the UISPP will ensure you official 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 you wish to attend the World Congress, become a member of the UISPP. For further information contact the office of the General Secretary: loost@ipt.pt

A NOTE ABOUT THE PRESENT ISSUE

The theme of “WHY ART” has produced a large response and a variety of different views. We are sorry for having been unable to include more papers. The present issue includes an interesting and varied sample of views from different continents and conceptual approaches. Reviewers criticized one of the included papers because of little concern with standard scientific canons. The approach was considered to be naïf and old-fashioned. Nevertheless ultimately it was decided to include it, as potential source of debate. Accepted papers that are not appearing in the present issue may be considered for forthcoming issues.

The question of the sequence order of papers has been faced again. Various options have been considered: the chronological sequence according to the age of each specific case treated, the geographical succession according to continents of concern, the sequence according to the time in which the papers were submitted, the sequence according to the evaluation of importance of the papers, or the sequence from generic topic to specific ones. Ultimately it was decided to continue the same sequential system followed so far: the papers follow the alphabetic order of the family names of their authors.

HOW TO RECEIVE THE NEXT ISSUE OF EXPRESSION MAGAZINE FREE OF CHARGE?

Just send us these words: “I wish to receive the next issue of EXPRESSION magazine free of charge”, include your name, address, country, and email address to: atelier.etno@gmail.com.

DISCUSSION FORUM

The Discussion Forum invites readers to be active in debates of worldwide interest in conceptual anthropology

ABSTRACT SIGNS IN PREHISTORIC AND TRIBAL ART: MEANING AND PROBLEMS OF INTERPRETATION

Any suggestion?

In the framework of the project 'Understanding what is called abstract' colleagues are invited to present papers about the meaning and problems of interpretation of abstract signs in prehistoric and tribal art. Scholars, students and other persons of culture are welcome to participate in this research with their personal ideas and papers. After being reviewed, the accepted papers will be published in **EXPRESSION** magazine and eventually in a monographic volume. It would be a pleasure to consider your contribution. Among the many aspects of such a discussion we anticipate some suggestions:

- 1-The decoding and possible meaning of specific signs defined as abstract.
- 2- Cases of abstract art and their significance.
- 3- Syntactic relations between figurative and abstract.
- 4- Pictograms, ideograms and psychograms.
- 5- Tribal explanation of abstract signs.
- 6- Abstract art and communication.

Other topics will be considered. Following the traditions of **EXPRESSION** magazine you are invited to propose a paper on a specific topic or site.

Short papers of 1,500–3,000 words are suggested, preferably with about four illustrations. Illustrations (definition 600 dpi) should be separate from the text and each illustration should have a caption and be pertinent to the illustration and the topic selected. The papers most relevant to a worldwide debate will be published first in the international quarterly magazine **EXPRESSION** and then as a volume. Please indicate the title you intend to present. Try to avoid general conceptual disquisitions, unless they are of a strongly innovative nature. The deadline for the presentation of the final paper is 30 August 2016.

We look forward to the pleasure of reading your paper. Reply to: <atelier.etno@gmail.com>.

FORTHCOMING DEBATES

Readers are proposing themes for debate. Some of them may be considered in the near future:

- 1- **WOMEN**: The role of women in prehistoric and tribal art.
- 2- **FIRE**: The representation and the meaning of fire in prehistoric and tribal art.
- 3- **COLONIZATION**: Prehistoric navigation and colonization. How humans reached all the lands of the planet.
- 4- **SEX**: The role of sex in prehistoric and tribal art.
- 5- **STYLES**: Local, regional and global styles in visual art.
- 6- **ART AND ECONOMY**: relations between economic conditions and artistic creativity.

Proposals for papers and suggestions on possible developments of these and other issues are welcome.

Dear Reader, You are invited to indicate your interest in participating in one of these topics by proposing the title of your suggested paper. You are also invited to propose other topics for debates. Please consider that **EXPRESSION** is open to new ideas. It will be a pleasure to hear from you.

CONTENTS

Robert G. Bednarik (Australia) Questions and answers about art and rock art.....	8
Kalyan Kumar Chakravarty (India) Is Art Necessary for Human Survival?.....	11
Liudmila Lbova (Russia) Anthropomorphic figurines of ice age art in Siberia: new data and perspectives on the function of prehistoric mobile art.....	16
Thirtha Prasad Mukhopadhyay (Mexico) and Derek Hodgson (UK) Why is rock art so evocative? Affective depiction of animals from Coso Range Petroglyphs, Southwest California, and Isco, Hazaribagh, India.....	26
Ancila Nhamo (Zimbabwe) Male versus female: variation in representations of males and females in the Hunter- gatherer rock art of Southern Africa.....	48
Marcel Otte (Belgium) Duality in Arts.....	57
Kalle Sognnes (Norway) From where to why: some examples of rock art locations in Scandinavia.....	61
Jitka Soukopova (UK) Saharan rock art sites as places for celebrating water.....	67
George F. Steiner (Switzerland) The goddess and the copper snake: metallurgy, star-lore, and ritual in the rock art of Souther levant.....	73
Tsoni Tsonev (Bulgaria) Art and “Primitive” Cultures.....	95

QUESTIONS AND ANSWERS ABOUT ART AND ROCK ART

Robert G. Bednarik

*Convener and Editor, International Federation of
Rock Art Organisations (IFRAO)
Australia*

Professor Anati has posed a series of useful questions, some of which can be answered satisfactorily in a scientific sense, and some of which cannot be clarified with any credibility. Before attending to them, let me first consider the use of the little word 'art'. We can probably agree that art comprises arrangements of shapes, colours, sounds or performances by people who create art for reasons ranging from self-fulfilment to religious fervour to gaining a profit. The concept of 'art' as it is perceived today is relatively recent, emanated from Europe and has been applied to various art-like phenomena such as 'ethnographic art', children's art, graffiti, tattoos and so forth, often without clarifying whether these 'traditions' constitute art in the same sense. I understand, from art critics and commentators, that for instance thirty ordinary bricks laid out in a row in an exhibition by an artist constitute art; so does the act by an artist of slaughtering a cow at the entrance of an art gallery, and even the cow's carcass is a 'work of art' and meaning. In other words, the term 'art' encompasses such a great diversity that it seems to mean no specific class of entities, but refers to the meanings these were given. Most importantly, "the status of an artifact as a work of art results from the ideas a culture applies to it, rather than its inherent physical or perceptible qualities. Cultural interpretation (an art theory of some kind) is therefore constitutive of an object's arthood" (Danto 1988). It would be preposterous to contend that modern (Westernised) humans could fathom the ideas ancient cultures applied to paleoart tens or hundreds of millennia ago. They cannot even establish the status of recent ethnographic works with any objective understanding (Dutton 1993): interpretation is inseparable from

the art work (Danto 1986). To regard paleoart as art is therefore an application of an etic and ethnocentric idea to products of societies about whose emic parameters nothing is known in most cases. That is why we should refer to the ancient evidence as 'palaeoart': it is no more art than a peanut is either a pea or a nut. 'Palaeoart' or 'rock art' are just names; they don't imply that either is art. With this in mind I will try to respond usefully to the questions Anati posed, within a framework of science rather than any of the usual clichés of the humanities.

Why was a certain place selected and then used for generations to produce art?

There are many possible reasons: why were more films made in one town than in another? Why are there enclaves of artists in certain places? However, Anati may not be referring to art per se, but specifically to rock art. Here we know some of the reasons from ethnography, e.g. in Australia, but it may not be justified to extrapolate from these to other circumstances. It may be best not to generalise, but to refer to specific cases, specific sites. It also needs to be remembered that without understanding the taphonomy applying to a given corpus of rock art, this question cannot be answered satisfactorily: surviving rock art sites were not only selected by their 'artists', but also by processes of deterioration (Bednarik 1994).

What is or was the function of art?

If the question refers to rock art, the answer is simple: unless sound ethnographic information (including written statements by the 'rock artists', as in the Middle East) is available, the function of rock art can only be inferred indirectly. If the proposition cannot be tested (falsified or refuted) it has no scientific standing. But if Anati's question refers to art in the generic sense, art has numerous functions.

Who were the producers of this art?

In the case of rock art, if credible information of its age is available (which is only rarely the case; most claims of this nature in the literatu

re are probably false; Bednarik 2016), we may be able to link it to specific technological traditions or ethnic groups. Without credible dating or ethnography we cannot say who produced it.

What pushes humans to produce art?

Humans are not being “pushed” to produce art; many of us never produce any and we seem to be content with that. For instance my own attempt to compose an opera at age 10 had to be abandoned because of a lack of talent. It seems more a case of aptitude, talent and artistic drive, which certainly differ between individual humans.

What place does art take in human culture?

It has numerous roles, among them being those in advertising, design, nationalism, religion, ethnic identity, education, the ‘art industry’, the events industry, investment, the music industry, photography, the theatre, the film industry and countless others. Even in ancient cultures art-like production, like music or palaeoart, probably had many roles, if ethnography is any guide.

How did the need to produce art start in early humans?

Very little can be said about this with any credibility, and the question would profit from a reformulation expressing scientific language. It is the most consequential question Anati raises here, but a fitting response cannot be accommodated in 3000 words. Instead, let it simply be said that the issue has been investigated in great depth, and the best theory at present seems to be that palaeoart played a significant role in hominin history, in that the proliferation of exograms (Bednarik 2014) during the Early and Middle Pleistocene led to human cognitive modernity (metarepresentation, recursion etc.). This question needs to be attended to by the cognitive and neurosciences; the humanities are in no shape to answer it credibly (see Bednarik 2011).

When did it start?

The advent of palaeoart seems to coincide almost with the appearance of the genus *Homo*, i.e. in the order of 2 to 3 million years ago. However, apparent traditions of palaeoart production can only be traced back to perhaps the late Early Pleistocene, and they become distinctive and well identifiable during the Middle Pleistocene, in the forms of petroglyphs, portable engravings, beads and pendants, proto-figurines, pigment use and manuports. In this context it is useful to recall that there is more Middle Palaeolithic rock art surviving in the world than Upper Palaeolithic; and that Upper Palaeolithic rock art stands not at the beginning, but closer to the end of palaeoart development.

Are there populations in the world without art?

There are populations that normally produce only aniconic ‘art’ (such as the Jarawas; Bednarik and Sreenathan 2012), but there does not seem to be a major cultural tradition that lacks any form of art, be it in the form of graphic work, sculpture, ceramics, music or drama.

Are there people wishing to destroy art? Why?

Excellent question! Yes, there are such people, including iconoclasts of various types (religious, political, due to mental illness etc.). Of particular interest here are those who endeavour to destroy rock art deliberately. There are several types of these: 1. *Iconoclasts*: individuals who because of ideological, religious or other reasons dislike rock art. Examples are provided by the destruction of Buddhist rock art in central Asia by Moslems; the Idol Eradication Policy declared in Lima soon after Spanish conquest; the practices of Bedouins in Arabia or White supremacists in the USA of using petroglyphs for target practice; or the practices of dynamiting rock art sites, e.g. in the Middle East or in Rio Tinto Gorge in Western Australia. 2. *Land rights issues*: some non-indigenous

land owners on whose land rock art occurs will blow up rock art (or threaten to do so) if they fear the land may be claimed by indigenous people because of the presence of the rock art.

3. *Archaeologists*: many professional archaeologists, as consultants or as administrators, have been involved in the destruction of rock art, clandestinely or openly. There are numerous cases around the world of complicity of archaeologists in rock art destruction, for instance in South America (Chile, Brazil), Europe and Australia. The best-known examples are provided by the wholesale destruction of hundreds of rock art sites in the Guadiana valley, concealed by the archaeologists responsible (Bednarik 2004), and preceded by similar destruction of the rock art in several other Portuguese valleys; and the destruction of 95,000 petroglyphs on Murujuga, the main island of the Dampier Archipelago in Australia (Bednarik 2013), believed to be the largest rock art assemblage in the world. In the latter case, the consulting archaeologists managing the destruction of numerous rock art sites have been paid many millions of dollars for their work in clearing the land for development until, after a bitterly fought 12-year campaign against two governments and numerous large resource companies, I managed in 2014 to secure protection of the remaining Murujuga rock art.

References

- Bednarik, R. G.
1994 *A taphonomy of palaeoart*. *Antiquity* 68(258): 68-74.
- Bednarik, R. G.
2004 *Public archaeology and political dynamics in Portugal*. *Public Archaeology* 3(3): 162-166.
- Bednarik, R. G.
2011 *The human condition*. Springer, New York.
- Bednarik, R. G.
2013 *History's largest confrontation over rock art protection*. *International Newsletter on Rock Art* 67: 15-19. Bednarik, R. G.
- 2014 *Exograms*. *Rock Art Research* 31(1): 47-62. Bednarik, R. G.
- 2016 *Horse and bull petroglyphs of Europe*. *Bollettino del Centro Camuno di Studi Preistorici* 40. Bednarik, R. G. and M. Sreenathan
- 2012 *Traces of the ancients: ethnographic vestiges of Pleistocene 'art'*. *Rock Art Research* 29(2): 191-217.
- Danto, A. C.
1986 *The philosophical disenfranchisement of art*. Columbia University Press, New York.
- Danto, A. C.
1988 *Artifact and art*. In S. Vogel (ed.), exhibition catalogue for ART/artifact, pp. 18-32. Center for African Art, New York.
- Dutton, D.
1993 *Tribal art and artifact*. *Journal of Aesthetics and Art Criticism* 51: 13-21.

IS ART NECESSARY FOR HUMAN SURVIVAL?

Kalyan Kumar Chakravarty

*President, Bhasha Research and Publication Centre,
Baroda, India*

Abstract

Humanity has to overcome the growing chasm between arts and life, nature and culture, technology and ecology in order to survive. Arts nourished transgenerationally by communities rather than arts made for the market constitute human culture and development. These provide a bridge between necessity and embellishment and rescue humanity from the anomie and sclerosis assailing human civilization.

A fragile civilization

The question about the relevance of art to human survival arises out of the current situation of humanity in which art serves an urban, technological civilization. The civilization is driven largely by a consciousness industry, a society of spectacle, an artless, loveless, pitiless predatory generation. Steamy Sleaze, recycled minimalism, apocalyptic trivia, ceaselessly shifting axes tell us of people described by T.S. Eliot in 'Burnt Norton' as distracted from distraction by distraction. Artists are too big for art. Whatever the artist does is art. The medium is the message, to quote Marshall McLuhan. Bare materials, uncollectibles, tropisms, ready-mades, found objects, ludified fantasies, action plastic, atonal, aleatory music, transvestite architecture, avant- and rear-guardism, layering, discontinuity, ambiguity, asymmetry, deconstruction have become characteristic of an age of cybernetic production. With kool-art, Pepsi-art, sunshine art, 39¢ art, 15¢ art, vam art, Menthol art, exlax art, Pamryl art, last chance art, tomorrow art, anti form, process and random art in discourse, the question is not what is art but what is not art. Current art is a symptom of a despe-

rate sense of irresponsible freedom in the face of instantiation and nothingness in a world seen as void of personality or purpose. Styles become febrile and change with bewildering rapidity, reminding one of the fables of the emperor's clothes with every change in art movement. Growth in art is like fire in gorse, breaking out now in one area, now in another, leaving the ground behind desolate.¹ This scenario is characteristic of a world in which the human being is like a pilot in the cockpit of a flying jet with the licence of a truck driver. The world is overtaken by ethnic strife, genocide, the marginalization and impoverishment of the majority of humanity, the accelerated extinction of the species, the depredation and destruction of millions of years of co evolutionary interdependence of organic and inorganic, human and non-human communities and the erosion of the connection of arts and life.²

¹ A grisly commentary is offered by the Fairy Knight in the Ballad of Tam Lin in which the lover instructs the beloved to bring him back to the real world instead of being shocked by his mercurial transformations.

They will turn me in your arms, lady
Into an esk and adder;
But hold me fast, and fear me not,
I am your bairn's father.

The onlooker is stranded like a wretched castaway on a rock in the middle of a raging sea. We shout but our voice is drowned by the roar of rushing wave.

Edward Lucie Smith, 1968, *Thinking about Art*, London, Calder and Boyars, pp. 20-30, 42-3; Roy McCullen, 1968, *Art, Affluence and Alienation*, Mentor, pp. 12-17; Harold Rosenberg, 1972, *Dedefinition of Art*, Collier, pp. 11-12.

² W.B. Yeats expresses the troubled spirit of present time:

Turning and turning in the widening Gyre
The falcon cannot hear the falconer;
Things fall apart; the centre cannot hold;
Mere anarchy is loosed upon the world,
The best lack all conviction, while the worst
Are full of passionate intensity.

'The Second Coming', *The Collected Poems*.

Need to restore balance of nature and culture

This denouement has come about because of the inadequate symbolism of an art divorced from life. It is trying to address a culture cut off from nature through means that dissociate form from function, beauty from utility, and ignore interconnected patterns of concepts and perceptions. Art has been seen as a life substitute that provides equilibrium lacking in life. It will disappear as life gains more equilibrium. And yet it is acknowledged that the art of a presumed undeveloped social moment of humanity can exercise eternal fascination and act beyond the historical moment. Seemingly forgotten things preserved in us come to the surface and speak to us like the shadows in Hades whom Odysseus fed with his blood.³ At a time when the accumulation of materials of external life exceeds the power of assimilating them to the internal laws of human nature, it is necessary to go back to the language of first words, origins which simultaneously provided tone and thing, image and sign, nomina and verba. One may draw a comparison between the crystalline in the diamond and the state of equilibrium, between heredity and variation, vis centrifugum and vis centripetum, repulsion and attraction, inertia and movement, matter and energy, created by a shared will.⁴ The Pythagorean, Polykleitian and Platonic numerical proportions, and the golden section in nature, shells, plants, flowers and the human body provide examples of a shared principle of economy. Hegel has written of traditional Indian art as inadequate symbolism which fails to give infinite nature finite expression. The truth, on the contrary, is that the artist is today confronted with a chilling, unintelligible world, created by technology, in which he finds himself a stranger. He suffers from a dearth of adequate symbols that can explain a world, in which things have become too much for people, means too much for ends, tools too much for their producers.⁵ Heidegger speaks of Europe becoming a land of sunset, to prepare for a new dawn. Indian art undertakes a search for adequate symbols to make the immea-

surable measurable. A cathedral or an aeroplane, a hymn or mathematical equation, an ugly or a beautiful face are equally true if made according to their purposes.⁶ The art comes out of the rectification of consciousness through identification with and participation in the subject of art. It is depicted not in pinchbeck imitation of nature but in imitation of the manner of the operation of nature. In this art, as in Plato's city of God, sacerdotium and regnum are united. Artists are not considered to be a special kind of human being; every human being is a special kind of an artist. The art prototype is conceived after an archetype, to take a person from a state of wretchedness to one of blessedness, for promoting the common good and not adding to the sum of mortality.⁷

The quest for equilibrium

In India, music ascends from the tonic heart of unstruck sound through microtonal intervals to a crescendo, widens out and rolls back. The temple is equated with the body and the house of God. It ro-

³ Ernst Fischer, 1959, *The Necessity of Art*, Penguin, pp. 9-12. Aristotle speaks of the cathartic function of drama. It overcomes terror and pity and lifts a person above the blind workings of the fate.

⁴ *Ibid.*, pp. 24-25, 102-3, 116-18, 124-28.

⁵ *Ibid.*, pp. 197, 199.

⁶ Lines drawn under mathematical laws, organically transgressed, in deliberate deviation from proportions, in the Parthenon or in metrical irregularities of verse, are also beautiful. See Herbert Read, 1953, *Art and Industry*, New York, Horizon Press, pp. 14-21, 29-37; Read, 1967, *Art and Society*, London, Faber and Faber.

⁷ Heidegger, who speaks of the human being as tenant of a time of need, which lies under a double lack and a double not, says that if Europe is to fulfil or heal itself, it has to open itself to other great beginnings. Martin Heidegger, 1976, trans. J.L. Mehta, *The Way and Vision*, Honolulu, University Press Hawaii. Kaushitaki Upanishad 111.8 says that the objective is not to know rupa or shape but the rupadrashta or creator of shapes. Sahityadarpana III.2.3 describes the experience as equal to tasting of God, an experience transcending physical or intellectual longing.

tates around an imaginary centre in a square within a circle, both of which are coordinates for space and time. The dancer, stationed at the centre, describes a triangle in Bharatnatyam, a square in Kathakali, a spiral in Manipuri and an axial in Kathak forms. (S) he moves from minimum to maximum deviation to come back to the most dynamic rapturous balance. Indian art combines iconic and aniconic, figural and geometric, sacred and profane motifs to demonstrate a process of unity of opposites and a constant flux of forms from plurality to a non-dual identity. Buddha in Indian and Asian art is shown confronting Mara. The conquest of Mara is presented not as an external conflict but as a rectification of Buddha's own fragmented consciousness. Buddha is Mara transfigured. He ascends from the ground to the summit of contingent being. Indian arts show a convergence of phenomenal and noumenal and affirm an affective world view in which the universe is not indifferent to but sympathetic to humanity. A journey is enacted from the luxuriant profusion of forms on the outer surface of the temple, epitomizing the melee of the world, to communion with the self in the dark and silent sanctum inside. An eternity of being and fluency of becoming suggests the human mission of becoming what it is potentially, truly human. Immanence and transcendence characterize the ascent and descent, interpenetration and fusion of human and divine forms. The proliferation of floral and faunal forms shows a cosmological theme of regeneration and a release of nutritive and therapeutic forces. These are contained as sap in the tree, blood and semen in the body, milk in the cow, honey in the flower and rain in the sky. A differentiated tactile group of figures in a close view on a temple surface becomes an undifferentiated optical mass in a distant view. This apprehension of the syncretism and merger of forms and the simultaneity and ambiguity of meanings are characteristic of prehistoric rock art, folk and tribal art all over the world. From ethno-archaeological evidence, initiation, invocation, propitiation, exorcism, apotropaic protection and

homeopathic magic appear to have inspired such arts. The primitivist movements in modern art and surreal, neoplastic art also seek to enclose the entire world in a felt unity. They make the subject of dream and meditation the object of art in a conscious spiritual kinship. There emerges a pantheistic perception of the world in which creation and procreation become one. Van Gogh's canvases describe the immediacy of sense perception in which pro and contra have disappeared, the fields of corn have colours that almost hurt the eyes, and a starry night, with the sky looking like water full of cross-currents, the stars no longer pinpoints but rings and circles of light, and cypresses like green flames.⁸ With Freud's identification of civilization as repressive, a non-repressive civilization has been sought. A polymorphous eroticism has been extended from the sexual apparatus to irradiate the whole sensory field in the environment. The artist is like Orpheus in whatever he does, making pots, gardens, houses, tea or a sword, drawing others like a vortex into his patterns. Art now relates to the environment like the osmotic membrane of a plant instead of being sliced into discrete discontinuous bits. The artist is the man of Tao, whose art is one of standing aside and not interfering with the world, like a leaf in the wind, and to see beyond the individual ego and social conditioning through play.⁹ An intense spontaneity and a sense of solidarity with creation characterize the arts of the autochthonous indigenous people of the world. Their language is a diageic odyssey in negotiating the signifier-signified chasm. It is full of hyperboles, ironies, metaphors, idiophones, onomatopoeias. Their music is polyplanar, accompanied by dextrous footwork, versatile gestures. They offer counternarratives to colonial or outsider master scripts, and reconnect themselves to their land, kinship, folk tales. Rock art round the world can still be connected with oral

⁸. Colin Wilson, 1956, *The Outsider*, Boston, MA, Houghton Mifflin, p. 281.

narratives, creation stories, songlines, dreaming tracks, astronomical and totemic settings, shamanistic rites, initiation or burial ceremonies, increase and potlatch rituals. Bioneurological and entoptic constants have been suggested to explain their shared empathy with nature. Dreamtime figures like the Flying Alites of South Africa, the Condors of Baja, California, the masked heads and long skeletal forms of Chumash mythology in North America, Rainbow Serpents in Australia, Orang Asli figures of Malaysia all correspond to analogous depictions in rock art elsewhere and continue in the art of hinterland communities. The prehistoric manuports find replicative responses in the use of beads and pendants, rock or quartz crystal, painted pottery, stone discs, colour pebbles, body decoration in tattoos, cicatrices, and infibulations among hill and forest communities today. The bush lore calendar among local communities of South Africa or Australia is based on creative nodes, springs, lagoons, shells, middens, quarries, reef sites, shore lines and rock shelters. Megalithism continues to thrive in the painted wooden and stone pillars in south Bastar and adjoining Andhra and Orissa in India. Cree Canadians use seven healing fires of singing, dancing, laughing, talking, listening, playing and crying in pipe, sundance and sweat lodge camps since the late 19th century Cree Big Hero in Saskatchewan, Canada. The Jurrulu intertribal cult has been harnessed in Australia to integrate money with song and dance to preserve tribal knowledge. The Anata Andina carnival parade of Aymaras in highland Bolivia invoke Pachamama, mother earth, to celebrate the reciprocity of human and non-human communities. The Maoris of New Zealand claim to be Kaitaki or custodians of their Taonga or treasures of mother earth and represent their landscape in art as earth mother, severed from sky father. The South African novelist Zakes Mda builds her story worlds on bushman paintings of healing trance dances and patterns of rock art, strewn over the grassland in which they lived, died and were buried. The Kurumbas of Kerala recognize

honey beehives, tubers, yams and colocassia by sight and smell and compare developments in banana leaves with the stages of pregnancy. The drumbeats and stepping sequence of Gond dancers of Bastar imitate the stalk of the crane, the prow of the tiger, the flow of water. The Naga girl Hambrumai in northeast India learns weaving from ripples in waves, patterns in bamboo leaves, ferns, flowers and butterfly wings. Non-invasive strategies of harvesting the diversity of nature sustainably have been thus nurtured by communities transgenerationally through arts.¹⁰

The way out of the *cul de sac*

The destruction of rock art sites, biocultural diversity and associated community arts and knowledge systems has been accelerated over the past century by mega-developmental depredations. Forests that served as habitat and source for folklore and arts have been mined and destroyed. The monoculture of trees, crops, organisms, languages and the replacement of organic by planned settlements, the subversion of local terms of identity, economy, equity and efficiency, the substitution of logocentric individualist property rights, based on fixed expressions, for collective property rights, based

⁹ This is described as Wu-wei or non-interference with the original nature of the world: Tao Te Ching xv. The artist is yielding, like ice that is going to melt, simple like wood unplanned, vacant like valleys that are hollow. Everything is seen as related to everything else, like dew drops on a multidimensional spider web. The answer to one's voice is an endless reverberation of echoes and the world is a belt of mirrors around the taper's flame. The heron is white without a daily bath. The raven is black without daily colouring itself. In this formulation, art is equated with non-directive therapy: Alan W. Watts, 1970, *Psychotherapy East and West*, New York, Valentine Books, pp. 21-25, 82-4. Gestalt therapy defines an organism in relation to the environmental field, like a breather defined in relation to air, a walker in relation to gravity and the ground: F.S. Perls, R.F. Hefferline and P. Goodman, 1951, *Gestalt Therapy*, New York, Julian Press, p. 259. The order of sensuousness is installed against the order of reason, through play impulse, by liberating senses. The artist, like a black bootblack shining shoes, dances whatever he does. He swings.

on intangible ideas, the reduction of all sacred and ecological categories to economic and production categories have hastened the homogenization and extinction of species, arts and their custodians. It is time to arrest and reverse this reckless and suicidal destruction of humanity. This has to be done by co-opting the artists from hinterland communities for a cooperative rather than competitive mode in making arts living and life artistic. It is necessary to move from art as an adjunct to a personality cult to art as an expression of the deepest aspirations of humanity for self-fulfilment in collaboration with nature. Art has to be released from its slavery to machines, markets, galleries, museums, publicists and ideologues. It has to stop engaging in endless acts of narcissism, hysterical gestures, acts of demolition, planned obsolescence and juxtaposition of recognizable forms in unrecognizable combinations. It needs to get rid of millenarian or chiliastic anxiety,

apocalyptic thoughts of insecurity, and dissolve the boundary of mythos and logos. Artists have to recover the dynamic protean conversation of humankind and witness the unified play of the fourfold mixture of earth and heaven, gods and mortals.¹¹ The artist can do this only when (s)he goes back to the beginnings, when nature was held sacred and not something to be used, tradition was no mere trope or metaphor, calcified by stylization, and life symbols were not yet eroded by a knowing-believing, subject-object, nature-culture, self-other, spirit-matter, being-being dichotomy. It will then be possible for the artist to hear, like St Martin, 'bowers that sounded 'and see 'notes that shone'. Once it is realized that the human world is not the purpose or centre of the universe (Copernicus), that the human being is a member of the animal kingdom (Darwin), and the human ego is not master in his own house (Freud), the artist will resume the mission of enhancing life instead of diminishing it.¹²

¹⁰ Kalyan Kumar Chakravarty, 2014, Introduction, *Knowing Differently*, eds G.N. Devy and Geoffrey V. Davis, London, Routledge.

¹¹ Martin Heidegger, 1971, *Poetry, Language and Thought*, New York, Harper, pp. 150-51, 227-29.

¹² Norman .O. Brown, 1959, *Life Against Death*, New York, Random House, pp. 16-17.

ANTHROPOMORPHIC FIGURINES OF ICE AGE ART IN SIBERIA: NEW DATA AND PERSPECTIVES ON THE FUNCTION OF PREHISTORIC MOBILE ART

Liudmila Lbova

*Full professor of cathedra Archaeology &
Ethnography
Novosibirsk State University
Novosibirsk, Russia*

Introduction

Our understanding and emotional interpretation of environments are influenced by deeply rooted dispositions. Certain sensation enter our sensory system is highly specific signals carrying a message. Paleolithic cultures are important pacemakers of the evolution, especially in art, and symbolic activity in the Past in whole. The evaluation and interpretation of signs in our environment can be seen as a result of special our senses to the impact and mass of information from outside and have been selected for in the long process of human evolution. The discussion about signs and their interpretations as a markers of cultures of the Past can has a lot of wide fields and directions. We are not believe that we are be able to postulate universal human disposition to perceive, feel, think and behave, also to express the ideas using the images of the Past.

Siberian Upper Paleolithic assemblages display cultural traits similar to European Upper Paleolithic assemblages. However, this superficial similarity does not provide ground either for the correspondence of the European to the northeast Asian Paleolithic record, or for speculations about long-distance migration of prehistoric European populations. Siberia is also relevant to the timing and conditions of human adaptation to the high latitudes of Eurasia, as well as the initial colonization of Pleistocene Beringia and

the northwestern part of the American continent. The Malta site is located in Baikal-zone (South Siberia) (Fig.1), and is look as a key to understanding Paleolithic migration processes in northeast Eurasia, especially in combination with ancient DNA (Willemslev & Raghavan, 2013).

The time-space structure of the classical stage of the Upper Paleolithic is very complicated. Industries based on advanced blade technologies with rich, diversified lithic, bone, and antler tools, predominate. One of the famous Siberian archaeological objects of the last Glacial is Malta-Site (Baikal-region). The Malta assemblage includes many archaic components such as side scrapers, pebble tools, and Levallois and discoidal cores. As such, the Malta Culture is now regarded as having local roots (Medvedev et al., 1996, 2001; Lipnina, 2012; Lbova, 2014). The Ice Age period is, like in other parts of the Old World, rich in artifacts, such as superb mobile art and personal ornaments, which reflect more than their utilitarian way of life. No other period in Paleolithic northeast Asia is comparable. Upper Paleolithic sites show evidence of intensive procurement of reindeer, mammoth, and woolly rhinoceros, and at such sites as Malta and Buret', there is evidence of specialized reindeer hunting. Of course, hunting was not for meat only.



Fig. 1 Situational location Malta's sites position in the Baikal region (South Siberia)

Numerous remains of arctic fox, red fox, wolverine, and wolf at Malta imply a source of fur for the Paleolithic inhabitants. During the classical stage of Upper Paleolithic, we see evidence for a flourishing culture of reindeer and mammoth hunters as evidenced by diverse blade let lithic industries, a rich series of bone and antler implements, personal ornaments, and mobile art objects. Along with stone tool industries based on the removal of blades from prismatic cores, the classic period also witnessed the growth of bone tools and small forms of expressive art.

The middle Upper Paleolithic assemblages such as of Malta, Buret' and Achinskaja, with the majority of tools on small blades, were contemporaneous with another sites of East and West part of Siberia. Despite some shared features, mostly in lithotechnology, there are marked differences, and entirely grouping them is impossible. Similarities in tool types, ornamental designs, and art styles of Malta and Buret', however, gave rise to the definition of the Malta Culture by A. P. Okladnikov (Okladnikov, 1968). Worth mentioning here is the appearance of micro blade technology, which became ubiquitous in Siberia in the Final Paleolithic.

To summarize, Malta is the typical site of the final stage of Siberian's Ice Age, especially middle of Upper Paleolithic Period (Last Glacial Maximum). The site was discovered and excavated between 1928 and 1958 by M. M. Gerasimov (Gerasimov, 1931, 1941, 1958), the group of Irkutsk State University scholars has continued research there until now.

Currently, Malta has produced stratified culture deposits dating from 43,000/41,000 to 12,000 years 14C BP. The "classical" component from Gerasimov's excavation, characterized by ivory artifacts, anthropomorphic sculptures, and habitation features, dates between 19,000 and 23,000 years 14C BP according last results (Medvedev et al., 1996; Lipnina, 2002, 2012). Particular attention among the archaeological finds in Malta-site always attract anthropomorphic figurines, which have become a historical source for our understanding of the life characteristics of

the population of Siberia during the Ice Age. In this article, we wish to show our results obtained using microscopic analysis in the collection of anthropomorphic figurines. The most unexpected result was that we saw the traces on the surface of the figurines that were not spotted earlier, as they are not visible to the naked eye, due to the ravages of time. New results help us to reconstruct the technological steps of the processing anthropomorphic figurines (Lbova & Volkov, 2015). May be in future we can answer more questions.



Fig. 2 Option interpretation of the furs clothing Malta's figurines.

- 1 - Child's figurines, Hermitage Museum No. 370/752
- 2 - Photo of the Chukchi child's "kerker" (V. Bogoraz, 1904, plate XXVI, fig. 1)

Materials and methods

Our investigation of the ivory samples focused on morphology, technical and typological classification, experiment and microscopic analysis (Gerasimov, 1941; Semenov, 1964; Filippov, 2004). We used dry, wet, and frozen ivory to replicate the ornamental technology. We believe the decorative surfaces of

moister ivory were easier to work. The ivory's Malta anthropomorphic and zoomorphic sculptures, rods, and disks are of the utmost importance when we evaluate Malta's symbolic material culture. One of our tasks is to find continuity to understand if there

is retention of elements, techniques, and composition.

Malta's materials of mobile art collect 856 products of bone, horns, and ivory materials (Lipnina, 2012). There are identified few categories of figurines based



1



2

Fig. 3 Alternative interpretation of the ornament Malta figurine.
1 - Child's figure, Hermitage Museum No. 370/753

2 - picture of summer clothes of seal intestines by V. Bogoraz
(V. Bogoraz, 1904, p. 247, fig. 180a)



Fig. 4 Interpretation of outwear such as “parks” adult.
 1 - Anthropomorphic figure, Hermitage Museum No. 370/748

2 - pattern winter clothing Northern Aboriginal

on morphology, of these value anthropomorphic group (including figurines, blanks, pieces and parts (head) – 32 objects. All but two of these are made of ivory, most are complete and they show remarkable homogeneity. All have heads and many detailed faces and hair (or headdress). Their bodies are flat and elongated and there are no signs of obesity or pregnancy. Z. Abramova on the basis of detailed stylistic analysis of European and Siberian female statuettes identified some specific features Malta and Buret’ collections (Abramova, 1995).

According our technological principles all anthropomorphic sculptures (i.e., finished products) we divided on three categories (Lbova&Volkov, 2015):

1. Shaped figures with body elements with and without decoration, but with clothes and accessories engraved,
2. Flat, engraved figures with and without decora-

tion, and
 3. Decorated heads.
 Some of the figurines are just blank pieces, which were ready to the sculpture’s works. Previously, there had been different approaches to the classification of these figurines, but the basic division of the figurines was into “dressed” and “naked” (Gerasimov, 1958; Abramova, 1966; Filippov, 2004). Our research showed that all of them are more or less “dressed”. There were not only technological traces of processing the ivory with knife or burin, microscope analysis showed the elements of the dresses and accessories of Paleolithic persons. These traces showed more details of clothes than we had seen previously: bracelets, hats, shoes, bags and even backpacks. In other words, they are prototypes and this allows us to reconstruct all the steps in their creation. This approach allowed us to reveal many interesting new

details and review some ideas about these sculptures. Microscopic analysis allows seeing the different types of hats, hairstyles, shoes and accessories, which were depicted with thin lines by stone burin or special type of knife. The ancient masters used different techniques to highlight the different materials - fur, leather, and special symbols or decorations. In the realistic elements of clothing and hats are obviously seen the details of traditional outerwear of Ice Age peoples. The most popular outerwear on the figurines are fur coveralls - “kerkery” as worn by children

and women in the extreme North of Siberia (Fig.2). In the collection of Mal'ta figurines, the overalls are more typical for small sculptures (2-5 cm in height). Besides, all the figures dressed in overalls have a disproportionately large head, such proportions we see in children under 5 years old, dressed in overalls with high hoods. In other words, these sculptures show small children in clothes typical for them and in the same proportions. We believe Mikhail Gerasimov was right describing these figurines as a “kinder garden”.

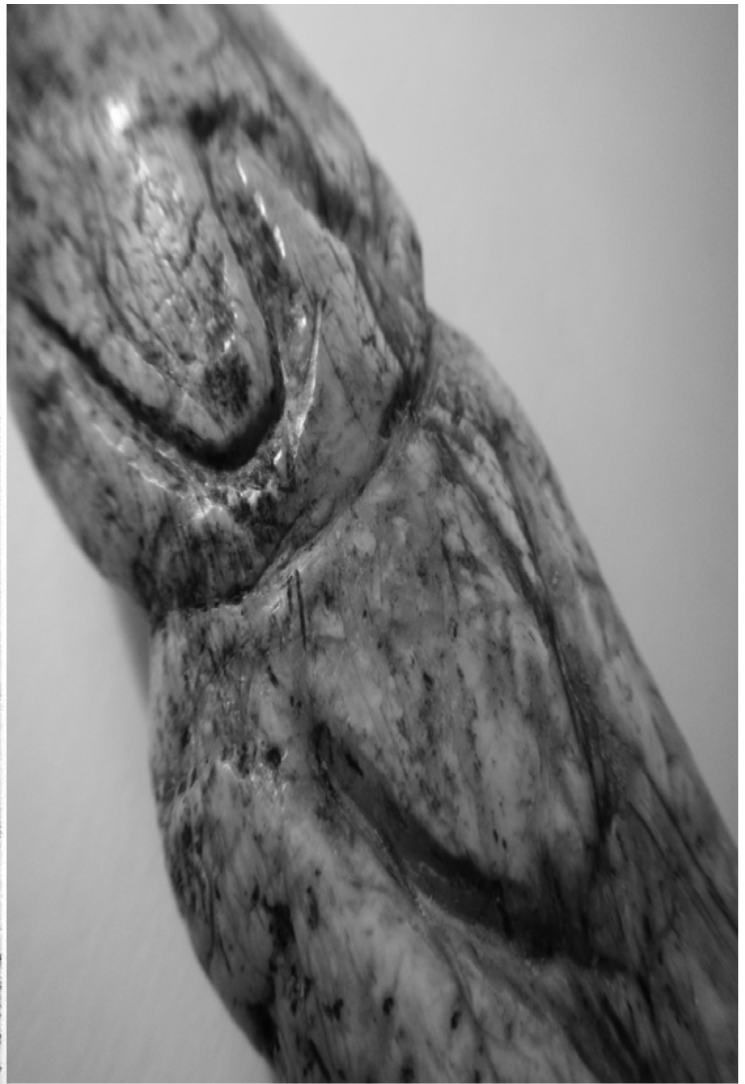


Fig. 5 Interpretation of partially clothed figures
1 - Photo Chukchi women in a typical (V. Bogoraz, 1904, plate XXVII, fig. 3)

2 - fragment of the figures “with one breast” Hermitage Museum No. 370/748

On other sculptures, possible, we can see overalls made of guts, probably from fish or seals, which people wore in summer (Fig.3).

On the next figurines, we establish short parkas, similar ones in the culture of the indigenous people who live in the northeast of Eurasia, like the Koryaks and Itilmens people (Fig.4). One of the more interesting details there is image of the one nude breast. The fact was marked earlier, and it was reading as the symbol of Death, underground sphere.

On one hand the base of this fact, some of scientists

believe the Malta figurines are symbol of death people. However, another hand we find analogy in the real life of Chukchi. As a rule on summer, the nurse-women do not close one breast for the baby (Fig.5) (Bogoraz, 1904).

On the two figurines, we can also saw the bags and in one case a traditional back pack with two straps (FIG. 6). The figure is probably showing a teenager. It has not so much detail, and it is not clear if this is male or female, yet the proportions of bodies show that this is definitely a teenager.



Fig. 6 Detail of the image “shoulders bags”, or bags:
1 - Women’s figure with bag, Hermitage Museum No. 370/743

2 - a. “Teenager’s figurine” - Hermitage Museum No. 370/755
b. The enlarged detail (backpack), Hermitage Museum No. 370/755

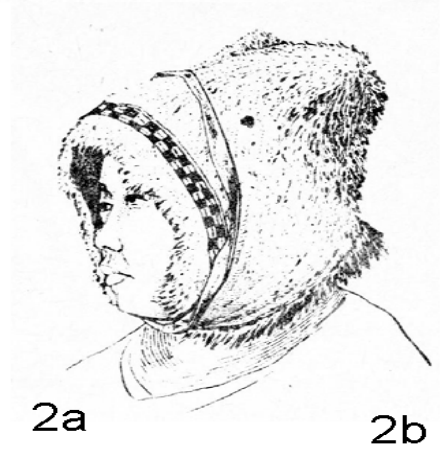
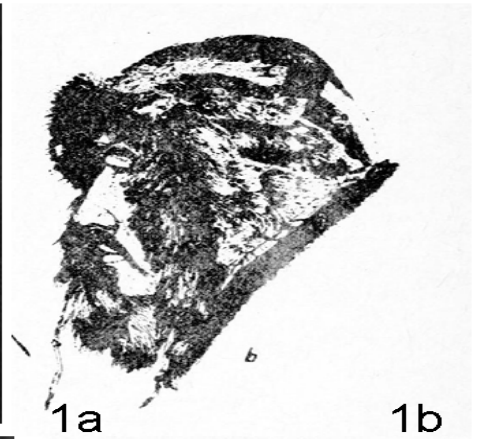


Fig. 7 Options of the different head (cap.)

- 1 - Men's cap (a - Hermitage Museum No. 370/748;
b - picture by V. Bogoraz (V. Bogoraz, 1904, page 242, Fig. 173b)
- 2 - Children's hats (a-Hermitage Museum No. 370/752;
b-picture by Bogoraz V (V. Bogoraz, 1904, page 242, fig. 173a)

- 3 - type headdress "firefighter helmet" (a-Hermitage Museum No. 370/743
b - picture of the same type of hat (V. Bogoraz, 1904, p. 243, fig. 175)

There are no indication of breasts on the one of the pieces, as on the “kinder garden’s group”.

Most interesting are the hats and hairstyles. There are fur “helmets” meaning a hat that covers the head and part of shoulders; normal hats and hoods (FIG.7 - a,b). The most common are these fur ‘helmets’ that cover the head, neck, ears, cheeks and chin. In one case, there was a high roll under the chin like a fur scarf, or a closed collar of fur. Another type is the helmet, which gently falls on the back and shoulders, as might a modern firefighter’s hat (FIG. 7-c). In all cases, the depictions are cleared between the headdresses and the hairstyles.

Discussion

More than 150 years of studying Paleolithic mobile art, and especially the anthropomorphic figures in terms of their semantic meaning allows us to offer several associated areas of interpretations (Marshak, 1991; Barton et al, 1994; Soffer et. all, 2000; Art as Behavior... 2014), etc. We have tried to link the known variants of explanations anthropomorphic figurines function in archaic societies and indicate some authors and their basic research in relation to Malta figurines:

1. The image of specific living people (live model) (Abramova,1966; Frolov,1987; Soffer et all, 2000; Cohen, 2003; Lbova & Volkov, 2015):

- a copy of the individual with the characteristic elements of the constitution, clothing, accessories;
- individual physical type as an aesthetic ideal;
- personal physiological state (pregnancy, feature of the constitution);
- fixing the age and sex categories of the community (children, teenager, girls, woman of the productive age, old woman);
- magic wishes of the target or promising of the sexual actions;
- nostalgia for the departed (deceased) person

2. The image of the woman as an object of ritual actions, including image of a nude women (or breastfeeding women) as a tool in the rituals associated

with fertility (Frolov, 1975; Cohen, 2003);

3. The generalized image of progenitor (ancestor’s legendary image) as a symbolic expression of blood-related family was propose by A. P. Okladnikov (Okladnikov, 1968);

4. Domestic patron, spirits in the pantheon of the family (grandma, hostess, mistress of animals) or a universal spirit helper (Tokarev,1961; Frolov, 1975, 1987; Cohen, 2003).

5. Malta’s figurine as the tool of astrological operations (Larichev, 1999; Frolov, 1975, 1987).

M. Gerasimov, who excavated this rare Ice Age settlement, considered the clear connection between the anthropomorphic figurines and habitation sphere, or persons who lived in it. All the figurines were found within the living facilities of ancient settlement, some of them even in ritual places in limit the home: some of them were covered with mammoth scapula bone or sprinkled with ocher (Gerasimov, 1931, 1958).

Some of the Malta figurines are perforated by a circular hole at the base or an oval slit between the lower kegs so that they could be treated and worn upside down as pendant and seen the right way round when held in the hand. However, our analysis also shows that small holes on the figurine likely have another purpose. We can only suggest that they could be firmly attached to clothing, so they did not to move. The other idea is that they could be attached to a cradle with leather laces, in keeping with a known tradition among Siberian indigenous groups. Both ideas are suppose the idea of the defense, guarding function for the person (or baby).

There is surprisingly presentation of the hard realism and a clear-detailed image of the Malta figurines. We also noted portrait individuality of each figure, the characteristic features of the natural constitution, age features (baby, infant, teenager, young women, nurse-women, old women), individual clothing and accessories. These circumstances certainly point to the real image of the person, who ancient master looked and knew.

Conclusion

In recent years, the phenomena of the Art increasingly been examined from the vantage point of human ethology and evolutionary psychology. Several book publications, inspired by this novel approach, have found an interdisciplinary readership, among them: *Beauty and the Brain* (1988), *Homo Aesthetic* (1992), *An Anthropology of Art* (2006), *Art as Behavior* (2014) and so on, using on a large comparative diachronic and cross-cultural study of the paintings and sculptures basing on the evolutionary paradigm.

In the process of the evolution by the Man was a formed system of signs from simple, from based on simulation of the natural phenomena to the complicated cultural system. One key-concept of ethology is that of ritualization. During the process of the ritualization of behavior into expressive movement, behavioral patterns undergo specific changes serving conspicuousness, distinctiveness and unambiguity. Simplification and exaggeration of behavioral sequences and amplitudes of movements occur as well as a rhythmic repetition. Cultural symbols, along with the symbols body, gestures and language are constants of human communications. Study Malta anthropomorphic sculpture in the framework of symbolic interactionism concept by G. Mead (Mead, 1934) can explain the realistic art style, attention of the ancient masters to detail (also clothing and accessories), the selection of technology and the nature of the engravings. Microscopic studies of anthropomorphic sculpture collection it possible to identify process steps of raw material selection, its primary processing, techniques of engraving elements of figures, as well as features of the decor. The cumulative technological and iconographic analysis leads us to the understanding of the sculpture such as Maltinskaya as sustainable element of culture and social communication that determined realism of the artistic style.

The new technical possibilities and new data propose analyze the objects of mobile art not only as

a source for the study of the material culture of the Paleolithic population of Siberia. Hope, they will be help to find base moment in the system of evidence of the functional purpose in the semantic context of mobile art in Malta.

Considering the features of the processing technology raw materials, techniques and decoration detail of the mobile art subjects as part of the behavior of Paleolithic man, with the release of the most common elements, it is possible to set the behavioral “cultural pattern” for the Upper Paleolithic communities in the northern. The study of visual techniques in primitive art Siberia reveals a number of artistic features, which form a system unconsciously, developed cultural codes transmitted through symbols and images.

One of the main theses of symbolic interactionism is the assertion that the individual personality is always social, ie, a person cannot be formed outside society. The behavior of an individual is determined, according to the symbolic concept of communication by three variables: the structure of the personality, the role of the reference group and the “recognition” symbol. From our understanding, Mal'ta's figurines there are an element of social communication that determines the realism of the artistic style.

In the process of the evolution by the Man were formed systems of signs from simple, based on simulation of the natural phenomena to the complicated cultural system. One key-concept of ethology is that of ritualization. During the process of the ritualization of behavior into an expressive movement, behavioral patterns undergo specific changes serving conspicuousness, distinctiveness and unambiguity. Simplification and exaggeration of behavioral sequences and amplitudes of movements occur as well as a rhythmic repetition. We have, in principle, an enormously wide range of individual perception and action, but it has become reasonably clear in the last decades that Primitive Art has some fundamental mainstream on the bio-psychological, and social levels, thereby supra-individual.

Acknowledgments

The author express their deep gratitude to G. I. Medvedev and E. A. Lipnina (Irkutsk State University), S. A. Demeschenko (the State Hermitage), and P. V. Volkov (Novosibirsk State University) and other persons for the opportunity to work with the collections and for the fruitful discussions. Many thanks also to leaders of the Novosibirsk State University, who supported the archaeological researching of the Primitive Art in Eurasia.

The Russian Found of Basic Research supports the research, project No. 16-56-00020.

References

- Abramova, Z. A.
1966 Men's image in Paleolithic Art of Eurasia. Moscow-Leningrad (Nauka) (in Russian)
- Abramova, Z. A.
1995 L'art paléolithique d'Europe orientale et de Sibérie. Grenoble (Publisher J. Millon)
- Art as Behavior. An Ethnological Approach to Visual and Verbal Art, Music and Architecture
2014 Hanse Stiduiies, Vol. 10, Oldenburg
- Barton C. M., Clark G. A., Cohen A. E.
1994 Art as information explaining Upper Paleolithic art in Western Europe. World Archaeology. Vol. 26, p. 185 – 207
- Bogoraz W.
1904 The Chukchee. Vol. 1, Part 1: Material culture (Memoirs of the American Museum of Natural History. Leiden • New York (E. J. Brill ltd, G. E. Stechert & Co).
- Cohen C.
2003 La femme des origines. Images de la femme dans la préhistoire occidentale, Paris, Berlin (Herschel)
- Filippov, A. K.
2004 Chaos and harmony in the Paleolithic art. Saint Petersburg: Preservation of the Natural and Cultural Heritage (in Russian).
- Frolov, B. A.
1975 The problems of primitive art (based on the historiography of the Paleolithic art of Eurasia). PhD thesis, Moscow (in Russian)
- Frolov, B. A.
1987 Opening of the Men (to the experience of new studies of primitive art. Anthropomorphic image. Novosibirsk. p. 8–18.
- Gerasimov, M. M.
1931 Malta — Paleolithic Station (preliminary data): findings of excavations in 1928/29. Irkutsk (Vlast' truda) (in Russian)
- Gerasimov, M. M.
1941 Treatment of Bones of the Paleolithic Site of Malta. Materials of Research in Archaeology USSR, vol. 2. Moscow-Leningrad (Institute of Archaeology), p. 65-85 (in Russian)
- Gerasimov, M. M.
1958 Paleolithic Mal'ta-site (excavation 1956-1957). Soviet Ethnography, 3, p.28-53 (in Russian)
- Larichev, V. E
1999 Star gods. Novosibirsk (in Russian)
- Lbova, L.
2014 The Upper Paleolithic in Northeast Asia. The Cambridge World Prehistory. Edited by Colin Renfrew & Paul Bahn, Vol. 2, p. 707-723 (Cambridge University Press)
- Lbova, L.; Volkov, P.
2015 Microscopic analysis of the Mal'ta's anthropomorphic sculptures (the technology of the morphogenesis, detailing, and decorating). Stratum plus, 1, pp.161-168
- Lipnina, E. A.
2002 Malta Site of the Paleolithic Cultures: Modern Study and the Perspectives. PhD thesis, Novosibirsk (in Russian)
- Lipnina, E. A.
2012 Malta: Paleolithic Cultures and Small Form Sculptures. Archaeometria. Tokyo (University of Tokyo). p. 71–79
- Marshack, A.
1991 The Female Image: A «Time-factored» Symbol. A Style and Aspect of Image Use in the Upper Paleolithic. Proceedings of the Prehistoric Society.

Vol.57, part 1, p.17–31

Mead, G.

1934 *Mind, Self, and Society*. Ed. By Charles W. Morris, Chicago & London (University of Chicago Press)

Medvedev, G.; Cauwe, N.; Vorobyeva, G.; Coupe, D.; Claes, L.; Lipnina, E.; Modrie, S.; Mukharramov, S.; Osadchy, S.; Pettitte, P.; Rebrikov, P.; Rogovsky, E.; Sitlivyi, V.; Sulerzhitsky, L.; Khenzykhenova, D.

1996 *The Malta Paleolithic locality*. Irkutsk (ARCOM Press) (in Russian)

Okladnikov, A. P.

1968 *Siberia in the Stone Age: the Paleolithic Era (History of Siberia)*. Vol.1 (in Russian)

Salmony, A.

1948 *An Ivory Carving from Malta (Siberia) and its significance*. *Atribus Asiae*, 11(4), p. 285-288.

Semenov, S. A.

1964 *Prehistoric technology (an experimental study of the oldest tools and artifacts from the traces of manufacture and wear)*. Eds. Cory, Adams and Mackey, London.

Soffer, O.; Adovasio, J. M.; and Hyland, D. C.

2000 "Venus" Figurines Textiles, Basketry, Gender, and Status in the Upper Paleolithic. *Current Anthropology*, Volume 41, Number 4, August–October, p.511-537

Tokarev, S. A.

1961 *To a question about the importance of women's images Paleolithic*. *Soviet archaeology*, vol. 2 (in Russian)

Willerslev, E.; Raghavan, M.

2013 *Ancient Siberian genome reveals genetic origins of Native Americans* (<http://geogenetics.ku.dk/latest-news/Malta/>)

WHY IS ROCK ART SO EVOCATIVE? AFFECTIVE DEPICTION OF ANIMALS FROM COSO RANGE PETROGLYPHS SOUTHWEST CALIFORNIA AND ISCO HAZARIBAGH INDIA

Tirtha Prasad Mukhopadhyay

Universidad de Guanajuato, Mexico

Derek Hodgson

University of York, UK

The prehistoric rock art of animals and patterns (including abstract geometrical and anthropomorphic figures) embodies extra-semantic functions in the ability to communicate affect and psychologically evocative signals of vitality and engagement with life. Rock art from Isco and Sambalpur, India and Coso Range petroglyphs, in southern California were studied as part of a Fulbright project on the emotive and cognitive strategies of petroglyphic art. Research indicates how implicit cognitive processes were employed to create a proto-aesthetic appeal (i.e., both ritualistic and psychological) in several examples of Mesolithic rock art. Analysis reveals that these examples of rock art are intrinsically affective, and exemplify a development in the sensibility of human cognition. No time frame, however, for such evolution is suggested. Yet it appears that rock art provides evidence of the early development of an ability to draw suprasensory, affective visual signs.

Examples of suprasensory, affective rock art depictions

In this paper we attempt to explain how examples of prehistoric rock art can be regarded as aesthetic 'marking' (Schaafsma 1986: 6; Klassen 1998: 68; Ouzman 1998: 40; Davies 1986: 198). The essentially aesthetic character of rock art has been discussed by Schaafsma (1986), Heyd (1999), Ouzman (1998) and Dobrez (2014), among others. However, the psycho

logical and perceptual properties of rock art aesthetics have not been explored in depth. Anati's (2010) and Hodgson's (2006) explanations of rock art reinstates the importance of visual parameters in judging the artistic qualities and creativeness of rock art where the emphasis is placed on semantic properties of visual representation and neuropsychological factors, respectively (Hodgson 2006: Helvenston and Hodgson 2010). We argue that visual arrays of prehistoric pictograms and petroglyphs produce a directly affective response on the viewer, achieved predominantly due to the intrinsic depictive elements involved, despite any possible symbolic or social (ethnographic) connotations. This approach derives partly from James Gibson's theory that visual art consists of optical arrays which evoke a sense of correspondence with real objects in the world (Gibson 1966, 1968, 1971, 2014) and partly from the discussion of the metaphorical function of visual imagery as underscored by Anati, Hodgson and Witkins, among others. Here we propose some examples of possible paradigmatic triggers of surprise, excitement and affect in viewers' response to rock art. Specific examples of such psychological responses to prehistoric art can be found at the end of this paper.

Rock art, both generically as representative of cognitive abilities, as well as its more isolated instances, have psychological functions similar to that of drawing or painting in contemporary art (Witkins 1983: 200; Hodgson 2005: 56). The array of horses, bison, deer, sheep, aurochs and rhinos depicted during the Mousterian and Aurignacian periods, which Marshack (1976: 274) and Davis have discussed (1986: 193), demonstrates the emergence of a distinct technique in the development of the capacity to depict. Numerous zoomorphic shapes, animals, stick figures and anthropomorphs suggest sensory icons of great empathy and feeling for such creatures. The rock art image therefore tells a story, not because it is symbolic, but because it represents an evocation of the artist's direct or immediate account of a scene. Bednarik described rock art figures as 'con-

cept-mediated marking' (1990: 607), but we are also aware that something more than conceptualization is involved; and perhaps Mithen's observation may be taken into account in suggesting (in response to Bednarik) that rock art imagery exhibits not merely concept-mediated markings, i.e., symbolic markings in terms of a specific suite of mental traits, i.e., perceptual (psychological) traits (Mithen 1996: 670). Following Mithen, one can suggest that rock art can transcend its conceptual and semantic functions because it communicates emotions, the basic reflexes involved in recognizing motifs and objects. The depictive process perhaps needs, as Ernst Cassirer once said about the artists of the early European Renaissance, 'a total intellectual orientation' (Cassirer 1948), which involves not just the rock artist's interpretive perception or meaning of a sensory event. Thus, rock art images may prime the viewer with an attitude or particular feeling. This function of rock art is perhaps more easily understood by modern post-photographic societies that place a premium on visual communication and where painting, print, media and advertising are all intended to create immediate affect in order to modify a viewer's preferences and responses.

The affective nature of rock art, however, has only been marginally acknowledged, with the exception of scholars such as Heyd (1999: 451), Smedt and de Cruz (2011: 389) and Hamilakis (2014), who refer to the sublime setting of rock art, or the effects of the backdrop or landscape on the viewer (Heyd 1999: 455), or artistic elements such as the 'design stance' (Smedt and de Cruz 2011: 388). In this regard, Schaafsma (1986) also refers to the stylistic elements of rock art. The question therefore arises whether rock art can also be analysed according to an etiology of affect. In other words, what are the visual components that carry affective value in such depictions? Is it possible to describe the cognitive basis therein, in contrast to semantic, non-evocative depictions that merely have a communicative function? Second, following Pearson, Wylie, Renfrew and Lam-

berg-Karlofsky, who promote a post-processualist, anti-positivist agenda, we might perhaps think of an archaeology of empathy (Pearson 2002; Renfrew 1990; Lamberg-Karlofsky 1991), which may assist in the aesthetic evaluation of rock art signs. So, what cognitive principles, when considered chronologically within that schema, enable a prehistoric artist to embody powerful visual effects by employing simple and mostly two-dimensional forms in rock art? It could be argued that a search for the intrinsic and non-intrinsic (implicit) templates of cognition is already a clichéd and disabused exercise, as exemplified by the rock art literature. This issue, however, deserves further attention as the simplicity of the geometrical motifs and the pure abstraction of rock art imagery provides the context for understanding primary depictive capacities. The theory of universal and stable form-constants, for example, first developed in 1988 by Lewis-Williams to explain the underlying impulses of rock art imagery (Lewis-Williams 1988: 210; Bednarik 1990: 77; Dronfield 1996: 391) is well known.

Form-constants or inner-eye optical phenomena were said to provide visual templates from which

rock art depictions derive. However, does this approach adequately describe how the animal and human figures of prehistoric art acquired their visual power and vitality, and in view of this reductive simplicity can such depictions still be evocative? The theory of morphological form-constants has of course been debated and modified and is now an integral part of the rock art literature. Here, however, we investigate the psychological efficacy of rock art in relation to ritual and artistic expression.

Entoptics and psychedelic forms: possibilities and fallacies

The form-constants of rock art were said to be ‘entoptic’ in origin by Lewis-Williams, with the concept being given wider currency in archaeology in the controversial article ‘The Signs of All Times: Entoptic Phenomenon in Upper Paleolithic Art’ (Lewis-Williams and Dowson 1988), which followed Knoll (1963), Reichel-Dolmatoff (1978), and Eichmeier and Hofer’s theory that archetypal visual patterns in intraocular neurons may perhaps provide templates for the production of imagery in prehistoric rock art c. 10,000–3,000 BP (Eichmeier and Hoer 1974: 51).

	ENTOPTIC PHENOMENA		SAN ROCK ART		COSO	PALAEOETHIC ART			
	A	B	ENGRAVINGS C	PAINTINGS D		MOBILE ART F G		PARIAL ART H I	
I									
II									
III									
IV									
V									
VI									

Fig. 1 Entoptic phenomena in different times and cultures (Lewis-Williams and Dowson 1988: 206-207).

Fig. 2. Triangles at Isco. Compare with Lewis Williams (Fig. 1 above) Fig. IV A and B.



‘Entoptic’ from Greek *en*, within, and ‘optic’ meaning ‘related to vision,’ which Helmholtz discussed in the section titled ‘Electromotive Phenomena in the Eye,’ in *Handbook of Physiological Optics* (Helmholtz 1867), which refers to abstract geometric units (i.e., two-dimensional unfilled shapes) generated or retained, either voluntarily or involuntarily, within the eye with the induction of low-voltage excitation produced by rubbing or introducing hallucinogenic substances into the ganglionic cells of the retina. Entoptic images are projected as non-figurative zigzag lines, Fibonacci spirals, triangles and concentric circles, which were classified by several archaeologists (including Dronfield [1996]) as being present in many rock art panels.

The Hazaribagh (and Sambalpur) panels of central India, studied in 2013 as part of a University of Calcutta project on aesthetics, provide further evidence of the presence of such geometrical signs.

Similarly, in the context of architectural patterns of the later Neolithic, Lewis-Williams suggests entoptic signs provide evidence of ‘the mercurial type of human consciousness that is universal’ (Lewis Williams 2005: 9). Bednarik, who remains somewhat sceptical about interpreting rock art on the sole basis of entoptic images and associated neurological form-constants or phosphenes (Horowitz 1964; Oster 1970; Bednarik 2001), nevertheless, acknowledges its canonical importance in archaeology: ‘one can regard all forms of graphic art (rock art, portable

two-dimensional art, tribal arts, body decoration, children’s art, graffiti, subconscious doodling, fine arts etc) as being tied together by certain forms of graphic universals’ (Bednarik 2001 153). Perhaps the most outstanding examples of phosphene motifs (i.e., entoptics) derive from the autogenous and involuntary phenomenon arising from the mammalian visual system. Thus, such form constants seem relatively impervious to cultural conditioning and appear to be ontogenetically stable. (Bednarik 2001: 153). There has been some confusion over what is meant by ‘entoptics’ and ‘phosphenes,’ as the terms have sometimes been used interchangeably by rock art specialists. However, there seems to be a general acceptance that entoptics arise directly from the eye, whereas phosphenes derive from the early visual cortex, especially V1 (Kosslyn 1994; Helvenston and Hodgson 2010: 69). But on the whole entoptic (or phosphene) theory has changed our understanding of the motifs and formative processes of post-Palaeolithic petroglyphs in visual culture. A great deal of recent archaeological literature on rock art has been directly inspired by neuroscientific models based on entoptic/phosphene forms (Huffman 1983; Dowson 1988; Sales 1992). In effect, entoptic/phosphene theory underlies much of the structural-morphological analysis of rock art (Wiley 1988; Whitley 1992; Clottes 1995; Conkey 2001), similarly to how studies of sign systems were seminal for linguistics and anthropology. Dronfield (1996) in a statistical survey of entoptic images in medical test cases suggested, for



Fig. 3. Isco entoptic triangles (could represent cardinal solar directions as well as phallic symbols), Hazaribagh, India. Compare with Lewis Williams Fig. IV A and Fig. 1 F above.

example, that the motifs Lewis-Williams identified in megalithic sites and rock art were broadly correct in their wider definition and provide a constitutive principle for rock art visuals (Dronfield 1996: 391). He observes that 'grouping principles and artistic relations between endogenous phenomena, iconic hallucinations, and other forms of endogenous phenomena remains an open field' (Dronfield 1996: 389).

The other, more important, aspect of entoptics/phosphenes is that proto-entoptic imagery, especially in rock art, was produced by psychedelic substances through hallucinogenic effects. Helmholtz previously referred to the effects of intoxicants on the optical system. As with the rudimentary geometric shapes discussed above, representations of the body – animal, human or mythical – may derive from hallucinogenic effects, which seemed to play a key role. Following the original psychedelic model of optical projections discussed by Helmholtz and subsequently Knoll, Lewis-Williams proposed a theory of projection regarding therianthropes in rock art, in particular, the beast-man motif at Lascaux, France. Thus, hybrid images of mythical animals or therianthropes can reveal how shamans came to depict animal and zoomorphic forms under the influence of hallucinogenic substances. However, this does not explain why the depiction of simple easily recognizable animals attracts and stimulates the viewer as sensory information suffused with vitality and animation, even when viewed out of context (Solomon 1999: 60; Hodgson 2006: 55). Moreover, Knoll's electro-neurological model of visual excitation (1963), which Lewis Williams and Dowson (1988) employed, does not wholly explain (a) the processes involved in psychedelic stimulations, (b) a functional description of a viable neuronal recall mechanism for such representations, as in the case of mimetic (behavioural) performance such as acting (Wilson and Bennett 2003; Helga and Helga 2006) or music (Bhattacharya et al. 2001), and (c) a corresponding channel for reproduction (visual) of

the endogenous form-constants in relation to motor skills, which determine the external content of rock art (Mavromatis 1987; Helvenston and Hodgson 2006: 3). Kinaesthetic representation is, for example, akin to acting or music performance where ordinary movements as physical reflexes are arbitrarily connected to the visual representation of body movements produced by way of kinaesthetic recall (Marshall 1936; Drummond 1979: 26). However, the role of recall is only beginning to be assessed (Wynn and Coolidge 2010: S5). The archaeology of how depictive motifs are produced should also be based on building a bridge between neuropsychological evolution and human depictive strategies (White 1938; Marshack 1988; Wynn and Coolidge 2010). It suggests that there is a missing link in the entire discourse of archaeology, which continues to be based on the neural, or cognitive origin of so-called hallucinogenic (i.e., entoptic/phosphene) imagery. In contrast to hallucinogenic approaches to rock art, it has been alternatively proposed that the origin of the aesthetic impulse such as 'mimicry and depiction, are deliberate in that they are to be understood as even in their ancient practices, (as) ... not the direct result of accident or incidence' (Davidson and Noble 1989: 389), as is assumed in the case of hallucinogenic inducement. It is therefore only possible to speculate on the genesis of such visualizations from the 'script' as visual evidence deriving from the rock art itself. For example, Marshack (Marshack 1976: 280; Davidson 1989: 125) has demonstrated that language may have existed during the Lower Palaeolithic as part of a wider communicative system, including early non-linguistic modes of communication necessary for group activities such as burial or collective fire-making. In case of myths, whether oral or written, hallucinogenic processes are unable to account for the origination of divinities either in improvised mythological narratives or in scripted (including visual) schemes. Mythical creatures (like beast-men or talking animals) in later epochs are produced intentionally and cover a wide range of interrelated topo-

logical (allegorical) symbols intended for complex ritual situations. A latent syntax of such symbolism must have been in place in preliterate visual cultures when rock art pictograms were created. Rock art motifs are therefore not arbitrary or hallucinatory simulations but composed of a cognitive grammar that links and integrates visual symbols in a gestalt of semiotic units (Davidson 1989: 130; Marshack 1984: 500; De Beaune et al. 2009; Byers 1994: 390).

Diagrams, cognitive abilities, affective signs

In contrast, an innately based cognitive aesthetics has been proposed by Davies, Bahn, Anati, Davidson and Noble, Delluc and Delluc, and above all Hodgson. A basic typology of rock art imagery has been proposed that assumes that original units of rock art developed from random markings on rocks (Davis 1986: 207). Is there an elementary (earlier), but more significant phase, in the artistic perception and handling of the first random, unqualified marks which later transmutes into artistic motifs as Davis, following Gombrich, suggests (Gombrich 1977; Davis 1986)? For example, cracks and natural marks on walls may have eventually given rise to the ability to interpret these as semantically identifiable shapes. This proposition, however, is not helpful for investigative purposes because even if there was a phase of elementary markings, as Marshack (1984) suggests, the effects only became evident in the fully-formed glyphs during the Lower Palaeolithic and in the more well-known recent examples. Nevertheless, we still need to know how mark-making first arose, as this has implications for understanding the later more complex depictive outcomes. Consider the horse drawings referred to by Davis (1986), as well as spirals (Mamani and Fernandez Distel 2010: 47) and punctuation marks with probable astronomical significance (Quintano 2010: 113). A theory of random origins would also have to explain how random markings might become stable form-constants in the cognitive system, but it especially begs the question as to how such modificatory reflexes came

to be used in more recent examples of Palaeolithic culture. Is there a history of the use of pareidolia, for example, in self-conscious ancient art (Helveston and Hodgson 2010: 70)? Pareidolia refers to recognition of real-life object shapes in forms like chan-



Fig. 4a. Aurignacian representational images (c. 32,000–26,000 BC) (Davis 1978: 194). Block b. Abri Blanchard. Horns and head of an ibex.



Fig. 4b. Pareidolia of bison, Covaciella, Asturias. Forms are indicated by minimal lines.

ging clouds or marks on rocks. There is definitive proof of such techniques employed in the rock art of the American southwest, for example, especially Anasazi or Ute rock art face shapes produced with appropriation of the physical and random shapes of rock in the Fremont and Sevier petroglyph complex. But what is particularly important regarding the techniques utilized is not the shapes suggested by pareidolia or other kinds of hallucinatory or illusionistic resemblances. Rock art contains many examples of lines that are not constructed to make an image using concrete suggestive referents or real-life percepts (Davis 1986, 1988; Quintano 2010: 38). Yet the incomplete lines of rock art may be hyper-suggestive. Even Davis's example on the origins of rock art imagery in randomized and incom-

plete markings cites suchlike as in the horned ibex shown in Figure 4a. Thus, the ability to suggest the entire shape of the animal by utilizing a few curved lines is crucial, as this provides minimal hints for the total gestalt. In other words, the actual lines are charged with semantic possibility, and are used sparingly, a phenomenon verified by Hodgson (2000: 870; 2003a: 100). Such incomplete semantic lines may be an early phenomenon, but in Aurignacian rock art we see the mature expression of this tendency. Similar suggestive patterns can be found in the rock art imagery of South Asia. A remarkable partial outline of a Chalcolithic rhinoceros (from Hazaribagh, India, studied as part of a Fulbright project) illustrates the control involved in the depiction of the suggested animal:



Fig. 5a Outline of a rhinoceros, Mesolithic Age. Isco cave cleft, Hazaribagh district of the state of Jharkhand, India.



Fig. 5b. Parallels from Cougnac, France.

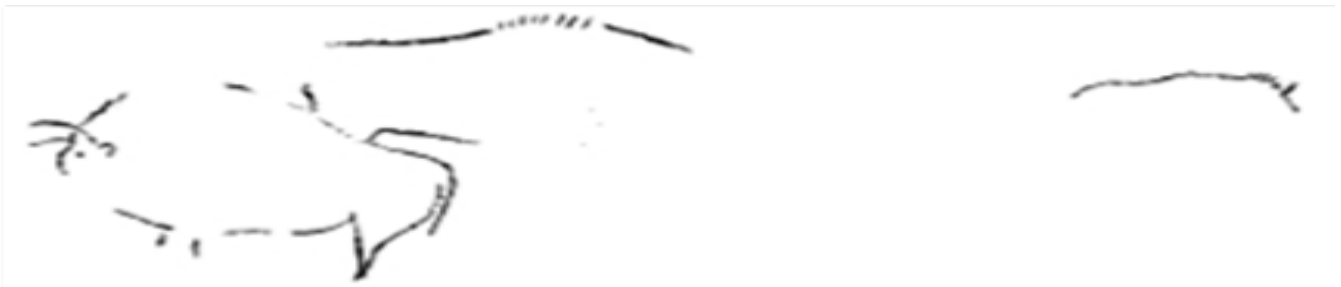


Fig. 5c. Parallel of three bison from Réseau Clastrés, Ariège, France.

That the line refers to a rhinoceros is apparent from the recurrence of the motif in the Hazaribagh tribal belt of central north-east India, and in sites separated by at least 500 miles (Neumayer 2013: 164), where the rhinoceros reappears on different blocks at sites in Sambalpur and the Deccan. The fact that the same incomplete (or partial) image recurs in various rock art locations confirms its referent (in this case a single-horned South Asian *Rhinoceros unicornis*) and verifies that the lines do not represent a different animal. The lines' referent is also confirmed from palaeontological evidence of the existence of the horned rhino in the region between 10,000 BC and 4,000 BC (Biswas 1972: 134; Neumayer 2013: 164). Among other things, the curved line is a perfect visual abstraction of the curved back of the horned rhinoceros; hence it becomes a stable marker. Similar line-variants are also used to represent other animals in the region, such as aurochs, deer and bulls. Such depictive outlines, which derive from the way the visual system processes fundamental cues, serve as powerful suggestive signals (Hodgson 2003b; 2008), akin to metonymic markers or a synecdoche, where the part suggests the whole. In any case, such lines acquire what can be termed cognitively embedded significance and therefore may not derive from the transcription of pre-existing templates, such as those arising from entoptic/phosphene experiences. Even if entoptic/phosphene forms and similar abstract geometrical signs exist simultaneously within the same context, this could be interpreted as the development of artistic tendencies arising from an increase in mark-making skills in parallel with semiotic or representational value (Marshack 1984: 280; Wilson et al. 1986; Hodgson 2003: 98). Depictive mark-making techniques were fully developed by the Upper Palaeolithic and the elaborate inscription and notations of early ideograms or hieroglyphs similarly indicate the dynamic interaction of human cerebral capacity with mark-making over a long stretch of time during a period of around 4,000 years during the Neolithic (Marshack 1988; Hodgson

2003: 98). If a cognitive-behavioural structure of artistic capacities was in place, early visual systems such as those appearing on rock surfaces may be logically thought of as being products of embedded stylistics. Although the quest for the origins of rock art practices remains problematic, incomplete lines may provide a key, just as such lines are crucial for learning basic drawing skills. Exactly how proto-depictive strategies were relevant to the derivation of rock art engravings etc during the Palaeolithic is difficult to ascertain because of the lack in the literature of neuropsychological insights. In this regard, except for Hodgson, few studies have articulated the possibility of a primal aesthetics. Indeed, neuropsychological findings relating to artistic depictions have only recently begun to receive the attention they deserve (Baddeley 1974; De Beaune et al. 2009; Wynn and Coolidge 2010). Moreover, the proposition that there are universal morphological signs underlying the visual arts continues to be debatable. At best, a body of such pre-ordaining marking systems has been identified, which Anati refers to as 'psychograms' (2010: 45). It would, therefore, not be too speculative to view some rock art imagery as simply psychogrammatical, in having a specific, yet unknown, ritualistic function. In the case of recognizable shapes and prefigurations of bodies or spirit-entities, the motifs tend to become stylized and acquire complex affective value, as in later post-Neolithic or modern conceptions of the grotesque or theogonic icons. Peirce's concept of iconicity is true for rock art of the late Palaeolithic era, as in earlier times, in that they already had the ability to evoke psychological reflexes: "The Diagram sufficiently partakes of the percussivity of a Percept to determine a state [of] activity in the Interpreter, mingled with curiosity ... that is to say, it not only happens in the cortex of the human brain, but must plainly happen in every QuasiMind in which Signs of all kinds have a vitality of their own. (Peirce 1940)."

Later, more evolved human or animal (zoomorphic) representations from 10,000 BCE evoke decisive

psychological responses from the viewer. Symbols of animals, or humans (presumably 'spirits', 'gods', 'shaman-selves'), if analysed according to the effects of a template (Vinnicombe 1967: 138) also provoke predictable emotions such as veneration, fear or sublimation, as well as grotesque-divine aggrandizements in facial features and disproportionate symmetries of body, arm, torso, leg, adornments, genitalia, headdresses etc, which facilitate flourishing, dancing, gesticulating or deific views of the human figure. Symbols may have a degree of para-referential value here, so that animals (Vinnicombe 1967: 129) or images of tools e.g., handaxes, atlatls, spears, are not merely recognizable but also have an allegorical affect (Zimmer 2003: 1425). There are symbols evoking additional, culturally valorized, gendered responses, embedded in an allegorical dimension (Solomon 2000; Hays-Gilpin 2004). Whether or not these symbols are ethnographically defined is debatable, yet the real meaning of the objects depicted varies according to the gender of the performer engaged in ritual and the subjects depicted, thus leading to different emotive categories. Anne Solomon discusses the symbolic role of ash marks in South African paintings on this basis. According to Hays-Gilpin, 'the interpretation of a vulva symbol is steeped in gender stereotypes' (Hays-Gilpin 2004: 69) and women rather than men may have made some rock art, thus giving an entirely new orientation and appearance to sexual iconography in rock art (Hays-Gilpin 2004: 185). These considerations form part of the wider psychology relating to the depictive apparatus that affective lines and markers elicit (Chippindale 1998: 256). Neurologically, the issue of emotions and visually stimulated behaviour in this context is, therefore, important. Seeing or interpreting an image implies not only de-fragmentation of visual components for the recognition of an integral whole, but also the feelings associated with this (Barrett 1998: 578; Barrett and Moshe Bar 2009: 1325). It has been argued by Barrett and Kosslyn (1994), Schacter (2008) and

Helvenston and Hodgson (2010) that the perception of an object or a visual signal, especially art objects, elicits a definite change in the emotional and higher areas of the brain, as much as in the early optic tract, which suggests more than straightforwardly entoptic/phosphene/hallucinogenic factors are relevant (Helvenston and Bahn 2003; Damasio 2001; Di Dio and Gallese 2009: 682). If rock art is accepted as early evidence of extrasomatic representation (Davis 1978), which is a visible reflex generated from mind-body, neuromotor processes, visual shapes accordingly act as a focal node for affective processes. In fact, when considered from a more detailed perspective, artistic representations may be considered as deriving from a combined neuro-cognitive system involving both cognition and emotion in a simultaneous phase space. Investigations of the nature of emotional experience, especially as highlighted by Zajonc (1984), Townsend (1997) and Penskepp (1998), among others, show the importance of the limbic system in generating emotional affect. This means from a connectionist perspective, which prioritizes not innate reflex mechanisms but those conditioned by experience, emotions can drive behaviour independently of higher cognitive influences. Therefore, emotion, a basic trait of animal behaviour, would also logically be a significant element underlying most art forms, including the earliest, most rudimentary rock art. Thus, any competent artist would be capable of expressing an emotive component without cognitively disposed meaning intervening in the production of an art work. Even if implicit emotional influences have mostly been ignored in research, we may, nevertheless, assume that the emotive dimension indisputably influences artistic behaviour. This approach can help explain many of the properties of art (Debes 2009: 20; Zajonc 1984: 29). Zajonc goes as far as to suggest that the interaction of emotion and cognition may be reflected in the associated structures of the motor systems or 'events within the organism that stands for a particular referent, be it an external stimulus (concrete,

verbal or abstract) or an internal stimulus such as proprioceptive experience or kinaesthetic feedback' (Zajonc 1984: 74; Vroebel et al. 2008: 227). Zajonc's statement anticipates the inherently emotive nature of artistic behaviour, a phenomenon we could analyse with regard to the representation of Hazaribagh animals and Bighorn sheep of the Coso valley in southwest California.

Emotional arrays, pleasure and form in animals

By appealing to Gibson's approach to visual perception, we are well placed to identify the affective parameters deriving from the visual template that determines the marks utilized in any rock art. Such marks or diagrams, therefore, can serve as templates useful for the analysis of graphic outcomes (Solso 2003; Efland 2002; Hodgson 2005; Sommers 1984). Coso Bighorn sheep, unlike the isolated Hazaribagh animal images depicted in a complex scene, display a visual choreography incorporating recognizable arrays that show how sheep live, move, feel excitement, migrate and interact with humans (Figures 10, 11, 12 and Table III). Recognition of arrays suggests that embedded cognitive abilities are exploited in rock art in a manner similar to the suggestive patterns of contemporary abstract art (Solso 1996; Eisner 2002; Efland 2002; Witkin 1983; Wollheim 1986; Hodgson 2005). Rock art marks have been classified in terms of learning abilities and shared stylistics (Conkey 1989, 2001; Solomon 2000; Michaelson 1986; Vinicombe 1995). Surveys of children's drawing development also point to how such capacities may have arisen (Piaget 2013; Piaget and Inhelder 1969; Sommers 1984, Hodgson 2002, 2006), a sequence that seems to be reflected in rock art procedures (though this does not in any way suggest that prehistoric artists had a childlike mentality, as modern adults, when first learning to draw, tend to improve motor control by making similar graphic primitives). However, from Gibson's perspective, an analysis of the perceptual dynamics is more difficult. For Gibson, the graphic arrays cannot be exactly described, as they

are activations rather than formations (Gibson 1961, 1966, 1978; Bhattacharya et al. 2001). According to Gibson, it is not possible or necessary to define precisely what a visual object contains, i.e., which identifiable visible structure acts as a reminder of the form or plane of a real-life object, as it is the generalized invariances implicit in the optic array that are important, not the static object, whether natural or manmade.

So, where might the labelling of features in an array begin? Perhaps this derives from a comprehensive system of dots, edges, angles, or curves? The visual elements of rock art cannot, however, provide an answer (just as Gibson predicted for visual signals in general (1968)). Arrays are produced by what Gibson called invariances, which are like events in time in which any visual recognition leading to a definitive perspective-resolution takes place. An array cannot be translated or graphically mapped since it would act, if Gibson were correct, like a trigger or signal with concatenated emotive-behavioural sequences. Again, all arrays within a total image may or may not be relevant to the process of interpretation, as any particular petroglyph or petroglyphic scene may evoke responses in the viewer as a product of selective stimuli or cues within the total complex of visual elements that compose a recognizable object. It is also possible that these stimuli or cues in an array of visual lines, shapes or forms carry the reflex associated with the artist's perception of an event. If we assume that the representation of the physical elements of Bighorn sheep, for example, exhibits a projective 'diagram plan' (Leibowitz 2013: 127), a subjective selection, or what Kohut calls 'the restoration of the self' (1977), then the animals may be also shown to reflect what in the clinical sciences is termed the affective state of the artist (Kohut 1977). In the Hazaribagh pictograms, one might sense a feeling of trepidation in images of possible animal sacrifice, the visual cues pertaining to a rapidly fleeing animal (Table I, Row 4). In Coso, however, the re is more of a sense of the freedom and vitality of game





















animals. In either case, as the figures below illustrate, the composer selects arrays that suggest the emotive or psychological results of actions associated with the movement of the animals rather than simple recognition of an object or event without emotive content (see Table I). The visual syntax of animal imagery is therefore not simply mimetic in the sense that it indicates the activity or direction of movement of the animal; what is more interesting are the emotive consequences of such arrays, giving rise to what Witkins describes as a stream of affective visual abstractions.

Following Gibson (2014), it thus becomes possible for Witkins to identify some of the sources of the abstract visual shapes deriving from the capacity to provide affective, rather than only a precise semantic value to a work of art. Here, a list of some of the arrays portraying the affective movement of the animals is provided with the occasional embellishment and conventions of human figures and anthropomorphs listed as extrasomatic markers.

These examples may, therefore, constitute arrays for expressing emotions (Hamilakis 2011; Hodder 1982). In this way, it is possible to demonstrate how Gibson’s approach can offer an alternative and useful way to recognize the affective value of certain figures and themes relating to anthropomorphs, abstract patterns and animal images (Layton 1995; Gross and Hayne 1998).

But we should notice two aspects within each representational array: an array of recognition and an array of deviation. What this means is that any single array evokes its meaning or its effects with a dualistic strategy. On the one hand we ‘recognize’ the meaning of a visual line, namely what it stands for. But on the second level the meaning is modified by the manner of inflection, or tweaking the array to suggest something else, and in all probability, an emotive event.

Table I. General List of Arrays

CHARACTERISTIC ARRAY	EUROPE	CALIFORNIA	AMERICAN SOUTH WEST	INDIA	AUSTRALIA
1. CIRCLES					
2. RAISED ARMS					
3. POSITION OF LEGS					
4. ANIMAL MOVEMENT					

Thus recognizable arrays of hands, legs, torso, circular and linear shapes etc are all used to evoke surprise, or appearance, divinity, or gesticulations associated with hunting or ritual (Dobrez 2014: 367; Keyser 2013: 86).

Higher-level abstraction

Witkins refers to higher-order abstract art. However, the capacity for such affective abstraction is acquired much later in cognitive development and long after Euclidean forms are grasped by four-year-old children, which is the proven age for the eventual acquisition of adequate representational drawing abilities (Piaget and Inhelder 1969: 14; Arnheim 1954; Witkins 1979, 1983: 201, Hodgson 2002: 565). Graphic abstraction may, therefore, only be achieved following the prolonged growth and maturity of the cognitive system. As Witkins suggests:

At the highest level, there is full integration and we can speak of visual representation as fully abstract. It is reached in naturalistic representation in which the high order structure is fully realized in the image and the individuated object emerges, free of stimulus configurations which occasion it—a thing in itself. (Witkins 1983: 201).

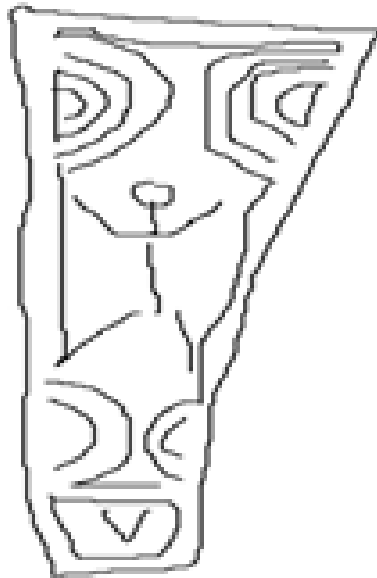
Witkins also classifies higher abstractions as non-naturalistic marks. Such higher abstractions constitute advanced cognitive templates and are more complex in shape or configuration than what Witkins refers to as naturalistic or mimetic markings (Witkins 1983: 205). Perception involved in complex artistic abilities and the achievement of superior denotative forms are possible due to cognitive development; it would seem plausible that rock art is the product of this higher abstraction and occasional semi-realistic arrays. The representational depictions of rock art thus represent a sophisticated cognitive perceptual ability, which are on par with the abstract, non-naturalistic characteristics of such abstract works of Picasso or Braque and other advanced modernists such as Jackson Pollock (whom Witkins mentions).

Hyperimagery and its emotive markers

A crucial aspect of rock art concerns what Hodgson terms hyperimagery. Basically a hyperimage refers to multiple aspects of visual perception achieved with additive visual images. Although hyperimages usually arise from situations involving psychological stress experienced as a consequence of interacting with the real world and normally pertain to single objects, they are subject to exploitation based on prevailing socio-cultural norms. As stipulated by Helvenston and Hodgson (Hodgson 2010: 69): Pictures with implied motion may be particularly susceptible to hyperimagery, or capable of actively producing hyperimages, especially if representations were in the past also identified as actual people, or incorporated into myths or stories and associated with complex, emotionally-laden beliefs (Helvenston and Hodgson 2010: 69).

The rock-art craftsmen were keenly aware of super-sensory optical illusions. They knew of the psychological efficacy of the pre-completed animal shape and could complete, for example, a visually incomplete circle, as is evident in zoomorphs. Numerous examples can be cited, especially in Australian aboriginal painting where an image has a double or triple function. An image of a vertebrate animal might start to resemble a human shape, superimposing an evolutionary morphology within a single metaphoric image (Fig. 8). This metaphorical process in the visual semiotics of rock art has been discussed by Layton, Clottes and most notably by Hodgson (2006, 2010) in relation to hyperimagery, i.e., the ability of images to accommodate two or three (more than one at least) visual combinations (like in Escher's enigmatic diagrams). The semantically meaningful images in rock art can also be exploited to produce synthetic meaning or effects, a rare phenomenon, which exemplifies the ability of preliterate image makers to modify rudimentary semantic units in order to communicate complex or higher-order meanings and even emotions.

Fig. 6. A visual metaphor (what Hodgson refers to as a hyperimage) from Isco India. The 'nose' feature appears like a human figure within a larger 'face'-like object.



Cognitively driven higher-order abstract images (Witkin 1983) can produce associative recombinations as a function of long-term memory, but in order to understand a basic functional principle of rock art, it is rather more interesting to follow up on Hodgson's idea of the hyperimage, especially in the depiction of the body. Instead of combinative depictions generated through the use of hallucinogens, we concentrate here on Anati's approach to recombinations and, especially, Hodgson's thesis regarding the role of hyperimages. Basic geometrical patterns, such as squares, circles and triangles, are visually arranged to depict the body, especially the human body. We might describe this as the cognitive extension of abstract patterns that serve to represent dynamic body actions. The circle depicts 'heads' (Coso, central India, South Africa), squares and triangles stand for the 'torso', lines for stick body forms, concentric circles for eyes. Body anthropomorphism demonstrates the emergence of basic cognitive processes, which can also be observed in the raised tails of Coso Bighorn sheep, as described below. Anthropomorphization involves what Johannes Maringer describes as a key element of rock art, namely the 'adorant' posture (Maringer 1979). This is a universal detail found universally in almost all rock art in

cluding Australian aboriginal and San, and not just Coso or central Indian: the fact that depictions of the body are done by means of qualifying arrays of 'raised arms' (Maringer 1979). This kind of posture has been described by Dobrez (2104) as 'performative'. The figure depicted in Fig. 7 shows a human-like shape: the raised arms affect the viewer by directly inviting one to empathize with the model by representing excitability, display, anticipation and engagement. The raised arms, thus, represent a human acolyte, deity or a spirit-keeper, and anticipates the iconography of later world mythology and historical religions.

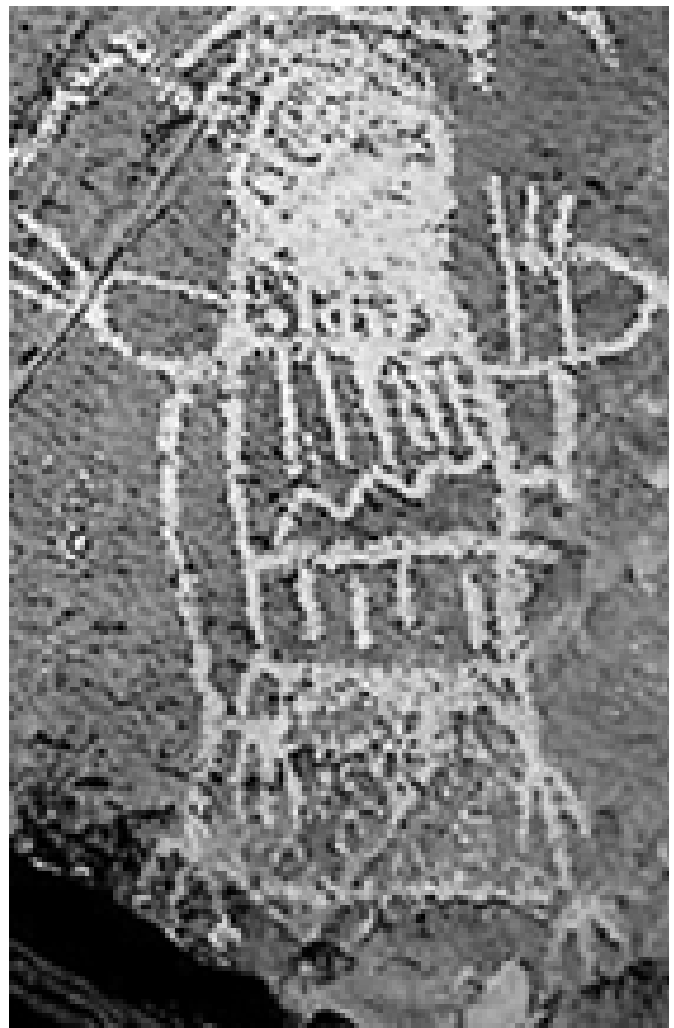


Fig. 7. Dinwoody Petroglyph, Great Basin Wyoming.

Table II. Arrays from Coso and Hazaribagh Petroglyphs

Coso examples

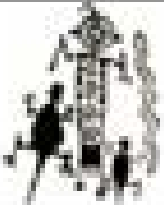
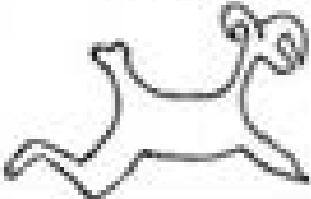




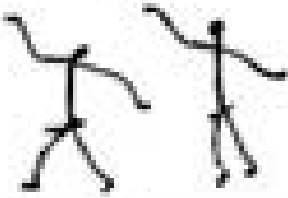




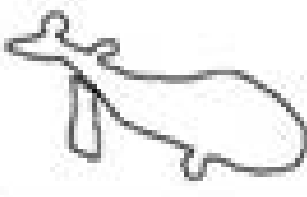
LOCATION	RAISED ARMS	LEGS POSTURE INDICATING MOVEMENT
COSO		
COSO		
COSO		
CENTRAL INDIA		
CENTRAL INDIA		
HAZARIBAGH		



Fig. 8. Procession of Bighorn sheep, Coso, California.

Semantic possibilities inherent in Coso Bighorn sheep images invite us to empathize with the freedom of movement and the emotions associated with the migration. Arrays of stylized gestures mostly indicate concerted movement, as if in a dance or in a procession of sheep as a visually defined set, as in Figures 10, 11 and 12. Notably the visual array is produced in terms of the positioning of the legs of the sheep, which tend to shift in synchronized pairs, as shown in Figure 10. The vitality of the sheep is simulated by the physically choreographed movement. An interesting feature concerns the sheep's tail, which points in an upward direction (Keyser and Whitely 2006: 3; Garfinkel and Austin 2011: 458), as shown in Table III. However, Bighorn sheep never usually raise their tails upward in this way. Garfinkel and Austin Bighorn studied tail angles ($n = 112$) from photographs extracted from an inventory of more than 1,000 photographs collected by biologists Van Slyke and White (Garfinkel and Austin 2011: 458). Corroborating findings from the research of biologists who studied Bighorn sheep Garfinkel and Austin (2011) have shown that the raised positioning of the tail (standing at an average angle of 45°

from the horizontal plane created by the plane of the lower edge of the feet) is a sign of sexual excitement in females before breeding. The tails, therefore probably symbolize mating behaviour and a celebration of the increase in reproduction, security and sustenance for hunter-gatherer communities. In other examples ($n = 4$), Garfinkel and Austin agree with Keyser's interpretation that the sheep with tails pointing downwards (see Table III) are associated with hunting, in that this shows animals experiencing rigor mortis after being hunted down. In both cases, the tail posture elicits an emotive identification in the viewer. The raised position of the tail creates what Witkins refers to as a stream of abstract markings. This is perhaps one of the most significant examples of the hypersemantic function in Coso rock art, which is evident despite the interpretative uncertainty as to what the images actually mean in the context of their ethnographic origin. Ouzman (1998), following Lewis-Williams (1988), refers to such details in terms of an identifiable motif in rock art practice, which Klassen (1998: 51) also mentions

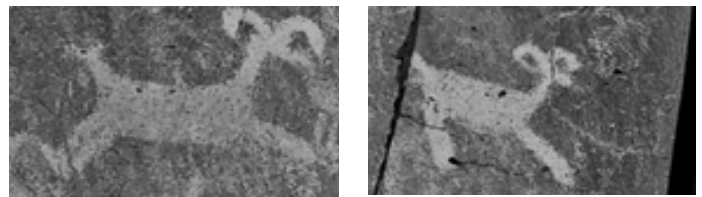
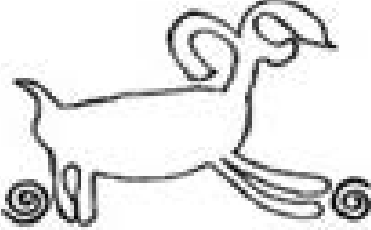
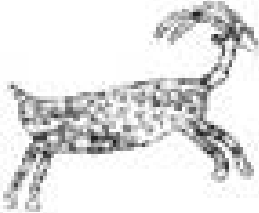
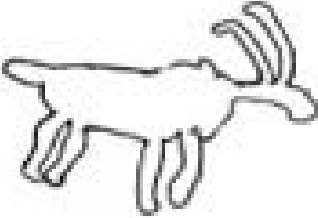
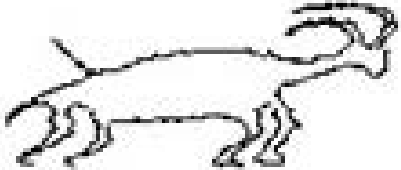


Fig. 9 (a) and (b). Pairing and direction of legs in Coso petroglyphs, California.



Fig. 10. Outline drawing of legs moving in a synchronized manner, Coso, California.

Table III. Arrays of Tail Positioning

<p>RAISED TAILS</p> <p>Fertility game animals</p> <p>→</p>	 <p>Little Petroglyph Canyon</p>	 <p>Big Petroglyph Canyon</p>
<p>DOWNWARD TAILS</p> <p>Dying animals</p> <p>→</p>	 <p>Renegade Canyon</p>	 <p>Big Petroglyph Canyon</p>

Conclusion

Prehistoric rock art communicates context-independent affect by the selective manipulation of visual arrays. We have demonstrated this technique in the repertoire of rock art traditions in the Fulbright project locations studied. Tail position and the clever exploitation of the graphic quality of the circles, as well as the positioning of legs, all indicate affective states associated with an event. None of the arrays considered in Tables I, II and III are novel or unknown anatomical shapes, but the affective quality of each of these arrays is also simultaneously modified or tweaked, or given narrativity with emotive consequences that result from surprising, unexpected transformation of basic-level, visually recognized aspects (Table I). Rock art is based on simple graphemes, which may or may not be entoptic/phosphene in origin, yet their appeal – aesthetic or otherwise – resides in universal and invariably embedded processes of human perception and memory.

References

Anati, Emmanuel
 2010 *World rock art: the primordial language*. Oxford: Archaeopress.

Arnheim, Rudolf
 1954 *Art and visual perception: A psychology of the creative eye*. Berkeley, CA: Univ. of California Press.

Baddeley, Alan.
 1997 *Human Memory. Theory and Practice*. Psychology Press. Denmark.

Bahn, Paul G.
 2010 *Prehistoric rock art: polemics and progress*. New York: Cambridge University Press.

Barrett, L.F.
 1998 *Discrete emotions or dimensions? The role of valence focus and arousal focus*. *Cognition and Emotion*, 12, pp. 579-599.

Barrett, L.F. and Moshe Bar.
 2009 *See It with Feeling: Affective Predictions du-*

- ring Object Perception*. 2009. *Philosophical Transactions: Biological Sciences*, Vol. 364, No. 1521, Predictions in the Brain: Using Our Past to Prepare for the Future (12 May), pp. 1325-1334.
- Bednarik, R.G.
1995 *Concept-mediate Marking in the Lower Palaeolithic*. *Archaeology and the evolution of mind*. *Current Anthropology*, 36, pp. 605-617.
- Bednarik, Robert.
2001 *Rock art science : the scientific study of palaeo-art*. Brepols/Turnhout: Turnhout.
- Bednarik, Robert.
1990 *On Neuropsychology and Shamanism in Rock Art*. (rejoinder included in) J. D. Lewis-Williams and Thomas A. Dowson. *Current Anthropology*, Vol. 31, No. 1 (Feb.), pp. 77-84.
- Bhattacharya, Joydeep, Hellmuth Petsche and Ernesto Pereda.
2001 *Long-range synchrony in the γ band: role in music perception*. *The Journal of Neuroscience* 21.16, pp. 6329-6337.
- Blundell, Geoffrey , Christopher Chippindale, Benjamin Smith (eds).
2011 *Seeing and knowing: understanding rock art with and without ethnography*. Walnut Creek, CA: Left Coast Press.
- Byers, Martin.
1994 *Symboling and the Middle-Upper Palaeolithic Transition: A Theoretical and Methodological Critique*. *Current Anthropology*, Vol. 35, No. 4 (Aug.-Oct.), pp. 369-399.
- Chippindale, Christopher and Paul S.C. Taçon.
1998 *The Archaeology of Rock Art*, New Directions in Archaeology Series. Cambridge University Press. Clark, W.H.
1968 *Religious Aspects of Psychedelic Drugs*. *California Law Review*, Vol. 56, No. 1 (Jan.), pp. 86-99.
- Clottes, Jean.
1995 *Perspectives and Traditions in Paleolithic Rock Art Research in France. Perceiving Rock Art: Social and Political Perspectives*. Eds. K Helskog and B. Olsen. Oslo: Novus Forlag.
- Colby, B.N.
1975 *Culture Grammars*. *Science*, 18, pp. 913-919.
- Conkey, Margaret W.
2001 *Structural and Semiotic Approaches. Handbook of Rock Art Research*. Ed. David Whitley. Palo Alto, CA: Altamira Press.
- Czegledy, Nina.
2000 *The Mind's Eye. Art, Technology, Consciousness*. Ed. Roy Ascott. London: Intellect Press.
- Damasio, Antonio R.
2001 *Some notes on brain, imagination and creativity. The origins of creativity. The Origins of Creativity*. Eds. Bruce Adolphe, pp. 59-68. Oxford: OUP.
- Davidson, Ian, William Noble, David F. Armstrong, L.T. Black, William H. Calvin.
1989 *The Archaeology of Perception: Traces of Depiction and Language [and Comments and Reply]* Whitney Davis, Dean Falk, Mary Lecron Foster, Paul Graves, John Halverson and Gordon W. Hewes. *Current Anthropology*, Vol. 30, No. 2 (Apr.), pp. 125-155.
- Davis, Whitney.
1978 *So-Called Jaguar-Human Copulation Scenes in Olmec Art*. *American Antiquity*, Vol. 43, No. 3 (Jul., 1978), pp. 453-457.
- Davis, Whitney.
1986 *The Origins of Image Making*. *Current Anthropology*, Vol. 27, No. 3 (Jun.), pp. 193-215.
- Davis, Whitney.
1988 *Rock Art and Archaeopsychology*. *Current Anthropology*, Vol. 29, No. 1 (Feb.), pp. 184-186.
- De Beaune, Sophie A., Frederick L. Coolidge and Thomas Wynn.
2009 *Cognitive archaeology and human evolution*. Cambridge: Cambridge University Press.
- Debes, Remy.
2009 *Neither Here Nor There: The Cognitive Nature of Emotion*. *Philosophical Studies: An International Journal for Philosophy in the Analytic Tradition*, Vol. 146, No. 1 (Oct.), pp. 1-27.
- Deluc, B., and G. Deluc.
2011 *Dans notre iconothèque: Un rhinocéros peint*

- dans la grotte de Villars*. Bulletin de la Société historique et archéologique du Périgord, 138(2), pp. 291-294. Di Dio, Cinzia, and Vittorio Gallese.
- 2009 *Neuroaesthetics: a review*. Current opinion in neurobiology, 19.6, pp. 682-687.
- Dobrez, P.
- 2014 *Hand Traces: Technical Aspects of Positive and Negative Hand-Marking in Rock Art*. MDPI Arts 3, pp. 367-393. doi:10.3390/arts3040367.
- Dronfield, Jeremy.
- 1996 *The Vision Thing: Diagnosis of Endogenous Derivation in Abstract Arts*. Current Anthropology, Vol. 37, No. 2 (Apr.), pp. 373-391.
- Drummond, John J.
- 1979 *On Seeing a Material Thing in Space: The Role of Kinaesthesia in Visual Perception*. Philosophy and Phenomenological Research, Vol. 40, No. 1 (Sep.), pp. 19-32.
- Dutta, Pratap C., Anadi Pal and Jitendra N. Biswas.
- 1972 *Late Stone Age human remains from Sarai Nahar Rai: the earliest skeletal evidence of man in India*. Bulletin of the Anthropological Survey of India, 21.1-2, pp. 114-138.
- Eichmeier, J., and O. Hofer.
- 1974 *Endogene Bildmuster*. Munich: Urban and Schwarzenburg.
- Efland, Arthur.
- 2002 *Art and cognition: Integrating the visual arts in the curriculum*. Teachers College Press. Columbia University. NY and London.
- Furst, Peter T.
- 1990 *Flesh of the Gods. The Ritual Use of Hallucinogens*. In Alan P. Garfinkel and Donald R. Austin. 2011. Reproductive Symbolism in Great Basin Rock Art: Bighorn Sheep Hunting, Fertility and Forager Ideology. Cambridge Archaeological Journal, 21: 3, pp. 453-471.
- Gibson, James J.
- 1968 *What gives rise to the perception of motion?* Psychological Review, 75(4), p. 335.
- Gibson, James J.
- 1971 *The information available in pictures*. Leonardo, pp. 27-35.
- Gibson, James J.
- 2014 *The Ecological Approach to Visual Perception: Classic Edition* Psychology Press & Routledge Classic Editions. New York and London: Psychology Press.
- Goldman, Alvin.
- 1986 *Epistemology and Cognition*. Cambridge, MA: Harvard University Press. Simultaneity: Temporal Structures and Observer Perspectives. Cambridge, MA: Harvard University Press.
- Gombrich, Ernst Hans et al.
- 1977 *Art and illusion: A study in the psychology of pictorial representation*, Vol. 5. London: Phaidon.
- Gross, Julien, and Harlene Hayne.
- 1998 *Drawing facilitates children's verbal reports of emotionally laden events*. Journal of experimental psychology: applied 4.2, p. 163.
- Hamilakis, Yannis.
- 2014 *Archaeology and the Senses: Human Experience, Memory, and Affect*. Cambridge: Cambridge University Press.
- Hays-Gilpin, Kelley. A.
- 2004 *Ambiguous Images. Gender and Rock Art*. Palo Alto, CA: Altamira Press.
- Helmholtz, Hermann Von.
- 1867 *Electromotive Phenomena in the Eye*. pp. 56-60. In Handbuch der physiologischen Optik. Helmholtz's treatise. From the 3rd German edn. James P.C. Southall.
- 1962 *Electronic edition 2001*: University of New York, Dover Publications Pennsylvania. At <http://psych.upenn.edu/backuslab/helmholtzphysiologicaloptics>
- Helvenston, P.A., P.G. Bahn, J.L. Bradshaw and C. Chippindale.
- 2003 *Testing the 'three stages of trance' model*. Cambridge Archaeological Journal, 13(02), pp. 213-224.
- Helvenston, P.A. and D. Hodgson.
- 2010 *The Neuropsychology of 'Animism': Implications for Understanding Rock Art*. Rock Art Research, 27 (1), pp. 61-94.

- Heyd, Thomas.
1999 *Rock Art Aesthetics: Trace on Rock, Mark of Spirit, Window on Land*. Journal of Aesthetics and Art Criticism, Vol. 57, No. 4 (Autumn), pp. 451-458.
- Hodder, I. R. (ed.)
1982 *Symbolic and Structural Archaeology*. Cambridge: Cambridge University Press.
- Hodgson, D.
2002 *Canonical perspective and typical features in children's drawings: A neuroscientific appraisal*. British Journal of Developmental Psychology, 20.4, pp. 565-579.
- Hodgson, D.
2003 *The Biological Foundations of Upper Palaeolithic Art: Stimulus. Percept and Representational Imperatives*. Rock Art Research, 20 (1), pp. 3-22.
- Hodgson, D.
2003 *Seeing the 'Unseen': Fragmented Cues and the Implicit in Palaeolithic Art*. Cambridge Archaeological Journal, 13(01), pp. 97-106.
- Hodgson, D.
2005 *Graphic Primitives and the Embedded Figure in 20th-Century Art: Insights from Neuroscience, Ethology and Perception*. Leonardo, Vol. 38, No. 1, pp. 55-58.
- Hodgson, D.
2006 *Altered States of Consciousness and Palaeoart: an Alternative Neurovisual Explanation*. Cambridge Archaeological Journal, Vol. 16/Issue 01 (Feb.), pp. 27-37.
- Hodgson, D.
2008 *The Visual Dynamics of Upper Palaeolithic Art*. Cambridge Archaeological Journal, 18 (3), pp. 341-353.
- Hodgson, D.
2010 *Hyperimagery and rock art: visual imagery, perceptual ambiguities and ways of thinking.*, In *Archaeological Invisibility and Forgotten Knowledge*. Conference Proceedings, University of Łódź, Poland, 5-7 September 2007. K. Hardy (ed.), pp. 172-179. BAR International Series 2183. Oxford: Archaeopress.
- Hodgson, D. and P.A. Helvenston.
2006 *The Emergence of the Representation of Animals in Palaeoart: Insights from evolution and the cognitive, limbic and visual systems of the human brain*. Rock Art Research, 23 (1), pp. 3-40. At <http://www.uccs.edu/~faculty/fcoolidg/Hodgson%20et%20al.%20RAR%202006%20with%20our%20comments.pdf>
- Horowitz, M.J.
1964 *The imagery of visual hallucinations*. Journal of Nervous and Mental Disease, I 38: 5 I, pp. 3-23.
- Huffman, T.N.
1983 *The trance hypothesis and the rock art of Zimbabwe*. South African Archaeological Society, Goodwin Series 4, pp. 49-53.
- Ingold, Tim.
1993 *The Temporality of the Landscape*. World Archaeology, Vol. 25, No. 2, Conceptions of Time and Ancient Society (Oct.), pp. 152-174.
- Keyser, J.D.
2013 *How is a picture a narrative? Interpreting different types of rock art*. Am. Indian Rock Art, 39, pp. 83-99.
- Keyser, J. D., and D.S. Whitley.
2006 *Sympathetic magic in western North American rock art*. American Antiquity, pp. 3-26.
- Klassen, Michael.
1998 *Icon and Narrative in Transition: contact period rock-art at Alberta, Canada*. The Archaeology of Rock-Art, New Directions in Archaeology Series. Eds. Christopher Chippindale and Paul S.C. Taçon. Cambridge: Cambridge University Press.
- Knoll, Max, Johann Kugler, Joseph Eichmeier, Oskar Hofer.
1962 *Note on the Spectroscopy of Subjective Light Patterns*. Journal of Analytical Psychology. Society for Analytical Psychology (Jan.), Vol. 7, Issue 1, pp. 55-70.
- Knoll, M., J. Kugler, O. Hofer, and S.D. Lawder.
1963 *Effects of Chemical Stimulation of Electrically Induced Phosphenes on their bandwidth*, Shape, pp. 201-226.

- Kohut, Heinz.
2011 *The Restoration of the Self*. Chicago, IL: University of Chicago Press.
- Kokot, Waltraud, Hartmut Lang and Eike Hinz.
1982 *Current Trends in Cognitive Anthropology*. *Anthropos*, Bd. 77, H. 3./4, pp. 329-350, p. 343.
- Kosslyn, S.M.
1996 *Image and brain*. Cambridge, MA: MIT Press.
- Lamberg-Karlovsky, Clifford Charles.
1991 *Archaeological thought in America*. Cambridge: Cambridge University Press.
- Layton, Robert.
1985 *The cultural context of hunter-gatherer rock art*. *Man*, 20 (3), pp. 434-453.
- Lewis-Williams, J.D. and T.A. Dowson.
1988 *The Signs of All Times: Entoptic Phenomena and Upper Paleolithic Art*, *Current Anthropology*, 29: pp. 201-245.
- Lewis-Williams, J.D. and T.A. Dowson.
2002 *The mind in the cave: consciousness and the origins of art*. London: Thames & Hudson.
- Lewis-Williams, J. David, and David Pearce.
2005 *Inside the neolithic mind: consciousness, cosmos and the realm of the gods*. London: Thames & Hudson.
- Leibowitz, Marvin.
2013 *Interpreting Projective Drawings: A Self-Psychological Approach*. New York: Routledge.
- Mamani, Jose Luis and Alicia Anna Fernandez Di-stel.
2010 *Spirals and Circular Forms: The Most Common Rock Art Elements in the World? Spirals in the Humahuacha and NW of Arghentina (South America)*. Proceedings of the XV World Congress. BAR S 2108, pp. 39-48. Oxford: Archeopress.
- Maringer, J.
1979 *Adorants in Prehistoric Art: Prehistoric Attitudes and Gestures of Prayer*. *Numen*, 1 Dec., pp. 215-230.
- Marshack, Alexander.
1976 *Some implications of the Paleolithic symbolic evidence for the origin of language*. In *Origins and evolution of language and speech*. Ed. H.B. Steklis, S.R. Hamad and J. Lancaster, pp. 289-293. II. Annals of the New York Academy of Sciences, 280.
- Marshack, Alexander.
1984 *The ecology and brain of two-handed bipedalism: an analytic, cognitive and evolutionary assessment*. In A. Marshack (ed.), *Animal cognition*, pp. 491-511.
- Marshall, C.R.
1936 *A Factor in Hypnagogic Images*. *Mind*, New Series, Vol. 45, No. 177 (Jan.), pp. 67-70.
- Mavromatis, Andreas.
1987 *Hypnagogia: the Unique State of Consciousness Between Wakefulness and Sleep*. London: Routledge and Kegan Paul.
- Michaelson, A.
1986 *In Praise of Horizontality: André Leroi-Gourhan, 1911-1986*. October, 37, pp. 3-17.
- Minsky, M.
1975 *A Framework for Representing Knowledge*. In P. Winston (ed.), *The Psychology of Computer Vision*, pp. 211-277. New York: McGraw-Hill.
- Mithen, Steven.
1996 *On Early Palaeolithic 'Concept-Mediated Marks', Mental Modularity, and the Origins of Art*. *Current Anthropology*, Vol. 37, No. 4 (Aug.-Oct.), pp. 666-670.
- Mukhopadhyay, Tirtha.
2005 *Affective States in Art: An Examination of the Paradigm of Transcendence with Special Reference to Metaphor, Iconography and Theater*. University of Texas at Dallas.
- Neumayer, Erwin.
2013 *Prehistoric Rock Art of India*. New Delhi: Oxford University Press.
- Noice, Helga, and Tony Helga.
2006 *What Studies of Actors and Acting Can Tell Us about Memory and Cognitive Functioning*. *Current Directions in Psychological Science*, Vol. 15, No. 1 (Feb.), pp. 14-18.

- Oster, G.
1970 *Phosphenes*. *Scientific American*, 222 (2), pp. 83-87.
- Ouzman, Sven.
1998 *Towards a Mindscape of Landscape. The Archaeology of Rock-Art*. New Directions in Archaeology Series. Eds. Christopher Chippindale and Paul S.C. Taçon. Cambridge: Cambridge University Press.
- Panksepp, Jaak.
1998 *Affective neuroscience: The foundations of human and animal emotions*. Oxford: Oxford University Press.
- Pearson, James L.
2002 *Shamanism and the Ancient Mind: A Cognitive Approach to Archaeology*. CA: Rowman Altamira.
- Peirce, Charles S.
1940 *Collected Papers [CP], Volume IV ex Vols. I-VIII* (eds. Hartshorne & Weiss; Burks), Cambridge, MA: Harvard University Press.
- Piaget, Jean.
2013 *Play, dreams and imitation in childhood*. Vol. 25. London: Routledge..
- Piaget, Jean, and Bärbel Inhelder.
1969 *The Psychology of the Child*. New York: Basic Books.
- Quintano, Jose Fernandez.
2010 *Schematic Panel with Paleolithic Punctuation and Other Questions of Paleoastronomy and Philology of Antiquity' Proceedings of the XV World Congress*. BAR S 2108, pp. 39-48. Oxford: Archeopress.
- Reichel-Dolmatoff, G.
1978 *Drug induced optical sensations and their relationship to applied art among some Columbian Indians*. In M. Greenhalgh and V. Megaw (eds.), *Art in society*, pp. 289-304. London: Duckworth.
- Renfrew, Colin.
1990 *Archaeology and language: the puzzle of Indo-European origins*. Cambridge University Press Archive.
- Ross, June and Iain Davidson.
2006 *Rock Art and Ritual: An Archaeological Analysis of Rock Art in Arid Central Australia*. *Journal of Archaeological Method and Theory*, Vol. 13, No. 4, Advances in the Study of Pleistocene Imagery and Symbol Use [Part I] (Dec.), pp. 305-341.
- Sales, Kim.
1992 *Ascent to the Sky. A Shamanic Initiatory Engraving from the Burrup Peninsula, Northwest Western Australia*. *Archaeology in Oceania*, Vol. 27, No. 1 (Apr.), pp. 22-36.
- Schaafsma, Polly.
1986 *Indian rock art of the Southwest*. New Mexico: UNM Press.
- Schacter, D.L.
2008 *Searching for Memory: The Brain, the Mind and the Past*. New York: Basic Books.
- Shaw, Robert.
1981 *On Characteristics of Information in J.J. Gibson's Ecological Approach to Visual Perception*. *Leonardo*, Vol. 14, No. 2 (Spring), p. 173.
- Smedt, Johan de and Helen de Cruz.
2011 *A Cognitive Approach to the Earliest Art*. *Journal of Aesthetics and Art Criticism*, Vol. 69, No. 4 (Fall), pp. 379-389.
- Solomon, Anne.
1999 *Society Meanings, Models and Minds: A Reply to Lewis-Williams*. *South African Archaeological Bulletin*, Vol. 54, No. 169, pp. 51-60.
- Solomon, Anne.
2000 *On Different Approaches to San Rock Art*. *South African Archaeological Bulletin*, Vol. 55, No. 171, pp. 51-60.
- Solso, Robert L.
1996 *Cognition and the visual arts*. Cambridge, MA: MIT Press.
- Solso, Robert L.
2003 *The psychology of art and the evolution of the conscious brain*. Cambridge, MA: MIT Press.
- Sommers, Peter.
1984 *Drawing and cognition: Descriptive and experimental studies of graphic production processes*.

- Cambridge: Cambridge University Press.
- Townsend, Dabney.
- 1997 *An introduction to aesthetics*. At <http://philpapers.org/rec/TOWAIT-4> (accessed 4 March 2016).
- Vinnicombe, Patricia.
- 1967 *Rock-Painting Analysis*. South African Archaeological Bulletin, Vol. 22, No. 88 (Dec.), pp. 129-141.
- Vrobel, Susie, Otto E. Rössler and Terry Marks-Tarlow.
- 2008 *Simultaneity. Temporal Structures and Observer Perspectives*. Singapore: World Scientific.
- Wheeler, Raymond H.
- 1928 *A Theory of Circuit Integration: A Criticism of the 'Centrally Aroused Process'*. American Journal of Psychology, Vol. 40, No. 4 (Oct.), pp. 525-541.
- Whitley, David S.
- 1992 *Prehistory and Post-Positivist Science: A Prolegomenon to Cognitive Archaeology*. Archaeological Method and Theory, Vol. 4 (1), pp. 57-100.
- Wilson, E.O.
- 1988 *The creative mind: Towards an evolutionary theory of discovery and innovation*. E.O. Wilson (ed.). Journal of Social and Biological Sciences II.
- Witkin, Robert Winston.
- 1979 *Art in Mind: Reflections on the Intelligence of Feeling*. Christ College Press.
- Witkin, Robert Winston.
- 1983 *The Psychology of Abstraction and the Visual Arts*. Leonardo, Vol. 16, No. 3, Special Issue: Psychology and the Arts (Summer), pp. 200-203.
- Wollheim, Richard.
- 1986 *The thread of life*. Cambridge University Press Archive.
- Wylie, Alison.
- 1985 *The Reaction Against Analogy*. Advances in Archaeological Method and Theory, 8, pp. 63-111.
- Wylie, Alison.
- 1988 *Comment on 'The Signs of All Times'*. Current Anthropology, p. 29.
- Wynn, Thomas and Frederick L. Coolidge. 2004 *A cognitive and neuropsychological perspective on the Châtelperronian*. Journal of Anthropological Research, pp. 55-73.
- Wynn, Thomas and Frederick L. Coolidge.
- 2010 *Beyond Symbolism and Language: An Introduction to Supplement 1, Working Memory*. Current Anthropology, Vol. 51, No. S1, Working Memory: Beyond Language and Symbolism (June), pp. S5-S16.
- Zajonc, R.B.
- 1984 *Feeling and Thinking: Preferences Need no Inferences*, American Psychologist, 39, pp. 117-29.
- Zimmer, Robert.
- 2003 *Abstraction in Art with Implications for Perception*. Philosophical Transactions: Biological Sciences, Vol. 358, No. 1435, pp. 1281-1295.
- Zimmer, Robert.
- 2003 *The Abstraction from Experience to Concept (29 July)*, pp. 1285-1291.

MALE VERSUS FEMALE: VARIATION IN REPRESENTATIONS OF MALES AND FEMALES IN THE HUNTER-GATHERER ROCK ART OF SOUTHERN AFRICA

Ancila Nhamo

Archaeology Unit, University of Zimbabwe

Abstract

In southern African rock art, the frequency of human figures has been shown to vary from a strong emphasis on males in some areas to higher numbers of females in others. In South Africa, observations of emphasis on male figures have been made in the Drakensberg Mountains, while females are depicted more in the Limpopo province. Recent research in Zimbabwe has also shown that male figures seem to dominate the rock paintings in the middle and northern parts of the country and there are more female figures in the southern parts towards the Limpopo region. Comparable patterning has also been observed in the depiction of bulls and cows among certain animals such as the kudu that are dominant in the art. Although kudu cows are the most frequently depicted animal, there are certain places where bulls equal or outnumber the cows. Based on the existence of these sexual patterns in the rock art, this paper discusses possible explanations of varying gender representation, with a focus on Zimbabwe.

Introduction

This paper discusses sex representation of human and animal figures in southern African hunter-gatherer rock art with special reference to Zimbabwe, with some comparison with the Limpopo basin. The discussion is based on detailed studies carried out in specific parts of Zimbabwe. These include northern Nyanga and Zimunya and Chipinge

in the east, Harare in north central and the Chivi area in the southern parts of the country (Nhamo 2007, 2014; Nhamo and Bonyongwa 2015). Detailed research has also been carried out in the Beitbridge area (Eastwood et al. 1994). Although rock art research carried out in these case studies was not primarily focused on the analysis of gender representation, documented information gives a picture of the nature of variation of the rock art in this regard. During the research, human depictions were recorded in categories of male, female and indeterminate images. The determination of sex was based on clear depiction of the genitals or breasts. For much of the research the frequency of each category was quantified and statistically calculated. While most animal figures were not categorized according to sex, kudu images were (Nhamo 2007, 2014). This enabled analysis of both animals and humans.

Human representation

Human images constitute the bulk of the rock art from most parts of Zimbabwe. They are shown in groups or as single images. With reference to sex, many of the figures are indeterminate. There is also the possibility that some images were deliberately not sexed but this is difficult to ascertain. The sex of many may no longer be identifiable due to fading and weathering.

Of those that could be identified, the depiction of males and females differs from place to place (Nhamo 2014; Eastwood and Blundell 1999; Parkington 1998). In most parts of Zimbabwe, male images outnumber female in the identifiable human figures. This is the case in northern Nyanga and Harare. However, in Chivi, even though male figures are the most frequent, there are slightly higher numbers of female representations than in Harare and northern Nyanga. In Chivi, female human figures make up 10% compared with 4.9% and 2.8% in Harare and northern Nyanga, respectively. Female figures outnumber males in the Beitbridge area. The slightly higher percentage of female figures in the rock art of



Figure 1: Depiction of genitals on male figures with some exaggerated especially on therianthropes (1b)

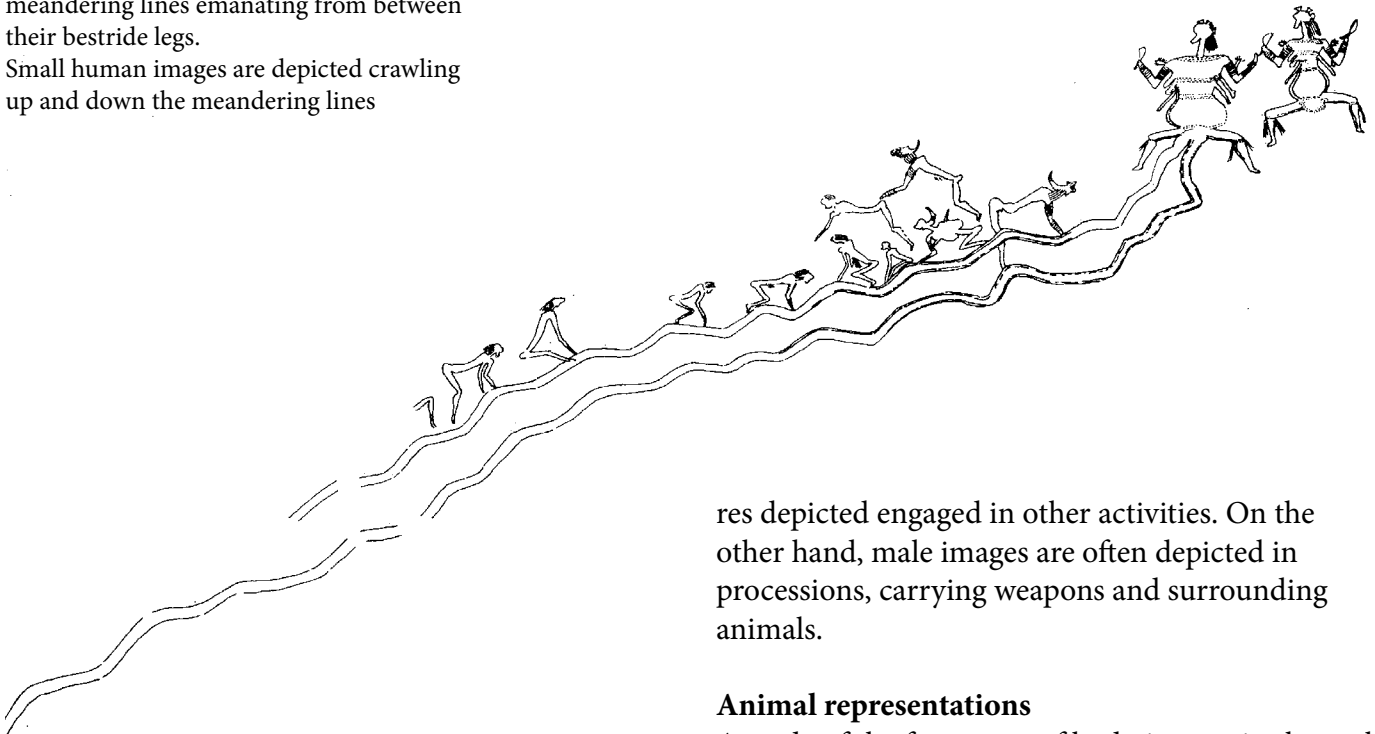
Chivi may suggest that there is an increase in female imagery as one goes south towards Beitbridge in the Limpopo basin where female images outnumber male (Eastwood and Blundell 1999; Eastwood 2005; Smith 2006; Eastwood et al. 2010).

The variation in representation of the sexes in human figures is also evident in the manner of depiction in the art. The nature of depiction can provide a window on to analysing gender roles in the production and consumption of rock art. Males are mostly identifiable through observation of the genitals. Occasionally, these are exaggerated especially in the therianthropic (conflated) images (Fig. 1). This has been observed in rock art from northern Nyanga, Harare and other parts of Zimbabwe, although this exaggeration of penises has not been observed in Chivi. On the other hand, female representation of genitals is rare. Most females are shown by their breasts.

An exception to this comes in the form of certain squatting depictions that have extended (exaggerated) genitals that have been determined to be female. These images have two meandering lines emanating from between their apart legs. Small human images are depicted crawling up and down the meandering lines (Fig. 2). In the Mtoko and Murehwa areas, the images are usually depicted in pairs, one with the meandering lines and the other without. The depiction with the lines also has breasts while the



Fig. 2 Figure 2: These images have two meandering lines emanating from between their bestride legs. Small human images are depicted crawling up and down the meandering lines



others do not (Goodall 1962). Therefore, depictions with the lines are considered female depictions and those without have been presumed to be male (Goodall 1959; Solomon 1992; Garlake 1987). The female depictions gave rise to the terms 'primeval mother', 'mother goddess' and 'mythic woman' (Goodall 1949, 1959; Solomon 1992, 1994, 1998). Similar images are found outside the Mutoko and Murewa areas, but they are not paired. In Goromonzi, Wedza and northern Nyanga only single images with meandering lines and crawling figures are depicted.

Apart from the depiction of identifiable sex attributes, human figures are also depicted in different postures according to their gender. Many female figures in Zimbabwean rock art are executed in dancing postures (Fig. 3). Female dancing figures have been recorded in northern Nyanga, Harare, Beitbridge, Chipinge and Zimunya. Converse to this, however, are bichrome images from Chivi where female figures are depicted in a sitting position clapping while males dance in processions. Rarely are female figu-

res depicted engaged in other activities. On the other hand, male images are often depicted in processions, carrying weapons and surrounding animals.

Animal representations

A study of the frequency of kudu images in the rock art has revealed that although the motif is ubiquitous, the representation of bulls and cows differs from place to place (Nhamo 2006, 2014; Eastwood and Eastwood 2006). The kudu is a large African antelope that is identified by its distinct large and broad ears and elongated necks. It also has a distinctive hump with an upstanding mane running from the back of the head to beyond the shoulders, upright on top of the spine (Nhamo 2007). Usually the females lack horns and the males have twisted horns that are the longest of any antelope in Africa (Estes 1991).

In the art, cows are mostly identifiable by the hump and large ears and bulls are depicted with their distinct horns and at some sites with the mane raised on the hump. In most parts of Zimbabwe, female kudu greatly outnumber their male counterparts. This is true for areas such as Zimunya, Beitbridge, northern Nyanga, Chivi and Harare. However, in places such as Malilangwe, the depiction of both sexes is almost equal (Nhamo 2006; Pearce et al. 2003). Even in the areas where cows dominate, some sites seem



Figure 3: Dancing female figures from Zimunya, eastern Zimbabwe

to have a preponderance of bulls (Nhamo 2014). The manner of depiction of the kudu also seems to differ according to sex. The kudu cows are usually depicted in groups. This is reminiscent of the female kudu in the wild, where they are gregarious, that is, they have lasting social bonds. Their herd can be made up of more than 12 members. They are tolerant of each other and have no hierarchy within the herd. In the art the females are depicted either resting or in a procession, probably walking. On the other hand, kudu bulls are usually depicted singly or among the cows in most areas. This is also similar to the situation in the wild where one adult male can be

found among a herd of females and their offspring during the mating period. Nevertheless, at some sites bulls are depicted in groups (Fig. 4).

Discussion and conclusion

Rock art is an important source of information about the prehistoric social and economic life ways of past societies. Therefore, archaeologists can use the representation of the sexes in art to help in understanding these images in relation to relationships between men and women, gender roles and authorship of the rock art itself. The frequency of the subject and nature of the depiction illustrate gendered notions



Figure 4: Kudu cows (4a); Kudu bulls (4b)

occurring in the wider society of hunter-gatherers. In addition, the variation in the manner of depicting males and females in the rock art can tell us a lot about differences that occurred between smaller groups of hunter-gatherers in relation to issues that were central to them. It is well known that hunter-gatherers lived in small groups with common and varying cultural attributes. Thus, the rock art reflects both common and circumscribed codes of expressing gender notions within these groups.

Apart from exceptional cases of comparably more recent farmer art (Zubieta 2010; Eastwood and Namono 2005), researchers have not been able to identify the sex of rock artists in southern Africa. However, the predominance of the male figure and the emphasis on hunting motifs have been used to assume that the artists were probably men (Garlake 1995; Parkington 1998). The research discussed here has not been able to identify the sex of the artists but the nature of the depictions challenges the general

assumption that the artist was male based on abundance. If abundance is to count then in areas such as Beitbridge where there are more female images, one has to conclude that women were the artists. However, the issue is most likely not about the sex of the artist. People of any sex may have done the rock art but the issues addressed by the rock art would have been influenced gender perceptions in different areas. Each group of hunter-gatherers would have chosen symbols that best expressed their interests, resulting in different foci. Thus, rock art could have been used to express different issues in different parts of southern Africa.

In many parts of Zimbabwe, female figures are depicted dancing separately from males. However, in the bichrome rock art of Chivi emphasis is on women clapping sitting and clapping where male figures dance. This best exemplifies differences in the focus of the rock art. In Chivi, the artists and their communities may have been interested in exhibiting and illustrating particular ceremonies where men were dancing and females sat around clapping. Such ceremonies are common among contemporary hunter-gatherers (Marshall 1999). This does not mean that in Chivi they did not have other ceremonies where women danced; it just reflects the focus of the rock art. The rock art from northern Nyanga and Harare has dancing female figures depicted on their own. In these areas too, other ceremonies were probably undertaken but were not the focus of the art. Societal concern was centred on those depicted in the art. The art from Chivi might be targeting ceremonies involving the participation of both men and women as a way of reducing gender tensions, as suggested by Parkington (1998, 2003).

The social structure of hunter-gatherer groups in the Limpopo basin may have been different from other parts of the sub-region and this could have influenced the choice of subject matter in the rock art. The increase in female imagery around the Limpopo Basin may be a reflection of these differences in the social structure when compared with groups that li

ved in the northern parts of the country. This is supported by the increase of female images on both the Zimbabwean and South African sides (Eastwood 2005; Smith 2006; Eastwood et al. 2010). As argued by Parkington (1989), males dominated the ritual sphere in areas where they are more frequent in the art. In areas such as Beitbridge, however, the predominance of females may show the significance of women in the cosmology of the hunter-gatherers of this region compared with areas where there is a dominance of male figures (Eastwood and Blundell 1999; Eastwood and Eastwood 2006; Eastwood et al. 2010). Gender perceptions in the hunter-gatherer communities could have varied with areas. The manner of depicting males and females in the rock art exposes some common gender perceptions that were held by most of the hunter-gatherer groups in Zimbabwe. Males are depicted showing genitalia in almost all areas, with certain images showing some exaggeration. Females, on the other hand, are depicted clothed showing only breasts but not the genitals as in males. The ubiquitous nature of such a representation reflects the widespread notions about masculinity and femininity. The depiction of female genitalia could have been taboo except in concepts of reproduction and regeneration, as in the squatting images. This would explain the avoidance of depicting female genitalia. These taboos could have been influenced by beliefs of the dangers associated with female sexual organs and the whole reproduction system (Biesele 1993; Solomon 1992).

Some of the imagery alludes to belief systems in the hunter-gatherer groups. For example, the so-called 'primeval mother', 'mother goddess' and 'mythic woman' with meandering lines that have small crawling human figures are obviously not depicting realistic images but certain beliefs that existed in the community. The beliefs seem to have been widespread since similar images are found in many parts of the country, including northern Nyanga, Mutoko, Murewa, Wedza, Goromonzi, Harare and Chivi. However, the belief must have had local variations because the re-

presentations are slightly different in all these areas. The images have been for a long time connected to reproduction and regeneration. Garlake (1995) sees the distended stomach as a sign of pregnancy and therefore connects the motif to fertility, a position that is also taken by Solomon (1992, 1994, 1998). Huffman (1983) also considered the images to be female. He argued that the lines issuing from between the legs represent menstrual blood or amniotic fluid. The fact that the apparent female images are associated with the emissions and small figures crawling along them may support the argument for regeneration and cosmological explanations. The pairing of these with male figures in Mutoko and Murewa may allude to father-mother symbolism, rather than just the 'mother goddess' figures argued for by Goodall (1959, 1962) and Solomon (1992, 1994, 1998). Omission of the 'father' motif in other areas may be showing differences in belief systems.

The use of animal symbolism in sex representation shows that gender issues permeated all aspects of the rock art of southern Africa. Therefore, the distinctiveness of the kudu bulls and cows may have influenced their choice as a major symbol of gender in the rock art of Zimbabwe.



Figure 5: 'pregnant' Giraffe from Chivi

The use of gender symbolism in animals has also been suggested elsewhere in southern Africa. The symbolism of snakes (Mallen 2005), eland (Parkington 2003) and springbok (Lessen-Erz 1994) in gender relations have all been proposed and it is possible that other animals were also used for this reason. There is a depiction of one giraffe apparently pregnant in Chivi (Fig. 5). Thus giraffe, an animal emphasized in some parts of the country, could have been an important symbol in this regard. Variation in kudu depictions may be symbolizing different notions of gender-related issues and ways of addressing them within particular groups. The kudu cows may be symbolizing the qualities and characteristics of what is expected of women. The gregariousness of the female kudu is one such aspect which would encourage cohesion among women. The male kudu shown among cows probably has connotations of sexual relationships between men and women (Nhamo 2007). In the wild kudu bulls move with females only during the rut (mating) season (Smithers 1983). The association of human male-female relations with animal symbolism is not limited to prehistoric rock art. It can also be seen in the symbolism associated with large antelopes among modern hunter-gatherers. The relationship between a hunter and large antelope (inclusive of kudu) is especially likened to relations between a man and his wife among the !Kung (Biesele 1993). This might also have been the same in the past and that symbolism could have been represented in the rock art. As mentioned earlier, in some instances as observed in the Harare and northern Nyanga rock art, kudu bulls predominate at some sites. This has also been recorded elsewhere in Mashonaland at sites such as Chikupo and Domboshava. In these cases, masculinity may be the focus of the depictions. It has been noted that the depiction of groups of kudu bulls occurs in areas where rock art was targeting male behaviour and masculinity (Nhamo 2014). In Chivi and Beitbridge where female imagery is more fre-

quent, groups of kudu bulls have not been observed. The variation in the representation of kudu images in different areas provides an example of how animal symbols could have been used to communicate social issues such as gender and other relations. Thus, the selection of kudu bulls and cows as symbols seems to be grounded in the characteristics of the animal that resonate with the moral concerns of society.

References

- Bieseke, M.
1993 *Women Like Meat: The Folklore and Foraging Ideology of Kalahari Ju/'hoansi*. Johannesburg (Witwatersrand University Press).
- Eastwood, E. B.
2005 *From girls to women: female imagery in San rock paintings of the central Limpopo basin, southern Africa*. Before farming: anthropology and archaeology of hunter-gatherers.
- Eastwood, E. B. and G. Blundell.
1999 *Re-discovering the rock art of the Limpopo-Shashe Confluence area, southern Africa*. South African Field Archaeology vol. 8, pp 17-27.
- Eastwood, E. B., G. Blundell and B. Smith.
2010 *Art and authorship in southern African rock art: Examining the Limpopo-Shashe Confluence Area*. In G. Blundell, C. Chippindale and B. Smith (eds), *Seeing and Knowing: understanding rock art with or without ethnography*, pp. 75-96. Johannesburg (Witwatersrand University Press).
- Eastwood, E. B., C. Cnoops, V. Bristow, N. Hahn.
1994 *A report on the rock art of Sentinel and Nottingham, Limpopo River Valley*. Unpublished report.
- Eastwood, E. B. and C. Eastwood.
2006 *Capturing the spoor rock art of Limpopo: An exploration of the rock art of northernmost South Africa*. Cape Town (David Philip).
- Estes, R. D.
1991 *The Behavior guide to African mammals*. Los Angeles, CA (University of California Press).
- Garlake, P. S.
1987 *The Painted Caves: an introduction to the prehistoric art of Zimbabwe*, Harare (Modus Publications).
- Garlake, P. S.
1995 *The Hunter's Vision*. London (British Museum Press).
- Goodall, E.
1949 *Notes on certain human representations in Rhodesian rock art*. Proceedings and transactions of the Rhodesian scientific association vol. 42, pp. 69-74.
- Goodall, E.
1959 *The Rock Art of Mashonaland*. In R. Summers (ed.), *Prehistoric Rock Art of the Federation of Rhodesia and Nyasaland*, pp. 3-111. Salisbury (National Publications Trust).
- Goodall, E.
1962 *A distinctive mythical figure appearing in the rock paintings of Southern Rhodesia*. In G. Mortelmans and J. Nenquin (eds), *Actes du IV congrès panafricain de préhistoire*, pp. 399-405. Tervuren (Musée Royale).
- Huffman, T. N.
1983 *New Approaches to Southern African rock Art*. South African Archaeological Society-Goodwin series vol. 4, pp. 49-54.
- Lenssen-Erz, T.
1994 *Jumping about: Springbok in the Brandberg Rock Paintings and in the Bleek and Lloyd collection, an attempt at a correlation*, in J. D. Lewis-Williams and T. A. Dowson (eds), *Contested Images: Variation in Southern African rock art research*, pp. 275-291. Johannesburg (Witwatersrand University Press).
- Mallen, L.
2005 *Linking Sex, Species and a Supernatural Snake at Lab X Rock Art Site*. South African Archaeological Society Goodwin Series vol. 9, pp. 3-10.
- Nhamo, A.
2006 *Kudu: a survey of its representation in Zimbabwean hunter-gatherer rock art*. Paper presented at the Association of Southern African Archaeologists, Pretoria.
- Nhamo, A.
2007 *Out of the labyrinth: an enquiry into the signi-*

- ficance of kudu in San rock art of Zimunya, Manyikaland, eastern Zimbabwe*. Harare (University of Zimbabwe Publications).
- Nhamo, A.
2014 *Characterizing hunter gatherer rock art: An analysis of spatial variation of motifs in the prehistoric rock art of Zimbabwe*. Unpublished PhD thesis, Archaeology Unit, University of Zimbabwe.
- Nhamo, A. and R. Bonyongwa.
2015 *The rock art of Chimanimani and Chipinge, south-eastern Zimbabwe*, Zimbabwea 11. Parkington, J.
- 1989 *Interpreting Paintings Without a Commentary*, *Antiquity* vol 63, pp. 13-26.
- Parkington, J.
1998 *Resolving the past: Gender in the Stone Age archaeological record of Western Cape*. In S. Kent (ed.), *Gender in African Prehistory*. pp 25-38. Walnut Creek, CA (AltaMira Press).
- Parkington, J.
2003 *Eland and Therianthropes in the Southern African rock art*, *African Archaeological Review* vol. 20 (3), pp. 135-147.
- Pearce, D. G.
2009 *An introduction to rock art of the Malilangwe Conservation Trust, south-eastern Zimbabwe*. *Azania* vol. 44 (3), pp. 331-342.
- Pearce, D. G., Mguni, S. and Steyn, W.
2003 *The Malilangwe estate, Chiredzi, Zimbabwe*. Unpublished report, British Institute in Eastern Africa, Nairobi.
- Smith, B. W.
2006 *The rock arts of sub-Saharan Africa*. In G. Blundell (ed.), *Origin: The story of the emergence of humans and humanity in Africa*. Cape Town (Double Storey Books).
- Smithers, R. H. N.
1983 *The Mammals of the Southern African Sub-region*, pp. 92-101. Pretoria (University of Pretoria Press).
- Solomon A. C.
1992 *Gender representation and power in San ethnography and rock art*. *Journal of Anthropological Archaeology* 11, pp. 291-329.
- Solomon, A.
1994 'Mythic women': *A study in variability in San rock art and narrative*, in J. D. Lewis-Williams, and T. A. Dowson (eds), *Contested Images: variation in Southern African rock art research*, pp. 331-374. Johannesburg (Witwatersrand University Press).
- Solomon, A.
1998 *Ethnography and method in southern African rock art research*. In C. Chippindale and S. C. Tacon (eds), *The Archaeology of Rock-art*, pp. 268-284. Cambridge (Cambridge University Press).
- Zubieta, L.
2010 *The Rock Art of Chinamwali: material culture and girls' initiation in south-central Africa*. Unpublished PhD thesis, University of the Witwatersrand.

DUALITY IN ARTS

Marcel Otte

*Professeur de Préhistoire, Université de Liège
Président de la Commission « Paléolithique
Supérieur d'Eurasie », Union Internationale des
Sciences Préhistoriques et Protohistoriques - UISPP
Belgium*

The exercise of thinking is based on a radical biological necessity: to maintain the duality of species and the world. During its development, human thought combated the absurdity that was gradually imposed on its lucidity: it forged a weapon to reconcile oppositions: good and evil, fear and defiance, male and female (Cassirer, 1972). Over time, each metaphysical system was able to draw strength from the complementarity of the contrasting aspects imposed by experience (Eliade, 1949). In mythology, its visual importance has been masterfully demonstrated since prehistoric times (Leroi-Gourhan, 1965). Such duality also has sociological implications in which all tasks are found in balance, as much by their differences as by their complementarity: during rituals, spiritual harmony is periodically renewed, materially and physically when opposites are united. Thus this pure abstraction becomes visible to us in both form and gesture (Malraux, 2004). The mythological key is illustrated here, but only via the plastic filter, the appearance of which is reduced to aesthetic aspects alone, an obstacle so often fatal to art historians in the most common achievements of their practice.

All exotic arts are articulated around the opposition of gender, whether explicitly opposing male and female (sometimes in a stupefying aesthetic purity), or allusive, when animals or signs take on these values. Ongoing allusions to the combination of the two genders sometimes fall within an excessively explicit schematization (Le Quellec, 1993). And even in these extreme examples, they are connected to the sacralization of a life, animal or human, in continual renewal and for which signs evidence and reinforce the action. They then themselves become the vec-

tors of existence, activity animated by idolatry, from which few believers escape, and in which the concept is reduced to a plastic form. Above all else, such perpetuity concerns human life. Transposed by mythological passage, it is always a story that explains existence and predicts the end, except for an exemplary life (which is thus extolled). All plastic expression contains metaphorical allusions to the two genders, expressed in explicit or allusive modes, because they were produced and expressed only by consciences that were themselves, from their conception, torn between these two modes that in the meantime seek only to be united. This obsession is emphasized as much by images, stories or simple vocabulary. The plastic modalities are only emergences, but still strike us by the reciprocity of our considerations and their continually imposed solidarity: from now on, we all are one.

Reduced to dimensions that can be manipulated, figurines play the role of objects to be used in accordance with ritual rules and in stable places, in contrast to caves where the permanence of the walls localize the style, iconography and the story. Figurines have an opposite function: their mobility is adapted to their mythological role alone. Thus, a sanctuary is found spatially organized according to the sacred rules of religious thought: the vast dug structures no longer have anything in common with the habitats formerly designated as such. These are now sanctuaries as mobile as the medieval portable altars or the tents of the medicine-men among the Plains Indians. Their interior structure responds to the same rigour because they correspond to the universal marks of the spirit, that are not at all random, not more than the statues in our churches; only the magical world governs them. From there on, we can perceive the role of the mistress of animals as the incarnation of nature: figurines roam its environs, planted like nature in the sediment of the periphery. Their role is clear. Other than their ostentatious position, all maternal attributes are ostensibly assigned to them – ample breasts, wide hips, generous thighs



Fig. 1 Feminine figurines across northern Europe, in which indices of fertility are exaggerated: the group has a powerful symbolic value, further emphasized by the barbed sign (masculine value) placed on the shoulder of the figurine on the right. (Left, Willendorf, Austria; Centre: Dolni Vestonice, Moravia; Right: Malta, Siberia)

– all in an impersonal mode proper to the mythological atmosphere (fig. 1) because they are fixed in an ideal model extracted from the religious conscience-but reflecting no reality.

An example are the Sepik fetishes, always identical, always strange, always far from any real forms but grouped by the unique space in the men's house (fig. 2).

Woman is not represented from common observation, but is only a form created by the religious spirit, that which presides and governs existence and thus dictates its laws to nature. Everything in Palaeolithic art is reduced to the play of symbols: specific aesthetic rules strictly governing animal representations, even more so as they are both thought and experienced. And we can recognize species as common as horse and reindeer through the traditional stylistic filters. Their proportions are aligned with cultural codes much more than with codes imposed by their

simple natural aspect. None of the waterfalls represented in China has anything in common with that of a Romantic European landscape: they are two spirits in opposition that combat one another through stylistic codes.

This complementary duality is also found in masculine forms. Shamanic figurines accompany the trance (little death) and, in the grave, they embody the living man, persist with him, embody his spirit and correspond to his spiritual nature beyond any other form of existence. The burial of Brno (Moravia) contains one, like all shaman's graves. Modern Evenks and 18th-century Yakuts (fig. 3) smoked the graves to lift the spirit to the cosmos and to mix it with the celestial sphere (Lot-Falck, 1953).

Everything is asymmetric in this dual world: man is represented here with anatomically precise details while woman is reduced to a symbol of universal procreation. Men and women are clearly associated

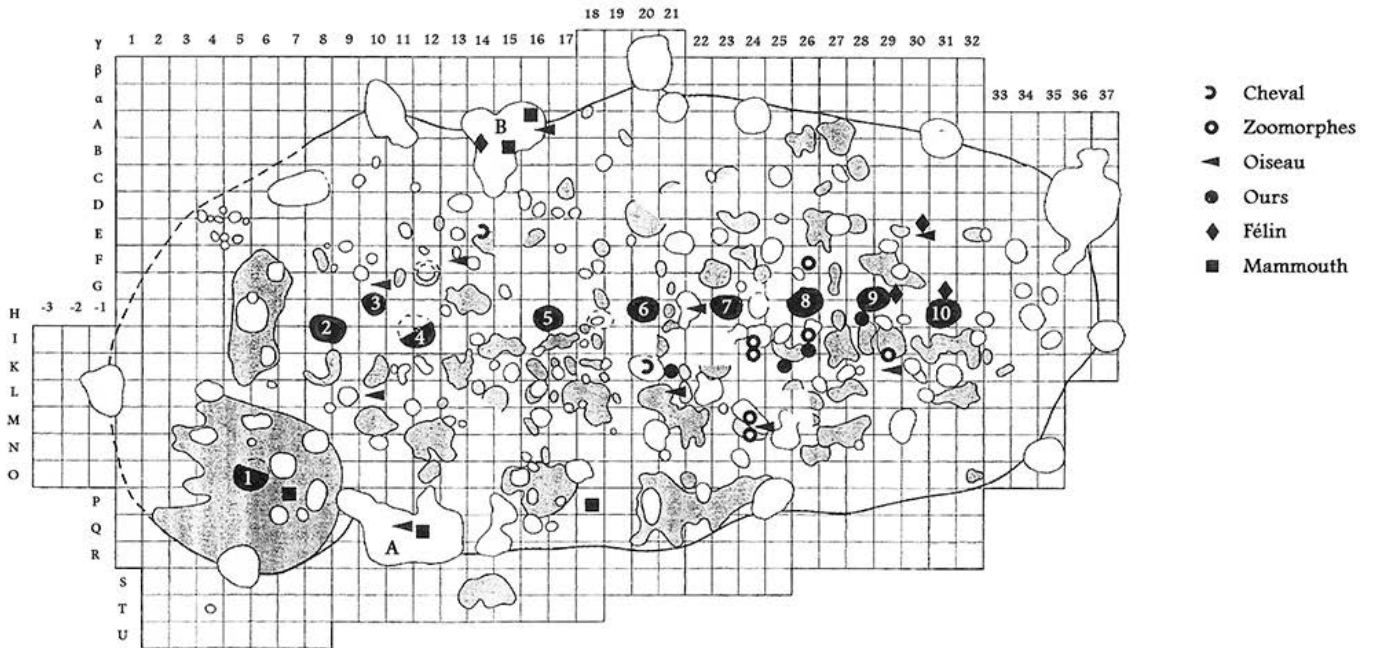


Fig. 2 Comparison between collective layouts, elaborated and ritualized by the use of mobile art: among the Sepik and in the European Palaeolithic (Kostienki, Russia, after Iakovleva, 2004).

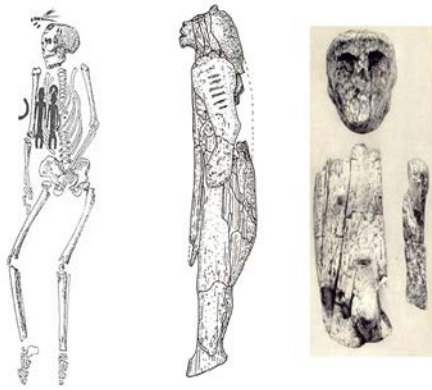


Fig. 3 Masculine value of the figurine, reduced and embodying the spirit of the shaman during his trance: Yakut Shaman (top), Evenk shaman's grave, (18th-century), Stadel figurine (Aurignacian, Jura Souabe), Brno figurine (Moravia, Gravettian).

with different and opposing animal species, varying by traditional codes, from the ass and cow in Christian crèches to the snake and the eagle in Mexican by them that moves symmetrically from illusion to frightening reality. And all is combined in the firm myths. Structured spaces group these forms, both on cave walls and in the large quarried structures of the Eastern Palaeolithic (Iakoleva, 2004, fig. 2). The values of one or the other appear to be transposed in isolated animal representations, exactly as if the mythological spirit had devoured the human image to the point of obliterating its form. It takes a metaphorical role, like the lions on our flags, bears, eagles, snakes: all fearsome animals but absent in the contexts where they intervene in symbolic mode. None of these species has an authentic identity va-

lue but their images play on ambiguity, because the terror they inspire is shared by the clan confronted with the evocation of the divinities, male and female, enriches in turn the combat of physical love between men and women, always gained, always lost.

Even in this attempt, the combat itself becomes mythological. It sublimates instincts to reach ecstasy, once again in the shamanic mode. Banners decorated with terrifying monsters embody the natural forces with which they are identified. Thus the destiny of man is aligned with the destiny of the gods, like the national colours, by forming the ultimate schematic reduction. But the imperial and cruel eagle still reigns, through its symbolic function, over collective minds in which mythological disenchantment persists, like the eagle of the shamans overlooking the battle against natural spirits. It is disheartening to note how much the strength of the symbol still governs us, without resorting to daily politics, all advertising use nothing else, but their ends are obviously less metaphysical.

References

- Cassirer, Ernst,
1972 *La Philosophie des formes symboliques*, 2. La pensée mythique, De Minuit, Paris.
- Eliade, Mircea,
1949 *Traité d'Histoire des Religions*, Payot, Paris.
- Iakoleva, Lioudmila,
2004 *Les habitats en os du paléolithique supérieur en Europe Orientale*, Dossiers d'Archéologie, 291, Le Quellec, Jean-Loïc,
- 1993 *Symbolisme et art rupestre au Sahara*, L'Harmattan, Paris.
- Leroi-Gourhan, André,
1965 *Préhistoire de l'Art occidentale*, Citadelle-Mazenod, Paris.
- Lot-Falck, Évelyne,
1953 *Les rites de chasse chez les peuples sibériens*, nrf, Gallimard, Paris.
- Malraux, André,
2004 *Écrits sur l'Art*, nrf, La Pléiade, Paris

FROM WHERE TO WHY: SOME EXAMPLES OF ROCK ART LOCATIONS IN SCANDINAVIA

Kalle Sognnes

Professor Emeritus

*Norwegian University of Science and Technology
Trondheim, Norway*

Introduction

The question of why people started making art is one of the most intriguing questions that can be asked, especially about prehistoric art, including rock art, which it is impossible to answer. Detailed studies of rock images and symbols within their local macro- and micro-topographical contexts may, however, at least help us to explain why certain locales and panels were chosen. In this paper I present and discuss four rock art sites that in some way or other are linked to specific geographical and topographical features. Three of these sites are located in the Trøndelag region in central Norway, the fourth in the Ångermanland region in northern Sweden across the border from Trøndelag.

Why rock art was made is not a question of human intellectual capacity alone; carving and painting images and symbols on rocks in these regions must have been triggered by different causes specific to the people who lived there. The art in question is dated to the Stone Age. One possible cause was the first immigration into the new land exposed by the retreat of the Late Pleistocene glaciers, as was suggested by Gjessing (1945) and Hesjedal (1974) for some sites in coastal northern Norway; the land was taken into possession. This explanation, however, seems not to be valid for most of the Norwegian coast, where the making of rock art did not start until much later. Here I look into the question of why engravings were made at some particular rocks, knowing that the vast majority of suitable rock outcrops and panels bear no traces of ancient rock art at all. The answer to this question on a general level will remain an enigma, but

sometimes the rock itself provides us with clues that may lead us to at least partly answer this question. I here present four examples where this seems to be the case. For two of these sites (Tønsåsen and Bøla) the existence of special topographical features appear to have been of importance, while for the other two sites (Bardal and Högberget) the rock face itself may have been the decisive factor.

Tønsåsen

The Tønsåsen hill is located at Lånke Farm at the mouth of the Stjørdal Valley. Five rock art panels (Lånke I-V) are found near the hill-foot of the ridge, which forms a distinct topographic crescent-shaped feature, rising more than 100 m above the surrounding plain. The panels are found between 32 and 45



Figure 1. Map of the Tønsåsen Ridge with the Lånke rock art panels in Stjørdal, Trøndelag, Norway; contour interval 5 m. The shoreline is drawn at +30 m above the present sea level (after Sognnes 1994).

m above the current sea level but the map (figure 1) shows the situation with the sea level 30 m higher than today.

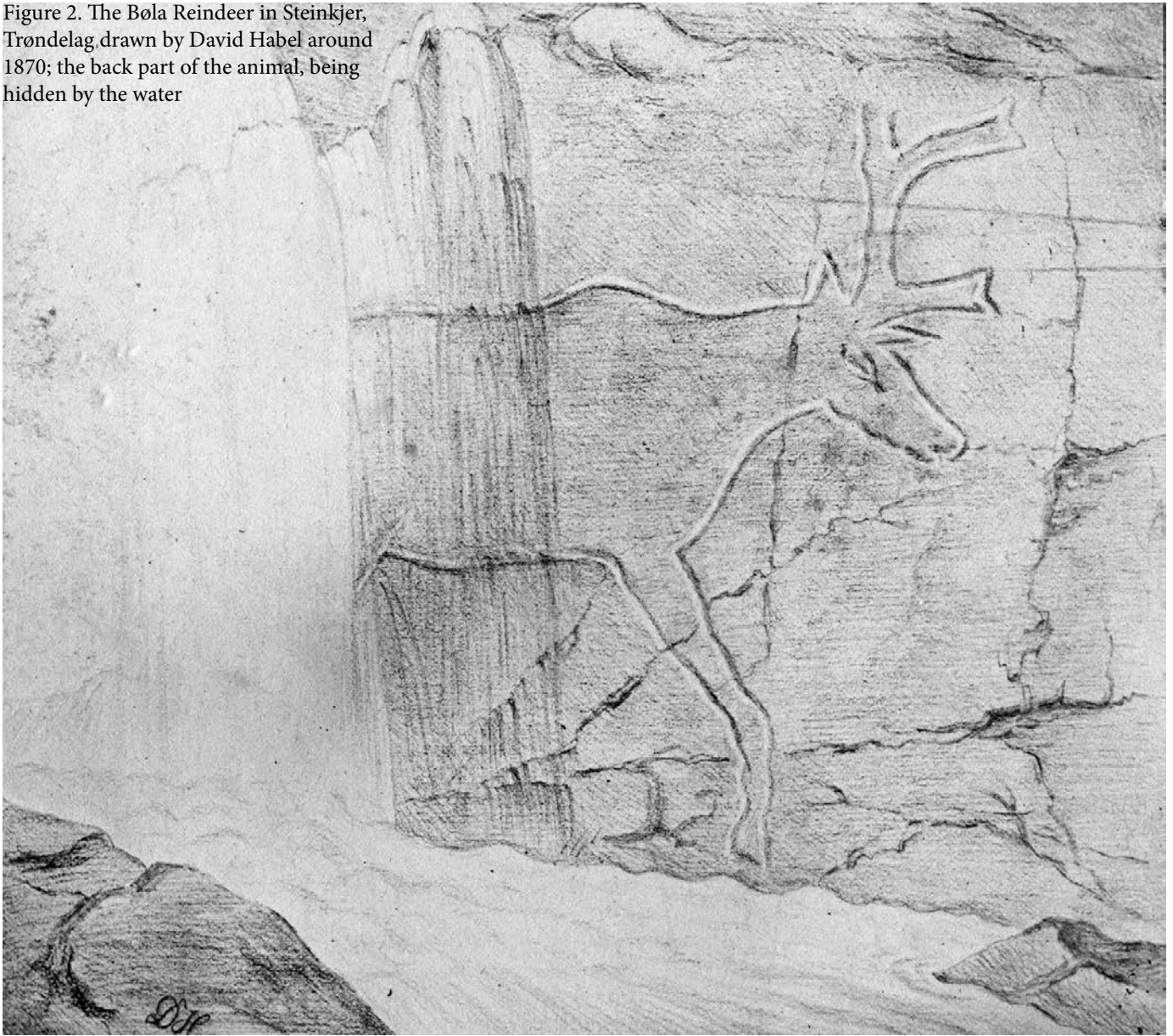
Remains of an old riverbed show that the Leksa River ran along the hill-foot shortly after the plain to the west of the ridge started emerging from the sea due to the Holocene land uplift. The rock consists of a coarse conglomerate with pockets of fine-grained matrix on which around 50 carvings are found near the centre of the concave western side of the hill (Sognnes 1981). Motifs represented are elks and other quadrupeds together with whales, birds and an anthropomorph, the range being wider than normal in this region. The shape of Tønsåsen must have been significant for the location of the rock carvings, forming a distinct element in the landscape that can be seen from far away, especially from the sea. In clear view from this site but on the western side of the former bay into which the Leksa River emptied, the Steinmohaugen hillock on Hell Farm forms a smaller but equally distinct feature in the landscape. At the time of the maximum date for the lower Lånke carvings as evidenced by the Holocene land uplift, Steinmohaugen was connected to the mainland by a narrow piece of low land. At the southwestern side of Steinmohaugen two large reindeer images together with some smaller ones are found on a vertical panel, which appears to be the only panel on this hillock that is not strongly weathered (Gjessing 1936; Hallström 1938; Sognnes 1999). Both sites face the Trondheimsfjord, which is the dominant geographical feature in the region. The fjord today is around 120 km long but until around 4,000 BC it comprised the large Lake Snåsavatn too, being more than 40 km longer. The fjord forms a series of basins separated by narrow sounds, each basin having its own name, which is the case also for the short tributary fjords, like the Stjørdalsfjord at the inner end of which the Lånke and Hell sites are located, where two valleys meet; the Stjørdal Valley coming from the east and the Leksdal Valley from the south. These sites at the same time mark the transition

between land and sea, the meeting between these two spheres being mirrored in the Lånke carvings. It seems reasonable to hypothesize that the local topography was of decisive importance for the making of this rock art and that we may be dealing with the remains of an ancient ritual landscape (Sognnes 2000).

Bøla

The Bøla site is located at the south side of Lake Snåsavatn . A rock carving depicting a full-size reindeer was discovered at the bank of the Bøla River in the early 1840s, during the construction of a milldam. This animal apparently reigned in splendid isolation for more than a century, but today it represents just one out of six rock art panels immediately above the last waterfall before the river empties into the lake (Sognnes 2011). Above the site the river runs against nature, cutting through a rock ridge in a narrow S-shaped channel created by meltwater during the deglaciation at the end of the Pleistocene. In this part the river does not run in the bottom of the shallow valley but higher up on the east side of the valley slope in the lower part in an acute angle to the rock face, forming a waterfall a few metres in front of the Bøla reindeer, which this carving is being referred to. During snow melting and heavy rain this waterfall may become as much as 30 m wide and during wintertime the entire waterfall may freeze into solid ice (Sognnes and Mohrsen 2004). Around 1970 some more carvings were discovered, among them a fragmented bear image. In 1991 more panels were found on the gently sloping rocks downstream from the waterfall. Motifs represented among these strongly weathered carvings are elks, a bear, some birds and a skiing human (Sognnes 2011). Normally the waterfall splits into two narrow channels, one at each side of the bear carving; however, during heavy rain this carving disappears below water. This occasionally happens to the large reindeer too: then both reindeer and bear apparently cease to exist. Hills, bogs and forests dominate the landsca-

Figure 2. The Bøla Reindeer in Steinkjer, Trøndelag drawn by David Habel around 1870; the back part of the animal, being hidden by the water



pe around this part of the lake. Earlier scholars like Gjessing (1936) suggested that the reindeer carving was made when the panel in question was located at the seashore, which means that it was seen as a fjord site. It is, however, primarily a river site, as demonstrated by carvings being made in and immediately around a waterfall. Yet, the distance to the sea during the later Stone Age was short – but steep. However, the Bøla carvings are not merely located by a river, but by a river that runs against

nature. The locations of three panels within the original river course further enhance the uniqueness of this site with animal depictions that erratically disappear and reappear, depending on seasons and weather conditions.

Bardal

Panels with rock carvings representing both the northern and southern Scandinavian rock art traditions are known from Bardal Farm at the north side of



Figure 3. The Bardal I panel in Steinkjer with its converging rows of oval, eye-like, grooves contains rock carvings from the Stone Age through to the Early Iron Age (photo E. M. Skeie).

the Beitstadfjord, the innermost present Trondheimsfjord basin. On the large Bardal I panel rock carvings apparently were made from Early Stone Age through to Early Iron Age (Gjessing 1935, 1936; Hallström 1938; Sognnes 2008). The local topography indicates that this panel may have functioned as a meeting place for people living in the area, with large open spaces both in front of and above the panel, and good landings for boats close by. Yet it primarily is the qualities of the panel itself that make it special and a place to be marked by rock art. The panel is virtually covered by carvings, Bronze Age and Early Iron Age strata being superimposed on the Stone Age strata. In total around 350 carvings are identified, of which around 50 belong to the Northern Scandinavian rock art tradition (Gjessing 1936; Hallström 1938). This is a rock that apparently was visited for millennia. Most of the earlier carvings today are strongly weathered and many are incomplete.

A cluster of large natural-sized carvings depicting elks are located near the western edge of the panel. Due to heavy weathering, the exact number of carvings in this cluster is unknown but four are fairly well preserved. The weathering indicates that these carvings were among the very first to be made on this panel, which means that the superimpositions were deliberate – as if the artists made a statement. The hooves of the elks are placed at different heights; This, together with the backwards curving of the rock, makes the smaller upper images appear to be further away from the spectators, giving the impression of the images being drawn in a true perspective. The size of the panel together with the large number of carvings make Bardal I one of the larger sites in the region, but this is not why it is presented here. Cracks and fissures cross the panel, following several directions and planes. Where three planes meet some blocks have slid off. More interesting are, however, two converging rows of oval depressions

obliquely crossing the panel, forming a horizontal V. These rows meet near the southwestern edge of the panel below the abovementioned cluster of large elk carvings. Both Gjessing (1936) and Hallstöm (1938) noticed them, and Gjessing (1936: 31) found that they functioned as steps, helping him to move around on the panel. Under favourable light conditions people visiting the panel may experience these grooves, many of which are marked by narrow white quartz bands, as large, natural rock eyes – as if the rock is staring back at the spectators standing in front of it. This effect may be the actual reason for why rock art was made on this particular rock as well as for the tight clustering of the first carvings.

Högberget

Visiting the rock art site at Åmnøy in Meløy, Nordland I noticed a fragmentary ‘image’ created by natural fissures that resembles the fragmentary contour line of the front part of a quadruped, likely a cervid (Sognnes 2012). These lines were made by the Late Pleistocene glacier and are found in the upper part of a wave-shaped rock outcrop consisting of fi-



Figure 4. Natural lines in the rock resembling parts of a cervid drawing at Högberget in Sollefteå, Västernorrland, Sweden (author's photo).

ne-grained granite. Below we find many large, naturalistic zoomorphic rock carvings made by grinding or polishing shallow furrows (Gjessing 1932; Hallström 1938).

A similar situation exists at the Högberget site in Sollefteå, central northern Sweden (Lindgren 1993). At the foot of a large vertical cliff some rudimentary rock paintings have been identified on a vertical panel at the foot of the cliff. The lower panel, Högberget I, is divided into two parts by a distinct vertical crack that Gjerde (2010: 367-368) sees as a symbolic river. Above a narrow ledge higher up on the cliff a second panel with paintings is identified and two more panels are found some hundred metres away on a large boulder under which a small cave is formed. In the left part of the lower panel, some natural lines in the rock surface can be identified as parts of the fragmentary outline of an animal, most likely parts of the hind leg, back and neck of an elk (figure 4). The Late Pleistocene glacier clearly made these lines too. On the plain in front of the large cliff a series of pitfalls used for elk hunting are found. These pitfalls link the rock art to elk hunting, traces of which are common in this landscape. It therefore seems reasonable to associate the Högberget paintings with elk hunting, but at the same time suggesting that the making of the paintings was triggered by the existence of the fragmentary zoomorphic image made by extra-human forces.

Conclusions

So far I have written more about where the rock art is located than about why it was made. The why question is extremely difficult to answer and we may become subject to what the American historian D. H. Fischer called the fallacy of metaphysical questions, since why questions tend to become metaphysical questions (Fischer 1970: 14). My choice of examples provide, however, some answers to the question of why certain sites and panels were chosen for the location of rock art: distinct topographical features and rock faces with special qualities, but not the que-

stion of why rock art was made in general in northern Scandinavia during Stone Age. This question is, however, also related to the wider landscape and how it was experienced and exploited by Stone Age people; rock art was not made everywhere. We are, however, here dealing with a time when mankind had already made rock art in Europe for several thousand years. The question that might be answered, therefore, is why rock art was made in this particular region during the Late Mesolithic and the Neolithic.

The motifs represented in this region are limited, with a strong emphasis on terrestrial and marine animals represented by cervids and cetaceans. Birds occur too but on a few sites only, as are anthropomorphs and boats. The rock art thus was an expression of the relationship between humans and certain animals, the larger and potentially most dangerous ones. The sites briefly presented here all are located at the outskirts of important hunting grounds, the Norwegian sites at the same time at the border between sea and land at panels that show (but not share) some special characteristics, the rock art being made by hunter-gatherer-fishers. In a wider context we find that many small sites are located within a region crossing the Scandinavian Peninsula between the Trondheimsfjord and the mouth of Ångermanälven River, where the large Nämforsen site is located (Hallström 1938). This region roughly marks the southern border zone between Samis and Scandinavians (Norwegians and Swedes). By means of the Holocene land uplift we can estimate the maximum dates for most coastal and fjord panels to the Late Mesolithic and to the Neolithic, at the time when the transition from hunting-gathering-foraging to farming started. The making of this northern tradition rock art therefore may have been a way of marking the land by the traditional owners as well as signifying a close and direct relationship between humans and animals.

References

- Fisher, D. H.
1970 *Historians' Fallacies, Toward a Logic of Historical Thought*. New York, Harper & Row.
- Gjerde, J. M.
2010 *Rock Art and Landscape: Studies of Stone Age Rock Art from Northern Fennoscandia*. Unpublished PhD dissertation at the University of Tromsø.
- Gjessing, G.
1932 *Arktiske helleristninger i Nord-Norge*. Instituttet for sammenlignende kulturforskning series B 21. Oslo, Aschehoug.
- Gjessing, G.
1935 *Die Chronologie der Schiffdarstellungen auf den Felsenzeichnungen zu Bardal*. Acta Archaeologica 6, pp. 125-139.
- Gjessing, G.
1936 *Nordenfjelske ristninger og malinger av den arktiske gruppe*. Instituttet for sammenlignende kulturforskning series B 30. Oslo, Aschehoug.
- Gjessing, G.
1945 *Norges steinalder*. Oslo, Norsk arkeologisk selskap.
- Hallström, G.
1938 *Monumental Art of Northern Europe. The Norwegian Localities*. Stockholm, Thule förlag.
- Hesjedal, A.
1994 *The hunters' rock art in northern Norway, Problems of chronology and interpretation*. Norwegian Archaeological Review 27, pp. 1-28.
- Lindgren, B.
2004 *Hällbilder i norr*. Umark 36. University of Umeå.
- Sognnes, K.
1981 *Helleristningsundersøkelser i Trøndelag 1979 og 1980*. Rapport arkeologisk serie 1981 no. 2. Trondheim, DKNVS Museet.
- Sognnes, K.
1994 *Ritual landscapes. Toward a reinterpretation of Stone Age rock art in Trøndelag, Norway*. Norwe-

- gian Archaeological Review 27, pp. 29-50.
 Sognnes, K.
 2000 *Det hellige landskapet. Religiøse og rituelle landskapselementer i et langtidsperspektiv.* Viking 63, 87-121.
 Sognnes, K.
 2003 *On shoreline dating of rock art.* Acta Archaeologica 74, pp. 189-209.
 Sognnes, K.
 2008 *Stability and change in Scandinavian rock art. The case of Bardal, Nord-Trøndelag, Norway.* Acta Archaeologica 79, pp. 230-245.
 Sognnes, K.
 2011 *The case of the lone reindeer. The Bøla rock art site in Trøndelag, Norway.* Acta Archaeologica 82, pp. 81-95.
 Sognnes, K.
 2012 *The 'polished' petroglyphs of North Norway: some methodological remarks regarding location and age.* Rock Art Research 29, pp. 47-58.
 Sognnes, K. and J. B. Mohrsen
 2004 *A midwinter day's mare.* International Newsletter on Rock Art 38, pp. 7-9.

SAHARAN ROCK ART SITES AS PLACES FOR CELEBRATING WATER

Jitka Soukopova

*Research Associate at the University of Bristol
 UK*

Abstract

The Central Sahara contains hundreds of rock shelters with paintings and engravings from various periods, stretching from prehistory until the recent historical era. Although the earliest rock art originated during a humid period, an intentional connection of numerous sites to water sources is evident. We do not possess a direct ethnographic record related to the ancient Saharan populations, yet thanks to the comparative studies of other African regions as well as to the extraordinary conservatism of African religion we can identify the core of ancient belief systems, being thus able to understand why water was one of the crucial elements in prehistoric rock art.

Keywords: water, religion, Round Head paintings, ethnography, Tassili mountains

Artistic production is extremely old in Africa, starting with simple objects such as engraved ochre pieces from c. 75,000 years old levels at Blombos Cave, Western Cape, South Africa (Henshilwood et al., 2009). In North Africa an Iberomaurusian site, Tamar Hat, revealed one of the oldest datable art objects found in the Sahara, namely an engraved stone in the form of mouflon horns, dated to the 20th millennium BP (Aumassip, 1986). In the Nile valley in Egypt the oldest rock engravings at Qurta representing wild animals date to 16,000–15,000 BP (Huyge, 2009).

The oral tradition belongs to a very ancient cultural heritage of the African continent. Indeed, the first computational methods derived from evolutionary biology have been used to reconstruct phylogenetic

protoforms for some of the African myths, showing that they have probably Palaeolithic roots (Le Quellec, 2015). Myths, stories, songs and ritual formulae have been an inseparable part of life of most African populations no matter their economy. Although African culture shows flexibility in its ability to adapt to newly introduced cultural and material responses, the essence of the belief system remains intact.

Interdisciplinary studies among Darwinian anthropologists, evolutionary psychologists, archaeologists, linguists and geneticists suggest that there was a primary tradition represented in the 'anatomically modern' *Homo sapiens* that gave rise to the migration probably about 80,000 years ago (Barnard, 2004). This migration would spread early symbolic culture within Africa and out of Africa.

Contrary to the widespread general conviction that all things must inevitably change in time and space, I argue that certain ideas or traditions were deliberately preserved through millennia. What if something was so important or even fundamental for the life/death issue that it had to be protected in its original form, fearing that otherwise events would go wrong? The preservation in time and space may be especially true for those notions regarding the very basic elements of life which water undoubtedly is, so that the mythology, rituals or any religious behaviour involving water might have been transmitted from generation to generation in their possibly unaltered form. To understand the rock art it is necessary to begin from its religious origin. This is much easier for regions in which the ethnographic record is available, such as South Africa. But can we find religious origins of the Central Saharan rock art, the region which is today almost completely empty and with almost no local ethnographic record? The answer is: yes, we can approach the reconstruction of the original tradition using comparative studies of the neighbouring regions. There is no domain in which man is so conservative as in that of religion (Janh, 1961). Thanks to the extraordinary conservatism of African culture we can identify the core of the ancient belief

system, which is still perceptible in the art.

Divine water

Water has always been of fundamental importance for African populations. Long before the onset of agriculture with the constant need of water for cultivation, prehistoric hunters were fully dependent on the availability of water. Dry seasons represented forced movements away from their base-camps and these long journeys often signified death for the weakest members of the group.

The essential role of water left a deep trace in the belief system of prehistoric societies and to water was assigned the first place in many myths concerning the creation of the world. In ancient Egypt, for example, all creation myths held that the world arose out of the lifeless waters of chaos, called Nu. The god Nu and his female counterpart Naunet represented the inert primordial water itself and they were symbolically depicted as aquatic creatures because they dwelt within water (Hart, 2004).

A very similar ideology is documented in the ethnographic record of the Dogon people in Mali, proving that the core notion that God is water persisted in the Saharan region for several millennia. In the Dogon cosmology God had intercourse with his earth-wife and water, which is the divine seed, entered the womb of the earth, which resulted in the birth of twin spirits called Nummo. God created them like water; they were half human beings and half serpents. These spirits were of the essence of God, since they were made of his seed, which is the substance of the life-force of the world. This force is water, and the divine twins are present in all water: they are water (Griaule, 1965).

In virtually every region in Africa gods and water spirits are believed to inhabit lakes, rivers, waterfalls and water-fed caves. In southern Zambia it is believed that many people, especially chiefs and culture heroes, enter water after death and become water spirits, thus associating water with ancestors or the

spirits of the dead (Smith and Dale, 1920). For San people underwater is a metaphor for death and it was through a waterhole that the great God climbed when he first came on earth (Solomon, 1992).

Rock art and water

Most of the earliest Central Saharan rock paintings are concentrated in southern Algeria, namely in the Tassili n'Ajjer mountains. These paintings called the Round Heads were created by dark-skinned hunters during a humid period starting at 10,000 BP. Many of the painted rock shelters chosen by hunters were from 7,500 BP used also by newly arrived pastoral populations who added their images next to those produced by hunters. In several cases, these shelters were later utilized by painters of the Horse and Camel periods starting at about 2,800 BP, when the climate was already dry (Soukopova, 2012).

Similarly to South Africa in the Central Sahara, also there are many more shelters without painting than with it, which means that the rock art sites were selected. A great variety of depicted subjects suggests that multiple activities occurred in the same sites, and the function of sites is likely to have changed in time. However, there are numerous cases where the rock art is clearly related to water sources and in such places water could have been the main protagonist for many centuries.

Often painted figures are located under an ancient waterfall (Fig. 1). Although the rock wall is large enough and the paintings could have been distributed in protected spaces, prehistoric painters intentionally placed human or animal figures at those points where water fell during rain. The importance of the place with its connection to rain water seems to have been primary, the painting activity being the result of this importance.

In traditional African culture rain is always sent by God (Mbiti, 1969). Rain water is therefore divine water which must be treated with due respect; water as an embodiment of God or spirits may be invoked or

used for important social purposes. The water is also the water of birth (Griaule, 1965) and indeed, sacred lakes in South Africa are believed to be inhabited by the spirit of the lake who answers the prayers of barren women (Doke, 1975).

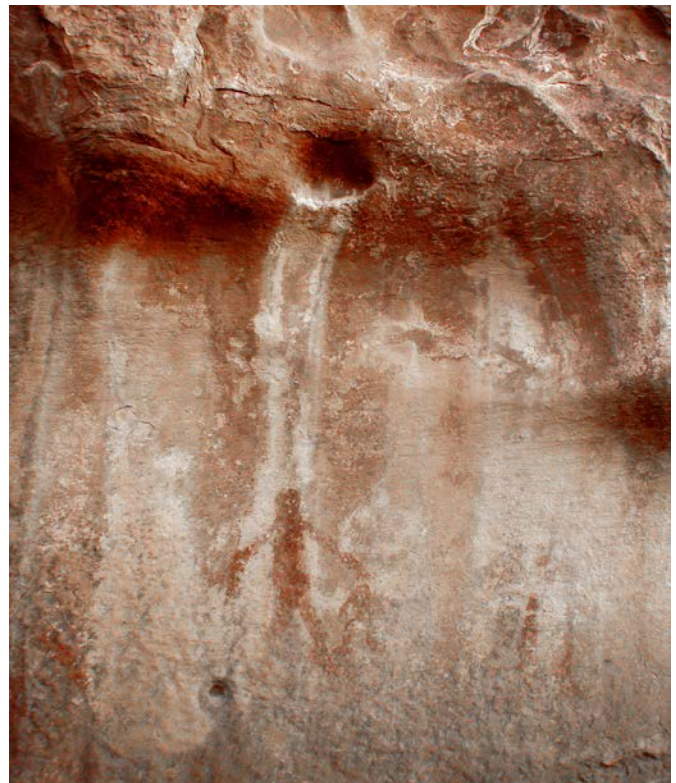


Fig. 1 A Round Head male and a probable child next to him were intentionally painted under an ancient waterfall passing over a natural kettle above the figures (Tahadaft, Tassili).

Rock sites of the South African Sandawe people are places controlling a defined area in which boundaries are marked by ritual activity (Lim, 1996). These sites are attended to only to attract rain, which means that no sacrifice occurs during years of sufficient rainfall. Thus, sites are repeatedly visited when necessary. A similar pattern may have occurred in those Central Saharan rock art sites in which there are depicted possible rain animals, namely fantastic down-headed quadrupeds which look very like the rain animals of San rock art (Lewis-Williams, 2004; Soukopova, 2011). If so, in these sites the painting was a by-product of rain rituals.

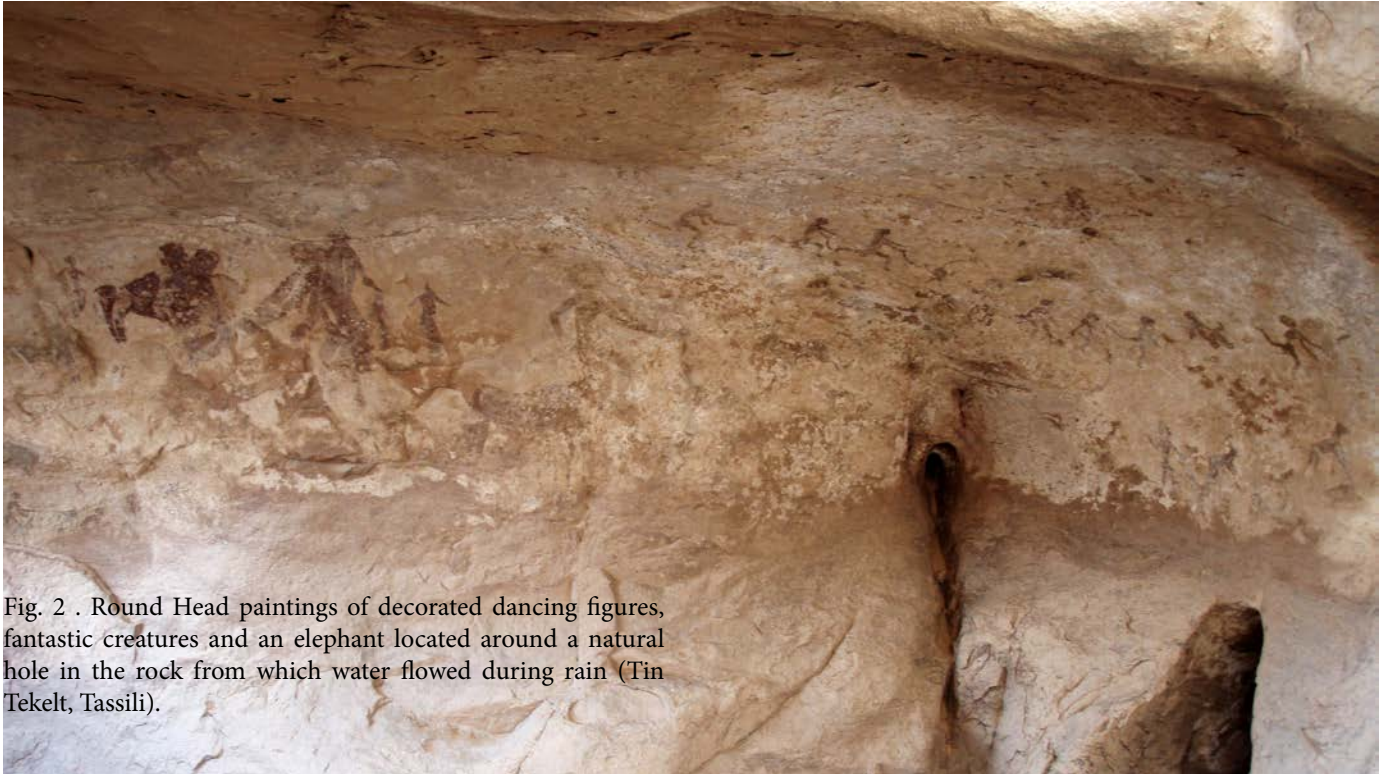


Fig. 2 . Round Head paintings of decorated dancing figures, fantastic creatures and an elephant located around a natural hole in the rock from which water flowed during rain (Tin Tekelt, Tassili).

According to the Dogon belief system breath as a vapour is a form of water, which is the principle of life. Breath is the clouds and the blood is the rain that falls on the world (Griaule, 1965). This notion is also perceptible in rock art. In many parts of Africa spraying water from the mouth on ritual objects or animals is an act of reconciliation between humans and supernatural entities, such as spirits, ancestors or witches (Mair, 1969). One of the oldest forms of rock art, namely hand stencils, may represent this belief. Spraying coloured water on the sacred rock surface and leaving in this way a personal handprint may, at least in some cases, have signified the act of a direct communication between a person and the spirits of the place. The Dogon belief that blood is the rain that falls on the world is surprisingly similar to the belief of San peoples in South Africa. According to them the blood of the rain animal, caught and killed by a rain man on a hill, falls down on the world as rain (Lewis-Williams, 2004). Since the same

belief is associated with different ethnic groups separated geographically by thousands of kilometres, I suggest that in this case also we are dealing with a very ancient notion which was possibly spread over the African continent in prehistoric times.

Continuity of ritual places

Since the earliest Saharan rock paintings originated during a humid period, virtually all rock art sites were near to a water source and many of them are located on riverbeds, facing directly ancient streams. However, there are many cases of rock sites in which a further and more close contact with water was established. One of the best examples is the site of Tin Tekelt on the Tassili plateau which has been used for ritual purposes from prehistory until modern days. In the main shelter of this site the Round Head paintings are located around a natural cavity in the rock wall from which water flowed during rain (Fig. 2). The scene represents decorated dancing people,



Fig. 3 A shallow kettle carved on an inclined surface of a boulder under an ancient waterfall (Tin Tekelt, Tassili).

Fig. 4 A double arrow indicates the 'child's foot', a place on the rock wall where the Touaregs pour milk and oil as a sacrifice in order to attract rain (Tin Tekelt, Tassili).

fantastic creatures and also an elephant, an animal which needs to drink around 100 litres of water every day and perhaps for this reason the elephant is one of the San's rain animals (Solomon, 1992). Not far from this scene another point celebrating water was created. Under an ancient waterfall a very shallow kettle was carved on an inclined surface of a boulder, so that during the rain water washed this small depression (Fig. 3).

A proof of an extraordinary continuity of the site as a place connected to rain water is the fact that it has been used for ritual purposes until recently. In a nearby shelter there is a small rectangular cavity in the rock surface which the modern Touaregs call the



'child's foot'. According to their belief, in very ancient immemorial times a child impressed his little foot into the rock and since then the shelter became a kind of sanctuary. For generations, in extremely dry years the Touaregs visit the shelter and they pour milk and oil on the 'foot' as a sacrifice in order to attract rain (Fig. 4).

This site, chosen as a place of ritual by the Early Holocene hunters, was later frequented by pastoral people, as attested by their paintings, and it was still known as a ritual place millennia later. Although the economy, culture and ethnic groups changed, some Central Saharan sites evidently conserved their special status for many generations. Considering all the notions that water implies (God, spirits, fertility, ancestors, etc), the function of rock art sites connected to water could have been multiple and much more complex.

References

- Aumassip, G.
1986 *Le Bas-Sahara dans la préhistoire* (Algiers: Editions du CNRS).
- Barnard, A.
2004 *Kalahari revisionism, Vienna and the 'indigenous peoples' debate*. Paper presented at the eighth EASA conference, Vienna, 8–12 September 2004.
- Doke, C. M.
1975 *Trekking in South Central Africa, 1913-1919* (Roodeport, Transvaal: South African Baptist Historical Society).
- Griaule, M.
1965 *Conversations with Ogotemmel: An Introduction to Dogon Religious Ideas* (London: Published for the International African Institute by Oxford University Press).
- Hart, G.
2004 *Egyptian Myths* (Austin, TX: University of Texas).
- Henshilwood, C. et al.
2009 *Engraved ochres from the Middle Stone Age levels at Blombos Cave, South Africa*, *Journal of Human Evolution* 57: 27-47.
- Huyge, D.
2009 *Late Palaeolithic and Epipalaeolithic rock Art in Egypt: Qurta and El-Hosh*. *Archeo-Nil* 19: 109-118.
- Jahn, J.
1961 *Muntu. La civiltà Africana moderna* (Torino: Einaudi editore S. p. A).
- Le Quellec, J. L.
2015 *En Afrique, pourquoi meurt-on? Essai sur l'histoire d'un mythe africain*, *Afriques* [online], Varia, at <http://afriques.revues.org/1717> (accessed 28 July 2015).
- Lewis-Williams, D. J.
2004 *The Mind in the Cave. Consciousness and the Origins of Art* (London: Thames & Hudson).
- Lim, I. L.
1996 *A Site-Oriented Approach to Rock art: A Case Study from Usandawe, Kondoa District*. KAUPIA: Darmstädter Beiträge zur Naturgeschichte, Heft 6: 79-85.
- Mair, L.
1969 *Witchcraft* (New York: World University Library).
- Mbiti, J. S.
1969 *African Religions & Philosophy* (London, Ibadan, Nairobi: Heinemann).
- Smith, E. W. and Dale, A. M.
1920 *The Ila-Speaking Peoples of Northern Rhodesia* (London: Macmillan)
- Solomon, A.
1992 *Gender, Representation, and Power in San Ethnography and Rock Art*, *Journal of Anthropological Archaeology*, 11, 291-329.
- Soukopova, J.
2011 *The earliest rock paintings of the Central Sahara: Approaching interpretation*, *Time and Mind: The Journal of Archaeology, Consciousness and Culture* 4/2: 193-216.
- 2012 *Round Heads: The Earliest Rock Paintings in the Sahara* (Newcastle upon Tyne: Cambridge Scholars Publishing).

THE GODDESS AND THE COPPER SNAKE: METALLURGY, STAR-LORE, AND RITUAL IN THE ROCK ART OF THE SOUTHERN LEVANT

George F. Steiner

Independent researcher

*P.O.B. 12, 84990 Midreshet Ben-Gurion, Israel /
Heuerberg, 8784 Braunwald, Switzerland.*

Abstract

Pastoralism and metallurgy emerged simultaneously in the arid southern Levant, with the first attested records dated to the Late Neolithic. The two economies reached their maturity during the Chalcolithic and the Early Bronze Age. The bulk of the rock engravings of the Negev Desert and the neighboring areas are dated precisely to this period. Their symbolism bears witness to the compatible values of smiths and nomads. These beliefs are also well-reflected in nomadic star-lore, which is apparently the oral version of the stories told by a number of petroglyphs. The literature describing the relations between pastoral nomads and itinerant coppersmiths, from ancient to modern times, emphasizes the special status of the latter, which is expressed in their role as marginalized ritual specialists. Even that the values professed by coppersmiths left a deep mark on the mythology of the nomad, the influences were reciprocal, and the descendants of the Bronze Age smelters would become the champions of nomadic virtues during the Iron Age.

Keywords

After-life beliefs, Ashera, biblical, Kenites, masseboth, metallurgy, Negev, nomadic pastoralism, petroglyphs, Recabites, ritual, Solubba, star-lore, tumuli

Introduction

The archaeological record of the period when pastoralism emerged in the Negev Desert and rock art – which is an integral part of the record – are, to the author's knowledge, not sufficiently correlated in the literature that deals with the period. Moreover, the influence of metallurgy, another parallel development, is utterly ignored in the interpretation of rock art. In this paper, the impact of metallurgy on the representations of the nomads is sought for in the symbols engraved by the latter. Nomadic star-lore, as another expression of symbolic thought, is presented as an integral part of the picture. The archaeological record, which reflects the beliefs of the period discussed can be interpreted correctly only when all the components of the nomad-metallurgist mentality are analyzed and reported to each other. The author argues for an approach to the interpretation of rock art and the archaeological record from the perspective of the apparent affinity between the symbolism of desert star-lore and metallurgical concepts. The aim of the paper is to offer a coherent image of the spiritual landscape of the ancient Negev, which was apparently the result of the cultic cooperation between smiths and nomads. In order to achieve this, the paper describes the shift in mentality from agricultural to pastoral concepts (Shepard 1998), the compatibility of the latter with metallurgist values (Amzallag 2008, 2009), and the reflection of these beliefs in the archaeological data of the period (Avner 2001; Rosen 2007). Solid archaeological evidence is compared to less-palpable oral traditions that survived in nomadic star-lore (Bailey 1974). Moreover, a ritual frame (Lewis-Williams and Dowson 1988; Garfinkel and Waller 2008; Kent 2010; Mailland 2015a) into which the aforementioned concepts were introduced is also sketched and suggested.

To illustrate the hypothesis proposed in the paper, an iconic symbol that surfaces in a number of rock engravings from different locations in the area is singled out and interpreted in various contexts, from different perspectives. The symbiotic partnership

between tent-dwellers and itinerant coppersmiths is followed through the ages and taken beyond the limited information that we possess, which is restricted to the biblical account. Apparently, the Kenite coppersmiths and their descendants were associated with most of the nomadic groups of the southern Levant and the Arabian Peninsula (Wolff 1835) and a vestige of such a partnership is documented to our days (Glubb 1943; McNutt 1994; Betts 2003, 2004).

Discussion

1. The Parallel Emergence of Pastoralism, Metallurgy and Rock Art

1.1. Pastoralism

The earliest evidence of animal herding in the Negev Desert does not necessarily coincide with the date of the domestication of goats and sheep, but it would take another thousand years, and by 5,500 BCE pastoralism seems to be an already well-established economy. This date is based on the analysis of dung layers in cave-shelters (Eddy and Wendorf 2002; Levy 1983) that are very similar to those still in use by contemporary Bedouin. In other parts of the world there is earlier evidence, precisely from the period of domestication. The introduction of caprines to Africa occurred in the 6th millennium BCE (Close 2002) and because the generally held opinion is that small domestic livestock originated in southwestern Asia, it is only a logical conclusion that these domesticates were present in the area of the only land bridge between the two continents at an already earlier stage (ibid.; Makarewitz et al. 2016). Nomadic lifestyle and multi-resource pastoralism (Haiman 2002; Rosen 2003) are already well-documented during the Chalcolithic and the Early Bronze Age. In these periods the fully nomadic lifestyle alternated with semi-nomadic pastoralism according to the intensity of rainfall and the availability of forage (Rosen 2003). Pastoralism proved itself to be one of the most durable economies ever known to mankind, and it persisted in an almost unaltered form to the

present.

1.2. Metallurgy

Metallurgy had a parallel development with that of nomadic animal husbandry. The first tentative experiments occurred long before the “official” start of the Copper Age in many areas outside the southern Levant, but the wish to see metallurgy as a linear development with its origins in the Middle East led some scholars to adopt a diffusionist approach to the subject. Others, by taking into consideration the apparently autonomous development of copper metallurgy in isolated regions, proposed a localizatio-nist solution. However, there is a difference between crucible smelting, which is an early technology with the source of heat around the reactor, and furnace smelting, a more developed process with the source of heat within the reactor itself. The smelting of copper is attested in the southern Levant from the 5th millennium BCE. The peculiarity of this area is that copper does not occur in the form of lumps and thus, instead of the more incipient crucible smelting, furnaces were used starting with the earliest stages of copper smelting (Rothenberg 1992; Amzallag 2009).

1.3. Rock Art

The earliest rock engravings in the Southern Levant are dated precisely to this period (Anati 1985), when pastoralism and metallurgy become established. However, the bulk of the petroglyph corpus is dated to later periods (Chalcolithic and Early Bronze Age) (ibid.), when the two economies reached their maturity. This period witnessed unprecedented population densities in the Negev, but this was to change starting with the Middle Bronze Age II when the Negev and Sinai would become depopulated for almost 900 years, due to harsh climatic conditions. It is only at the start of the Iron Age when human habitation and rock art – already complemented by rock inscriptions – are recorded again. The spatial distribution of the Chalcolithic and Bronze Age rock

art seems to be related to the copper industry and it is present mainly along the corridor running between the three major centers where copper deposits occur: Punon, Timna and Serabit el Khadim. Other concentrations are found along the dry riverbeds and mountain passes used by pastoralist populations in their migrations between the Edom Plateau and the Delta, where there was always available forage for the flocks, even in lean periods.

2. Pastoralist Values and Beliefs

2.1. *The Shift in Values: Sky vs. Earth; Cyclic Renewal vs. Fertility*

The new economy attracts a shift in mentality, and values that are very different from those of agriculturalist populations start being professed by desert nomads. The new concept of the world becomes more sky-oriented, as opposed to the earth-dominated perception of agriculturalists. While fertility plays a central role with the latter, in the desert, where there is no fertility to talk about, the cyclic renewal of the seasons that determine not only the availability of forage, but also the movements of the animal herders and their livestock, gains importance. The location of the sacred is also shifted, and it moves skywards: the generous mother-goddess of the peasant, identified with the earth and fertility, is gradually replaced by the father figure of a sky-god who is keeping an eye on his subjects and regulates the cyclic renewal of rains and forage – as a gift or punishment – from his abode, which is usually located on a holy mountain (Shepard 1998; Steiner 2010). This shift in symbolism becomes also reflected in social organization, with the matriarchal order of the agriculturalist being gradually replaced with the patriarchal values that are so typical to pastoralist societies. The world itself becomes vertically stratified, with a lower world of man and a higher otherworld and after-world, where the shepherd-god and the ancestors are at home.

2.2. *Ancestor Worship, Lineage Families and the Pre-occupation with After-life*

However, the idea of the mother-goddess of the agriculturalists is not forgotten and the fertility that she is symbolizing, but which is missing in the desert, is projected on the after-world, which is perceived as qualitatively superior to ours. The concept of Paradise as a reward, the yearning for a place at the side of God, the green color of Islam, and the persistence of a female deity at the left-hand side of the omnipotent male god may have their source in this symbolic reshuffling of the roles played by gender. Monotheism is another general inclination that characterizes the nomad, and its emergence in the southern Levant is paralleled by similar developments in Central Asia (Shepard 1998; Steiner 2010; Mailland 2015a). Ancestor worship and lineage families, both related to the vertical hierarchy of the nomad's world, are also characteristic to the period, as evidenced by archaeological remains like tumuli, masseboth and alignments on one hand, and rock art symbolism on the other. What must be stressed here is that the notion of an after-world is related to renewal and transcendence and that these concepts reflect the supreme concerns of desert nomads.

2.3. *Common Rock Art Motifs and Their Temporal and Spatial Continuity*

A common representation of the female principle related to after-life is an ankh-like figure with out



Fig. 1 The icon discussed in the text at various locations in the Negev Desert (drawings based on photographs by the author)

stretched arms. The left arm (from the observer's point of view) is represented as ending in a hand with exaggerated fingers, while the right arm is drawn as a snake. The rock engraving is known to the author from three different locations in the Negev (Nahal Zihor and Nahal Zin, and an additional, slightly different, but obviously related drawing on Har Karkom). The same motif is known from southern Transjordan and northern Hejaz. However, the dominant motif in the rock art corpus of the Negev, which is featured in not less than 63% of the engravings (Anati 1985), is that of the ibex. The ibex drawings can be interpreted in at least six different ways (depending on the context in which they appear), which are complementary to each other. In the light of what was said up to this point, the ibex may be perceived as (i) the mediator between the two worlds: at daytime, the ibex descends to the lower world of man, while at nightfall it climbs to high and inaccessible places, where God is at home. As professional shamanism is also a phenomenon that characterizes the period discussed (Gilead 2002), and because ritual specialists are known as mediators, the ibex symbol may be (ii) a representation of the form assumed by the latter. The crescent-shaped horns of the wild goat declare its (iii) affinity with the moon, which is (iv) a universal symbol of renewal and transformation, but also (v) the symbolic representation of the Semitic moon-god Sin (Bastoni-Brioschi 1998; Wachtel 2014). With time, it would also become (vi) the symbol of coppersmiths and their trade, as they would gradually take over the role fulfilled by the shamans. Winged, bird-like figures, very common in the petroglyph corpus, are also related to this mediating role and may be seen as the forerunners of the later concept of angels. The snake is another very frequently depicted motif related to renewal, mediation and transcendence. What characterizes the motifs that dominate in rock engravings is their spatial and temporal continuity. They are located at hundreds of miles from each other and were engraved in periods separated by

thousands of years. From Chalcolithic to Bedouin times, the same motifs resurface in different corners of the southern Levant, a territory that was defined by the same economy and climate.

2.4. *Desert Star-lore, the Essence of Pastoralist Beliefs*

The seasonal return or disappearance of particular stars, asterisms, and constellations was either anticipated or dreaded by the desert nomad, depending on the blessings or curses of which they were harbingers. The stars became familiar figures, personalized as heroes or villains, and their stories were engraved in rock or handed down through generations, as poems and proverbs that were also related to the theme of cyclic renewal. Bedouin star-lore in the Sinai and Negev (Bailey 1974) cannot be very different from that of the nomads who preceded them in the region, given the longevity and stability of the pastoral way of life and the example of the temporal continuity of the motifs depicted in rock art. Petroglyphs that are presumed to depict asterisms and constellations should not be interpreted as sky-maps – which the nomad does not need – but as graphic references to well-known stories and concepts told and illustrated by the stars. This is an important function in a culture based on memory and oral transmission. Beside orientation in space – which is undoubtedly important to the nomad travelling in the desert at night – stars are also useful for orientation in time: the beginning of the rainy season, the sprouting of the vegetation on which the survival of the flocks depends, the calving period, and other events that are of crucial importance in a nomad's life are correlated with the nocturnal or heliacal rising and setting of certain stars.

Only the circumpolar area around the constellation Draco is visible all year long. Draco, not only because of its reliability, but also because of its shape, may be easily imagined as an ibex, with the polar star drawn as a dot inside its horns, or represented as a kid (the Arabic name of the star is al-Jidy, which

means kid). Later, the image of the ibex would be replaced with that of a pregnant or calving she-camel (Eisenberg-Degen and Rosen 2013), whose story is mentioned in the Qur'an and which is related in another paragraph. Draco – because of its year-long presence in the sky - is also identified in tradition as the seat of God. To the left of Draco (from the viewpoint of the constellations), one can trace out an ankh-like figure, with its head on the polar star and its body corresponding to the axis of the constellation Cepheus, which is also situated in the circumpolar area. The figure has two arms: one of them ends in the constellation Cassiopeia (the name of β Cassiopei, Kaph, means palm in Arabic and Hebrew and it is known as the “lucky hand” to the Bedouin) and is represented with three exaggerated fingers. The second arm is a horned snake that is drawn along the neck and head of the camel, which is Draco. This is the figure that we have already mentioned and identified as the goddess related to renewal, at the left of God.

Between October and March, the arc described by her three fingers encompasses the celestial area where asterisms and stars associated with luck (Capella), rains (Pleiades, Aldebaran and Betelgeuse) and the renewal following them (Hamal) are positioned. The constellations in which these stars are located (Orion, Taurus, Auriga, Aries) are found precisely within that arc of the ecliptic which is associated with the vernal equinox and the period immediately preceding it. The proposed position of the goddess in the sky becomes even more significant when we take into consideration that her outstretched arms encompass precisely the 90° of the ecliptic that is situated between the winter solstice and the spring equinoxes of today. Thus, her role in renewal is emphasized: she seems to be involved in the transition between winter and spring, which is characterized by increasingly longer days.

Aldebaran (Imjayid in Arabic) is a bright red star that dominates the winter sky. Its counterpart is another red star, Antares (Uheymir in Arabic) that

rises in the east at sunset when Aldebaran disappears in the west, and it is a permanent feature in the summer sky. Not incidentally, the snake-like arm of the goddess points precisely to Antares, the red heart of Scorpius. Thus, she attracts attention to the relatedness of the two. Given the complementary character of the two stars, it is very plausible to perceive Antares as the summer aspect of Aldebaran. Its apparent role at the peak of the dry season is to prepare the return of Aldebaran and the rains. The scorpion's task in summer is carried out by two dogs towards the end of winter (Canis major and minor), which are hunting down Orion to enable the return of the spring. The star Sirius (Burbarah, “the barking one” in Arabic) of Canis major may have a central role in the chase. There are many petroglyphs scattered all over the Negev, which seem to depict such a symbolic hunt. The nocturnal rising of Sirius coincides with the setting in of a 40-day period, known as Al-Arbainiyah to the Bedouin. This is followed by spring and the plenty that comes with it. The hunt may be understood as a 40-day chase, meant to restore the sun, so important to the growth of vegetation. Semi-nomadic Bedouin, who are practicing part-time, so-called “dry” agriculture, see in the nocturnal rising of Sirius a marker that sets the time for the sowing of winter-wheat (ibid.).

In Fig. 2, the dominant constellations of the winter sky (Taurus, Orion) are represented as zoomorphic figures, while the summer constellations (Virgo, Scorpius, Libra) are imagined as snakes and

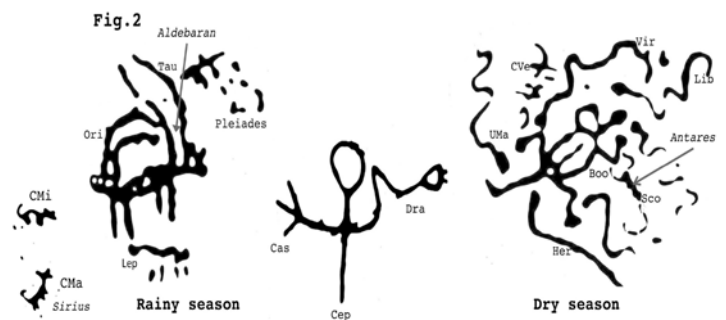


Fig. 2 “The Goddess” parting the winter (left) and summer (right) constellations (drawings based on photographs by the author)

scorpions devouring a bird-like lizard (Bootes). Incidentally, this petroglyph seems to depict that arc of the ecliptic in which the autumn equinox occurs. Thus, it may be a parallel story to that told by the petroglyph to the left of the goddess in the figure. May to October is the “cursed” part of the year, as opposed to the “blessed” period between November and April, which also corresponds to the gestation period of the ibex. The kids are born together with the vegetation that sprouts as a result of the rains that impregnated the earth during these months. Hence, the pregnancy of the ibex is parallel to that of the earth. The emphasis on cyclic renewal in star-lore is evident and the involvement of the goddess with the outstretched arms, although related to fertility, is very differently defined. As she is apparently also associated with after-life beliefs, the stories related to this concept may be placed between the coordinates of Aldebaran and Antares, especially because the archaeological record of the period - as evidenced by prevalent orientation patterns - seems to reflect a preoccupation with this very subject.

3. Archaeological Support

3.1. *Alignments, Tumuli and Sacred Precincts*

The funerary traditions of incipient pastoralists are still different from those of evolved animal herders. Nawamis are communal burials (Goren 2002), while tumuli are individual inhumation sites. In the latter, the body is often buried in a fetal position, and some of the burial mounds are tailed: a stone wall is built as an extension to their eastern side, thus a general east to west orientation - aligned with the path followed by the sun or other celestial bodies - is consciously observed.

Walls are also common structures in the Negev, some of them only a few yards long, while others reach a few miles in length. The majority of these walls are also east to west oriented, with stelae (masseboth) or shrines on the eastern end and prominent burial mounds (tumuli) in the west. The best known

is the so-called “K-line”, a 2.8 miles long wall between Har Ramon in the east and Har Romem in the west (Haiman 2000). Most of these lines are related to tumuli fields and alignments and are dated to the Early Bronze Age I. Given their proximity to burial mounds, and because of their prevalent east to west orientation, it is assumed that they are in a way related to astronomical alignments and to dead cult, to ancestor worship or, to rebirth (Granot 2008, personal communication). The east to west orientation of these lines and of other contemporary archaeological complexes is usually related to the position of the setting sun on the day of the summer solstice (Rosen 2007). However, the author proposes a different approach, based on personal observation. This would explain the prevalent orientation of these alignments in the light of the already mentioned relationship between the stars Aldebaran and Antares. The relatedness of the two stars with the concept of renewal - which is central to both pastoralist and metallurgist beliefs, to rock art, and to the archaeological record, seems to be more than incidental.

There are two archaeological complexes in the Negev that illustrate very well the relationship between funerary traditions, after-life beliefs and the cycle of renewal. One of them is the sacred precinct on Ramat Saharonim in the Ramon Crater (Rosen 2007) and the other is the Zin-Mehia alignment on the Avdat Plateau (Steiner 2010).

The first example is a tumuli field, transitional in character, with tumuli that resemble nawamis, even that they contain individual burials. Their dating to the Neolithic – Chalcolithic transition coincides with the period of emergence and establishment of a pastoral elite. Four courtyard shrines and thirty large burial cairns are embedded in the landscape and are aligned with a prominent black volcanic hill to the west, and also with the setting sun of the summer solstice, with azimuth deviations of 2 to 8 degrees. The tumuli are set on parallel ridges and are visible from great distances. The alleged summer solstice alignment may be related to death symbolism and

the association of the shrines with the tumuli suggests a mortuary cult (Rosen, 2007).

The Zin-Mehia alignment was researched by the author, and it is located 20 miles to the north of the Ramon Crater, on the Avdat Plateau. It belongs to a later period, but it reflects the same concept like the Ramat Saharonim complex: an east to west oriented 2.5 mile long alignment that is situated between a pair of masseboth on its eastern end, aligned with two prominent hills in the west, on top of which there are large tumuli. The impressive burials may be the graves of real or epic ancestors and may also denote territorial claims. A number of rock art sites (with the oldest drawings probably engraved in the Late Neolithic or early Chalcolithic, and the more recent ones only a few decades ago), bamot, masseboth and shrines are strategically located on the alignment. From behind the stelae on the eastern side of the complex, on the day of the summer solstice, the sun is not setting behind the saddle formed by the two prominent hills topped by tumuli on the western end, and the azimuth deviation is much larger than that measured on Ramat Saharonim. However, in the first days of June, Antares rises in the east at sunset and sets behind the saddle at dawn. At the end of November Aldebaran describes the same path in the sky. Hence, the Zin-Mehia complex seems to be rather aligned with the trajectory of these two stars than with that of the sun. The orientation reflects the position of the equinoxes on the ecliptic 5,000 years ago, which corresponds with the age of the oldest petroglyphs found here.

The use of the same rock surfaces for engravings for thousands of years points to a continuity of traditions, which are apparently related to ancestor worship and after-life beliefs. A very frequent rock art motif that depicts a couple in praying posture is drawn on three rock surfaces that are only a few yards apart. Judging by the patina covering them, they were etched in the rock at periods separated by thousands of years. Moreover, a very old and elaborate depiction of the couple is engraved on a cracked

rock. Under the crack, the same couple is drawn in a rudimentary stick-figure style. Judging by the patina, the sketchy engraving is almost as old as the one above it. Apparently, the elaborate engraving was etched in the rock at the time when a certain ritual commenced here, while the less elaborate sketch was engraved when the ritual was already a well-established routine-like ceremony.

Such engravings are very common in the Negev and are characterized by a pronounced dimorphism of the couple, which is maybe emphasizing the difference in gender, very much like in the case of masseboth (Avner 1990, see below). There are also many Thamudic inscriptions in the area, which were interpreted as greetings and dedication to the dead (Tsafirir 1996), and were probably incised by pilgrims who arrived to the area to honor their ancestors. The two hills at the western end of the alignment are both topped by tumuli pairs that display the dimorphism mentioned above, namely: a large tumulus and a much smaller one to its left. Apparently, their age is identical to that of the elaborate engraving on the cracked rock. Hence, the reason that led to the planning of the alignment may be inferred, and related to ancestor worship, dead cult, rebirth, and transformation.

3.2. *Betyls and Masseboth*

Architectonically related to tumuli are the so-called galei-ed (sg. gal-ed, testimonial cairn). However, their function recalls that of betyls: they are witnesses to oaths, contracts and alliances – between people, tribes, or man and God. Betyl means literally “house of God” (beth-el). They are usually purposefully erected rocks, in which the divine essence was thought to dwell. Meteorites falling from heaven were especially valued, because of their origin in the abode of the sky-god. Only 50 years ago, the Bedouin were still using the howdaj, a curtained acacia-wood frame mounted on a very special camel, which was lined with ostrich feathers and housed a holy chunk of meteorite thought to possess supernatural quali-

ties. The rock was instrumental in leading the people and the herd to good pasture, and it was also taken with on raids, which are so typical to pastoralist economy. The merkab-el-howdaj is reminiscent of the Ark of the Covenant, which was after all meant to house stone slabs, the witnesses of a contract made on a holy mountain. A black, cube-shaped meteorite rock known as Cha'abu, and thought to house DuShara was highly esteemed by the Nabataeans of Petra (Peterson 2006), and the Ka'aba of Mecca was apparently also a betyl that was worshipped long before the emergence of Islam (Achrati 2003).

Sacred stones are not singular to Semitic pastoralists and they have a long tradition with desert nomads. They are known as masseboth and are very common in the Negev and the Sinai. They stand mostly in shrines, alone or in groups, with pairs or triads being the most common combinations, but groups of five, seven and nine do also occur. They are generally facing east and many of them have at their base a carefully placed circular compartment. Offering benches, altars and basins are in many cases also accompanying them (Avner 1984, 2001). Masseboth are also found on bamoth (platforms) and associated with tumuli. The earliest of them are documented from the Negev, Sinai and southern Transjordan and date from the 11th and 10th millennia BCE (ibid.). Masseboth become very frequent from the 6th to the 3rd millennia BCE, a period that corresponds to the emergence and establishment of pastoralism, and they were commonly erected through the biblical period and even later. Pairs of masseboth are usually arranged as a combination of a tall and narrow stone with a short, broad one. The former are thought to represent male deities, while the latter may symbolize a goddess (ibid.). From the perspective of the gods who were supposed to be within the stones, the short massebah stands to the left of the tall and narrow one. This pattern, which reflects gender, is comparable to biblical references of male names before female ones, either in the case of gods or people. It is also reminiscent of the already di-

scussed petroglyphs that emphasize the sexual dimorphism of a couple in praying posture, in which the smaller figure is generally drawn to the left of her tall partner.

In the rock art inspired by star-lore the pattern is also picked up and, from the perspective of the constellations, the figure of the goddess is placed to the left of that of the male deity (Steiner 2010).

In the early pairs of masseboth the female stones seem to dominate, while in later periods, which correspond to the crystallization of pastoralist values, the male stones apparently outnumber them. However, in the case of masseboth related to burials, the short stones representing the goddess become dominant, a tendency that may be related to the role of the goddess in rebirth and afterlife (ibid.). This seems to be also reflected in the orientation of the masseboth: in the desert, 89% of them are facing east, while in the fertile areas only 38% of them follow this orientation (Avner 2001). The parallel between the orientation of the already discussed alignments and that of the masseboth seems to be more than incidental.

4. The Compatibility of Pastoralist and Metallurgist Values

4.1. The Essence in the Rock

The symbolic encasement of the sacred in the rock is evidenced by the example of the betyls and masseboth, which were erected through the millennia in the deserts of the southern Levant. Suggesting an additional ritual function of rocks is the still not sufficiently documented use of turquoise and malachite (copper carbonates) as intentional grave deposits. The occurrence of turquoise in the tumuli of Jebel Qabiliat on the eastern flank of the El Qaa Playa in the southern Sinai, in the 6th millennium BCE (Close 1996) and of malachite in graves at Nag-el-Qarmila, not far from Aswan, during the Naqada II pre-dynastic period (Gatto and Giuliani 2007) may point to a ritual use of these minerals. Their presence at burial sites could be interpreted as related to after-li-

fe beliefs, like rebirth or transformation. The author has also found small pieces of malachite between the boulders of a tumulus on the Avdat Pateau, but these were never professionally evaluated. So far, in lack of sufficient data, the tentative correlations above are only proposed to motivate further research.

However, malachite must have played an important role in the symbolic thought of the period in which metallurgy emerged. Its essence is copper, and in the light of the previous paragraphs, a parallel between the essence encased in betyls and that present in malachite does not seem far-fetched, especially that this correlation may lead to a better understanding of the special status enjoyed by coppersmiths in pastoral societies. In the eyes of the nomad, the smelter was controlling the essence encased in the rock, which is copper, by subjecting it to his will. In order to produce the high temperatures (ca. 1950 °F) necessary to reach the melting point of copper, fire and air were also controlled. The constant flow of air, which is achieved with the use of bellows, is very similar to a strong and steady wind. The noun “ruah” in Hebrew is used to designate both wind and spirit, and its use in the smelting process may be likened to the spirit that brings the essence to life, and thus it becomes part of the ritual around the smith’s craft.

Molten copper, which flows out of the furnace in the shape of a serpent may be equated with the universal symbol of renewal for which the image of the snake is very often used. Copper and snake are words formed by the same root-letters in Hebrew. The story of the Biblical brazen serpent and the actual existence of such a cultic object, which was found in the miners’ temple at Timna (Rothenberg 1992) may suggest that the copper snake represents the divine essence, which is “ruah”, or spirit. In Biblical tradition, these two concepts are equated. The copper snake becomes the symbol of the spirit and the expression of its immortality. The furnace in its turn becomes the symbol of the womb.

In Fig. 3, the rock engraving at the left illustrates very well this journey of the spirit. From a furnace, a copper snake coils towards a two-horned circle.

Under the circle, a parallel line to the snake’s advance can be noticed. Life is perceived here as the path of the spirit (the copper snake) from the womb (the furnace) to the grave (a tumulus, with a pair of masseboth topping it – the straight line that leads to the tumulus may be its east to west oriented tail). All the elements discussed up to this point are represented in this petroglyph: the tailed burial mound, the pair of sacred stones, the furnace and the copper snake. In order to correlate the engraving with another aspect discussed in the paper, namely star-lore, an imaginary petroglyph (drawn by the author) was inserted in the figure, a combination of the image of the goddess and the analyzed rock engraving. On the night sky, the two figures are in precisely this relative position to each other and they also conform to the east to west orientation. The stars on which the figure of the goddess is traced were already mentioned.



Fig. 3

Fig. 3. From womb to tomb (drawing based on a photograph by E. Anati (left) and an imaginary composite drawing by the author (right))

Those, which contour the second engraving belong to an asterism located between the constellations Lacerta, Pegasus and Cepheus (the furnace), the outline of the edge of the Milky Way (the snake) and the head of Draco with its two prominent stars (the tumulus and masseboth). Life is following its path from the womb to the grave under the outstretched, guiding arms of the goddess responsible for rebirth and transformation. The advance of the spirit towards Antares (pointed out by the snake-arm of

the goddess) may imply that this bright-red star that dominates the summer sky is related to Aldebaran, its corollary red star in the winter sky, to which the middle finger of the opposite hand of the goddess points. It seems that these two stars play a key-role in after-life beliefs and that their heliacal or nocturnal rising or setting at the beginning or the end of the seasons with which they are associated determined the east – to – west orientation of archaeological complexes. The role played by the two red stars in Bedouin star-lore must not be reduced solely to their association with the rainy and the dry seasons. The color of these stars seems to be also important. In African beliefs the red color of copper is a symbol of renewal and transformation (Wilmsen 2009), and in many prehistoric second-burials the bones were painted with red ochre, a practice that stresses the importance of this color in after-life beliefs.

The goddess in the figure is to be found at the left of the sky-god of the nomad. This is evidenced not only by the shapes and relative position to each other of masseboth, and by the dimorphism in the rock engravings that depict the couple with raised arms, but also by the actual position of the goddess in the sky. Draco, the most centrally located constellation, was perceived as the seat of the sky-god. The ibex symbol was often used to represent this constellation, which in later periods would be replaced by the figure of a pregnant she-camel Eisenberg-Degen and Rosen 2013). In many cases, a dot is incised either in the

body of the camel (to emphasize its pregnancy) or inside the figure of the ibex (which usually represents the polar star or symbolizes the gestation period). Noteworthy here is the reliable character of this constellation, at the center of the circumpolar area. In the figure below there is another imaginary petroglyph drawn by the author with the purpose to illustrate the various symbols used to represent the constellation.

At its left (from the perspective of the constellations) one can notice the image of the goddess

The rock engraving at the right is found on Har Mehia and it is relatively recent, from a period when the Thamudic alphabet was already in use. However, it illustrates a continuity of traditions, even that it also expresses a shift in symbolism: the ibex and camel motifs are replaced with that of a furnace. The dot inside the furnace represents pregnancy in a figurative way: it is the divine essence in the rock, which becomes copper. The inscription in the petroglyph displays the Thamudic letters yod and he, placed inside a third letter (beth), very much like the rock inside the furnace. It reads “beth Yah” – the house of God. (Harris and Hone 1997).

4.3. Semitic Beliefs

An excavation on Har Karkom (Anati 1986) unearthed in a gal-ed (testimonial mound) built out of black rocks, a calcareous white stone, intentionally shaped as a semicircle and weighing 97 pounds. It was apparently very consciously placed on a large rectangular boulder, and the crescent-like shape of the white stone made the archaeologists to consider again the possible relationship between the moon-god Sin and the mountain. Near the stone there was an Early Bronze Age flint scraper and the gal-ed was dated according to the age of the scraper. There are around 7,000 engravings of ibex on Har Karkom, (ibid.) and it seems very probable that the mountain was dedicated to the moon-god Sin, whose cult arrived in the region together with Semitic nomads from Mesopotamia, at around the time to which the testimonial tumulus was dated (3,000 to 2,600 BCE).



Fig. 4 The symbolic shift from ibex to camel and to furnace, as discussed in the text (a hypothetical drawing (left) and a drawing based on a photograph by the author)

At approximately the same time (3050 to 2650 BCE), a megalithic crescent-shaped rujum (cairn) was erected in the Galilee. It is locally known as Rujum en-Nabi Shua'ayb, or Prophet Jethro's Cairn. The proposed interpretation for the site is that it constituted a prominent landmark in its natural landscape, serving to mark possession and to assert authority and rights over natural resources by a local rural or pastoral population. There is no evidence for a permanent settlement near the structure. According to the archaeologist working on the site (Wachtel 2014), the monument's shape, a crescent, may have been chosen to symbolize the ancient Mesopotamian moon-god Sin. Wachtel also noted that an ancient town called Bet Yerah - "house of the moon-god" in Hebrew - is only a day's walk from the monument. The main centers of the Sin worship were Ur and Harran, places with which Abraham is associated. Between 2,600-2,400 BCE Ur exercised a large measure of supremacy over the Euphrates Valley and Sin was regarded as the head of the pantheon. It is believed that the cult of the moon-god was introduced to Mesopotamia by Semitic nomads from Arabia. The wives of Sin (moon) were Shamash (sun) and Ishtar (Venus). However, the sun would gradually lose her role and the two wives would become the morning and evening star aspects of Venus.

Herodotus (see Peterson 2006) relates that the Arabs worshipped Dionysus, whom they call Orotalt, and Aphrodite, whom they call Alilat Sin, the ibex, was probably interpreted as Dionysus the satyr. As for the etymology of the name Orotalt, the Brewer's Dictionary of Phrase and Fable (1890) attributes it to a corruption of Allāh ta'āla ("God exalted"). This Dionysian reference will be dwelt upon in detail, below.

The closest relatives of the Hebrews, the Edomites, are thought to have worshipped a deity called Qos, who was apparently also related to the ibex and the moon: his name comes from the Edomite "kaush" and Hebrew "keshet", which both mean "bow", a probable reference to the shape of the horns of the ibex. A horned stela from Petra inscribed Qos-Allāh

and a seal from Tawilan, also identified with Qos, and which displays a star and crescent, seem to consolidate the ibex-like symbolism surrounding the Edomite deity. The star beside the crescent is evidently Atart - Ashrat - Ishtar. Ibex engravings with exaggerated bow-like horns are also known from Har Karkom and other sites in the Negev Highlands. The Nabataean DuShara's (a name related to "sa'ir", which is the Land of Se'ir, but it also means hairy, goat, or ibex, and is also another name for Esau, who dwelt in Se'ir) partner was Al-Uzza or Allat, whose two names reflect again the two Venus wives of the moon, as personifications of the morning and evening stars (Peterson 2006).

In South Arabia, the star and the crescent were commonly-used symbols, and the worship of the Arabian high god Allah was associated with that of the goddess Al-Uzza, who is long forgotten, but still persists in the emblem of Islam, very much like her counterpart Ashera, as the tree of life or menorah, the symbol of Judaism (the menorah-like petroglyphs on Har Karkom and other places are most likely representations of the goddess).

Coppersmith and pre-Semitic nomadic symbolism were compatible with the Abrahamic beliefs described above. The role of the ibex and its sacredness were already mentioned. Male and female masseboth were the counterpart of the Sin - Ishtar partnership. Symbols of renewal were important to both coppersmiths and nomads, and the descendants of Abraham were also pastoralists. The goddess at the left of God, so often depicted in rock art related to star-lore was recognized as Ishtar - Ashera. The moon itself is a universal symbol of renewal, like the serpent. The pairing of the two was also known in the Mesopotamian homeland, it is common in Ur and it also occurs in South Arabian symbolism.

4.4. *The Semitic Gods of Egypt*

A nude goddess, often standing on a lion and holding a snake in her left hand, and lotus flowers in her right, is a familiar figure to archaeologists working on Late Bronze Age sites (ca.1500-ca.1200 BCE)

throughout the Levant. Scholars have identified her with Ashera / Astarte, partly based on the assertion that, in the Ugaritic texts, Ashera is called the “Lion Lady” (Patai 1990; Wiggins 1991). However, other scholars think that the Ugaritic texts that also name this goddess as the “Holy One”, or Qadesh(a), are actually references to the Egyptian Qetesh, or Qudshu (Cross 1973; Binger 1997; Pettey 1990).

Between 2000 and 1700 BCE, Egyptian kings often campaigned in the southern Levant and took captives whom they brought back to Egypt as slaves. Conversely, nomadic Semites (Shasu) migrated into the Nile Delta in search of food and fodder (cf. Steiner 2010). Many of them stayed and, of course, they brought their gods with them.

In the early seventeenth century BCE, Asiatics invaded and usurped the throne of the pharaohs. Although they formally adopted Egyptian divinities, it is clear that their real allegiance was to Astarte, Baal, and other Levantine deities. These Hyksos invaders, “rulers of foreign lands” (Redford 1992), were expelled around 1550 BCE.

Captive Asiatics poured into New Kingdom Egypt, as did Canaanite traders, some of whom founded a temple for Baal and his consort Astarte at Memphis. Soon, even the pharaohs were worshipping Canaanite deities, especially during the Ramesside period (1300-1200 BCE).

A number of Egyptian relief plaques from this period depict a nude goddess, usually standing on a lion, and sometimes posed between the Canaanite god Reshep(h), an Underworld deity, and the Egyptian fertility god, ithyphallic Min (Cornelius 2004; Binger 1997). The Egyptians called her Qetesh, Qeshet or Qudshu. Among her titles were “lady of heaven, great of magic, mistress of the stars” (Cornelius 2004). According to these epithets, Qetesh was a very great deity indeed, though seemingly she was not included in the cultic practices of royalty and the elite (ibid). “Lady or queen of heaven” was an attribute shared by the greatest of Eastern Mediterranean goddesses: Inanna and Ishtar of Mesopotamia; Asherah, Anat, and Astarte of Syria and Canaan; Isis

of Egypt; and Aphrodite / Venus of the Greco-Roman world.

One fact seems clear: the images of Egyptian Qetesh are very similar to those on the aforementioned plaques, pendants, and figurines from Syria – Canaan. Indeed, according to Binger (1997: 57), these depict a goddess “who, iconographically, is practically identical to Egyptian depictions of Qudshu”.

Moreover, the Qetesh plates described and published by Binger (ibid.) and Cornelius (2004) are surprisingly similar in composition with the depictions of the goddess to whom this essay is dedicated. In the plate reproduced below, the goddess is shown in a context that is almost identical in concept to her depiction in the Nahal Zin engraving (p. 3, Fig. 1, left), or in Fig. 2 (p. 4), which is an imaginary drawing that emphasizes her mediating role between the “cursed” and the “blessed” seasons.

The zoomorphic, ibex-inspired figure that was identified with the fertility brought by the rains that fall in the period dominated by the constellations Orion and Taurus is to the right of the goddess. Her exaggerated fingers are reminiscent of the five lotus flowers offered to Min in the Egyptian depiction. It does not seem too far-fetched to identify – conceptually – Min with Dionysus the satyr (or with Orontal, see Herodotus). Sex, fertility, orgiastic rituals, and plenty are concepts associated with this deity. To the left of Qetesh (from the goddess’ perspective), the Canaanite Reshep(h) may be identified with the heat, draught and hardships of the dry season. The lizard suggested to be the constellation Bootes in Fig. 2 may symbolically represent Reshep(h), who was thought to fight plague and pestilence, symbolically depicted as snakes and scorpions that attack the Bootes figure in the engraving discussed. Moreover, the animal associated with Reshep(h) is the gazelle, while that associated with Dionysus is the ibex. Min’s domain was the Eastern Desert, which is also known for its large stands of capra ibex nubiana, an animal that cannot be found west of the Nile.

Not surprisingly, the goddess in the Nahal Zin petroglyph (Fig. 1, left) is depicted between an ibex and a

gazelle. Very much like in the Qetesh plate, she holds a snake in her left hand, pointed towards Reshep(h). The goddess of fertility and sacred ecstasy

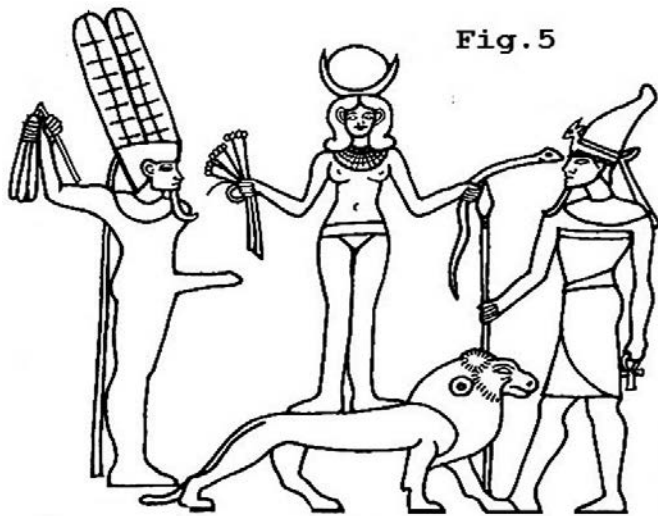


Fig. 5. The goddess Qetesh between Min (left) and Reshep (right) (drawing by the author, based on a reproduction of the Qetesh plate, British Museum)

(Cornelius 2004) stands in the center of the plate (Fig. 5, above). Her name denotes her Semitic origin (q-d-š: sacred, holy). The root letters that form her name also locate the center of her worship: Kadesh, in the Negev Desert. Interestingly, the composition is also geographically correct: the goddess stands between the dark-skinned Min of the Eastern Desert and the bearded Shasu-like Canaanite Reshep(h). Moreover, Qetesh is shown with the headdress and ears of Hathor, the patron-goddess of the copper miners at Serabit el Khadim and Timna. Conversely, the “Holy One” is also associated with the tin, copper and bronze trade (ibid.; Steiner 2010). Tin - without which there is no bronze - was mined in the Eastern Desert, in Min’s territory. Copper deposits occur in the southern Levant, the domain of Reshep(h). Kenite caravans (see below) travelled between these territories and crossed the lands of Qetesh.

5. Shamans to Prophets

5.1. The Ibex and the Copper Snake

The ibex symbol, as it was already mentioned, served

to represent not only the location of the seat of God in heaven, but because of the mediating role of the shaman between the two worlds, it was also meant to symbolize the shape he assumed when fulfilling his ritual role. The smelters’ mastery of the essence in the rock and the awe inspired by his craft, added to the symbolic similarities related to renewal, rebirth and transformation, elevated the status of the smith in the eyes of the nomad. Smelting is creation: the essence in the rock is materialized and the shapes taken by the molten copper are infinite. The breath of the smith, like that of God, lends life to matter (Amzallag 2008). The smelter became slowly the ritual specialist of the tent-dweller and assumed the shape taken by the shaman. Thus, the ibex would become his alter-ego, and the copper snake the symbol of his power. Drawings that depict the ibex and the snake together are a common motif in the rock art corpus of the Negev, and are based, in the author’s view, on the role fulfilled by smiths in the spiritual life of the nomads. The special status of coppersmiths with nomadic tribes is well-described in literature (Glubb 1943; McNutt 1994). and may be explained with the help of the suggestions sketched above.

5.2. Inferred and Suggested Ritual Context

Dionysus the satyr is associated with wild, wine-induced “orgies”, which in our case should be understood in a milder, ritual-related context. According to Amzallag (2008), such “celebrations” were characteristic to coppersmiths. The Greek word *techné* denotes not only technology, but also art and magic, and it is precisely in this holistic context that the initiation rites of the coppersmiths were performed (ibid.). However, in parallel with specialized metallurgist ceremonies, the riddle of after-life was apparently also addressed by such rituals. The death - life cycle stands under the patronage of Alilat, the consort of Orotalt / Dionysus. It is reasonable enough to think that Herodotus referred in his Histories III (cited by Peterson 2006) to Atart, or Ashtart. As a Greek, he also called the goddess Aphrodite, and associated her with fertility. Kypris was the name of a

Cypriot goddess who underwent a metamorphosis into Aphrodite when Astarte was imported (purportedly together with the alphabet) from Phoenicia (Budin 2014). Aphrodite Kypria was the name under which the goddess was also known, but not only because she was born in Cyprus, but also because of her relatedness to the copper for which the island was well-known in the antiquity (ibid.). As Sin's consort, the goddess was also directly related to the moon, namely the lunar phases. Again, fertility comes to mind, but within a context defined by renewal and transformation, in a rather "Dionysian" sense, as suggested above. The cult of the Egyptian Qetesh and her association with Min were described above, and fit perfectly with the ritual context outlined in this paragraph.

According to Federico Mailland (2015a), swastikas and crosses engraved within the horns or the legs of ibex represent the full moon, in connection with the crescent (the horns). The swastika symbol represents both the moon's radiating disk and the movement of the disk in the sky. Such scenes are likely to represent a myth of the lunar cycle in relationship with the ibex image. Although the engravings were etched in the rock by a society of herdsmen, there seems to be no relationship between the depictions and subsistence techniques. Mailland continues to argue (ibid.) that the moon cycle depicted in rock art symbolizes the opposition between life and death, and also the new life that commences after death. Furthermore, he stresses on the parallel between the duration of the moon cycle and the menstrual cycle in women, which accounts for the association of the moon with fertility, and illustrates the relationship between the moon and the origin of life.

The lunar crescent and disk are depicted together with the figure of the ibex not only in rock art, but also in cultic bronze figures of the period, like incense burners from the Yemen. Snakes are also shown on these incense burners that were purportedly used in fertility rituals.

Understanding such engravings as mundane hunting scenes (Eisenberg-Degen and Rosen 2013) is

far from realistic, especially because the human stick figures depicted in many of these petroglyphs either touch the horns of the ibex with their bare hands or with the tip of their spears, in a "power-tapping" attitude (Mailland 2015a, 2015b; Steiner 2016).

The social context within which the beliefs and preoccupations enumerated above became crystalized may be safely defined as reflecting the rise of a pastoral elite (Rosen 2007) and the consolidation of its values in time. In this, ritual must have had an important role. Indeed, the period witnesses the parallel rise of a ritual elite. The ritual specialists of the Late Neolithic – Chalcolithic – Early Bronze Age are functionally different from the healers, medicine men and sorcerers who preceded them in the Mesolithic and Early Neolithic (Otte 2009; Steiner 2016). However, the techniques employed in their rituals – and ritual is known to be conservative – are apparently not very different from those that characterize earlier generations of ritual specialists. The full transition from shaman to priest would occur only in parallel with the rise of political entities. In the case of sedentary societies, the transition took place at an earlier stage, thus the only niche open to the desert-shaman would be that of the "prophet".

A good approximation of the rituals performed in this transitional phase may be observed, in the author's view, at the rock art site situated on the eastern end of the already discussed Zin-Mehia alignment. All the elements that are usually associated with ritual behavior are present. Entoptics (Lewis-Williams and Dowson 1988) are engraved on a number of rocks. These are abstract geometrical patterns known from all over the world. Their interpretation is an interdisciplinary subject, as altered states of consciousness (ASC) are involved. ASC in its turn is closely related to ritual, magic and art. Paganum harmala (Syrian rue) seeds mixed with acacia spp. gum produce a DMT-rich hallucinogen that was still widely used by Bedouin ritual specialists in the recent past, in order to achieve the altered states that allowed to communicate with the ancestors, or to integrate with the natural cycles discussed above (Kent

2010). Cupules that may be associated with musical activities (Morley 2003) are also present. The site is also characterized by excellent acoustic properties, the ritual importance of which was recognized and studied in-depth (Garfinkel and Waller 2008). By striking any cupule engraved in the rocks on the western bank of the wadi, the echo comes back from the eastern bank, but not haphazardly: the reflected sound-wave returns from the fissured rock on which the already mentioned elaborate and sketchy praying couples are engraved. The sound seems to emanate from the crack in the rock. The ritual significance of this phenomenon is documented from many rock art sites, world-wide (ibid.).

In summary, without recurring to exotic hermeneutics, there is sufficient empirical evidence to suggest that a ritual behavior that “celebrated” the time-specific beliefs addressed in this paper was an integral part of the spiritual landscape of the ancient Negev and its neighboring areas.

5.3. The Ritual Role of Coppersmiths with Pastoral Societies

In the Bible (Genesis:4), the list of the descendants of Cain mentions in the same breath the two sons of Lamech: “Jabal, the father of those who live in tents and raise livestock”, and his brother “Tubal-Cain, who forged all kinds of tools out of bronze and iron”. That nomads and smiths belong to the same generation was apparently obvious to the compilers of the Old Testament, a fact that is also reflected in the archaeological record. Moreover, besides being contemporary in time, metallurgy and pastoralism emerged and evolved under the same desert sky. The values and beliefs that emerged and became established in the same geographical area, between the 6th and 3rd millennia BCE must have been characterized by a high degree of affinity. The attitude to animals and metals was very similar: animals were bred and metals were alloyed in order to achieve enhanced qualities, like milk or wool output in the case of ani-

mals, and hardness, color, etc. in the case of metals. The relation of coppersmith societies with pastoral nomads was always special, bordering on the mythical. Smith tribes, like the Kenites, who are identified as the descendants of Tubal-Cain, are known to have existed not only in the ancient world. In 1161 Benjamin of Tudela mentioned the Recabites of Yemen, who were the allies of tent-dwelling Arabs, and 700 years later, the Reverend Joseph Wolff would encounter them in the same area.

Actually, one such group is known among the Bedouin to the present day. They may not be the genetic descendants of the Kenites, but they seem to fulfill the same functions. The Solubba are travelling smiths who follow regular trade routes and act as musicians, scribes, circumcisers and fortune-tellers. Such a tribe must be nomadic, since its skills are required over a large area and they also have a reputation for magic, because of the awe aroused by the ability to work metals (Glubb 1943; McNutt 1994; Betts 2003). Tubal-Cain’s sister was Naamah and another brother was Jubal, “the father of all who play the harp and flute”. It seems that Tubal-Cain, Naamah and Jubal are personifications of the roles mentioned above and that there is a long tradition of cooperation between smiths and nomads on the ritual level. The services rendered by Jethro the Kenite to Moses and the ritual function that he fulfilled with the Midianites only point to that (Jethro is identified as a priest of Midian, but not a Midianite). Like the Solubba, who are associated with a number of Bedouin tribes (Doughty 1888; Musil 1907; Glubb 1943), the Kenites are mentioned in the Bible as accompanying not only Midianites (Exodus:2,18) and Hebrews (Numbers:10), but also Amalekites (1Samuel:15) and Edomites (Numbers:24), to whom they must have also provided their services as ritual specialists, musicians, prostitutes, scribes, and fortune-tellers.

The Solubba are also known as guides and healers. Above all, they are neutral, thus their tents are considered to be places of refuge and they are also

often solicited to judge in disputes (McNutt 1994). This recalls again the story of Moses, who found refuge with Jethro in the Land of Midian, and the latter's advice in the organization of the Hebrew judicial system (Exodus:18). The coppersmiths were feared and respected (Glubb 1943), mostly because of the magic related to their craft, which granted them their special role as the ritual specialists of the nomads. The general belief is that the Solubba had degraded to their present status from a previous high position (*ibid.*), hence the smith – nomad relations of today are only an echo of the strong partnership that must have existed between them in ancient times, and only started to deteriorate at the beginning of the Iron Age (Amzallag 2008).

5.4. *Desert Fundamentalism*

Some of Jethro's people were solicited to render their services as desert guides and joined the Israelites on their way to Canaan (Numbers:10). Their descendants continued to live "among the people of the Desert of Judah in the Negev near Arad" (Judges 1:16), which became "the Negev of the Kenites" (1Samuel 27:10). Arad was a major urban center during the Early Bronze Age that was abandoned long before the Israelite conquest. When Arad was resettled, immediately after the Ramesside period, the new inhabitants, who were apparently not Israelites, but presumably Kenites, built an unenclosed settlement (stratum XII), in the centre of which, a rectangular platform resembling an altar was found. Centuries later (stratum XI), an Israelite altar was built on top of it, and the remains of a temple structure bearing a marked similarity to Solomon's Temple in Jerusalem was unearthed from the same Israelite layer. A pair of masseboth was also found in the holy of holies of this temple (Aharoni 1967). The Arad Temple and its masseboth survived the religious reforms of both King Hezekiah in the 8th century BCE and King Josiah a century later, and it was apparently destroyed either by the Babylonians, or the Edomites, when the latter took over Judah after the Babylonian

Babylonian conquest. In the author's opinion, the presence of the temple was tolerated only because it served the nomadic, non-Israelite population around Arad. It is generally accepted that the Kenites continued to pursue the nomadic life and that they were champions and defenders of the monotheistic desert faith against the cult of the Canaanite gods. The story of these Kenites is known only from biblical references, and what we tend to forget is that they were the descendants of only a fraction of Jethro's clan, which in its turn was only a segment of the Kenites who were associated with Midianites, Amalekites and Edomites. As coppersmiths, guides, musicians, scribes and ritual specialists, they must have roamed the deserts of the southern Levant, in association with the nomads whose encampments ranged from Moab to the northern Hejaz. Even in southern Judah, the Kenites were wedged between the Judahites and Edomites and the route of the Arabian trade ran through this territory inhabited by pastoral nomads (Bienkowski 2001). Their previously high status with the wandering Israelites apparently deteriorated with Iron Age Israel, which became a settled, and politically-centralized entity. Iron and copper are also functionally different: the cultic approach to copper that granted the smith's mythical status was gradually replaced with an industrial approach to iron, in which the smith was degraded to the position of a mere laborer (Amzallag 2008). Religious fundamentalism and the exalting of nomadic values may be interpreted as a reaction against settled life, which was perceived as leading to apostasy. In the same spirit, the Recabite clan was known as a conservative, fundamentalist fraction of the Kenites, and who were tent-dwellers and ardent defenders of nomadic values. They are the descendants of Hammath the Kenite (1Chronicles 2:54) and not surprisingly, some of them are also identified as scribes. Invited to drink wine, they replied "we do not drink wine, because our forefather Jonadab son of Recab gave us this command: Neither you nor your descendants must ever drink wine. Also you must never build houses, sow seed or plant

vineyards; you must never have any of these things, but must always live in tents.” (Jeremiah:35). Interestingly, Jonadab’s credo would be repeated word-for-word a few hundred years later, by other nomads who established themselves in the Land of Seir: the Nabataeans (Negev 1961). DuShara, the main god of the Nabataeans seems to be related to the Biblical Lord of Seir, and it is improbable that the deity was worshipped by the Nabataeans before their arrival in Edom. It is not too far-fetched to think that DuShara was adopted by the Nabataeans under Kenite influence, very much like the Lord of Seir by the Hebrews, as the Kenite hypothesis argues (Parke-Taylor 1975; Blenkinsopp 2008). Taking into consideration the role fulfilled by the Kenites with the nomadic tribes of the southern Levant and the special status that was granted them because of the magic inherent in their craft, the theory that the Lord of Seir was initially an Edomite god of metallurgy (Amzallag 2008, 2009; Steiner 2010) seems to be built on solid fundamentals. The presence of a fundamentalist metallurgist group in the deserts of the southern Levant and northern Arabia that was associated with, and exercised influence on the beliefs of the ethnic groups that inhabited the area through the millennia cannot be dismissed.

5.5. *Thamudic Parallels*

The Thamudic tribes were the contemporaries of the Nabataeans in northern Arabia and Edom, and infiltrated the Negev towards the end of the Nabataean period. Many of their inscriptions have a religious character, which has led some scholars to propose the existence of a script that should be classified as different from Thamudic-proper (Harris and Hone 1997). Although this proposal seems far-fetched and it must be considered as a mere presumption, its initiators must be given credit for their recognizing a tendency in writing in which icons and ligatures are used instead of letters, especially in the case of religious inscriptions. This suggestion would deserve a scientific investigation. The most frequently used

symbols – according to Harris and Hone - are those of the ibex and the snake. Therefore, they argue that rock engravings that at first sight seem to be drawings should rather be read than interpreted. In the figure below there is a hypothetical illustration of how some petroglyphs should be looked at, as suggested by the aforementioned authors:

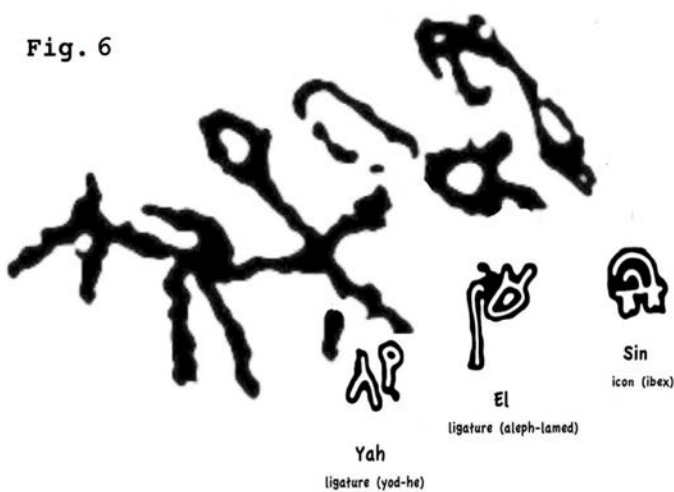


Fig. 6. Hypothesised “Old Negev” script (drawing based on a photograph by the author)

The “discoverers” of the script stress its archaic character and they liken it to Proto-Sinaitic. They date it to the Iron Age and link it to the revival of the cultic activity in the Negev during this period. Most of the inscriptions are documented from Har Karkom, the Nafha Plateau and Nahal Avdat. The content of the inscriptions, along with their chronology and location suggest that the scribes were speakers of a language best expressed through Old Hebrew transliteration, rather than the Thamudic dialect, which is a variant of Arabic. The ethnic ties of the scribes may include Kenites, Edomites or Midianites. If the Harris-Hone hypothesis would be scientifically-grounded, the scribes could be identified with the fundamentalist Kenites or Recabites mentioned above. The spatial distribution of the inscriptions, between the Kenite territory in Southern Judah and Har Karkom would also be significant and it could be an indica

tor to the existence of a pilgrims' route frequented by fundamentalist groups that led to one of the holiest mountains in the region, one of the most plausible candidates for Mt. Sinai: Har Karkom (Anati 1986). Smiths are often identified as scribes, and the discovery of the alphabet may be attributed to them (Amzallag 2008). The Proto-Sinaitic script was identified only at three locations, all of them in mining districts: Serabit el Khadim (1,600 BCE) in the Sinai, Wadi Hol (1,900 BCE) in Upper Egypt, and recently Timna (1,300 BCE), in the southern Arabah (Wimmer 2009). This alphabet, which is meant to express a Semitic language, is a marvelous feat of "engineering": the three consonants, which form the unchangeable root-letters of a word are perceived as the inert raw material that comes to life with the help of the inhaled or exhaled wind ("ruah", spirit). The metallurgical implications are evident. Therefore, the alleged presence of an archaic script used in religious contexts by conservative elements during the Iron Age should be considered and researched. Fig. 7 (left) depicts the icon that was so frequently discussed in this paper, with the difference that what was always identified as the drawing of a goddess, is represented in this Thamudic engraving from southern Jordan with markedly male characteristics. The same tendency is noticeable in the case of the "written" petroglyph in Fig. 6, in which only the names of God are featured, but the name of the goddess - whom the drawing supposedly represents - is utterly ignored. There is even a later addition to the petroglyph: a lighter patinated leg that not only facilitates its "reading", but it also underlines its maleness. The correction was made in a period in which the prophets were doing everything in their power to dethrone Ashera from her place at the side of God, and the petroglyph may illustrate this tendency. The same logic must hide behind the Jordanian engraving (left), although this is located in a territory where the prophets of Israel did not have any influence. This only seems to consolidate the presumption that monotheistic fundamentalism enjoyed a revival in the deserts to the south of Canaan

and that the identification of the scribes mentioned above (or their descendants) with the "artists" who engraved one of the petroglyphs and corrected the other does not seem improbable. Interestingly, in southern Arabia, Ashtart was a male god, while in northern Arabia a markedly female deity (Achra-ti 2003). Thus, such a fluidity in gender must have been perceived without too much ambiguity by the inhabitants of Iron Age northern Arabia and the southern Levant. Along the Arabian Trade Route

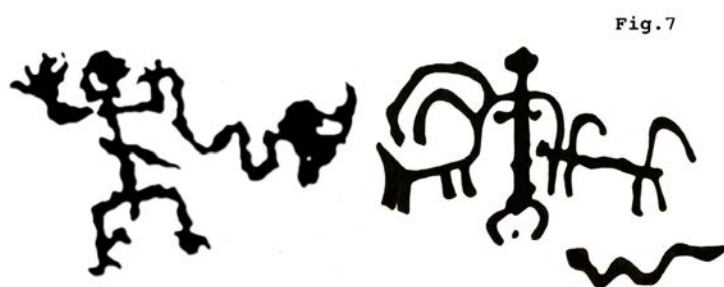


Fig. 7. From female (right, drawing by the author based on a photograph provided by Harris and Hone) to male (left, drawing by the author based on a photograph provided by Muhammad al Walidi)

(Bienkowski 2001) it was not only myrrh and frankincense that was traded, but ideas, too. Quite the opposite tendency can be noticed in the second illustration (right), which is a rock engraving traced by the author, on the base of a photograph provided by one of the initiators of the theory detailed above. The original engraving is - according to Harris and Hone - found in Spain, not far from Cadiz (a Punic colony). It is known to the locals as "Aphrodite" and may be indeed a depiction of the goddess, whose cult was introduced to Greece from Phoenicia. To the Carthaginians, she was known as Tanit, who was a metamorphosis of Phoenician Astarte. In the illustration above the goddess appears in her original fertility-related aspect, a fact which is evidenced by the markedly feminine characteristics of this apparently Punic drawing. Although the composition is very similar to that found in Nahal Zin (Fig. 1, left; Fig. 6), there is one major difference

between them: while the snake is only an element in the Carthaginian drawing, in the Nahal Zin engraving it is held by its tail by the central figure. In the petroglyph from Jordan, the male figure - who may be even a representation of the coppersmith-shaman - seems to control not only the snake, but everything that it symbolizes.

Related to the Thamudic people, there is a Qur'anic reference, which is also open to metallurgical interpretations (Surah 7:73-79). It relates the story of the Prophet Salih, who performed a miracle to prove the existence of God to the unbelievers. A miraculous ten-month pregnant she-camel issued from the rock. The story is set in Al-Hijr, or Egra, known today as Mada'in Salih, in the honor of the prophet. The Greek name is identical to Latin Petra and Hebrew Sela, both in the Land of Se'ir, and the literal meaning of all these names is "the rock". The camel emerges from the rock, very much like the copper snake, and the miracle performed by the shaman in bringing to life the divine essence in the shape of a copper snake may be equated to that of the prophet, who makes a she-camel issue from the rock. Both performances are meant to impress the skeptics, and the means employed by both the shaman and the prophet are identical. The snake, as it was already mentioned, is a very common motif in rock art. The figure of a she-camel with a dot incised in its hump, which represents pregnancy, is also very frequent, and it was often referred to in this paper. It is identified by the Bedouin with the constellation Draco as the camel, and the star Kochab (Ursa minor) as the dot, and it is shown to the children as an illustration of the Qur'anic story and as a reminder of God, whose existence was demonstrated to the people of Thamud with the miracle performed by Salih. It is precisely in this context that star-lore and its relatedness to rock art should be understood.

Conclusion

Although tendencies related to death cult, astronomical alignments and the motif of cyclic renewal were recognized in the archaeological record of the

period that witnessed the emergence of nomadic pastoralism, the approach to these subjects was either over-cautious or speculative in character and did not pursue the interpretation of the data. The possible influence of metallurgy - a parallel development in time and space with that of pastoralism - was not sufficiently considered in these interpretations, if any. Contemporary nomadic oral traditions were utterly ignored and the longevity of the pastoralist economy was not recognized as a potential indicator of the continuity of beliefs and symbolism. The rock art corpus of the territory in which pastoralism and metallurgy emerged in unison was not sufficiently correlated with the values that characterize these economies, even that the majority of the rock engravings were dated precisely to the period discussed. Moreover, a paternalistic approach, which tended to look for "civilized" outside influences on "primitive" desert rock art was adopted in many cases.

In this paper we have offered a model in which a parallel approach to the interpretation of both rock art and archaeological data is suggested. A special emphasis is placed on concepts that seem to reflect the shift in values from agricultural to pastoral economies: the skyward orientation that seems to be inherent to nomadic culture, the reshuffling of the role played by gender in subjects related to fertility vs. cyclic renewal, and the association of the latter with after-life beliefs. These preoccupations seem to be expressed by the presence of astronomical alignments and various structures related to ancestor worship and mortuary cult in the archaeological record. This was correlated with nomadic star-lore, which was solely approached as the oral version of the same beliefs, but categorically not as sky-maps. Rock art was suggested to be a graphic illustration of the preoccupations mentioned above. The compatibility of metallurgical concepts and symbolism with those that can be inferred from the archaeological record of the same period was analyzed, and - because of their apparent functional relatedness - star-lore and rock art were tentatively associated with scientifically-accepted data. Conversely, a ritual

approach based on empirical indicators was also attempted. The millennia-long partnership between nomads and coppersmiths was explained with the biblically and ethnographically documented ritual functions of the latter, which was suggested to have happened because of the smelters' control over the symbols related to nomadic beliefs. However, the functions fulfilled by coppersmiths with Bronze Age nomadic groups seems to have lost in importance with the politically-centralized sedentary population of the Iron Age. A radicalization of commonly-forged pastoralist - metallurgist values is observed during this latter period, which is traceable to the revival of cultic activities in the deserts to the south of Canaan, in the original nomadic context. Desert-prophets were suggested to be related to this radicalization and were presented in the paper as the functional descendants of the Bronze Age ritual specialists. The exaltation of nomadic values and the religious fundamentalism that accompanied it, apparently led to a parallel radicalization of symbols, as evidenced by the suppression of the role played by a goddess in concepts related to after-life and cyclic renewal. The model proposed in this paper is meant to offer a coherent image of the tendencies that can be discerned in the peculiarities of the archaeological record, which are also reflected in rock art symbolism and oral traditions. The suggestions sketched here are also meant to guide and widen the field of future research, the results of which may test the conclusions reached in this essay.

References

- Achrati, A.
2003 *Hand and Foot Symbolisms: From Rock Art to the Qur'an*. Arabica L(4): 464-300
- Aharoni, Y.
1967 *The Land of the Bible: A Historical Geography*. Westminster Press, Philadelphia.
- Amzallag, N.
2008 *The Copper Revolution: Smelters from Canaan and the Beginning of Civilization*. Hameara, Shani-Livna
- Amzallag, N.
2009 *From Metallurgy to Bronze Age Civilizations: The Synthesis Theory*. American Journal of Archaeology 113: 497-519
- Anati, E.
1985 *Has Mt. Sinai Been Found?* Biblical Archaeology Review 11: 4
- Anati, E.
1986 *The Mountain of God*. Rizzolli International Publications, New York.
- Avner, U.
1984 *Ancient Cult Sites in the Negev and Sinai Deserts* Tel Aviv 11: 115-131
- Avner, U.
1990 *Masseboth Sites in the Negev and Sinai and Their Significance*. In J. Aviram (ed.), Second International Congress on Biblical Archaeology in Jerusalem 1990. pp.166-181. Jerusalem.
- Avner, U.
2001 *Sacred Stones in the Desert*. Biblical Archaeology Review 27: 30-41
- Bailey, C.
1974 *Bedouin Star-lore in Sinai and the Negev*. Bulletin of the School of Oriental and African Studies 14: 35-80.
- Bastoni Brioschi, R.
1998 *Arte Rupestre: Har Karkom e il Dio Sin*. In F. Mailand (ed.), Archeologia e Mito pp. 21-38. Milano.
- Betts, A.
2003 *The Solubba: Nonpastoral Nomads in Arabia*. Bulletin of the American Schools of Oriental Research 274: 61-69
- Betts, A.
2004 *Gazelle-hunters and Salt-collectors: A Further Note on the Solubba*. Bulletin of the American Schools of Oriental Research. 293: 79-81
- Bienkowski, P. 2001. Southern Jordan and the Negev in the Iron Age: A New Model. Bulletin of the American Schools of Oriental Research 323: 21-47

- Binger, T.
1997 *Asherah: Goddesses in Ugarit, Israel, and the Old Testament*. Academic Press, Sheffield.
- Blenkinsopp, J.
2008 *The Midianite-Kenite Hypothesis Revisited and the Origins of Judah*. *Journal for the Study of the Old Testament* 33(2): 131-153
- Brewer, E.C.
1890 *Brewer's Dictionary of Phrase and Fable* (24th ed.), p.841. Cassell & Company, London, Paris and Melbourne.
- Budin, S.L.
2014 *Before Kypris was Aphrodite*. In D.T. Sugimoto (ed.), *Transformation of A Goddess: Ishtar – Astarte – Aphrodite*. pp. 195-217. Academic Press, Fribourg.
- Close, A.E.
1996 *Funerary Traditions and the Final Pleistocene-Holocene Sequence in South-Western Sinai*. University of Washington Archaeological Expedition to Sinai. pp. 1-14
- Close, A.E.
2002 *Sinai, Sahara, Sahel: The Introduction of Domestic Caprines to Africa*. In R. Kuper (ed.), *Africa Prehistorica* 14: Tides of the Desert. pp. 459-470. Köln.
- Cornelius, I.
2004 *The Many Faces of the Goddess: The Iconography of the Syro-Palestinian Goddesses Anat, Astarte, Qadesh, and Asherah c.1500-1000 BCE*. Academic Press, Fribourg.
- Cross, F.M.
1973 *Canaanite Myth and Hebrew Epic: Essays in the History of the Religion of Israel*. Harvard University Press, Cambridge MA
- Doughty, C.M.
2010 *(first published 1888) Travels in Arabia Deserta*. Cambridge University Press, Cambridge.
- Eddy, F.W. and Wendorf, F.
2002 *Prehistoric Pastoral Nomads in the Sinai*. In R. Kuper (ed.), *Africa Prehistorica* 14: Tides of the Desert. pp. 41-50. Köln.
- Edwards, E.S.
1955 *A Relief of Qudshu-Astarte-Anat in the Winchester College Collection*. *Journal of Near Eastern Studies* 14: 49-51
- Eisenberg-Degen, D. and Rosen, S.A.
2013 *Chronological Trends in Negev Rock Art: The Har Michia Petroglyphs as A Test Case*. *Arts* 2: 225-252
- Garfinkel, A.P. and Waller, S.J.
2008 *Sounds and Symbolism from the Netherworld: Acoustic Archaeology at the Animal Master's Portal*. *Pacific Coast Archaeological Society Quarterly* 46(4): 37-60
- Gilead, I.
2002 *Religio-Magic Behaviour in the Chalcolithic Period of Palestine: Smiths and Shamans Come From the Same Nest*. In I. Oren and S. Ahituv (eds.), *Magic and Craftsmanship in 5th Millennium Palestine - Aaron Kempinski Memorial Volume*. pp. 103-128. Beer Sheva University Press, Beer Sheva.
- Glubb, J.B.
1943 *The Solubba and Ignoble Tribes of Arabia*. *General Series in Anthropology* 10: 14-16
- Goren, A.
2002 *Nawamis of Sinai*. *Archaeology Odyssey* 5: 1
- Haiman, M.
2000 *"The K-Line" at Har Romem in Light of the Survey of the Map of Har Romem*. *Atiqot* 39: 21-29.
- Haiman, M.
2002 *(conference paper) Enclosed Structures, Pens, and Pastoralism in the Negev and Sinai Deserts – Past and Present*. ASOR Annual Meeting, Toronto.
- Harris, J.R. and Hone, D.W.
1997 *The Names of God*. Brigham Young University Press, Salt Lake City. Kent, J.L.
2010 *Psychedelic Information Theory: Shamanism in the Age of Reason*. PIT Press, Seattle.
- Levy, T.E.
1983 *The Emergence of Specialized Pastoralism in the Southern Levant*. *World Archaeology* 15: 15-36

- Levy, T.E.
1995 *Cult, Metallurgy and Rank Societies-Chalcolithic Period*. The Archaeology of Society in the Holy Land. pp. 226-244. Leicester University Press, London.
- Lewis-Williams, J.D. and Dowson, T.A.
1988 *The Signs of all Times: Entoptic Phenomena in Upper Palaeolithic Art*. Current Anthropology 29: 201-245
- Makarewicz, C.A.; Horwitz, K. L. and Goring-Morris, N.
2016 *Local Adoption of Animal Husbandry in the Southern Levant: An Isotopic Perspective from the Pre-Pottery Neolithic B Funerary Site of Kfar HaHorsh*. Environmental Archaeology. pp. 1-16
- Mailland, F.
2015a. *Ibex, Crescent and Swastika as Symbols of a Lunar God in the Rock Art of the Ancient Near East and Central Asia*. Expression 10: 48-53
Mailland F.
2015b. *Ritual Ibex Hunting in the Rock Art of the Near East*. In *The XXVI Valcamonica Symposium - Prospects for the Prehistoric Art Research: 50 Years Since the Founding of Centro Camuno*. September 9-12. pp. 159-162. Capo di Ponte.
- McNutt, P.
1994 *The Midianites, the Kenites, and the Rechabites as Marginal Mediators in Ancient Israelite Traditions*. Semeia 67: 109-132.
- Morley, I.
2003 (PhD Thesis) *The Evolutionary Origins and Archaeology of Music: An Investigation into the Prehistory of Human Musical Capacities and Behaviours, Using Archaeological, Anthropological, Cognitive and Behavioural Evidence*. Cambridge University, Darwin College, Cambridge.
- Musil, A.
1907 *Arabia Petraea*. Holder Verlag, Wien.
- Negev, A.
1961 *Masters of the Desert*. Putnam & Sons, New York.
- Otte, M.
2009 *The Paleolithic-Mesolithic Transition*. In M. Camps and P. Chauhan (eds.), *Sourcebook of Paleolithic Transitions*. pp. 537-553.
- Parke-Taylor, G.H.
1975 *Yahweh: The Divine Name in the Bible*. Wilfred Laurier University Press, Waterloo, Ontario.
- Patai, R.
1990 *The Hebrew Goddess*. Wayne State University Press, Detroit MI.
- Peterson, S.B.
2006 (M.A. Thesis) *The Cult of Dushara and the Roman Annexation of Nabataea*. McMaster University Press, Hamilton, Ontario.
- Petty, R.J.
1990 *Asherah, Goddess of Israel*. In J.B. Pritchard (ed.), *The Ancient Near East in Pictures Relating to the Old Testament*. Princeton University Press, Princeton NJ.
- Pitre, M.C., Gatto, M.C. and Giuliani, S.
2007 *Site Surveys in the Aswan-Kom Ombo Region of Egypt*. Bioarchaeology of the Near East 1: 59-72
- Redford, D.B.
1992 *Egypt, Canaan, and Israel in Ancient Times*. Princeton University Press, Princeton NJ.
- Rosen, S.A.
2003 *Early Multi-resource Nomadism: Excavations at the Camel Site; Long Distance Trinket Trade: Early Bronze Age Obsidian from the Negev* Antiquity 298: 749-760
- Rosen, S.A.
2007 *The Rise of Desert Cult: The Sacred Precinct at Ramat Saharonim, Central Negev*. Bulletin of American Schools of Oriental Research 346: 1-27
- Rothenberg, B.
1992 *The Beginnings and the Development of Early Metallurgy and the Settlement and Chronology of the Western Arabah, from the Chalcolithic Period to Early Bronze Age IV* Levant 24(1): 141-157
- Shepard, P.
1998 *Coming Home to the Pleistocene*. Island Press, Washington DC.

Steiner, G.

2010 *Smiths and Prophets: The Curse of Cain on History*. Renetius, Zürich.

Steiner, G.F.

2016 *Collective Dissociation: The Origins of Civilized Madness*. In R.G. Bednarik (ed.), *Understanding Human Behavior: Theories, Patterns and Developments*. pp. 239-291. Nova Science Publishers, New York.

Tsafir, N.

1996 *New Thamudic Inscriptions from the Negev*. *Muséon* 109:1-22.

Wachtel, I.

2014 'Jethro Cairn' – *An Early Bronze Age Site in the Upper Galilee, Israel: Function and Significance*. 9th International Congress on the Archaeology of the Ancient Near East. June 9-13, Basel.

Wiggins, S. A.

1991 *The Myth of Asherah: Lion Lady and Serpent Goddess*. *Ugarit-Forschungen* 23: 383-394

Wimmer, S.J.

2009 *The Discovery of A Proto-Sinaitic Inscription at Timna, Israel*. *UAIJ Journal of Ancient Egyptian Interconnections* 2(2): 1-12

Wilmsen, E.

2009 *Tsodilo Hills: Copper Bracelet of the Kalahari*. Michigan University Press, Ann Arbor.

Wolff, J.

1835 *Researches and Missionary Labours Among the Jews, Mohammedans and Other Sects*. J. Nisbet & Co., London.

1996 *The Holy Bible, New International Version*. Zondervan Publishing, Grand Rapids MI.

2010 *Der Koran* (R. Poret transl.) Kohlhammer Verlag, Stuttgart.

ART AND 'PRIMITIVE' CULTURES

Tsoni Tsonev

National Institute of Archaeology and Museum

2 Saborna str.

1000 Sofia, Bulgaria

What makes artistic behaviour human

In my view the most fruitful perspective for exploring the question 'why art?' is to ask the question: is it possible a society to exist without art? I doubt that there is a positive answer to that. But in order to answer it properly it is necessary to outline the conditions that make art an inherent feature in any human group, community or society. This approach does not mean to search for an accurate definition of art, but what kind of intrinsic features of art make artistic human behaviour.

In trying to answer these questions it is necessary to look for the fundamental characteristics of human behaviour that make possible the existence of art alongside the other aspects of human behaviour and find examples of the origins of art that support these conceptual premises. The most fundamental one is the aesthetic experience. There is not a single human being who has never experienced aesthetic appreciation of any form (natural or artificial). Moreover, humans are constantly being exposed to the influence of significant aesthetic experiences, scenery and forms. The aesthetic experience has been featured as a means by which humans enrich their lives by constructing pleasant and satisfactory interactions with the surrounding world and appropriate ways of sharing inter-subjective discourses (Dreon 2015).

Also this experience has the property of drawing a definitive line between proper art and art that turns against humanity. The first one would involve any forms and means that appeal to any individual and enables her/him to enrich the aesthetic experience that enables communication not only with the other members of a given society but also with persons

belonging to other cultures. The second type of aesthetic experience is, in fact, no experience at all. It is learned behaviour that aims to respond to any artistic forms and means that address abstract or idealized human beings and groups (ethnic, class, racial, or any other extremist views). It is reductive in that it gives easy answers to complex problems of human existence and is readymade for providing answers in any situation. As such has little appeal to the general public even in societies dominated by this type of artistic expression.

Long-term memory as another characteristic of artistic behaviour has been distinguished. Yet I would prefer to take into consideration the notion of working memory, which includes the short- and long-term memory and the ways of retrieving information from a given environment. At first glance, it may seem to be a trait of human adaptation. However, I would prefer to refer to this concept as related to artistic behaviour, but understood in general terms as the human ability to adapt to social environment. This adaptation is not automatic and goes through a lengthy conscious process of learning that has the ability to create temporary hierarchies that associate at many levels with diverse social necessities. Thus engaging with an artistic representation is not a single act of acquaintance and it is never based on a single sensual experience. Although the predominant stimulant may be in some cases visual or auditory, tactile, etc, these experiences involve the entire range of senses. It is an embodied knowledge that acquires information in all possible ways. This is why blind and deaf people can also have aesthetic experiences inspired by artistic representations.

Also individual and collective memory contributes to the process of creating and maintaining the cultural (digital) heritage (Silberman, in press). This is not a uniform process of ever-increasing positive practices of preservation and public display (Watterton et al. 2009). The central problem that divides good from bad practices in the management of cultural heritage is the notion of authenticity and how

it relates to the dominant political, ideological, religious and cultural background in a given society (Tsonev 2009). In this light a good practice of management would be to respect the authenticity (or better authenticities) of socially significant sites, while enabling all parts of society to ask all the possible questions about their historical and cultural significance.

Although most of these questions are difficult to answer, their discussion should continue with the aid of critically humanistic and scientifically informed clarifications that would lead to their solution. Also the notion of multiple authenticities of a given site avoids the essentialist notion of the primacy of place which is mostly associated with claims of primacy over cultural, religious, artistic, etc traditions. The latter recognizes heritage sites as primary places that unite tangible (now visible) and intangible (now existing) cultural traditions that form unique cultural trajectories of evolution that set communities and nations apart from other regional and supraregional traditions of cultural heritage (Winter 2012). The notion of primacy of place is an instrument that aims to divide societies into distinct groups based on epiphenomenal culture heritage traits. In fact each heritage site is unique in its combination (succession) of a series of authentic presences of different communities living at this place that cover the time span from prehistory to modern days. It is these different histories that are able to unite, based on contradictory authenticities. Only the different authenticities of a given site can create social necessity, which allows the presence of different peoples to be fully recognized, popularized and challenged from different national, cultural, religious, aesthetic viewpoints.

The next characteristic of typical human behaviour is the ability to recognize complex patterns, which increases with learned experience (Briscoe 2014). This premise moves back the origins of art to the beginning of the Acheulian tradition. This is the first hominid-human culture that produced symmetrical artefacts.

Not only is the symmetry important but also the process of the alternate detachment of flakes from the upper and lower parts of a big flake that finally becomes shaped into a pointed symmetrical form. It is quite plausible to assume that the processes of working stone and flints were associated with rhythmic movements, sounds and verbal communication. The repeated pattern of regular shapes of production and the use of symmetrical artefacts suggests the ability of these early humans to abstract stable mental images and pass them through generations.

This rhythmic regular process of creating perfectly symmetrical objects is typical for the climax of flint-knapping technologies, the production of superblades (symmetrical) detached from symmetrical conical cores. There is no human necessity or utility that justifies the production of these long blades. Instead, they are attractive in their appearance as the flint varieties they are made of are multicolour, wax – grey – brownish –reddish with glossy or mat surfaces. The distribution of these superblades from the region of their origin (north and northeastern Bulgaria) covers most parts of the Balkans. Another example that better clarifies this kind of behaviour is constituted of the most dispersed artefacts accepted for their symbolic appearance by diverse communities across prehistoric Europe. These are the axeheads made from Alpine ‘jade’. Their patchy occurrence in diverse archaeological contexts and landscapes is difficult to understand, but there is no doubt that these artefacts were highly valued for their aesthetic and social qualities (Tsonev 2015).

Society’s need to produce art

Although the above examples may reflect not artistic behaviour but practising craft, there is one significant feature that blurs the boundary between these types of human activity. This is the resemblance established between real objects and mental imagery (Layton 1991). This resemblance incorporates all the above-mentioned characteristics of artistic human behaviour.

The question that arises is how these mental images appear as stable concepts that allow the production of regular forms by different artisans in entire regions or even across the European continent. From an early evolutionary perspective primitive societies were labelled as the founders of primitive religious systems (Insoll 2011). These early belief systems were the source of inspiration for the art made by early and modern hunter-gatherer communities that were explained by hunting magic, animism, totemism and shamanism. If it is understandable that the cult of ancestors, the relational attitude between living and non-living things (Bird-David 1999) and the mediation through shamanistic rituals between material and spiritual worlds played a significant role in the depictions of Palaeolithic art. It is difficult to make a distinction between these belief systems and how each of them contributed to any particular context. In most cases Palaeolithic parietal art does not represent stable identities though permanent images. A considerable part of these images was reworked by later interventions starting from minor corrections to depictions of new representations inside or beside the older figures, and some become completely erased from the surfaces (De Beaune 2009). On this theoretical ground it is better to consider these early belief systems as dynamic practices based on experiment with the limits of the representation of nature (hybrid human and animal forms), symbolic conventions, social learning and communicating. It is these dynamic practices that, in most cases in the past and in modern days, are able to blur the boundary between decorative and high art and practising various crafts.

In this light it is of greater interest to focus on the correspondence between the artists’ mental imagery (concepts) and the ways she/he portrayed the real objects. Experimental research has demonstrated that learned subjects increase their efficiency in recognizing complex objects from 48% up to about 95% (Layton,1991: 167). Thus the variation between naturalistic and formalized artistic styles is not that

much a mark of conceptualizing the world in a more naïve naturalistic way or through more abstract beliefs. Without proper cultural knowledge it is difficult to identify even some of the realistic renderings of the animals of Magdalenian parietal art, and it is more difficult or almost impossible to estimate their significance from an evolutionary perspective.

For example, the early researchers of the Chaire-à-Calvin shelter art identified a horse running towards the inside of the cave. Later A. Laming-Empeire identified it as bison reworked into a horse. At present it is identified as a hybrid animal: the front part looks like a horse the back part – a bison (De Be-aune 2009). Thus the parts recognized and defined by the previous identifications become recomposed into a new hybrid representation. Such uncertainty accompanies almost all identifications of prehistoric art by modern researchers. Thus an approach of direct identification is not fruitful when trying to assess the skills of the artists and what they meant to convey through their works. Inevitably conceptual dichotomies such as advanced, not advanced appear in the assessment which suggests irrelevant labels such as totemic, animistic or shamanistic. It will be better to consider them as kinship ontologies of dynamic relationships established between different human groups. Their artistic representations are left in places of intense communication (rock shelters and caves) in order to conceptualize the complex relationships between these groups and aim to pass down knowledge to the next generations.

This is why the conceptualization of these images is a complex process not only for modern researchers. At the Roc-aux-Sorciers shelter there are many images that were erased or new images traced inside the older and bigger ones, or old images reworked into new ones. In this process different levels of execution of techniques and application of different skills have been observed. This diversity of the ways of representation stays in contrast to the traditional conceptualization of parietal art as made exclusively by an elitist group associated with shamans or other

ritual leaders. Moreover, these images were considered as fixed forms that constituted the only tangible material expressions through which priests mediated with real and spiritual worlds in the depths of a cave or in the darkness of a rock shelter. In fact the diversity of representations, their stylistic characteristics and the process of remodelling the old images into new ones suggest the existence of a dynamic social landscape. For example, a particular representation of a horse at the Chaire-à-Calvin has exact similarities with two other images situated at two other Magdalenian sites at a distance that varies from few to more than 100 km away.

It is plausible to assume that these dynamic relationships correspond to a discrete spatial process of negotiation, renegotiation and constant recreation of a complex social network. The stability of this network would depend on the production and reproduction of the same range of imagery. This social process suggests a diversity of the efficiency of the combination of technical and artistic skills which entail the re-establishment of fluid individual and group identities. These identities constitute a social need for instituting obligations of reciprocity and cooperation with other groups and individuals. In this way the cyclic reproduction of such a social network will follow a complex path. Its complexity lies in the limited range of the produced imagery left by the network itself. Although the thematic range of this imagery remains narrow it was supported by multiple technical and artistic skills that testify to a complex process of constituting a wide range of personal and group identities which create the social necessity of the introduction of cooperative obligations over a large territory. Looked at from this perspective art turns out to be at the very centre of a complex process of the structuration of society (Giddens 1984) through spatial habituation (regionalization) of mundane and artistic activities.

On the other hand, the creativity of the prehistoric artists must have been dependent on the way they conceptualized personhood and with it gender.

Both categories would have been constituted not through biological entities (human and animals alike), but through social constructs. The latter may be conceptualized as 'dividual' persons (Strathern 1988) and social gender categories that have the potential to enrich the intersubjective relationships construed within wider community networks. These relationships could have been established between humans and between humans, animals and things which were once entangled into embodied social knowledge and behaviour (Hodder and Mol 2015) invoke different levels of sensual and aesthetic experiences. Thus the source of creativity of an artist would not consist only of giving an idea a tangible form. For example, if someone cannot see an object well its form and qualities remain blurred. In such a situation the immediate reaction of the observer will be triggering an embodied experience that involves a range of primary mental templates of already known natural and cultural phenomena. The latter includes changing viewpoints, observational distances, tactile senses and sounds through touching or knocking on the object. According to the 'primary quality model' of human experience (Brewer 2004), only some particularities of such an object would be important, because only they have the potential to create the object's symbolic dimension (the observer's perception of prior and independent qualities of a given phenomenon) that can satisfy the aesthetic and cultural needs of a wider audience. Only good art and good knowledge possess such a quality that is able to feature various cultural forms and social behaviour in a unique way. This quality may also serve as a criterion that divides good from bad art and knowledge, and it makes it understandable why Palaeolithic art may be as good and even better than some of the art made by modern artists living in a technically developed society.

References

- Brewer, B.
2004 *Realism and the nature of perceptual experience*. *Nous*, 14(1), pp. 61-77. DOI 10.1111/j.1533-6077.2004.00020.x
- Briscoe, R. E.
2014 *Do intentions for action penetrate visual experience?* *Front. Psychol.* 5, p. 1265. DOI 10.3389/fpsyg.2014.01265
- De Beaune, S.
2009 *Le matériel lithique non taillé*. In G. Pinçon (ed.), *Le Roc-aux-Sorciers : art et parure du Magdalénien*, Catalogue des collections, Paris, éd. Réunion des Musées Nationaux. Available at <http://www.catalogue-roc-aux-sorcier>
- Dreon, R.
2015 *Aesthetic issues in human emancipation between Dewey and Marcuse*. *Pragmatism Today*, 6: 2, pp. 75-85.
- Giddens, A.
1984 *The constitution of society*. Cambridge: Polity Press.
- Hodder, I. and A. Mol.
2015 *Network Analysis and Entanglement*. *Journal of Archaeological Method Theory*, pp. 1-29. Crossref DOI Link to Publisher-Maintained Copy: <https://doi.org/10.1007/s10816-015-9259-6>, available online 26 August 2015.
- Insoll, T.
2011 *'Animism and Totemism'*. In T. Insoll, (ed.), *Oxford Handbook of the Archaeology of Ritual and Religion*, pp. 1004-1016. Oxford: Oxford University Press.
- Layton, R.
1991 *The Anthropology of Art, 2nd edn*. Cambridge: Cambridge University Press.
- Silberman, N.
2015 *What Are Memories Made of? The Untapped Power of Digital Heritage*. In *Behind the Pixel: Practices and Concepts behind VR*. Proceedings of workshop held in Barcelona 14 December 2015 (in press).
- Strathern, M.
1988 *The Gender and the Gift. Studies in Melanesian anthropology*. Berkeley and Los Angeles: Uni-

versity of California Press.

Tsonev, T.

2015 *Archaeological Approach to Linear Transformation of Surfaces (Kriging, ArcGIS Geostatistical Analyst) and its Potential for Expanding Archaeological Interpretation.*

PAPADOPOULOS, C., E. PALIOU, A. CHRYSANTHI, E. KOTOULA and A. SARRIS.

(eds), *Proceedings of the 1st Conference on Computer Applications and Quantitative Methods in Archaeology*, Greek Chapter (CAA-GR), Rethymnon, Crete, Greece, 6-8 March 2014, pp. 28-36.

Tsonev, T.

2009 *Shifted authenticity and 'liminality' of the Balkan prehistoric landscapes.* In I. Holm, K. Stene and E. Svensson (eds), *Liminal Landscapes. Beyond the concepts of 'marginality' and 'periphery'.* Oslo: Unipub/ Oslo Academic Press, pp. 139-149.

Waterton, E. and L. Smith.

2009 *There is no such thing as heritage.* In E. Waterton and L. Smith (eds), *Taking Archaeology out of heritage.* Newcastle upon Tyne: Cambridge Scholars Publishing.

Winter, T.

2012 *Beyond Eurocentrism? Heritage conservation and the politics of difference.* *International Journal of Heritage Studies*, pp. 1-15, DOI 10.1080/13527258.2012.736403

**A NEW IMPORTANT BOOK NAMED:
“ART AND RELIGION”**

After the publication of the papers in **EXPRESSION** Magazine, the printed edition is now being edited and is due to come out in July 2016. It will be published in a limited number of copies according to the orders received. It is going to become a rare and exclusive edition. Authors have the privilege of being able to order up to 3 copies. Those that did not yet order their copies may do so now before the book goes to the printer. Readers who are not authors in the volume may order only one copy per person. It will present a broad landscape of different views and cases from 25 countries and will be an essential textbook on the meaning and purposes of prehistoric and tribal art the world over. The book will be available to the public at the price of € 40. Authors have the right of acquiring up to 3 copies at 25% discount that is € 30 per copy (plus mailing cost) by subscribing and returning the enclosed form before June 2016

ART AND RELIGION

Anati, E. General Editor. 2016 *Art and Religion* Capo di Ponte

CONTENTS

Emmanuel Anati

Introduction

Jaafar Ben Nasr (Tunisia)

Sandal engravings in the village of Guermessa (Southeast of Tunisia): a graphic memorizing of a forgotten Berbel ritual.

Ingmar M. Braun (Switzerland)

Interdisciplinary interpretation of anthropomorphic composite beings in European Upper Palaeolithic cave art: an approach.

Edmond Furter (South Africa)

Art is structural magic, not illustration.

Arnaud F. Lambert (Usa)

Sorcerer-kings in the Olmec rock art of Preclassic Mesoamerica.

Maria Laura Leone (Italy)

Meanings of the Deer Cave (Porto Badisco, Italy): Neolithic Art.

J. D. Lewis - Williams (South Africa)

Art, religion and myth: were they interrelated in Upper Palaeolithic times?

Angelina Magnotta (Italy)

The Myth of Cynus and Ancient Carvings of the Archaic Apuan Ligurian people near Pontremoli (MS, Italy).

Federico Mailland (Switzerland)

Ibex, crescent and swastika as symbols of a lunar god in the rock art of the Ancient Near East and Central Asia.

Natalia Mykhailova (Ukraine)

Deer Offerings in the archaeology and art of prehistoric Eurasia.

Susan Searight-Martinet (Morocco)

Engraving of sacred, ideological of symbolical signs in Imaoun, a prehistoric tribal meeting place in Souther Morocco.

Hans - Joaquim Ulbrich (Austria)

Communicating with the gods: superstition on Fuenteventura and Lanzarote

Vahanyan Gregori (Armenia)

Rock art of the Vedda people of Sri Lanka: when, why and to whom?

Steven J. Waller (Usa)

Thunder Gods in Prehistoric Art, Mimicking Thunder for rainmaking Rituals and the Psychoacoustics of Reverberation.

Forthcoming book "ART AND RELIGION"
ORDER FORM RESERVED TO THE AUTHORS (DISCOUNT OF 25% on cover price of 40,00 €)

Shipping address

First Name

Last Name

email address

Street

Postal Code

City

State/Province

If you wish to receive a receipt, please indicate below:

Company or Name

Vat ID Number (eventual)

Street

Postal Code

City

State/Province

Please indicate number of copies and shipping zone
 (Zone 1: Europe - Zone 2: Africa-Asia-Americas - Zone 3: Oceania)

N. OF COPIES	PRICE OF VOLUME DISCOUNTED -25%	SHIPPING COST	TOTAL
<input type="checkbox"/> 1	30,00 €	<input type="checkbox"/> ZONE 1 - 11,00€ (1 pack)	41,00 €
		<input type="checkbox"/> ZONE 2 - 17,00€ (1 pack)	47,00 €
		<input type="checkbox"/> ZONE 3 - 23,00€ (1 pack)	53,00 €
<input type="checkbox"/> 2	60,00 €	<input type="checkbox"/> ZONE 1 - 18,00€ (1 pack)	78,00 €
		<input type="checkbox"/> ZONE 2 - 28,50€ (1 pack)	88,50 €
		<input type="checkbox"/> ZONE 3 - 34,00€ (1 pack)	94,00 €
<input type="checkbox"/> 3	90,00 €	<input type="checkbox"/> ZONE 1 - 29,00€ (2 pack)	109,00 €
		<input type="checkbox"/> ZONE 2 - 45,50€ (2 pack)	135,50 €
		<input type="checkbox"/> ZONE 3 - 57,00€ (2 pack)	147,00 €

Payment methods:

- PayPal (reference address: atelier.stno@gmail.com)
- Bank Transfer to:
Atelier Research Center - via Marconi 7, Capo di Ponte, Italy
 IBAN: IT 81 N 03359 01600 1000000 61142 | SWIFT: BCITITMX

Enclosed receipt or details of payment.

Date..... Signature.....

EXPRESSION

N°12

June 2016



Annual Subscription (4 issues)

Individual subscribers € 20
Institutional subscribers € 40

President Emmanuel Anati
Secretary Lysa Hochroth
Copy Editor Penny Butler
Editorial Board Ariela Fradkin
Federico Mailland
Elisa Pedretti

EXPRESSION is published by Atelier Editions
in cooperation with UISPP - CISNEP.
Proposed news and texts should be sent to
atelier.etno@gmail.com

*Atelier Research Centre
Città della Cultura, Via Marconi, 7
25044 Capo di Ponte (BS), Italy*

To subscribe or unsubscribe contact:
[<atelier.etno@gmail.com>](mailto:atelier.etno@gmail.com)

TO RECEIVE INFORMATION FROM ATELIER

Dear Reader,

-If you do not wish to continue receiving information form Atelier, please send the following message to:
[<atelier.etno@gmail.com>](mailto:atelier.etno@gmail.com)

“Please **cancel** from your mailing list the following address:.....”

Your email will be cancelled.

-If you wish to receive Atelier mail at a different address, please send us the following message:

“Please **change** my mailing address: Previous mailing address:.....; New mailinmg address:.....”

-If you wish other colleagues or friends to receive Atelier news, please send the following message:

“Please **add** the following email to your mailing list:.....”

Many thanks for your cooperation,
Atelier Secretariat

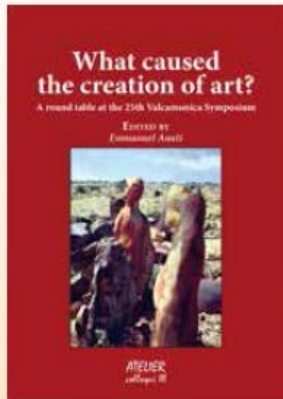
The editors do not necessarily agree with the ideas of the autors. The authors are the only responsible for the ideas, the texts and the illustrations they present.



ATELIER PUBLICATIONS IN CONCEPTUAL ANTHROPOLOGY

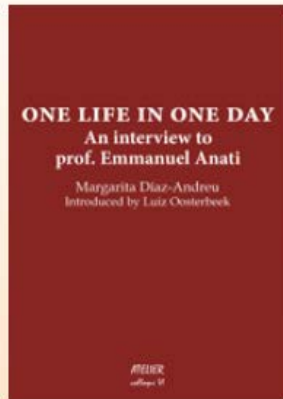
ENGLISH EDITIONS

COLLOQUI



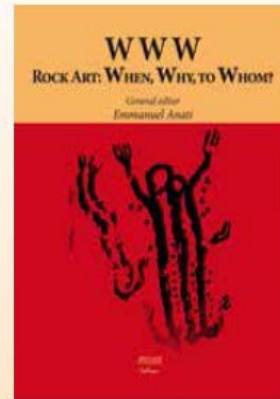
Anati, E. (ed.) 2013. *What Caused the Creation of Art? A Round Table at the 25th Valcamonica Symposium*, Capo di Ponte (Atelier), 44 pp. € 10.

'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.



Diaz-Andreu, M. 2015 *One life in one day, an interview to prof. Emmanuel Anati*, Capo di Ponte, (Atelier), 104 pp. 51 pls. € 20

In the gardens of the campus of Burgos University, while delegates were moving from sessions and lectures to coffee breaks and back, Margarita Diaz-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.

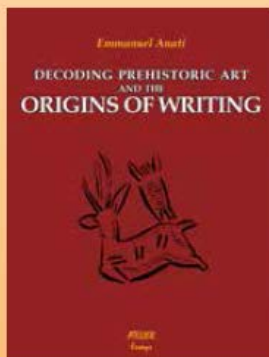


Anati, E. (ed.). 2015 *WWW. Rock Art: when, why, to whom?* Capo di Ponte, (Atelier), 218 pp. 184 pls. € 40

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? Fifty authors from five continent face the query: when, why and to whom?

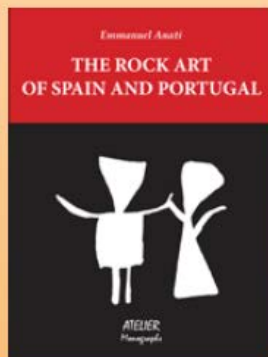
COLLOQUI

ESSAYS OF ATELIER



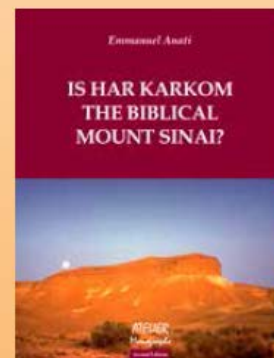
Anati, E. 2015. *Decoding Prehistoric Art and the Origins of Writing*, Capo di Ponte (Atelier), 152 pp. 83 pls. € 20.

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 propose a new vision for the beginning of writing.



Anati, E. 2014. *The rock Art of Spain and Portugal, a Study of Conceptual Anthropology*, Capo di Ponte (Atelier), 104 pp. 87 pls. € 20.

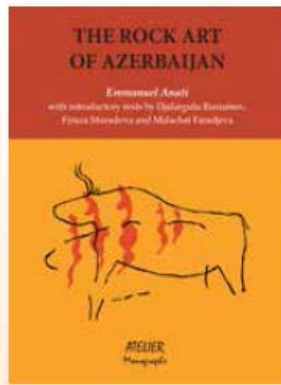
An analytical synthesis of the rock art in the Iberian peninsula from the conceptual anthropology approach. The major concentrations of rock art are considered as expressions of their different cultural and social patterns.



Anati, E. 2013. *Is Har Karkom the Biblical Mount Sinai?* (II ed.), Capo di Ponte (Atelier), 96 pp. 53 pls. € 20.

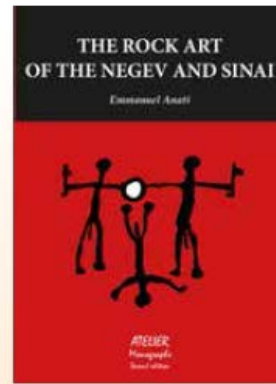
Remains of ancient sanctuaries and camp-sites tell the story of a hitherto unknown mountain in the heart of the desert of Exodus. Is Har Karkom the biblical Mount Sinai? To what point can we consider the biblical narratives as a source of historical documentation?

MONOGRAPHS



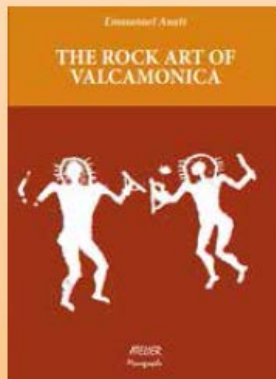
Anati, E. 2015. *The Rock art of Azerbaijan*, Capo di Ponte (Atelier), 156 pp. 190 pls. € 20

In 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. New chapters in the history of art are revealed by beautiful design and stylisation.



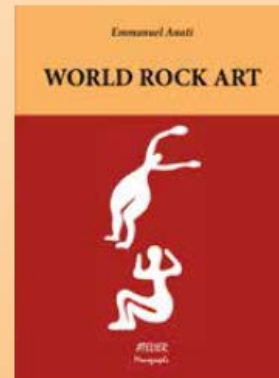
Anati, E. 2015. *The Rock Art of the Negev and Sinai*, second edition, Capo di Ponte (Atelier), 242 pp., 190 pls. € 25.

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.



Anati, E. 2015. *The Rock art of Valcamonica*, Capo di Ponte (Atelier), 260 pp. 153 pls. € 20

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. After having excavated, traced, described and analyzed it for over half a century, the author presents this synthesis bringing new light on 10,000 years of history. The present work represents a turning point in the methodology of archaeological research. Europe acquires back millennia of its forgotten history.



Anati, E. 2015. *World Rock Art*, Capo di Ponte (Atelier), 208 pp. 193 pls. € 20

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. He can be seen the beginning of a new discipline, the systematic study of world rock art.

BOOKS PURCHASE AND MEMBERSHIP

www.atelier-etno.it; PayPal (atelier.etno@gmail.com).

By bank transfer order by email to [<atelier.etno@gmail.com>](mailto:atelier.etno@gmail.com).

Books are also available on Amazon as printed versions and e-books.

To receive the general catalogue of Atelier Edit, request [<atelier.etno@gmail.com>](mailto:atelier.etno@gmail.com) free of charge