

INTELLECTUAL AND SPIRITUAL EXPRESSION OF NON-LITERATE PEOPLES

PROCEEDINGS OF THE XVII UISPP WORLD
CONGRESS (1-7 SEPTEMBER, BURGOS, SPAIN)

Volume 1 / Session A20

Edited by
Emmanuel Anati

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Contents

Foreword to the XVII UISPP Congress Proceedings Series Edition	xi
Introduction: A Message from the President	xii
Decoding Prehistoric Art: The Messages Behind the Images	1
Emmanuel ANATI and Ariela FRADKIN	
Primitive Religious Information Embodied in Human-Face Images of Rock Art on Zhuozishan Mountain, Wuhai, Inner Mongolia	23
Li AN and Junsheng WU	
Prairie Economy Development seen from Rock Art in the West Range of Langshan Mountain, Inner Mongolia	25
Aoyungerile and Ying AN	
The Canadian Shield Rock Art and its Spiritual Dimension: Finding Some Tangible and Intangible Aspects of Rock Art Sites in the Canadian Shield through a Contextual Approach	27
Daniel ARSENAULT	
Intellectual and Spiritual Expressions of Non-Literate Societies: Art and Culture, a Journey through the World of Mankind	39
Margalit BERRIET	
Carved Footprints and Prehistoric Beliefs: Examples of Symbol and Myth Practice and Ideology	45
Ulf BERTILSSON	
Grid Patterns in NW Iberia Rock Art Iconography, Contexts and Interpretations	63
Ana M. S. BETTENCOURT	
Sexual Human Representations in the Paintings in the Serra da Capivara, Brazil: Relations in Action, Narrative Relations?	65
Pascale BINANT	
The Stargazers: The Evolution of Knowledge, Beliefs and Rock Art	77
Paul BOUISSAC	
As Above, So Below: Unveiling the Truth About Stonehenge's Sacred Landscape	83
Paul D. BURLEY	
Research and Study on the Guizhou Rock Art Heritage	101
Bo CAO	
Pre-Literate Art in India: A Source of Indigenous Knowledge, Ethno-History and Collective Wisdom	103
Somnath CHAKRAVERTY	
The Anthropomorphic Figurine of Can Sadurní Cave, Begues, Barcelona	119
<i>Manuel EDO, Ferran ANTOLÍN, Pablo MARTÍNEZ, M^aJesús BARRIO, Elicínia FIERRO, Trinidad CASTILLO, Eva FORNELL, Georgina PRATS, Remei BARDERA, Concepció CASTELLANA</i>	

Archeology, Rock Art, Archeoacoustics and Neuroscience: What Kind of Relation?	121
Fernando COIMBRA	
Heralding the Sun	133
Léo DUBAL	
The Treasures from the Russian City of Zaraysk	141
Arsen FARADZHEV	
Several Understandings on the Cave Paintings on the Turtle Stone in Anshan	149
Gang Li and Xifeng Ni	
Earth and Underground in Early Sumerian Sources	151
Francesco GHILOTTI	
From Survival to Conatus: Comparative Axiology from Engraving To Painting	163
Lysa HOCHROTH	
The Intellectual and Spiritual Expressions of a Nomadic Tribe, the Birhor (of Hazaribagh, Jharkhand, Eastern India)	165
Bulu IMAM	
Prehistoric Rock Art, the Information Era of Humans which has been Overlooked	173
Yanqing JIN and Xiaoxia ZHANG	
Some Aspects of the Contemporary Use of Ancient Symbols	175
Shemsi KRASNIQI	
Discovery and Pilot Study of the Jinsha River Chiselled Rock Art in Shangri-La	177
Gang Li	
Rock Paintings in Southwest China, Focusing on the Coffin Paintings in the Rock Cave at Xianren Bridge, Huishui County, Guizhou Province	179
Fei Li	
Survey of the Status and Protection Strategy for the Ancient Rock Paintings in Guizhou	181
Hao Li and Biao He	
Lifestyle of Human Groups During Palaeolithic at Har Karkom	183
Federico MAILLAND	
Aspects of the Nature and Purpose of Specific Symbols and Images in the Non-Literate World of Neolithic and Bronze Age Britain and Ireland (Including Stonehenge)	185
G. TERENCE MEADEN	
The Arroyo de las Flechas' Rock Art Engravings: Symbolic Associations in Sierra El Alamo (Caborca, Sonora, Mexico)	197
Beatriz MENÉNDEZ, Ramon VIÑAS, Martha E. BENAVENTE, Alejandro TERRAZAS AND Albert RUBIO	
Colonisation of the Upper Miera and Asón Valleys (Cantabria, Spain) in the Late Pleistocene and the Early Holocene	211
Mercedes PÉREZ BARTOLOMÉ AND Emilio MUÑOZ FERNÁNDEZ	
The Special Characteristics of the Zhenfeng Rock Art in Guizhou	225
Xiaomei MU and Li-Na ZHANG	

Symbols as Persona in the Dawn of Food Production in the Alto Ribatejo, Portugal	227
Luiz OOSTERBEEK	
The Portrait in Prehistory	229
Marcel OTTE	
Review of Guangxi Cliff Drawing Research	237
Hu PENGCHENG	
Research on File Construction System of Rock Art	251
Hua QIAO, Li BIN GONG AND Hui LIU	
The Dynamics of Mental Movements as a Base for the Intellectual and Spiritual Expressions of Non-Literate People and the Origin of Development of the Human Being	253
Andrea ROCCHITELLI	
The Rock Art of Saracahi River Basin: The El Arco and Blanca de la Pulsera Caves, Sonora (Mexico)	259
Albert RUBIO, Ramon VIÑAS, Joaquín ARROYO, César QUIJADA, Beatriz MENÉNDEZ, Neemias SANTOS, Antonio HERNANZ AND Mercedes IRIARTE	
A Ritual Space with Paintings and Engravings in the La Calera Rock Art Set, Caborca, Sonora, Mexico	273
ALBERT RUBIO, RAMON VIÑAS, JOAQUÍN ARROYO, CÉSAR QUIJADA, BEATRIZ MENÉNDEZ, NEEMIAS SANTOS	
The Rock Art of Indo-European Cultures: Concordances, Logics and Possible Common Values	287
Umberto SANSONI	
A Natufian Mask-Face Figurine: An Insight into the Nature of the Supernatural Being	305
Dana SHAHAM and Anna BELFER-COHEN	
Research on the Classification and Staging of Rock Art on Lusen Mountain in Qinghai	307
Zeming SHI and Yanqing JIN	
Investigation and Research into Dahongyan Rock Art in Zhengfeng County, Guizhou Province	309
Zeming SHI and Xiaoxia ZHANG	
Field Survey and Analysis of Mask Worship in the Xiliaohe River Basin	311
Xiaoyong SUN AND Jiaxin ZHANG	
The Use of Burial Space and Social Relations Between the Late Neolithic Age and the Copper Age in Sardinia	313
Giuseppa TANDA	
3D Reconstructions of Sculptured Emotions in the Copper Age Eastern Balkans	327
Tsoni TSONEV	
The Beginnings of Natural Philosophy and Metaphysics in the Rock Art of Armenia	339
Gregor VAHANYAN	
A Complex Research of Paleolithic Art in Ukraine	347
Viktor VETROV	

Manipulation Tactics: A Cultural Interpretation of Rock Art Images Massed in Southwest China	349
Liangfan WANG and Xiaoming LUO	
Research on the Development and Utilization of the Guizhou Ancient Petrography Resource	351
Xiaoping WU and Hao LI	
Discovery and Study of Two Groups of Writing on the Cliff in the Hongshan Culture Area	353
Jiacai WU	
Communication and Transform: In-Depth Reflection of Helan Mountain Rock Art	355
Huiling YANG	
Research of Classification and Stages of the Rock Art on Lusen Mountain in Qinghai.....	357
Jing YANQING AND Shi ZEMING	
Using the Montage Technique to Read Various Cave Painting Sites on Guizhou Plateau	369
Qian Sheng YOU	
Agricultural Worship in the Rock Art of Jiangjunya, Lianyungang City, East China	371
Jiaxin ZHANG AND Yaqi HUANG	
Image Classification and the Symbolic Structure of the Rock Art at the Zuojiang River, Guangxi.....	373
Yasha ZHANG, Xiaohong LU AND Mingshui WANG	
Research on Face Rock Carvings in Northern China.....	375
Wenjing ZHANG AND Xiaokun WANG	
Discussion of Reproduction Worship in Chinese Rock Art.....	377
Jiaxin ZHANG, Bo XIAO AND Zhaohui WANG	
An Ancient Sacrificial Place: Research Into Rock Art in Xianju	379
Houqiu ZHU	
Significance of the Stabilization Works Which Protect the Rock Art Painting in Ningming District	381
Qiuping ZHU	
Petroglyphs of the Northern Pacific Rim: The Rock Art of the Xiliaohe River and the Amur River	383
Lifeng ZHU AND Xu WANG	
On the Disciplines of Taking Image in Chinese Rock Art.....	385
Yuan ZHU and Zhuoran YU	

List of Figures and Tables

E. ANATI AND A. FRADKIN: Decoding Prehistoric Art: The Messages Behind the Images	
Figure 1a. Engraved bones from French Upper Paleolithic	4
Figure 1b. Message-sticks from Yirrkalla, Arnhem Land, Australia.....	4
Figure 2a. European cave art.....	6
Figure 2b. Association of ideograms of Early Hunters.....	7
Figure 2c. Hand stencils and other symbols of Early Hunters.....	8
Figure 3. Prehistoric art elementary grammar. Pictograms, ideograms and a psychogram	9
Figure 4a. Message sent by an old man of the Cheyenne tribe to his son	10
Figure 4b. American Indian pictographic writing is recording a political and social event.....	11
Figure 5. Rock engraving of Hunters-gatherers	12
Figure 6. The composition is located in a selected place	13
Figure 7. High relief of the rock shelter of Laussel, called ‘The Laussel Venus’	13
Figure 8. A bone object from the archeological excavations at La Vache cave, in Ariège, France	15
Figures 9a,b,c,d. Some of the engraved rocks of the La Ferrassie group.....	16
Figure 10. Examples of the repetitious association of caprine or cervine.....	17
Figure 11. An engraving in the cave of Altamira, Spain	18
Figure 12a. A recording on bone at La Madeleine in the Dordogne, France	19
Figure 12b. Fragment of decorated bone from the Magdalenian period. Les Eyzies, Dordogne, France.....	19
D. ARSENAULT: The Canadian Shield Rock Art and its Spiritual Dimension	
Figure 1. Map showing the distribution of rock art sites in the Province of Québec, Canada	28
Figure 2. In the Canadian Shield, the rock painting sites located in the boreal forest	30
Figure 3. Some of the figures depicted in the Canadian Shield rock art illustrate hybrid personages	31
Figure 4. Maps between 1731 and 1733 of what was then the Domain of the King	32
Figure 5. One of the human-like figures (depicted in the rock art graphic at Nisula-Pepeshapissinikan	33
Figure 6. A stencil of one of the painted panels seen on the Mikinak site, National Park of Mauricie	34
Figure 7. For the Algonquian communities, many rock art sites in the Canadian Shield	35
U. BERTILSSON: Carved Footprints and Prehistoric Beliefs	
Figure 1. Footprints in the form of a pair of naked feet depicted together with a ring-cross.....	46
Figure 2. Footprints consisting of a pair of naked feet in combination with solar symbols	47
Figure 3. Footprint pair without marked toes and a solar disk that is supported by birds.....	48
Figure 4. The Litsleby carving dominated by the 2.40-m tall ‘Spear God’ with a sun symbol	49
Figure 5. Graphic depiction of the rock carving at Aspeberget	51
Figure 6. Part of Järrestad panel with three pairs of footprints	52
Figure 7. Pair of footprints with pendent adorant at front.....	53
Figure 8. Group with pairs of footprints at Lökeberg in Foss.....	54
Figure 9. Denmark’s biggest rock carving	55
Figure 10a. Rock carving at Gärde, Offerdal in Jämtland.....	56
Figure 10b. Contour-carved elk with marked heart, and a pair of elk track stamps.....	56
Figure 11. Photo of Bronze Age rock carving from Kyrkoryk in Tanum.....	58
Figure 12. Putative footprint from Briteiros hill fort (Guimarães) Portugal.....	59
Figure 13. The deeply carved footprint placed on the crest of a hill fort, Stenshuvud	60
P. BINANT: Sexual Human Representations in the Paintings in the Serra da Capivara, Brazil	
Figure 1. Toca do Caboclo, couple with pregnant woman.....	67
Figure 2. Toca do Caboclinho, representation of a couple of which a pregnant woman.....	67
Figure 3. Toca do Boqueirao do Paraguaio I, several human figures with a feminine figure	68
Figure 4. Serra da Capivara, group of male human figures with the angled sex	68
Figure 5. Toca das Europas II, serie of three <i>Characteristics</i>	68
Figure 6. Toca do Salitre, personnage et son acolyte féminin enceinte	69
Figure 7. Toca do Caboclo, <i>character</i> with an angled sign on the side	69
Figure 8. Toca du Zé Patú, <i>character</i> and his feminine <i>accomplice</i>	70
Figure 9. Toca do Rodriguez 2, scene of coupling up.....	71

Figure 10. Toca da Entrada do Baixão da Vaca, women with the “little circle”	71
Figure 11. Toca do Boqueirao da Pedra Furada, representation of childbirths	73
Figure 12. Toca da Fumaça, human figures, feminine one to the left, male to the right.....	74

P. D. BURLEY: As Above, So Below: Unveiling the Truth About Stonehenge’s Sacred Landscape

Figure 1. Location of Salisbury Plain, Wiltshire County, England.....	85
Figure 2. General extent of the Stonehenge landscape located in the south portion of Salisbury Plain	86
Figure 3. Location and extent of individual prehistoric structures	88
Figure 4. Locations of the nine long barrows Terence Meaden discovered	88
Figure 5. Configuration of the henges at five locations at or nearby the Stonehenge landscape	89
Figure 6. Map of the Stonehenge landscape	91
Figure 7. This illustration removes naked alignments associated with nine long barrows.....	91
Figure 8. Alignments associated with five additional monument locations.....	92
Figure 9a. The asterism of the Winter Hexagon located in the vicinity of constellations.....	95
Figure 9b. The Milky Way extends across and beyond the line between Sirius and Capella	96
Figure 10a. Star map of the Stonehenge Landscape showing the galactic plane, ecliptic	97
Figure 10b. Scaling the distance from the west end of the Greater Cursus to Woodhenge.....	98
Table 1. Features of the Stonehenge Landscape Corresponding to Elements of the Cosmic Dome	94

S. CHAKRAVERTY: Pre-Literate Art in India

Figure 1. Map of India showing the state-wise concentration of rock art sites.....	106
Figure 2. Hunting of deer by using harpoon. Site: Lakhajore; Madhya Pradesh	108
Figure 3. Engraved Foot marks of wild animals. Site: Tongo; Sundargarh District; Odisha.....	108
Figure 4. Group hunting Site: Lakhajore; Madhya Pradesh	109
Figure 5. Fishing by using a trap. Site: Pachmarhi	110
Figure 6. Pastoral community and their domesticates. Site: Pachmarhi	110
Figures 7 and 9. Battle Scenes. Site: Pachmarhi	112
Figure 8. Household scenes and monkeys with honey bees and honeycomb. Site: Pachmarhi.....	113
Figure 10. Wooden models of hand and feet as votive offerings in a rock art site. Site: Kathotia Karad	113
Figure 11. Painted icon in a household of Lanjhia Saora tribe. District: Rayagada; Odisha.....	115

F. COIMBRA: Archeology, Rock Art, Archeoacoustics and Neuroscience

Figure 1. Dancing to the sound of chanting or music.....	123
Figure 2. The plan of Maeshowe passage grave and the location of rock art motifs	125
Figure 3. Knowth and its satellite tombs	125
Figure 4. Prehistoric paintings from Hal Saflieni.....	126
Figure 5. Filiform carvings from Maeshowe	127
Figure 6. Stone head from the Hypogeum of Cividale del Friuli.....	128
Figure 7. Sleeping Lady	129

L. DUBAL: Heralding the Sun

Figure 1. Post-glacial sea-level rise after R. Rohde	134
Figure 2. Anthropomorphic sun at Helanshan (PRC).	134
Figure 3. Summer solstice sunset at Zürich Grossmünster (CH).....	135
Figure 4. Labyrinth and winter solstice sunrise at Newgrange (IRL).....	135
Figure 5. Labyrinth of Mogor (SP) / Sunset between Ons and Onza	136
Figure 6. Summer solstice sunrise at Dos Sulif (I).....	136
Figure 7. Winter solstice sunrise at La Gardette s/Cèze (F)	137
Figure 8. Winter solstice sunrise at Conxo (SP)	137
Figure 9. Artificial landscape in front of the sphinx heralding the sun before its shortest night.....	138
Figure 10. The sphinx’s head as pivot for the summer solstice sunset at Giza (UAR).....	138
Figure 11. Stela of Amenhotep IV as sphinx (Geneva Museum) decoding the ‘atenic’ message	139
Figure 12. Sunrise from Aten small temple, 704 hour before vernal equinox.....	140

A. FARADZHEV: The Treasures from the Russian City of Zaraysk

Figure 1. The bison figurine made from mammoth ivory.....	141
Figure 2. Excavation near the ancient walls of the Zaraysk Kremlin in 2001	142
Figure 3. Bison pictures from three sides after Kravtsov	143

Figure 4. Bison pictures from the other three sides after Kravtsov.....	143
Figure 5. Group of English students from the archaeological department at the Zaraysk excavations.....	144
Figure 6. The Zaraysk Venus	144
Figure 7. Catalogue of the exhibition <i>Ice age art. Arrival of the modern mind</i> , 2013	146

F. GHILOTTI: **Earth and Underground in Early Sumerian Sources**

Figure 1. 'Warka vase'. Relief-carved alabaster vessel, late fourth millennium, from Uruk	154
Figure 2. Schematic map of the world. Clay tablet of the middle of the third millennium, from Fara.....	158
Figure 3. Fantastic representation of the preparation of a banquet in the hereafter	159

B. IMAM: **The Intellectual and Spiritual Expressions of a Nomadic Tribe, the Birhor**

Figure 1. Birhors with their catch (Old photo 1970s)	169
Figure 2. Building the Kumba or leaf house4 (Danua Tanda)	170
Figure 3. Birhors	170
Figure 4. Birhors	170
Figure 5. Birhors	171
Figure 6. Sultana Tanda- Birhor women making plam leaf mats	171
Figure 7. Birhor tribe India	171
Figure 8. Birhors	172
Figure 9. Hunting Scene showing animals trapped in the net.....	172

S. KRASNIQI: **Some Aspects of the Contemporary Use of Ancient Symbols**

Figure 1.....	175
Figure 2.....	175

G. T. MEADEN: **Aspects of the Nature and Purpose of Specific Symbols and Images**

Figure 1.....	187
Figure 2. Some of the flint objects from inside the rock cavity	187
Figure 3. Front of a sarsen triangular stone weighing 13 kg pierced at the apex.....	187
Figure 4. A face carved from hard sarsen rock, weight 27 kg, found with the triangle	187
Figure 5. One side of the same 31-kg portable stone artificially shaped front and back	188
Figure 6. Drombeg Stone Circle.....	189
Figure 7. The union between a pillar stone and a lozenge stone: Drombeg Stone Circle	190
Figure 8. At sunrise on each indicated date of the year a shadow falls on the lozenge stone	190
Figure 9. Symbols on the horizontal flat surface of the recumbent stone at Drombeg	191
Figure 10. View from the interior of the stones of Stonehenge along the major axis.....	192
Figure 11. In midsummer week the shadow of the Heel Stone penetrates the monument	193
Figure 12. Whether the Altar Stone was recumbent or standing, the shadow reaches it after sunrise	193

B. MENÉNDEZ *et al.*: **The Arroyo de las Flechas' Rock Art Engravings**

Figure 1. Location of Arroyo de las Flechas with respect to La Proveedora and La Calera hills.....	198
Figure 2. Surface covered by the OHCNS project at Sierra el Alamo	199
Figure 3. Main panel in Arroyo de las Flechas (Sector 2).....	200
Figure 4. Topographic survey of Arroyo de las Flechas using the <i>Surfer</i> TM mapping program.....	200
Figure 5. Recording the rock art representations in the Arroyo de las Flechas	201
Figure 6. Sector 2 engravings representing several female figures	203
Figure 7. A scene where a human figure is playing a drum next to a lizard man and a turtle.....	205
Figure 8. Engraving of an archer	206
Figure 9. Symbolic associations with projectile-like representations	207
Graphic 1. Typology chart specifying the total number and percentage for each category.....	202
Graphic 2. Typological quantification of the rock art set according to the number of rocks and panels	203
Graphic 3. Typological associations percentage in the Arroyo de las Flechas set	204

M. PÉREZ BARTOLOMÉ AND E. MUÑOZ FERNÁNDEZ: **Colonisation of the Upper Miera and Asón Valleys**

Figure 1. Location of the upper Miera and Asón valleys	212
Figure 2. Glaciers and the extension of the ice	213
Figure 3. Glaciation phases in Castro Valnera: heads of the Asón and Miera valleys.....	214

Figure 4. Spatial distribution of sites in the upper Miera and Asón valleys.....	215
Figure 5. Frequencies of settlement types	216
Figure 6. Upper Paleolithic settlement: chronology, climate and cultural attribution	216
Figure 7. Azilian settlement: chronology and climate	217
Figure 8. Mesolithic occupations: chronology and climate phases	218
Figure 9. Distribution of the sites according to their altitude	219
Figure 10. Frequencies of cave typology	220
Figure 11. Frequencies of fauna	222
Figure 12. Frequencies of malacological species	222

M. OTTE: The Portrait in Prehistory

Figure 1. Rembrandt, Large Self-portrait (detail).....	229
Figure 2. Polychrome bison; Altamira Cave, Cantabria – Mask; Altamira Cave, Cantabria.....	230
Figure 3. Lions; Grotte de Chauvet, France – Lion-man.....	231
Figure 4. Vénus de Willendorf; Calcaire	232
Figure 5. Venus from Kostenki XIV – Claviform Venus, Nebra – Venus, Cueva del Pintal, Cantabria	233
Figure 6. Aïn Ghazal – plastered skulls, Jericho	234
Figure 7. Statuette from Vinča – young Papuan boy	234
Figure 8. Vase and statuette from Cucuteni	235
Figure 9. Janus, Roquepertuse, Bouches du Rhône, France – Lady of Elche	236

H. PENGCHENG: Review of Guangxi Cliff Drawing Research

Figure 1. Distribution Map of the Chinese Cliff Drawings	237
Figure 2. Geographic Location of Guangxi.....	238
Figure 3. Distribution Map of Guangxi Cliff Drawing	239
Figure 4. Distribution Map of Zuojiang Huashan Cliff Drawing	240
Figure 5. Panorama of Ningming Huashan cliff drawing	240
Figure 6. Part of Huashan cliff drawing	241
Figure 7. Group Figures of Former Research	242
Figure 8. Parts of Former Research Results	243
Figure 9. Four Drawing Methods	245
Figure 10. Archaeological Excavation and Some Unearthed Relics	246
Figure 11. Copying and Measuring the Data of Cliff Drawing.....	247
Figure 12. 1. Nayangshan cliff drawing, 2. Yizhou Horse Rock cliff drawing, 3. Maoheshan cliff drawing	248
Table 1. Table of Distribution of Guangxi cliff drawing	238
Table 2. Research and Conclusions on Zuojiang Huashan cliff drawing	242
Table 3. Relevant Research Projects	247

A. RUBIO *et al.*: The Rock Art of Saracahí River Basin

Figure 1. Cucurpe area indicating the caves El Arco and Blanca de la Pulsera	261
Figure 2. Topographic sketches of El Arco cave, Cucurpe	262
Figure 3. View of El Arco cave, Cucurpe	263
Figure 4. Graphic and table of the represented motifs in El Arco cave	263
Figure 5. Digital reproduction of the northern wall of El Arco	264
Figure 6. Figure in birthing position on a textile item	265
Figure 7. Topographic sketches of Blanca de la Pulsera cave, Cucurpe	266
Figure 8. View of the Blanca de la Pulsera cave, Cucurpe, and the outer wall with engravings.....	267
Figure 9. Graphic and table of the motifs represented in Blanca de la Pulsera cave.....	267
Figure 10. Engravings on the exterior zone of the cavity; human figure engraved on Panel I.....	268
Figure 11. Panel I, human figures with headdress and textiles, with a structure like a hut	269

A. RUBIO *et al.*: A Ritual Space with Paintings and Engravings in the La Calera Rock Art Set

Figure 1. Situation map and view of the hill of La Calera, next to La Proveedora	277
Figure 2. Block with human figures, animals and geometric elements of the La Calera rock art set.....	278
Figure 3. West slope of the hill of La Calera, where is located the ceremonial enclosure	278
Figure 4. Provisional sketch of the La Calera ceremonial enclosure.....	279
Figure 5. Comparison among categories of paintings and engravings of the ceremonial enclosure	280

Figure 6. Possible ceremonial ritual specialist with a rod and female figure with headdress	281
Figure 7. Representations of the Panel IV, on which stands out human figures and geometric elements	281
Figure 8. Representations of deer and geometric elements, engraved inside the enclosure	282
Figure 9. Characters of the Panel I. Digital Photograph and image treatment by DStrech.....	283
Figure 10. Block III. Small cupmarks are observed in the upper edge of the block.....	283
Figure 11. Block VI, with presence of fixed mortar bowls	284

U. SANSONI: **The Rock Art of Indo-European Cultures**

Tav. 1. Central Asia; Scandinavia; Alps; Iberian Peninsula	295
Tav. 2. Central Asia; Scandinavia; Alps; Iberian Peninsula	296
Tav. 3. Central Asia; Scandinavia; Alps; Iberian Peninsula	297
Tav. 4. Central Asia; Scandinavia; Alps; Iberian Peninsula	298
Tav. 5. Central Asia; Scandinavia; Alps; Iberian Peninsula	299
Tav. 6. Central Asia; Scandinavia; Alps; Iberian Peninsula	300
Tav. 7. Central Asia; Scandinavia; Alps; Iberian Peninsula	301
Tav. 8. Central Asia; Scandinavia; Alps; Iberian Peninsula	302
Tav. 9. Central Asia; Scandinavia; Alps; Iberian Peninsula	303
Tav. 10. Central Asia; Scandinavia; Alps; Iberian Peninsula	304

G. TANDA: **The Use of Burial Space and Social Relations**

Figure 1. Distribution map of decorated Domus de Janas.....	315
Figure 2. 1. Types I-IV; 2. Distribution rates of types I-IV and V-XXIII; 3. Distribution rates of types	317
Figure 3. Distribution rate of the Domus de Janas	318
Figure 4. 1. The Brodu Domus de Janas; 2. Distribution of signs based of the plant	320
Figure 5. Architectural Elements	322
Table 1. Refurbished tombs, with T-shaped core.....	319
Table 2. Tombs with T-shaped plant	319
Table 3. Frequency rate of wach location where motifs are sculpted	321
Table 4. Location of the motifs based on the planimetric economy of refurbished Domus de Janas	323
Table 5. Location of the motifs inside the T-shaped Domus de Jana	323

T. TSONEV: **3D Reconstructions of Sculptured Emotions in the Copper Age Eastern Balkans**

Figure 1. 'The Thinker'. Cernavoda site, Romania	332
Figure 2. 'The spouse of the thinker'. Cernavoda site, Romania	333
Figure 3. Portrait of a man with bulging eyes.....	334
Figure 4. Portrait of a man with one eye	335
Figure 5. Portrait of a man (woman) with inverted right-angle triangles.....	335
Figure 6. Portrait of an agonizing man	336
Figure 7. Portrait of a woman (man) in a high social position.....	336

G. VAHANYAN: **The Beginnings of Natural Philosophy and Metaphysics in the Rock Art of Armenia**

Figure 1. Differentiation of Indo-European	342
Figure 2. Allegory of the four elements of ancient natural philosophy	342
Figure 3. Cave drawing depicting the solar deity in the form of a swastika levorotatory.....	343
Figure 4. Petroglyphs of the four elements, solar (heavenly) and ideograms.....	343
Figure 5. Petroglyphs rides bulls (a, b) Ukhtasar, Armenia and stone tomb stone (c), Ukraine	344
Figure 6. Philosophical picture of the world: the four forces and acts of birth, Geghama Mountains.....	344
Figure 7. How the moon was created by modern scientists and ancient people by the rock art	345

J. YANQING AND S. ZEMING: **Research of Classification and Stages of the Rock Art on Lusen Mountain**

Figure 1. Figure.....	358
Figure 2. Animal.....	358
Figure 3. Yak	358
Figure 4. Yak	359
Figure 5. Yak	359
Figure 6. Yak	359

Figure 7. Yak	359
Figure 8. Yak	359
Figure 9. Deer	360
Figure 10. Animal like a tiger	360
Figure 11. Yak	360
Figure 12. Yak	360
Figure 13. Yak	360
Figure 14. Yak	360
Figure 15. Yak	360
Figure 16. Yak and horse.....	361
Figure 17. Yak	361
Figure 18. Deer	361
Figure 19. Deer	361
Figure 20. Deer	361
Figure 21. Deer	362
Figure 22. Shoot face-to-face	362
Figure 23. Chariot	362
Figure 24. Chariot and hunt diagram.....	362
Figure 25. Animal.....	362
Figure 26. Tree.....	362
Figure 27. Deer	362
Figure 28. Animal.....	363
Figure 29. Deer	363
Figure 30. Probably represents a yak hunting scene.	363
Figure 31. Probably represents a yak hunting scene	364
Table 1	365

Foreword to the XVII UISPP Congress Proceedings Series Edition

Luiz OOSTERBEEK
Secretary-General

UISPP has a long history, starting with the old International Association of Anthropology and Archaeology, back in 1865, until the foundation of UISPP itself in Bern, in 1931, and its growing relevance after WWII, from the 1950's. We also became members of the International Council of Philosophy and Human Sciences, associate of UNESCO, in 1955.

In its XIVth world congress in 2001, in Liège, UISPP started a reorganization process that was deepened in the congresses of Lisbon (2006) and Florianópolis (2011), leading to its current structure, solidly anchored in more than twenty-five international scientific commissions, each coordinating a major cluster of research within six major chapters: Historiography, methods and theories; Culture, economy and environments; Archaeology of specific environments; Art and culture; Technology and economy; Archaeology and societies.

The XVIIth world congress of 2014, in Burgos, with the strong support of Fundación Atapuerca and other institutions, involved over 1700 papers from almost 60 countries of all continents. The proceedings, edited in this series but also as special issues of specialized scientific journals, will remain as the most important outcome of the congress.

Research faces growing threats all over the planet, due to lack of funding, repressive behavior and other constraints. UISPP moves ahead in this context with a strictly scientific programme, focused on the origins and evolution of humans, without conceding any room to short term agendas that are not root in the interest of knowledge.

In the long run, which is the terrain of knowledge and science, not much will remain from the contextual political constraints, as severe or dramatic as they may be, but the new advances into understanding the human past and its cultural diversity will last, this being a relevant contribution for contemporary and future societies.

This is what UISPP is for, and this is also why we are currently engaged in contributing for the relaunching of Human Sciences in their relations with social and natural sciences, namely collaborating with the International Year of Global Understanding, in 2016, and with the World Conference of the Humanities, in 2017.

The next two congresses of UISPP, in Melbourne (2017) and in Geneva (2020), will confirm this route.

Introduction: A Message from the President

Emmanuel ANATI

Dear Friends and Colleagues,

The International Committee on the “Intellectual and Spiritual Expression of Non-literate Peoples” is conveying in its Session at the USPP Burgos Congress, as in previous occasions, experts from various disciplines to share experience and scientific approaches for a better understanding of the human creativity and behavior. Thank you for your active participation. Over 60 summaries, and 25 full texts of papers have been accepted. Participants include colleagues with different scientific concerns and specializations, from five continents. A stimulating dialogue is in progress by skype and internet.

Our committee is progressing in a joint effort of its participants, for a cooperation of different branches of the humanistic and the social sciences, aiming at building up a new kind of broad-minded study and understanding of the past. It is a sincere pleasure to welcome this courageous common effort. Prehistoric archaeology is in urgent need of this new landscape of “Conceptual Anthropology”, for a step forward. It is an important new academic approach for build up a solid future for the study of man.

In the last three generations, we have followed the tendency of some humanistic disciplines, in stabilizing conservative concepts, as a mean to preserve the past acquisitions and dictate the philosophical and ideological image of the discipline. Such trend creates a sort of mysticism of the discipline, a special glossary of conventional slangs, imposing a peculiar way of reasoning. This may turn out to become a handicap for innovation and progress. Each discipline has the tendency to find a comfortable refuge in its own ghetto. The spirit of conservation then favors the progress of those best integrated into the vernacular system. The obedient alumni are not necessarily the most brilliant ones. Such conservatism risks preventing new ideas and new concepts to compete with the old dogmas. Such a chain may have a negative effect on the progress of scientific research.

In each regime, to make a career, it is useful to be a “member of the party”. Academic regimes tend to follow the same trend. Conformism helps to survive though it does not help much in the progress of research. To avoid criticism, young archeologists and prehistorians prefer to remain descriptive, limiting new ideas that may displease “peer reviewers”. This is favoring mediocrity. For the advancement of scientific research, new ideas should have space: in any case, good ideas will survive while bad ideas will die. The debate will be the judge, rather than aprioristic dogmas.

Archaeology, both prehistoric and historic, needs a constant and open dialogue with other disciplines. The study of man includes anthropology, sociology, psychology, human geography, semiotics, art history, and other disciplines that have to join efforts. This is the aim of conceptual anthropology. Please join us in this effort.

For the last three generations the trend has been for researchers to be more and more specialized on limited research fields. Cultured humanistic formation has often been sacrificed, being replaced by specific technical knowledge. Rather than broadminded thinkers, this has favored the formation of technicians. They are welcome, as they are useful and needed, but it would be a dangerous dead end for the humanities if technicians would replace humanistic scholars and thinkers. Both have to coexist side by side, both being conscious of their task and role.

What is to be the image of Prehistoric and Protohistoric sciences in the future? Understanding the past is necessary to build a future. The knowledge of the past is the elementary base of culture. Even in the tribal world young people are being initiated to the knowledge of their past. Let us join efforts to develop public awareness, education, formation, engagement, research, for a broader understanding of our past.

Decoding Prehistoric Art: The Messages Behind the Images

Emmanuel ANATI and Ariela FRADKIN
Italy

Abstract

The purpose of prehistoric art was not to embellish rocks or stones or bones; it contains messages that were understood by the society from which their makers came. The paper proposes the decoding of a number of Paleolithic art objects and presents a methodology of analysis for the reading of prehistoric art, relying on systems of conceptual anthropology. The decipherment of prehistoric art reveals thoughts and concerns, events and memories that are thousands and thousands of years old, and opens up the way to transforming prehistory into history.

Introduction

The search for the decoding of prehistoric art has led to an analysis of the logical cognitive structure of the most ancient expressions of figurative art. The typological grammatical system and the associative syntactic one already revealed 30,000 years ago the same grammatical and syntactic structures of writing, and thus allow the reconstruction of the elementary roots of its formation. The present text examines the cognitive process that has led to the invention of writing and evidences constants of memorization and associative synthesis already present in the human mind from the very beginning of figurative art. It is postulated that the phonetic writing of the last five millennia are practical applications of an archetypal cognitive system that has had and will be able to have a range of solutions.

Some examples of decoding prehistoric art reopen the debate on the traditional concept of the beginning of the writing. It shows the presence of phenomena of graphical communication that transmit complex concepts, feelings and sensations since the early expressions of visual art. The visual art would then appear to have been born as a form of writing. That would lead to the deduction that visual art and writing are part of a single package of the cognitive system: the process of writing appears then to be part of the elementary intellectual heritage of *Homo sapiens*. The paper elaborates on this paradigm, which may appear at first as a bold paradox.

On the origins of writing

The traditional academic praxis considers that writing started approximately 5,000 years ago and the literature discusses whether it may have happened first in Mesopotamia or in Egypt. Similar processes of formation of formalized writing have taken place also elsewhere, at different times, in China, Mexico and elsewhere, where the ruling classes of complex political structures needed to standardize instruments of communication to control their territories and subjects. It was postulated that writing came contemporaneously with the birth of states. In that case, the origin of structured writing was related to economics and politics. Recent research doubts the validity of this idea.

Some years ago, Marija Gimbutas in her book *The Language of the Goddess* (1989) formalized the documentation for an ideographic proto-writing, consisting of the repetitive symbols appearing on statuettes and other Neolithic objects in the Balkans 8,000 years ago. These repetitive symbols appeared to have the role of adjectives or auspices referring to the images, like 'good', 'respected', 'producer of plenty', 'protector'. They were supposed to have had a magical religious function (Anati, 2007a). They were generally isolates and only rarely formed phrases. Analogous phenomena were documented also among tribal populations of incipient agriculturists and hunter-gatherers, and

also in some assemblages of prehistoric art. An analogous use of visual symbols for words was considered for the schematic signs of European Mesolithic societies, such as the Azilian cultures in France, the Romanellian in Italy or the Maglemosian in the north of Europe, from 10,000-8,000 years ago (Anati, 2007a, pp. 151-9). Then it was ascertained that the Natufian epipaleolithic cultures of the Mediterranean Levant also used repetitive signs with constant meaning 18,000 years ago (Anati, 2007a). These phenomena of using visual signs with agreed meanings implies the mental ability of symbolic graphic expression and its widespread diffusion, but they did not contain all the requirements for being considered as true complex writing.

Writing, apart from graphic symbols having constant values, implies the possibility of transmitting phrases and reasoning as graphic expressions even of complex thoughts and spoken language, in conventional forms, so as to be understood by the receiver. The examples provided above can hardly satisfy such criteria.

The documentation available so far is likely to be just a minimal part of what may have been produced in prehistoric times. Presumably if messages and other graphic documents were produced, most of them would have been executed on organic materials, as currently happens in the tribal world with wood, leaves, bark or animal skins, and would not have survived over a long time span. Such documents could have survived for ages only on durable materials like stone.

Documents aimed at communicating or memorizing have been produced since Paleolithic times. Since the early works of Denis Peyrony (1934) and Abbé Breuil (1912), it has been estimated that such expressions communicated attributes and also auspices, but had not shown the ability to transmit actions, feelings and concepts. Until yesterday they could not be defined as writing. The research on decoding prehistoric art is now demonstrating that hunter-gatherers formulated pictographic messages describing and transmitting information on actions, feelings and concepts already in the Paleolithic period. The early approaches to the origins of writing may require basic revision.

Language as defined by William Alston (and others) is a system of vocal symbols that writing transforms into visual symbols (Alston, 1971; Fodor, Katz ed., 1964). These symbols make sense if understood in the same way by the writer and by the interlocutor to whom it is addressed, in both cases, for oral messages as well as visual. The visual symbols have their typology responding to a grammar that defines their function and meaning. They follow an order of association which forms sentences or assemblages of concepts.

An isolated symbol-sound has a generic sense and the phrase-sequence acquires a specific sense. The symbol-sound 'hand' defines a part of the human body, the sequence of sounds 'give me your hand' or 'let us shake hands' inserts the symbol-sound 'hand' in a symbol-sound sequence that gives a specific sense to it. Writing follows the same principle, transforming vocal symbols into visual ones. The sequence of symbols of the vocal language becomes transformed into a visual sequence using syntactic rules. It is clear that before the development of phonetic writing, the same process took place with ideographic and pictographic messages.

Picture writing and phonetic writing

Writing by using graphic signs that communicate ideas, actions and feelings reflects the ability of human beings to formulate them, giving graphical shapes to ideas, making them comprehensible to others. In some prehistoric and tribal formulations such signs were not the legacy of a defined language, they were the expression of ideas shared beyond the various spoken languages. The phonetization of writing has tied up writing to the specific spoken language, thus losing the global ability provided by semiographic writing (picture writing and ideographic writing) to be read and understood in any spoken language. As core concept semiographic writing uses images or ideas having shapes of universal meaning. The figure of a man means 'man', that of a woman means 'woman' and that of an elephant means 'elephant'. That of a male or female sexual organ mean male or female sexual

organ. In phonetic writing in order to mean *man* three phonemes (letters) are requested in English; in Italian, *uomo* is made of four phonemes and the Spanish *hombre* has six phonemes. The sequence of phonemes are successions of sounds creating words which are comprehensible only to those knowing that language of speech. The figure of a man is comprehensible in any spoken language.

The relation between the sign and its meaning has variable levels. As formulated by Jean-Paul Resweber, there are signs and also phonemes that have an implicit meaning; others may have acquired a metaphorical or vernacular meaning, which is variable from culture to culture but usually they tend to keep a relationship with its core meaning (Resweber, 1979). A recurring example is that of the grapheme representing the vulva or female sexual organ, which may mean not just 'sexual organ' but also 'having sex' in some cases, or simply 'female' or 'woman' in other cases. These considerations of possible alternatives are essential elements in the process of decoding.

The prints of the hand, as an act of presence, has an immediate reading, disregarding the language; the hand print is like a signature. It may mean 'I have been here' or 'This place is mine' or 'I swear here on this sacred rock'. The figures defining 'worshipper' (human figure with upraised hands) or 'hunter' (armed figure with spear or bow) or the figures of an elephant, bison or snake are readable in whatever language. When they are accompanied by ideograms that mean to adore, to hunt, to wish, to love, to hate, to fear, or other, they form sentences. The accumulation of comparable data, from obvious to less obvious documents, and from recent to ancient documents, sometimes leads to positive results.

Like recent tribal art, since its origins, prehistoric visual art has had the role of transmitting contents, and memorizing and fixing events, myths, concepts and wishes. It had a functional purpose expecting results. It was not produced just to embellish rock surfaces. Some rock art sites contain millions of graphemes accumulated in the course of millennia. This visual art constituted the Bible of their makers, the archives of their memory, their myths and their history. As we shall further discuss, progressing with the decoding project we had to reach a basic conclusion: that a large part of such production had a grammatical and syntactic structure similar to that which was later on applied to the various forms of structured writing.

Tribal populations of historic times, having a technological level of the Stone Age, considered to be without writing, like some groups of Australian Aborigines, or populations of Ba-Twa and Mbuti pygmies of the Congo river basin, currently transmit messages through message sticks which are read and understood by whoever they are addressed to.

From a global comparative study of the art of hunter-gatherer groups of the different continents, we have found out that the graphic visualization of ideas responds to systems which are common to various populations which do not have contacts with each other for ages. Such systems appear to have the same common matrix. We can deduce that some of the standards of graphic messages reflect a faculty of associative synthesis acquired in times much remoter than what had been previously assumed. Since then it has allowed wider perspectives of intellectualization and has immensely amplified its power of communication and memorization.

Before getting to the explanation of some examples of decoding, it may be useful to go into some aspects of the functions of visual art, its structure and motivation. Since this paper concentrates on the art of European Pleistocene hunter-gatherers, it seems to be useful to provide a background to the overview in which such art may be positioned.

Functions of prehistoric art

Prehistoric art, like all art, transmits memories, experiences, sensations and feelings, and reflects both the intellectual truth and the imagination of its society through the medium of the artist; it expresses the requirements of the main human impulses of memorization and communication.



FIGURE 1A. ENGRAVED BONES FROM FRENCH UPPER PALEOLITHIC, CONSIDERED TO HAVE HAD THE TASK OF MESSAGE STICKS, FROM GOURDAN (HAUTE GARONNE), LE PLACARD (CHARENTE), LORTHET (HAUTES PYRÉNÉES) AND LA MADELAINE (DORDOGNE). (GRAZIOSI, 1960).

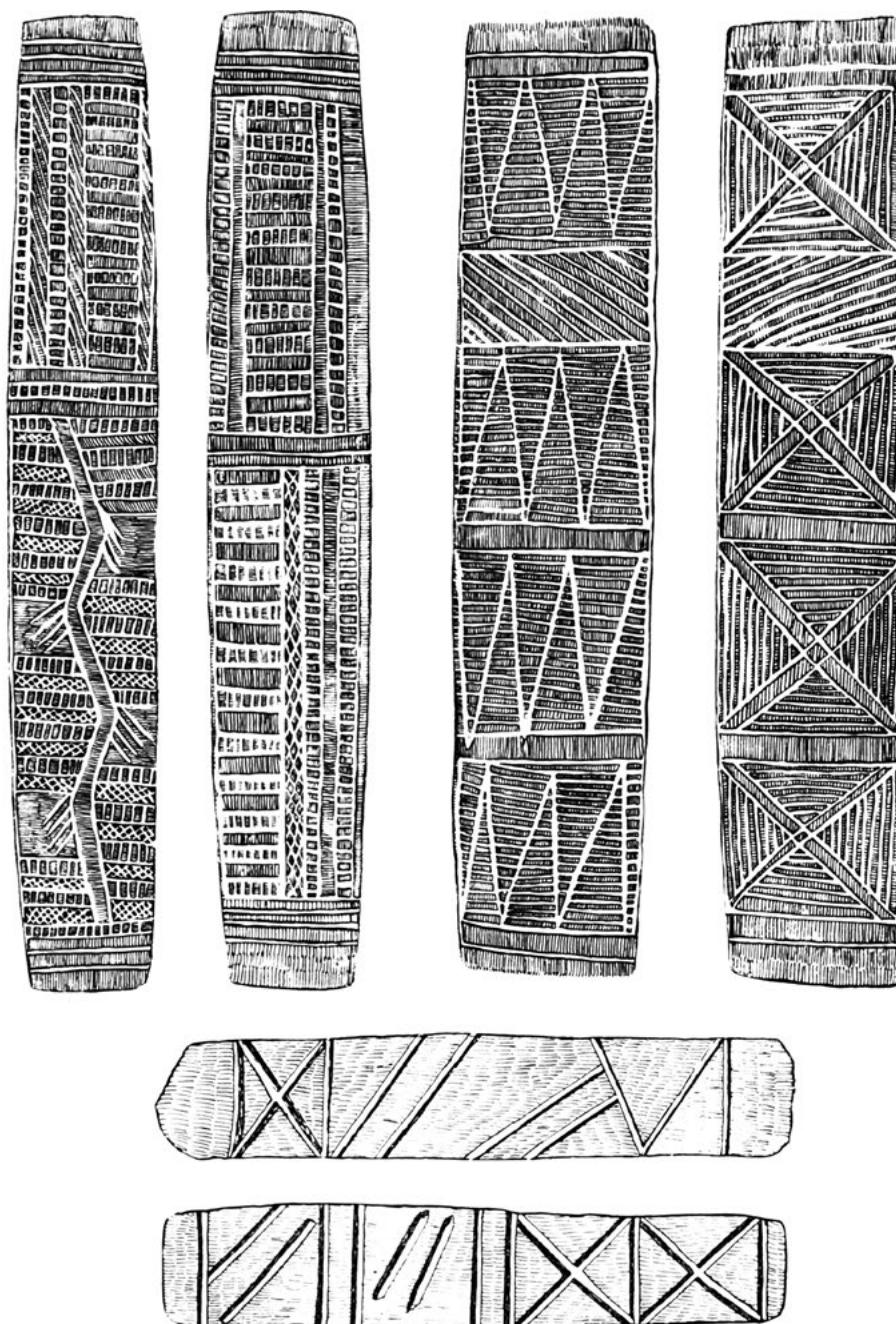


FIGURE 1B. MESSAGE-STICKS FROM YIRRKALLA, ARNHAM LAND, AUSTRALIA. (MOUNTFORD, 1956).

Visual art is conceptualization as it gives visual shapes to ideas. A fundamental role of prehistoric and tribal art is and has been to transmit the doctrine from generation to generation. Recent studies evidence the function of sacred writing that rock art has had for millennia, as a 'Bible written on stone' which spread over five continents (Anati, 2010).

A variety of styles are present in prehistoric art, as they are seen by us, from naturalistic to schematic, to abstract, from descriptive and realistic to metaphoric. The works of this immense repertory have been described for over a century. The analytical studies now allow us to establish that they have rules, never written and yet followed for millennia, in sites very distant apart from each other, from Africa to Australia, to Argentina in South America. Such rules concern the logical grammatical and syntactic structure, which allowed the transmission not only of facts, but also of sensations and feelings. Prehistoric art, like other kinds of literature, was able to express pleasure, fear and desire.

The most ancient figurative art, for which reliable chronologies are available, was produced around 50,000 years ago in regions far apart like Africa and Australia. Intentional markings and signs still older, engraved on stone, shaped as points, lines, criss-cross lines, cupules or cup-marks, are unlikely to have been done for nothing. They are likely to have had some practical function, like memorization or communication. Some are considered to have numerical value, like series of lines or of points, which presumably indicate amounts, of what we do not know, as no figures accompany the signs and the accompanying signs have not been decoded as yet.

The first graphical signs of memorization are older than the figurative visual art which developed in successive stages, in Australia, Africa, Europe and the Near East (Chaloupka, 1993; Anati, 2003). Signs of this kind, in South Africa, the Middle East and Europe, exist from at least 70,000 years (Anati, 2010). It is not impossible that they represent a semiographic system of communication. We can postulate that the need to memorize and to transmit information is a motivation of graphic or visual expressions that preceded the search for aesthetic experiences. Such a postulate inverts the traditional vision that considers writing as a derivation of figurative art. Could it be instead that figurative art derives from early attempts at a sort of primary writing? (Anati, 2011).

Early figurative art transmitted messages with conventional metaphoric and allegoric systems, which still persist in the tribal world. A classic example is provided by the figure of the bison (or buffalo) designed in charcoal-black by American Indian people to represent their head, whose name was Black Bison. It was the promotion and the exaltation of the charismatic head whom they worshipped. They did not write his name in phonetic script, they designed his name: the drawing of a bison made with charcoal was big chief Black Bison. We may consider it a metaphoric representation but for the makers it was just a representation and everybody understood its meaning (Anati, 1989b).

Tribal people who do not use phonetic writing are still producing a large variety of graphic ways to communicate and memorize. Some of them appear to have styles and themes similar to those of prehistoric people. They also have a variety of styles and preferred subjects. All of them have also many elements in common, which are of great help in the decoding of artworks produced by extinct cultures. Still surviving human groups of hunter-gatherers, like some of the Australian Aborigines or South African Khoisan, continue to produce works of art with similar topics, displaying persistent millenary traditions of art production as a means of communicating and memorizing, mainly to preserve and transmit the fundamental messages of their own conceptual identity from generation to generation (Anati, 1997).

In these intellectual expressions intimately tied between language and visual art, the diversification process derives from the influence of several factors. Adaptation to landscape, climate and resources may have been joined by different social experiences. The process of diversification of the primordial style forming different styles and tendencies is expressing variations in the mechanism of conceptual



FIGURE 2A. EUROPEAN CAVE ART. TWO PHASES OF PAINTINGS ARE PRESENT ON THIS TRACING SHOWING TWO DIFFERENT CONCEPTUAL TYPOLOGIES. THE LATER PHASE, TYPICAL OF FRANCO-CANTABRIAN CAVE ART, REPRESENTS ASSOCIATION OF QUADRUPEDS, BISONS AND HORSE. THE EARLY PHASE IS AN ASSOCIATION OF HAND STENCILS AND IDEOGRAMS, SOME OF WHICH REPRESENT TOOLS OR OBJECTS. SERIES OF DOTS MAY BE NUMERIC IDEOGRAMS. THIS EARLY PHASE DISPLAYS A PATTERN WHICH IS WIDESPREAD IN EARLY HUNTERS ART IN ALL CONTINENTS. CASTILLO CAVE, SANTANDER, SPAIN. TRACING BY H. BREUIL (DEL RIO, BREUIL, SIERRA, 1911).

development: a logical process of evolution. With regard to the languages, an analogous process is presumable, from a primordial language, defined as ‘the sapiens mother language’, through the development of local dialects that gradually became languages that have in their turn further developed dialects, in a constant process of diversification.

The visual communication has had analogous evolutions. The cognitive system has maintained one constant structure, with secondary variants reflecting the influence of the way of life determined by economic and social structures. As defined already in earlier works (Anati, 2002b; 2010), from worldwide comparative analysis it emerges that the style and the thematic of pre-literate art reveal the nature of the economic and social structures in which its production took place.

The localities to which men returned in the course of ages to execute rock art and leave on the rocks their messages and memories cover a role that we could define as sacred and social: they are meeting places where the communication with mythical beings or the spirits of ancestors was attempted, where humans had experiences of an imaginary dialogue with the invisible forces of nature. They were also places of meeting and joint meditation with other human beings.

Art and communication are still two major elements characterizing human society. Art is the spirit of society, the expression that defines its identity; communication is the spirit of society that allows single individuals to consider themselves part of one social community. In the last 50,000 years, art has had a vital role in transmitting the memory and defining the identity of the personality of the artist and his or her society. Among the people who do not have formal writing, the visual art is writing and has a fundamental role of communication beyond that of identity and social cohesion.

The conceptual analysis of the global characters of the most ancient visual art reveals to us the mechanism of the logical process of sequential and consequential thought: the earliest art known in several parts of the world follows the same logical trend, is most likely to have a common matrix and reflects the existence of universal archetypes in the associations and the elementary structure of the process of memory, association, elaboration and synthesis. The species Homo, in his trend of

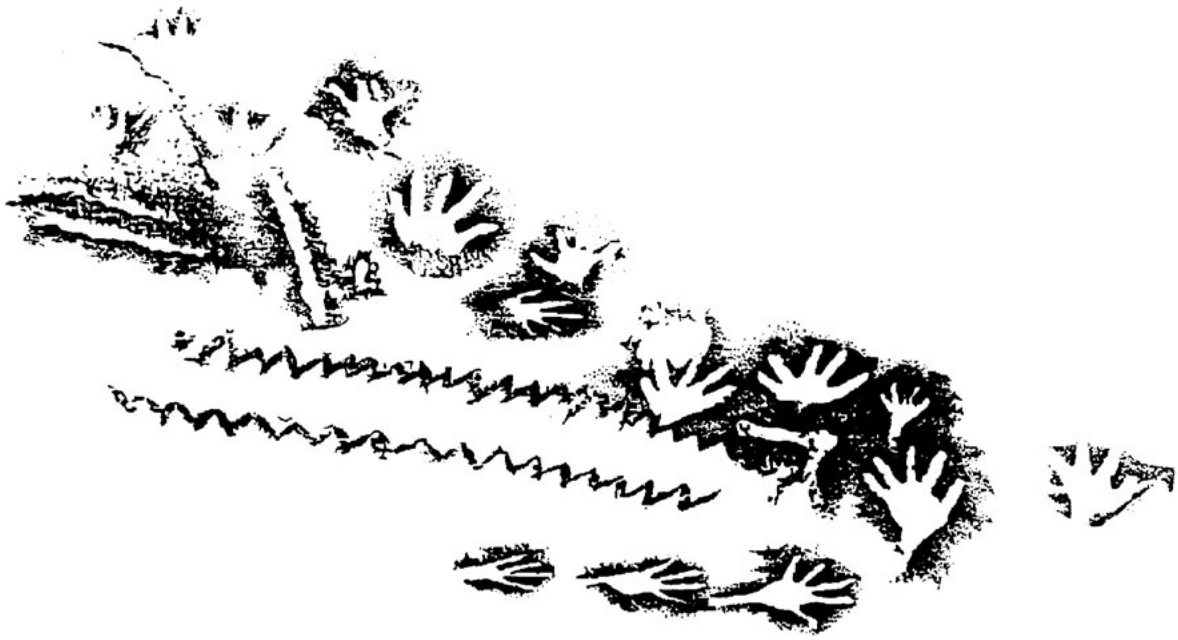


FIGURE 2B. ASSOCIATION OF IDEOGRAMS OF EARLY HUNTERS. ROCK PAINTINGS IN QUEENSLAND, AUSTRALIA. THERE ARE ALSO ENGRAVINGS (OMITTED IN THE DRAWING). STENCILS OF HUMAN HANDS ARE ASSOCIATED WITH STENCILS OF ANIMAL LIMBS, ZIG-ZAGS, SERIES OF DOTS AND TOOLS. LENGTH OF TRACED PART 1.50 METERS. (LATER ENGRAVINGS OVERLAPPING THE PAINTINGS ARE OMITTED IN THE TRACING). (DRAWN FROM A PHOTOGRAPH OF J. CLEGG, 1983, IN ANATI 2002A).

expanding over the many lands of the planet, has carried the language, the canons of symbolization and abstraction, and possibly other expressions of his own intellectual identity to the different promised lands offered them by their gods or ancestral spirits.

The grammar of primary art

As already discussed in earlier works (2010), five main typological categories may be recognized in the visual art of non-literate people. Such subdivision concerns different variants of grammar and syntax of art production. These variations turned out to be connected to the type of economy and social structure. They are: 1 Early hunters: team hunters of big game making no use of bow and arrow; 2 Gatherers, food collectors relying primarily on vegetal or snail diet; 3 Late hunters, hunters of middle and small size game making use of bow and arrow; 4 Animal breeders, pastoralists, mainly nomadic clans having an economy based on domestic animals and their by-products; and 5 Complex economy people: sedentary or semi-sedentary tribal people relying primarily on agriculture.

Each one of these categories has its own selection of types of visual expression. It may look obvious that a hunter of bison does not tend to represent snails and a snail collector does not tend to represent bison, but the repertory of each one of these categories has also other specific characters concerning the type of association or syntax, the repertory of images and signs, and stylistic tendencies which appear to reflect conditioning from the way of life (Anati, 2002b; 2010).

In the Pleistocene, until c. 14,000-12,000 years ago, only the first two of these categories were present; the other categories developed in the Holocene. All five categories are still performing among the various kinds of tribal groups. Early hunters and gatherers have the simpler and most evident grammatical and syntactic structure, but all the categories have their grammar built of three types of grammatically different signs: pictograms, ideograms and psychograms. Pictograms

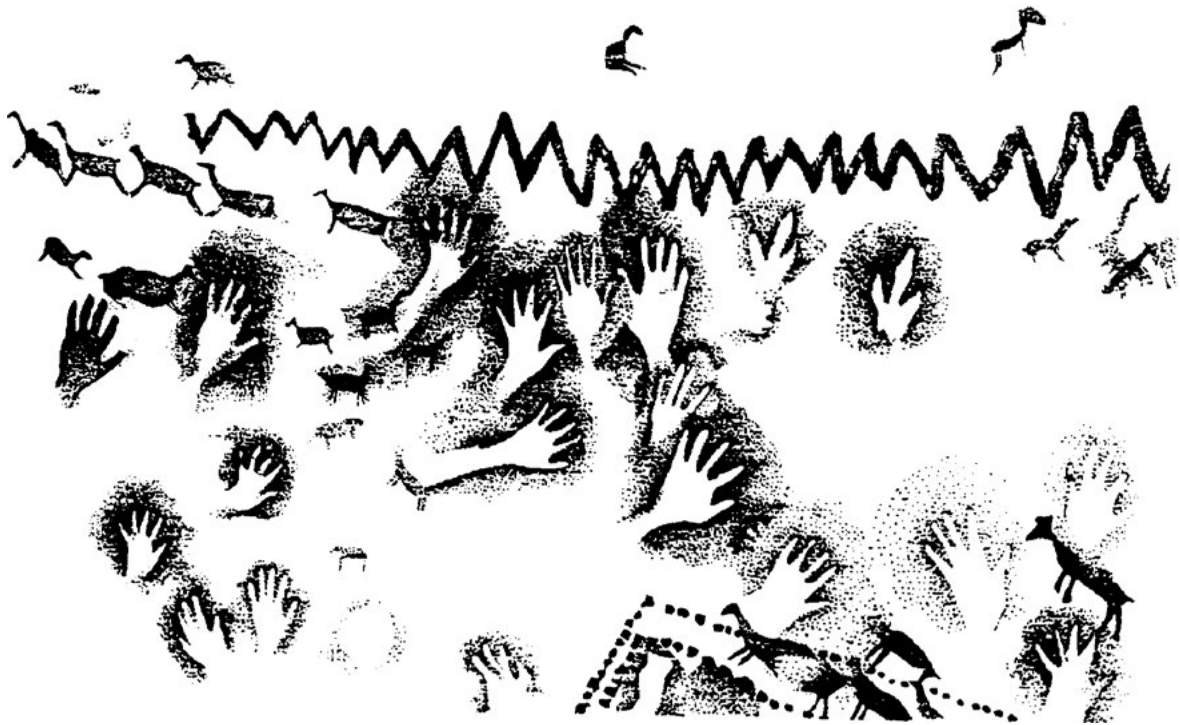


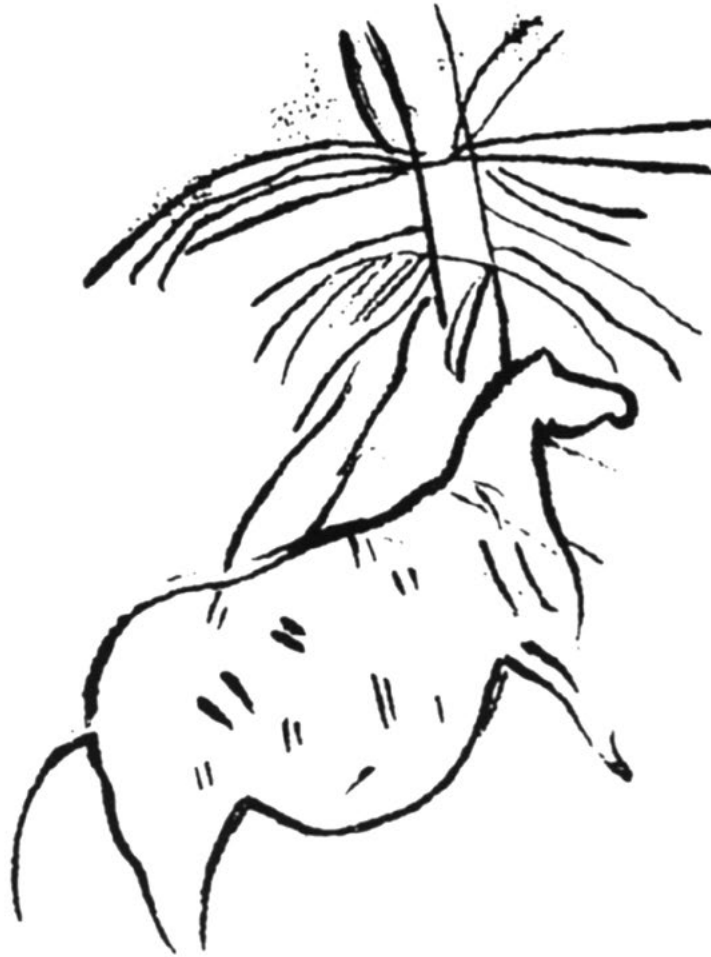
FIGURE 2C. HAND STENCILS AND OTHER SYMBOLS OF EARLY HUNTERS. ROCK PAINTINGS OF RIO PINTURAS, SANTA CRUZ, PATAGONIA, ARGENTINA. STENCILS OF HUMAN HANDS AND OF ANIMAL LIMBS ARE ACCOMPANIED BY A LONG ZIG-ZAG. THE ANIMAL FIGURES AND THE ROWS OF DOTS ARE LATER ADDITIONS. LENGTH OF TRACED PART 2.60 METERS. (SOURCE: DRAWN FROM A PHOTOGRAPH OF G.C. LIGABUE IN ANATI, 2002A).

(and mythograms) are figures in which shapes of real or imaginary things can be recognized. Ideograms are repetitive and synthetic signs that sometimes can have male or female values or other conceptual values. The repetitions and the constants of association indicate the presence of conventional concepts.

Psychograms are signs that do not represent either objects or symbols: they express feelings, evaluations or perceptions. They may express pleasure or displeasure, good or bad, positive or negative. These three types of signs, or semiogens, reveal an elementary associative mechanism. A common structural base appears to be shared by the visual arts, dance and music: the interaction between the three semiogens determines the theorem of the grammar of the arts, and in fact it reveals a constant trend of the cognitive function of the human mind.

Some repetitive signs in Paleolithic art appear to have constant values. A similar system is still in use by Australian Aborigines (Chaloupka, 1993). Some signs may indicate abstract or non-visual aspects such as noise, wind, rain, flood, thunder. The same graphic transfer of ideas is used also in the picture writing of the American Indians, as reported by G. Mallery (1889).

Since early times the association of pictograms, ideograms and psychograms appears to follow the same type of associations of ideas, the logic cerebral mechanism that characterized the first systems of planned writing many millennia later. The decoding of Paleolithic art may well indicate that the logical and conceptual process that carried on to the invention of the modern writing of the last 5,000 years was already present in the conceptual mechanisms of the makers of prehistoric art 50,000 years earlier, well before the birth of states and politically conceived writing as a means of land and human control.






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

FIGURE 3. PREHISTORIC ART ELEMENTARY GRAMMAR. PICTOGRAMS, IDEOGRAMS AND A PSYCHOGRAM. CAVE PAINTINGS FROM LA PILETA, SPAIN. THE PICTOGRAM IS A BROWN HORSE, ON HIS BODY AN IDEOGRAM MADE OF TWO PARALLEL LINES IS REPEATED TEN TIMES. IT IS DEFINED 'LIPS', AND A MEANING OF FEMALE IS ATTRIBUTED TO IT. THESE IDEOGRAMS HAVE BEEN MADE BY DIFFERENT HANDS AND WITH DIFFERENT COLOUR TONES: RED, BROWN AND BLACK. THEY ARE ACCUMULATION OF THE SAME IDEOGRAM ON THE AREA DEFINED BY THE BODY OF THE PICTOGRAM. ON TOP OF THE HORSE PICTOGRAM A BLACK PSYCHOGRAM APPEARS: IT IS A RECTANGLE RADIATING OUTWARD. AN APPARENTLY SIMPLE PAINTING IS AN ACCUMULATION OF SEVERAL HANDS AND TIMES. WHAT IS THE MESSAGE BEHIND THIS COMPOSITION? AN ELEMENTARY READING WOULD SUGGEST: PLEASURE OR SATISFACTION (THE PSYCHOGRAM) FOR THE HORSE (CLAN, NAME OR TOTEMIC IDENTITY) RELATED TO 10 LIPS, FEMALE SYMBOLS, EACH ONE PAINTED BY A DIFFERENT HAND. TRACING BY H. BREUIL (BREUIL, OBERMAIER, VERNER, 1915).

The physical nature of an image creates in the man of European extraction of the 21st century a veristic interpretation that not always leads to its intended meaning. In our pragmatic vision, a horse is a horse and a bison is a bison. When in prehistoric art a figure represents a being having a human

body and the head of a bison, how can such a being be defined – an anthropomorphic bison or a zoomorphic human being? Is it a masked man or the spirit of the bison? Or what else? We mentioned before Big Chief Black Buffalo represented as a black bison. It is the easiest and most logical solution, but may not look obvious to our conditioned minds.

The main gateway for decoding prehistoric art is finding hints to understand the associative process in the minds of the makers. Despite the scholastic approach that criticizes comparing ethnographic with prehistoric data, acquaintance with the traditional persistence of these processes among recent tribal people like the American Indians, the Khoisan of the Kalahari Desert or the Australian Aborigines has turned out to be very helpful, as it takes our minds away from the conventional, pragmatic associative system in which we have been brought up and conditioned.

Some classical examples

The pictographic writing of the American Indians documented by Garrick Mallery (1889) displays a transfer system from the idea to the image that has analogies with that of other tribal peoples from other parts of the world, both recent and ancient. Some concepts appear to be globally widespread, others are more localized. But the system of this transfer among the producers of pictographic messages appears to follow some general rules of elementary logic. The traditional anthropological approach that recommends the study of each cultural unit as an isolated ghetto has caused a serious delay in the process of decoding. In fact it is thanks to a broad comparative work that it has become possible to understand certain transfer standards, from the idea to the sign.

An example is the message sent by an old man of the Cheyenne tribe to his son. A man named Turtle-that-follows-his-wife sends the pictographic message to his son named Little Man. Their names are indicated above their heads. The sign coming out of the mouth of the old man indicates that he is the one sending the message. The movement of the two figures towards each other indicates encounter. The series of small circles over the line that exits from the mouth of the father towards the son is a numerical indication of round objects. The pictographic message reads: 'Turtle-that-follows-his-wife sends to Little-Man 53 dollars so that he comes to visit him'. In other words the message says: 'Come to see me, I pay your travel expenses' (Fig. 4a).

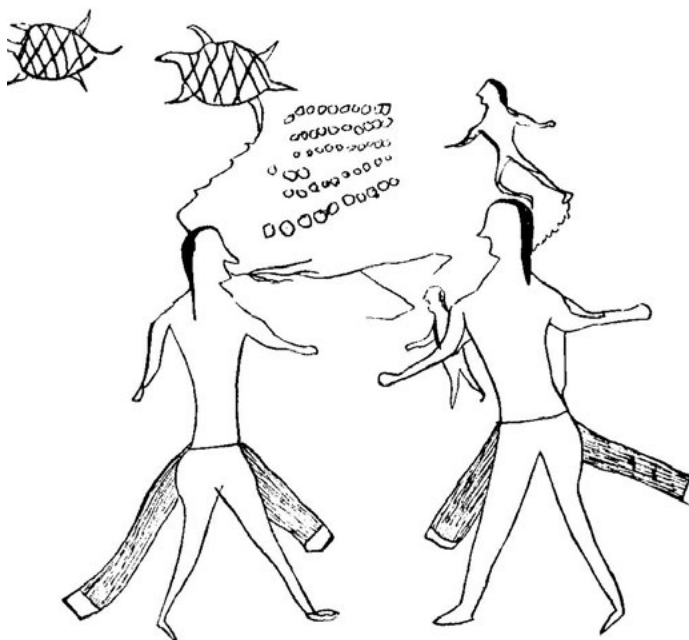


FIGURE 4A. MESSAGE SENT BY AN OLD MAN OF THE CHEYENNE TRIBE TO HIS SON. A MAN NAMED 'TURTLE-THAT-FOLLOWS-HIS-WIFE' SENDS THE PICTOGRAPHIC MESSAGE TO HIS SON NAMED LITTLE MAN. THEIR NAMES ARE INDICATED ABOVE THEIR HEADS. THE SIGN COMING OUT OF THE MOUTH OF THE OLD MAN INDICATES THAT HE IS THE ONE SENDING THE MESSAGE. THE MOVEMENT OF THE TWO FIGURES TOWARDS EACH OTHER INDICATES ENCOUNTER. THE SERIES OF SMALL CIRCLES OVER THE LINE THAT EXITS FROM THE MOUTH OF THE FATHER TOWARDS THE SON IS A NUMERICAL INDICATION OF ROUND OBJECTS. THE PICTOGRAPHIC MESSAGE READS: 'TURTLE-THAT-FOLLOWS-HIS-WIFE SENDS TO LITTLE-MAN 53 DOLLARS SO THAT HE COMES TO VISIT HIM'. IN OTHER WORDS THE MESSAGE SAYS: 'COME TO SEE ME, I PAY YOUR TRAVEL EXPENSES'. (MALLERY, 1889).

Another example of American Indian pictographic writing is recording a political and social event. It represents two individuals, one with a gun and the other with bow and arrows (Fig. 4b). On the head of each appears his identification ideogram. One has three stars and the other a cloud. The pictographic message reads: 'Mr Three Stars (referring to General Crook, whose degree is acknowledged from three stars on his pad) has talked to Red Cloud, in order to fight'. The reference is to a historical fact, an agreement that took place in 1876 between General Crook of the American army and the Indian chief Red Cloud to fight against the Cheyenne tribe.

Below we shall provide some examples of attempts at decoding European Pleistocene Paleolithic art, showing various degrees of decoding. Often partial deciphering cannot proceed further because of lack of information on some specific graphemes. In such a case we go as far as possible and leave the complete reading incomplete until new elements become available. Doubts often exist, but without trial and error research would go nowhere. Errors may be corrected and do stimulate discussion; they are far more useful than silence, which may indicate the researcher is harmless but will contribute nothing to the advancement of research.

An example is the famous scene of the so-called 'pit' of Lascaux cave, reproduced in all the books, having already had several partial interpretations by various authors but never fully decoded. What is the message behind this intriguing depiction? An ithyphallic being with a human body and the head of a bird is accompanied by a sort of standard or coat of arms having a bird head on top of a vertical line or pole (Mr Bird of the bird totem). To the right there is a bison overlapped by a spear, which, according to various interpretations is or is not blessing the bison. The bison has a prominent

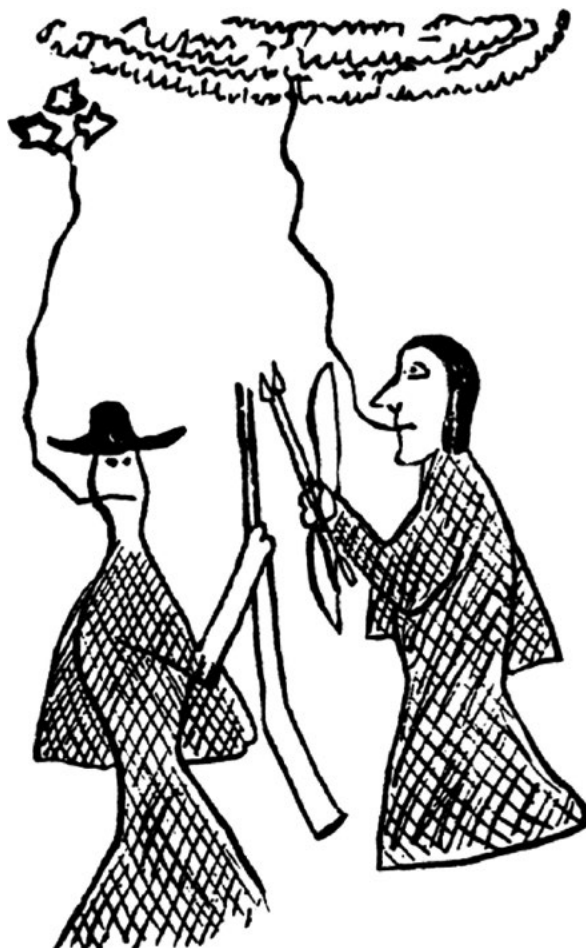


FIGURE 4B. AMERICAN INDIAN PICTOGRAPHIC WRITING IS RECORDING A POLITICAL AND SOCIAL EVENT. IT REPRESENTS TWO INDIVIDUALS, ONE WITH A GUN AND THE OTHER WITH BOW AND ARROWS. ON THE HEAD OF EACH APPEARS HIS IDENTIFICATION IDEOGRAM. ONE HAS THREE STARS AND THE OTHER A CLOUD. THE PICTOGRAPHIC MESSAGE READS: 'MR THREE STARS (REFERRING TO GENERAL CROOK, WHOSE DEGREE IS ACKNOWLEDGED FROM THREE STARS ON HIS PAD) HAS TALKED TO RED CLOUD, IN ORDER TO FIGHT'. THE REFERENCE IS TO A HISTORICAL FACT, AN AGREEMENT THAT TOOK PLACE IN 1876 BETWEEN GENERAL CROOK OF THE AMERICAN ARMY AND THE INDIAN CHIEF RED CLOUD TO FIGHT AGAINST THE CHEYENNE TRIBE (MALLERY, 1889).



FIGURE 5. ROCK ENGRAVING OF HUNTERS-GATHERERS EVIDENCING THE SEXUAL IDENTITY OF A COUPLE OF HUMAN BEINGS, MALE IS DEFINED BY THE “ARBOLET” IDEOGRAM, WHILE THE FEMALE IS DEFINED BY THE ‘LIPS’ IDEOGRAM. GOBUSTAN, AZERBAIJAN (ANATI, 2001).

ideogram or psychogram between its legs which looks like a wide-open vagina (other interpretations have been proposed). Below the bird-man there is a branch-like ideogram defined as an arbolet (a brunch-like ideogram), which in other cases indicates ‘sex’ or ‘male sex’ (see Fig. 5). To the left there is the image of a rhinoceros that may or may not have been added later. Near the back of the rhinoceros there is a presumably numeric ideogram of six dots. Technicians discuss whether or not the composition originated as it looks today. The rhinoceros could have been added later; several hands may have worked on it to obtain the present result. In any case, the composition is located in a selected place, it is neatly isolated, having no other signs in the vicinity, and appears to be an intentional composition with a purpose. It tells the story of an ithyphallic Mr Bird and a Ms Bison by the large vagina (being wounded, whatever this may mean, or having a spear as emblem), underlined by a sexual ideogram. The rhinoceros with its six dots probably provides additional details to the story, which so far we are unable to decode (Fig. 6). The painting of Mr Bird and Ms Bison tell a story or a myth, since it was located at a special point, difficult to reach, inside the cave. Why? What was its purpose?

Images which at first sight appear to have a pure aesthetic purpose tell stories through the association of pictograms and ideograms. We use famous images repeatedly published, as most likely they have been seen before by the reader. The high relief of the rock shelter of Laussel, called ‘The Laussel Venus’, represents a mature woman with a horn in her hand, a horn which is marked by 13 vertical incisions executed using three different flint tools, respectively in groups of six, four and three. The hip of the woman displays the incision of a bifurcate bâtonnet. On the lower left side of the high



FIGURE 6. THE COMPOSITION IS LOCATED IN A SELECTED PLACE, IT IS NEATLY ISOLATED, HAVING NO OTHER SIGNS IN THE VICINITY, AND APPEARS TO BE AN INTENTIONAL COMPOSITION WITH A PURPOSE. IT TELLS THE STORY OF AN ITHYPHALLIC MR. BIRD AND A MS. BISON BY THE LARGE VAGINA (BEING WOUNDED, WHATEVER THIS MAY MEAN, OR HAVING A SPEAR AS EMBLEM), UNDERLINED BY A SEXUAL IDEOGRAM. THE RHINOCEROS WITH ITS SIX DOTS PROBABLY PROVIDES ADDITIONAL DETAILS TO THE STORY, WHICH SO FAR WE ARE UNABLE TO DECODE. LASCAUX CAVE, DORDOGNE, FRANCE (TRACING FROM A PHOTOGRAPH BY LEROI-GOURHAN, 1981).



FIGURE 7. HIGH RELIEF OF THE ROCK SHELTER OF LAUSSEL, CALLED 'THE LAUSSEL VENUS' IT REPRESENTS A MATURE WOMAN WITH A HORN IN HER HAND, A HORN WHICH IS MARKED BY 13 VERTICAL INCISIONS. THE HIP OF THE WOMAN DISPLAYS THE INCISION OF A BIFURCATE BÂTONNET. ON THE LOWER LEFT SIDE OF THE HIGH RELIEF THERE ARE TRACES OF AN OBLITERATED OR DAMAGED RELIEF OF AN ANIMAL, PROBABLY A TIGER OR OTHER FELINE, PLACED VERTICALLY (ANATI, 2002A).

relief there are traces of an obliterated or damaged relief of an animal, probably a tiger or other feline, placed vertically (Fig. 7).

The description is the first phase in the process of decoding. In order to proceed beyond this point it is sometimes necessary to dare to pronounce a hypothesis on the basis of analogy, according to the method of trial and error. We may assume that the animal was the name or the totemic identification of the matron (a senior respected female being). Such an animal figure, if it has been intentionally

obliterated, as it seems, probably has disturbed whoever decided to cancel it. The bifurcate *bâtonnet* on the hip of the fat lady is probably an adjective. If, as appears in various other contexts, this ideogram means to walk, to travel, it would confer to the image the adjective of ‘the one who travels’ that is, the travelling matron. The horn has undoubtedly an important meaning and the numerical engraved lines repeat the meaning as many times as they are. The hypothesis that the horn is a musical instrument, as advocated by some authors, is not to be excluded, though other meanings are possible. The horn has been an expression of power since early times; equally it may be a symbol of plenty.

As a working hypothesis we assume that the matron is probably the image of a mythical being, commemorated by various other monuments and figurines, a primordial mother which was worshipped in Europe and Asia and also elsewhere in the course of millennia. The animal on its flank, probably a large feline, was her totem or the animal companion, or her name. In order to complete the reading it is necessary to know the meaning of the horn. The preliminary reading could be: ‘The travelling matron (whose name or attribute is indicated by the animal) owns, offers or produces strength, prosperity, music or whatever the horn represents, many times as the lines engraved on the horn’.

This example, like the previous one, describes a decoding in progress but not fully concluded. In order to get the entire story it is necessary to know the meaning of components like the horn that are still missing. The monument appears to be the icon of a revered travelling matron, bearing her name or totem and her attributes, indicating what she is offering to her followers or believers.

In the same period and cultural context there are pictographic compositions having a narrative structure and others that have commemorative or iconic structures like the Laussel icon. Three-dimensional art, like figurines and high reliefs, is prevalently an iconic art, producing images having protective or magic power. Most of the beautiful frescoes of the cave walls, on the other hand, are storytelling, reminder myths or historical events, often having allegoric or metaphorical meaning. They are likely to have had the role of sacred scripture, used for initiating the young generation to the knowledge of tribal traditions and sacred ceremonies. Both cave wall art and mobiliary art appear to have had also other purposes, like memorizing, agreements between different groups, magic spells, just as analogous purposes are still in use among surviving tribes.

Reading the messages

Some of the Paleolithic mobiliary art reminds one of the message sticks still in use among various populations of hunter-gatherers, like the pygmies of the Congo basin or some Aboriginal clans from Australia.

We will try to give some examples of more complete decoding, simplifying to the maximum the problems of reading the documents that are much more complex, in order to illustrate conceptual approach and contents of messages going back many millennia before the earliest writing.

A bone object from the archeological excavations at La Vache cave, in Ariège, France, from a Magdalenian level of approximately 20,000 years, has two deliberate sequences of signs engraved on the two sides (Fig. 8). On both sides the main subject is an animal head, on one side a gazelle, on the other a bison. These two animal heads are indications of identity, possibly indicating names of persons or of clans or their totemic identity. Each animal head is followed by a series of ideograms. The direction of the animal heads suggests that the reading goes from right on the left. This object, which may be defined as a document, is describing a transaction or an agreement on an exchange of items, between two subjects, named Gazelle and Bison, indicating the goods and their quantity. It reminds us of those documents of Early Dynastic Egypt, with similar registrations of operations or economic transactions (Pritchard, 1950, p. 227). It reminds us also of several other such Paleolithic documents where two different animal images appear to be protagonists.

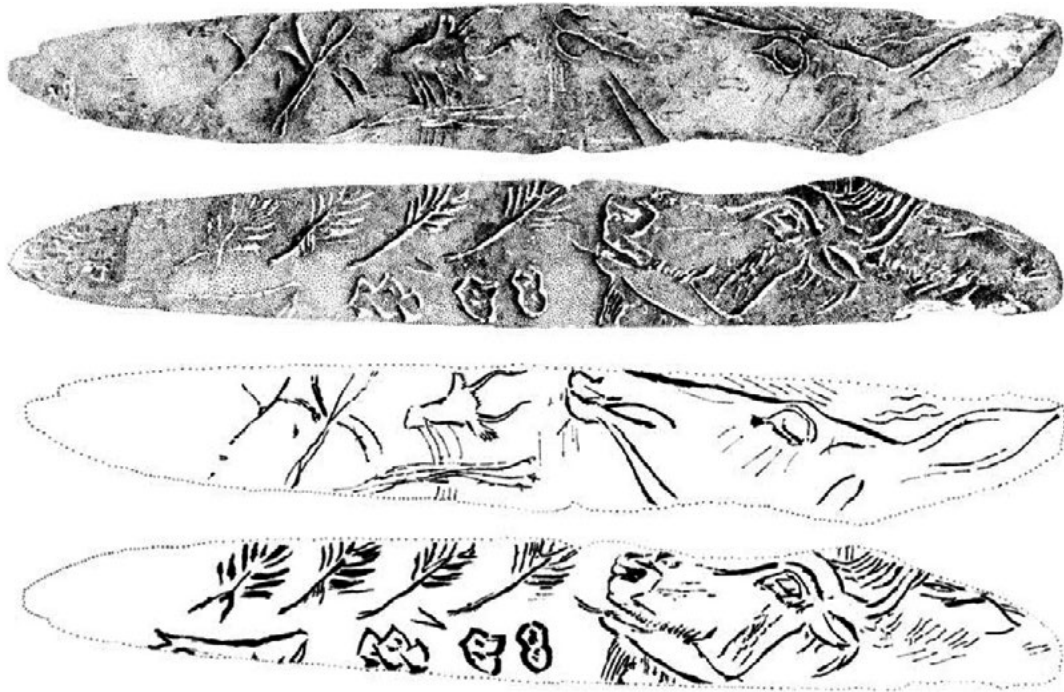
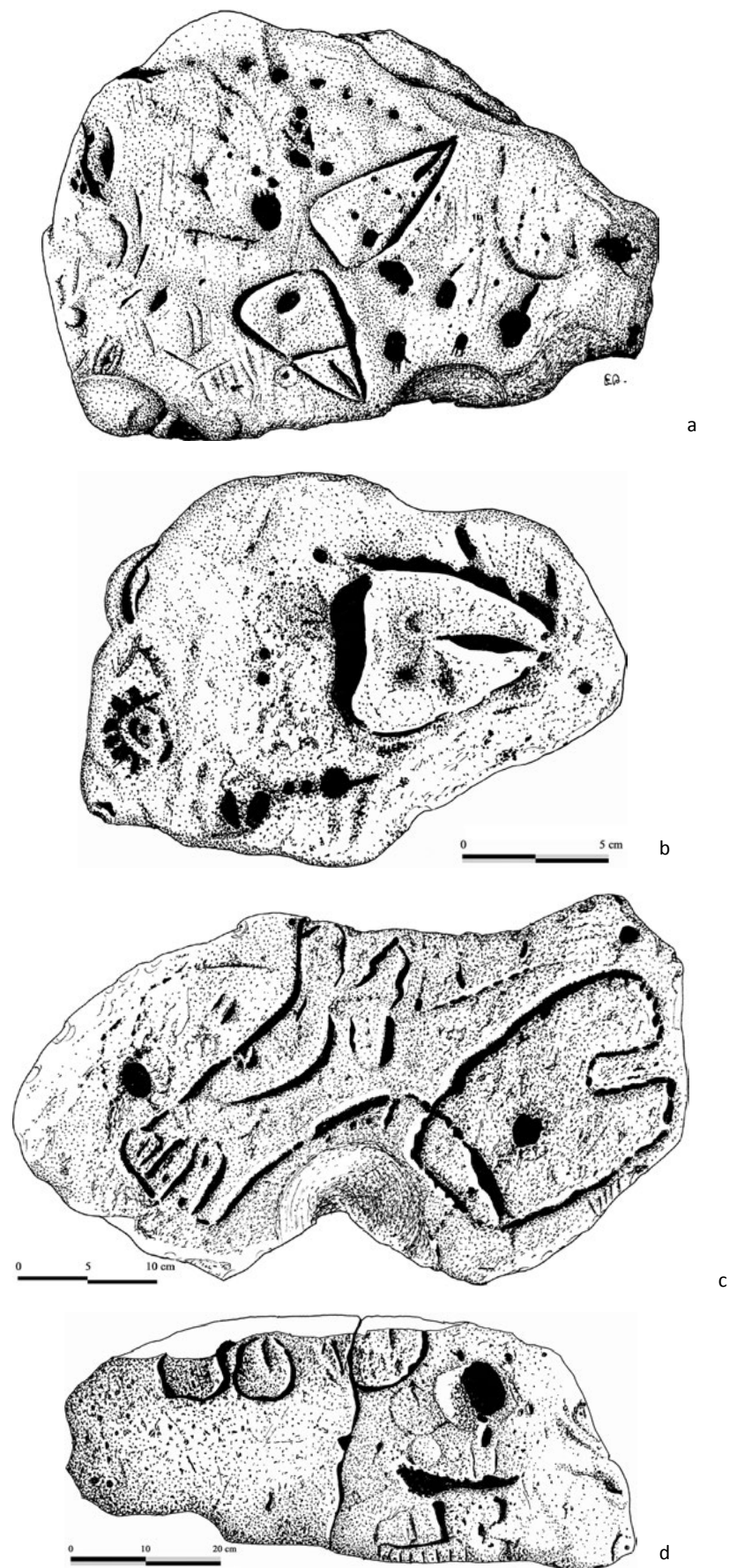


FIGURE 8. A BONE OBJECT FROM THE ARCHEOLOGICAL EXCAVATIONS AT LA VACHE CAVE, IN ARIÈGE, FRANCE, FROM A MAGDALENIAN LEVEL OF APPROXIMATELY 20,000 YEARS, HAS TWO DELIBERATE SEQUENCES OF SIGNS ENGRAVED ON THE TWO SIDES. ON BOTH SIDES THE MAIN SUBJECT IS AN ANIMAL HEAD, ON ONE SIDE A GAZELLE, ON THE OTHER A BISON. THESE TWO ANIMAL HEADS ARE INDICATIONS OF IDENTITY, LIKELY TO BE NAMES OF PERSONS OR OF CLANS OR THEIR TOTEMIC IDENTITY. EACH ANIMAL HEAD IS FOLLOWED BY A SERIES OF IDEOGRAMS. THE DIRECTION OF THE ANIMAL HEADS SUGGESTS THAT THE READING GOES FROM RIGHT ON THE LEFT. THIS OBJECT, WHICH MAY BE DEFINED AS A DOCUMENT, IS DESCRIBING A TRANSACTION OR AN AGREEMENT ON AN EXCHANGE OF ITEMS, BETWEEN TWO SUBJECTS, NAMED GAZELLE AND BISON, INDICATING THE GOODS AND THEIR QUANTITY. (ANATI, 2002A).

An interesting case of decoding concerns the so-called Groupe de La Ferrassie. Twenty engraved stone blocks from six excavated sites in the range of 20 km in and around the locality of La Ferrassie, Dordogne, France, come from archeological levels of the beginning of the Upper Paleolithic, going back 30,000-40,000 years. These monuments show repetitive associations of vulva signs and figures of animal heads. The constant association is 'such an animal, so many vulvas' (Anati, 2007b). The persistence of such an association in 20 different cases led to the consideration that the animal heads represent names or totemic identities, of individuals or of clans, and the engravings are documents of attribution or transaction of so many females to this or that totemic identity. Such an interpretation is opening up an interesting light on human and social relations in Europe at the beginning of the Upper Paleolithic. Somewhat jokingly they have been defined as the earliest marriage contracts. The animal figure indicates the name, the territory or the totemic sign of the clan and the signs of vulva, from one to four, the number of women as object. They are extremely schematic documents, sequences of ideograms that reflect a simple, essential attempt to transmit information, memorize agreements or fix records (Figs. 9a, 9b, 9c and 9d). The reading is of the type of 'Horse (clan of the horse or Mr Horse), four vulvas (four women)'.

The obvious elements are the feminine sex and the ethnic or totemic identity. They are comparable with proto-literate documents from Mesopotamia or Egypt, but the difference is that in the Near East they refer to wheat, oil or other kinds of food, and here they relate to females, and they are at least 25,000 years older. But the system of recording and memorization is the same and also the grammatical concept is the same, subject and object forming the message.



FIGURES 9A,B,C,D. SOME OF THE ENGRAVED ROCKS OF THE LA FERRASSIE GROUP, HAVING ANIMAL HEADS AND VULVA IDEOGRAMS. (ANATI, 2008).

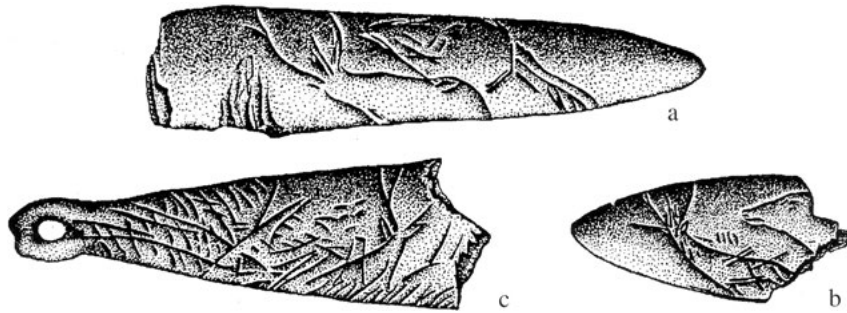


FIGURE 10. EXAMPLES OF THE REPETITIOUS ASSOCIATION OF CAPRINE OR CERVINE WITH HEAD OF CARNIVORE ON FRAGMENTS OF BONE OBJECTS FROM DIFFERENT PROVINCES OF THE FRANCO-CANTABRIAN REGION: A) MAS D'ASILE, ARIÈGE, FRANCE; B) LORTHET, HAUTES PYRÉNÉES, FRANCE; C) EL PENDO, SANTADER, SPAIN. MAGDALENIAN PERIOD, ART OF HUNTERS-GATHERERS. IN ALL CASES, THE CARNIVORE IS ACCOMPANIED BY AN "ARBOLET" (MALE) IDEOGRAM AND THE RHUMINANT IS ACCOMPANIED BY A 'LIPS' (FEMALE) IDEOGRAM. (ANATI, 2002A).

In the Paleolithic iconography there are repetitive associations of animals that imply metaphorical narrations. They can perhaps be compared with Aesop's fables, though much older. (Fig. 10). A recurrent topic concerns two animals placed side by side: the body of a deer, a gazelle or an antelope and the head of a carnivore, sometimes with the toothed mouth wide open. Over 10 different documents of this sort are recorded, both in France and Spain, on portable objects and in rock art. The two animal figures are sometimes accompanied by numeric and other ideograms which vary from case to case, possibly concerning variants of the same tale.

This series of similar documents is likely to tell a popular and widespread tale of approximately 20,000 years ago. The two animals, traditionally predator and prey, have been considered as metaphors for male and female: as predator and prey they live in harmony one by the side of the other. The story sounds like the kind of moralizing tales that 'Sapient' grandmothers would tell to grandchildren. Small chapters of daily life are bringing back glimpses of lost memories.

An engraving in the cave of Altamira, Spain, first published by Abbé Breuil in 1912, has been reproduced numerous times by various authors during the last 100 years. It shows two horses, some ideograms and one psychogram (Fig. 11). The dart or spear usually has a male value, like the 'arbolet' ideogram. Vulva and lips ideograms have a female value. The ideograms have male values and female values. A vertical horse is accompanied by a male ideogram, a horizontal horse by a female ideogram. On top of them appear the depiction of the dart ideogram (male) penetrating the lips female ideogram. Below the composition a psychogram appears, a sort of exclamation. The document may read: 'Mr Vertical Horse met Ms Horizontal Horse: sexual union, Ohh!!' This Altamira engraving may simply tell a love story of 20,000 years ago.

A common topic of early hunter iconography concerns descriptions of travels or migrations. Didactic or educational scopes are attributed to them, the memorization of events or myths intended to visualize the memory and teach the younger generation, like part of the formations for initiation rites. Recent hunter-gatherers also produce similar didactic tools and, in addition, create songs to exalt the events and make them a permanent feature of their memory.

A recording on bone at La Madeleine in the Dordogne, France, has the engraving of a personage in the position of marching, holding a *bâtonnet* on the shoulder (Fig. 12a). This ideogram, the *bâtonnet*, often bifurcate, is common in hunter art and is considered the indication of a person travelling (the

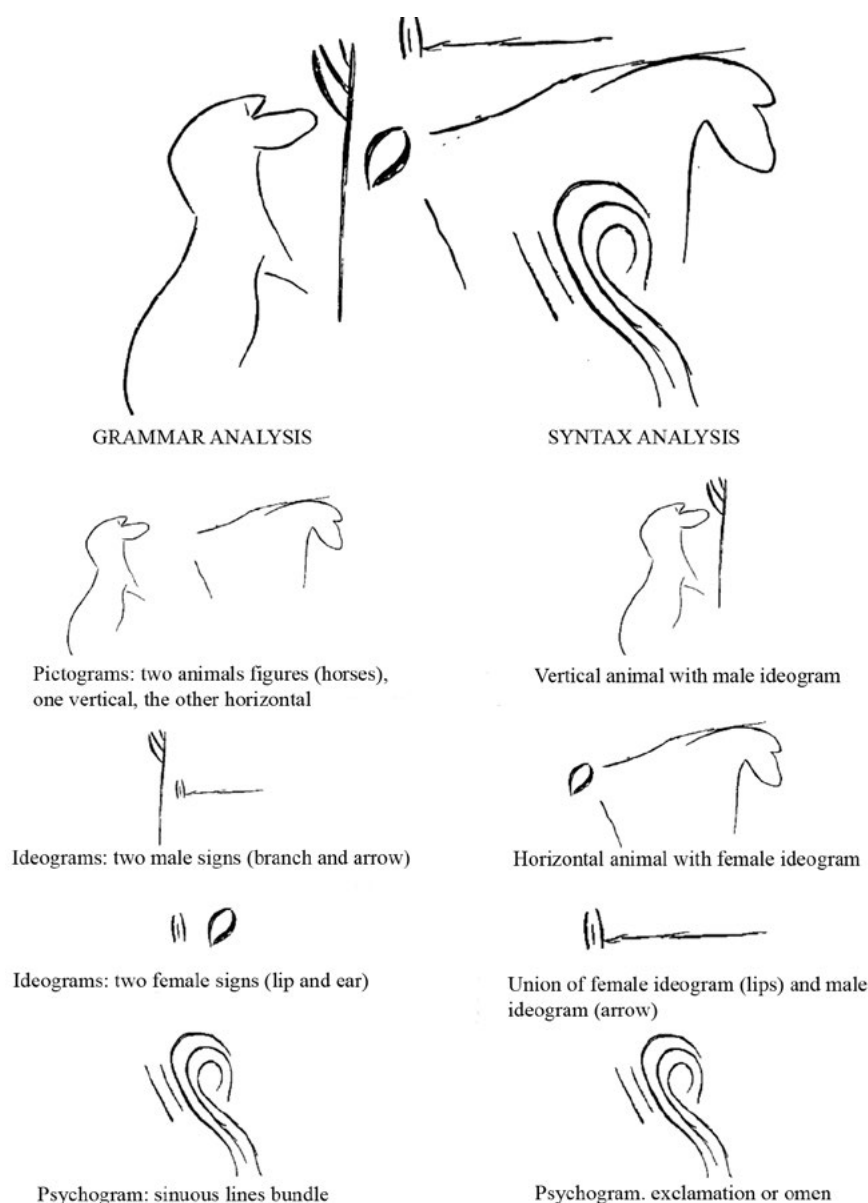


FIGURE 11. AN ENGRAVING IN THE CAVE OF ALTAMIRA, SPAIN. IT SHOWS TWO HORSES, SOME IDEOGRAMS AND ONE PSYCHOGRAM. THE DART OR SPEAR USUALLY HAS A MALE VALUE, LIKE THE 'ARBOLET' IDEOGRAM. VULVA AND LIPS IDEOGRAMS HAVE A FEMALE VALUE. THE IDEOGRAMS HAVE MALE VALUES AND FEMALE VALUES. A VERTICAL HORSE IS ACCOMPANIED BY A MALE IDEOGRAM, A HORIZONTAL HORSE BY A FEMALE IDEOGRAM. ON TOP OF THEM APPEAR THE DEPICTION OF THE DART IDEOGRAM (MALE) PENETRATING THE LIPS FEMALE IDEOGRAM. BELOW THE COMPOSITION A PSYCHOGRAM APPEARS, A SORT OF EXCLAMATION. THE DOCUMENT MAY READ: 'MR VERTICAL HORSE MET MS HORIZONTAL HORSE: SEXUAL UNION, OHH!!' THIS ALTAMIRA ENGRAVING MAY SIMPLY TELL A LOVE STORY OF 20,000 YEARS AGO. (TRACING BY BREUIL, 1912).

traveller). The personage is defined by a horse's head above him, and he heads towards another similar horse's head. The reading is something like 'Mr Horse-head goes to the land of Horse-head'. The space behind him, which he leaves behind, is indicated as a snake with the tail as an 'arbolet'; the arbolet is a diffused ideogram, having a sexual male value. In such a case the image would indicate the name 'Male Snake'. At its two sides the space is marked by horizontal and vertical lines. Like various analogous drawings, this composition of interlocking lines indicates 'territory' thus meaning

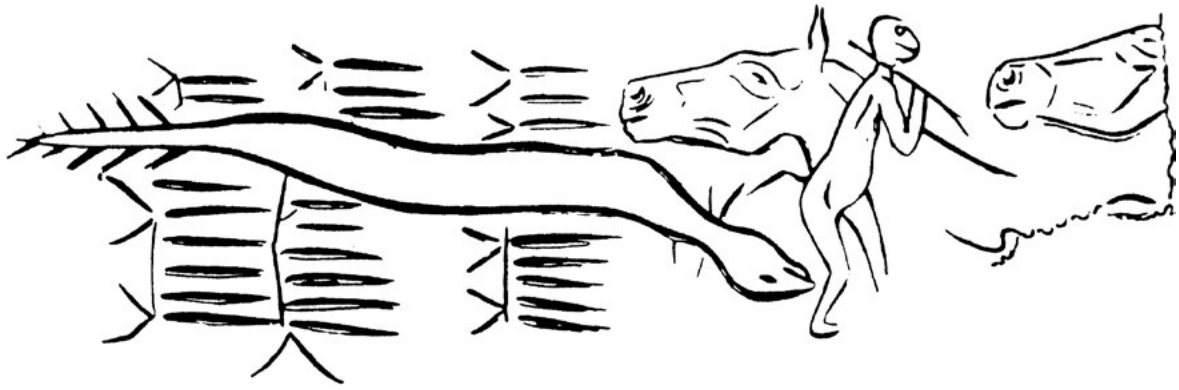


FIGURE 12A. A RECORDING ON BONE AT LA MADELEINE IN THE DORDOGNE, FRANCE. THIS IDEOGRAM, THE *bâtonnet*, OFTEN BIFURCATE, IS COMMON IN HUNTER ART AND IS CONSIDERED THE INDICATION OF A PERSON TRAVELLING (THE TRAVELLER). THE PERSONAGE IS DEFINED BY A HORSE'S HEAD ABOVE HIM, AND HE HEADS TOWARDS ANOTHER SIMILAR HORSE'S HEAD. THE READING IS SOMETHING LIKE 'MR HORSE-HEAD GOES TO THE LAND OF HORSE-HEAD'. THE SPACE BEHIND HIM, WHICH HE LEAVES BEHIND, IS INDICATED AS A SNAKE WITH THE TAIL AS AN 'ARBOLET'; THE ARBOLET IS A DIFFUSED IDEOGRAM, HAVING A SEXUAL MALE VALUE. AT ITS TWO SIDES THE SPACE IS MARKED BY HORIZONTAL AND VERTICAL LINES. LIKE VARIOUS ANALOGOUS DRAWINGS, THIS COMPOSITION OF INTERLOCKING LINES INDICATES 'TERRITORY' THUS MEANING 'THE TERRITORY OF THE MALE SNAKE'. THE WORKING HYPOTHESIS LEADS TO THE READING OF THIS DOCUMENT AS FOLLOWS: 'THE MAN (OR THE GROUP) WHOSE NAME, SYMBOL OR TOTEM, IS THE HORSE-HEAD GOES (OR RETURNS) TO HIS TERRITORY, TO THE TERRITORY OF THE HORSE-HEAD, LEAVING BEHIND THE TERRITORY OF THE MALE SNAKE'. THE DOCUMENT APPEARS TO BE THE RECORDING OF A STORY OR OF A MYTH OF MIGRATION OR TRAVEL. TRACING BY H. BREUIL (1952).



FIGURE 12B. FRAGMENT OF DECORATED BONE FROM THE MAGDALENIAN PERIOD. LES EYZIES, DORDOGNE, FRANCE. A GROUP OF EIGHT HUMAN FIGURES IN PROFILE ARE DEFINED BY IDEOGRAMS OF A FORKED *bâtonnet*, WHICH, MEANS 'TRAVELLING'. ON THE RIGHT SIDE THERE IS A BISON IN PROFILE AND ON THE TOP AND THE LEFT SIDE OF THE HUMAN FIGURES TWO IDEOGRAMS REPRESENTING FLAMES OR FIRE ARE REPEATED. THE REPETITION OF THE SAME IDEOGRAM MEANS PLURAL. SIMILAR SIGNS FOR FIRE ARE FOUND AMONG HUNTER-GATHERER TRIBES. THIS PLURAL IDEOGRAM IS REPEATED TWICE, ONCE BEHIND THE PEOPLE AND ONCE OVER THEIR HEADS (ANATI, 2002A).

'the territory of the Male Snake'. The working hypothesis leads to the reading of this document as follows: 'The man (or the group) whose name, symbol or totem, is the Horse-head goes (or returns) to his territory, to the Territory of the Horse-head, leaving behind the Territory of the Male Snake'. The document appears to be the recording of a story or of a myth of migration or travel.

Another document concerning travel or migration comes from Les Eyzies, Dordogne, France. It is a fragment of decorated bone from the Magdalenian period (Fig. 12b). A group of eight human figures in profile are defined by ideograms of a forked *bâtonnet*, which, as mentioned already, means

‘travelling’. On the right side there is a bison in profile and on the top and the left side of the human figures two ideograms representing flames or fire are repeated. The repetition of the same ideogram means plural. Other authors have described these ideograms as bush or vegetation, but similar signs for fire are found among hunter-gatherer tribes. Whatever the case, this plural ideogram is repeated twice, once behind the people and once over their heads. The ones over their heads are likely to determine the identity of the people, the ones behind their place of origin. As mentioned already on several occasions (Anati, 2001), it appears to describe the story of a migration. People defining themselves, according to the ideograms engraved above their heads, as people of the fires, or of the land of fires, are leaving behind the land of fires and marching in the direction of the bison, or to the land of the bison.

The bone was found in the Dordogne which, according to the numerous depictions of bison may well be considered to be the land of bison. They are coming from the land of fires. Since the beginning of written history, Azerbaijan has been known as the land of fires, where petroleum and gas emanations from the soil produce fire choreographies and permanent fires coming out of the bare soil. The land of the bison could be Dordogne or the Franco-Cantabrian area, where this fragment was found. The number of images of the bison in the paintings of Altamira, Lascaux and many other decorated caves may well hint that at that time this area was called the land of the bison. This small document is likely to provide a chapter of European history: the migration of a Magdalenian clan from the Land of Fires, entering Europe, crossing the Caucasus and reaching the land of plenty, the Far West of that time.

Conclusions

We have deliberately given an anecdotal tone to the preliminary results of research that might have revolutionary effects. We are trying to read millennia-old fables written in a pictographic script. Prehistoric art is acquiring a new dimension. These examples have given a glimpse of myths, beliefs, daily activities, personal events, social agreements, trade, territorial names, migrations, chapters of history, love stories, feelings. Prehistoric art is an immense archive, and decoding has just started. It is going to produce the history of prehistoric times. We realize that this picture-writing has the ability to transmit information, personal impressions and feelings.

We wonder to what point we may call this system that we are decoding writing. If such is the case, the information in textbooks should be modified: writing was not born 5,000 years ago but 50,000 years ago. Long or complex narrations have not yet been decoded. But we have discovered that these multi-millenary messages use the same grammatical concepts and the same syntactic system of association as modern writing; the way is now open to further progress in their decoding. What seems like a dream is that these messages can be read even without knowing the language in which they were conceived.

It is clear now that visual art was born as a system of communication, information and memorization. The progress in this project of decoding prehistoric art seems to demonstrate that writing was born with visual art. Visual art was writing before it was considered to be art. And it was and still is readable, in whatever language.

If a kind of writing allowing universal reading could be reinvented, entire humanity would communicate without the need of translation. Perhaps the faraway past has some suggestions to make for the culture of tomorrow.

Bibliography

- ALSTON, W. P. 1971. *Filosofia del linguaggio*, ed. italiana a cura di Giorgio Sandri, Bologna (Il Mulino).
- ANATI, E. 1989a. *Origini dell'Arte e della concettualità*, Art Book, Milano (Jaca Book).
- ANATI, E. 1989b. *Les Origines de l'Art et la formation de l'esprit humain*, Paris (Albin Michel).

- ANATI, E. 1997. *L'art rupestre dans le monde. L'imaginaire de la préhistoire*, Paris (Larousse).
- ANATI, E. 2001. *Gobustan, Azerbaijan*, Capo di Ponte (Edizioni del Centro).
- ANATI, E. 2002a. *La struttura elementare dell'arte*, SC vol. 22, Capo di Ponte (Edizioni del Centro).
- ANATI, E. 2002b. *Lo stile come fattore diagnostico nell'arte preistorica*, SC vol. 23, Capo di Ponte (Edizioni del Centro).
- ANATI, E. 2003. *Aux Origines de l'art*, Paris (Librairie Arthème Fayard).
- ANATI, E. 2007a. *L'odyssée des premiers hommes en Europe*, Paris (Fayard).
- ANATI, E. 2007b. Engraved rocks of La Ferrassie style, *XXII Valcamonica Symposium 2007, Rock art in the frame of the Cultural Heritage of Humankind*, Papers, Capo di Ponte (Edizioni del Centro), pp. 37-52.
- ANATI, E. 2008. *Studi per la lettura dell'arte rupestre*, SC vol. 27, Capo di Ponte (Edizioni del Centro).
- ANATI, E. 2010. *World Rock Art. The primordial language*, Oxford (Archeopress).
- ANATI, E. 2011. *Origini della musica*, Capo di Ponte (Atelier).
- BREUIL, H. 1912. L'âge des cavernes et roches ornée de France et d'Espagne, *RA*, vol. XIX, p. 215.
- BREUIL, H. 1952. *Quatre cents siècles d'art pariétal*, Montignac (Centre d'études et de documentation préhistorique).
- BREUIL, H., OBERMAIER, VERNER, W. 1915. *La Pileta*, Monaco (Imprimerie Vve A. Chéne).
- CHALOUPEK, G. 1993. *Journey in Time*, Sidney (New Holland Publishers).
- DEL RIO, A., BREUIL, H., SIERRA, L. 1911. *Les Cavernes de la région Cantabrique*, Monaco (Imprimerie Vve A. Chéne).
- FODOR, J. A., KATZ, J. J., Ed. 1964. *The Structure of Language: Readings in the Philosophy of Language*, Englewood, Cliffs, New Jersey (Prentice-Hall).
- GIMBUTAS, M. 1989. *The Language of the Goddess*, San Francisco (Harper & Row).
- GRAZIOSI, P. 1960. *Palaeolithic Art*, New York (Mc Graw Hill Book Company).
- LEROI-GOURHAN, A. 1981. *I più antichi artisti d'Europa, Introduzione all'arte parietale paleolitica*, Milano (Jaca Book).
- MALLERY, G. 1888-1889. *Picture-Writing of the American Indians*, 2 vols., (and photostatic reprint, 1972), 1° ed. New York (Dover).
- MOUNTFORD, C.P. 1956. Art, Myth and Symbolism, *Records of the American-Australian Scientific Expedition to Arnhem Land*, vol. I, Melbourne (Melbourne University Press).
- PEYRONY, D. 1934. La Ferrassie, *Préhistoire*, vol. III, pp. 1-92.
- PRITCHARD, J. B. Ed. 1950. *Ancient Near Eastern Texts Relating to the Old Testament*, Princeton (Princeton University Press), p. 227.
- RESWEBER, J.P. 1979. *La philosophie du langage*, Paris (PUF).

Primitive Religious Information Embodied in Human-Face Images of Rock Art on Zhuozishan Mountain, Wuhai, Inner Mongolia

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Abstract

The human-faced rock paintings like the sun god at Zhaoshao Valley in Zhuozishan in Wuhai City, Inner Mongolia, are one of the most eye-catching and exquisite rock paintings among the ancient works distributed across China. Zhuozishan, approximately 75 km long and the main body of which runs from north to south, is an extended range of the north Helan Mountain. The rock paintings are distributed from north to south at Moer Valley, Kucai Valley, Zhaoshao Valley and Queer Valley, etc., in Zhuozishan, harbouring such images as human faces, animals, hunting, grazing, dancing and stars. Among the nearly 300 polished or carved pictures there, the human-faced rock paintings account for 90 percent, thus constituting an exclusive area in China with human faces as the theme. The human-faced rock paintings in Zhuozishan are most characterized by those in the Zhaoshao Valley, not only displaying pleasure, anger, sorrow, joy and the vivid five sense organs; also there are more human-faced rock paintings with light rays than in Helan Mountain and Yinshan Mountain respectively. Some of them signify the sun god while others symbolize celestial gods, sorcerers or ancestor gods. The light rays might have reflected the epiphanic sorcerer-celestial god relations or recount that the deceased head sorcerer at epiphanies was blessing people. That has reflected the practices of the ancient forefathers around Zhuozishan area, who worshipped the sun and that places the primitive religious beliefs featuring the worship of nature, totems and ancestors in their spiritual world. Also it is a primitive religious thought deifying the above and a romantic formula for the creation. In primitive religious worship of nature, the prehistoric forefathers may have presented the worship of the sun. In their minds, the sun high above the celestial bodies had the magical power to dominate everything, bringing human brightness and warmth and giving all vigorous vitality, as well as making the land crack and river water dry up. Besides, it worked at day and rested at night like man and was assumed to be related with crops' growing seasons. So they attributed favourable climatic weather and bumper harvests in farming and hunting, etc. to favours from the celestial gods and the sun god. It can be inferred from the archeological discoveries, polished and carved marks and technique of expression around Zhuozishan, that the rock paintings there might have been created around 6,000 or 7,000 years ago, perhaps earlier than most of the sun god rock paintings discovered on east and west Helan Mountain and on Yinshan Mountain.

The human-faced rock paintings at Zhuozishan are an important turning point joining the Helan Mountain human-faced rock paintings with the Yinshan Mountain human-faced rock paintings. As regards to the origin of human-faced rock paintings, there is multi-origin theory and diffusion theory, etc. The research into human-faced rock paintings is a comprehensive field involving many disciplines and many perspectives. This paper tries to make an all-round analysis and presentation by means of archeology, anthropology and image classification in art history.

Prairie Economy Development seen from Rock Art in the West Range of Langshan Mountain, Inner Mongolia

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Abstract

Part of the west Yinshan Mountain, the west range of Langshan Mountain in Inner Mongolia, i.e. northeast Alxa Left Banner, harbours a cluster of rock paintings. From the contents and creation periods, they can generally be classified into early hunting stage, hunting heyday, husbandry rudimentary stage and husbandry mature period. From them we can see clearly the process where economic growth shifted gradually from hunting to husbandry for the ancient residents in hilly areas.

The rock paintings in the early hunting stage, carved or polished, contained pictures of deer, ibex, argali and wild oxen as well as scenes where men and wild animals were together. In the hunting heyday period the hunters knew how to use the bow and arrow as well as stone ball, stick and spear, mostly featuring in hunting large predator rock paintings, where hunters were trying to strike a beast with sticks and where a hunter was shooting a deer with bow and arrow.

In the Iron Age the inhabitants came into a husbandry-dominated growth stage with hunting as an auxiliary item. The herds being grazed were sheep, horse, cattle, with shepherd dogs, and there appeared scenes of lassoing and moving to other land for grazing, etc. Some paintings reflected animal breeding, like mating and mares being pregnant.

With the rapid growth of the grazing economy, some scenes appeared in rock paintings where tribes were fighting for grassland, which may reflect the frequent occurrence of battles for animals and perhaps for other properties. It can be seen from the rock paintings that people originally lived on hunting and foraging, and afterwards shifted to nomadic life seeking pasture.

The Canadian Shield Rock Art and its Spiritual Dimension: Finding Some Tangible and Intangible Aspects of Rock Art Sites in the Canadian Shield through a Contextual Approach

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Abstract

Rock art sites of the Canadian Shield have mainly been made by the ancestors of the First Nations Algonquian groups, and most of them predate the settlement of the first European colonies. For the Algonquians, those ancestral sites are still seen as closely related to their spiritual sphere, in spite of the fact that in many regions the past sacred knowledge associated with them has been forgotten, especially the interpretation of their graphic content, but also the ritual practices conducted there in ancient times.

Indeed, from an archeological point of view the meanings to be given to a rock art site always offer a challenge. Indeed, questions such as 'What do the figures depicted mean?', 'Why are those sites sacred?', 'What kind of ritual has been performed there?' are the usual ones addressed by archeologists, but the answers are, however, not always easy to find.

A contextual analysis of the graphic content of such sites in relation to what is known from Algonquian oral traditions and ancestral practices in the land can therefore become a key-approach for better integrating the spiritual dimension specific to the rock art sites and their venue, as well as the evidence of ritual attitudes and performed actions as having occurred on them in the past.

In many cases, the archeological data yielded by specific rock art sites and the tales produced by traditionalists or any other information coming from eye-witnesses about Algonquian rock art history, the people who created their graphic content and those who made use of their settings as a theatrical stage in the past in other words, the perceptions, attitudes and practices related to the occupation of those sites help us now to reconstruct more precisely the spiritual nature and religious context of some of the rock art in the Shield. To show this, the author will offer some of the more recent results coming from his ongoing archeological project pursued at Ontario and Québec rock art sites.

Introduction

Dating from the Pre-Cambrian era and covering a huge territory in the centre of Canada, from Saskatchewan to Québec, the Canadian Shield forms a vast geological area dominated mainly by igneous rock formations such as granite. It is usually on such formations that the rock art made by the ancestors of the Algonquian-speaking peoples – that is, the Ojibwa, the Anishinabe, the Cree, the Attikamekw and the Innus, to name a few – can still be found nowadays. Nearly 800 of those sites have been identified (in the Province of Québec, only 23 rock art sites have been identified so far, see Figure 1), most of them scattered in the boreal forests to the north and west of the Great Lakes region, considered as the core area of rock art phenomena in the Shield. Most of the Algonquian rock art sites might predate the settlement of the first European colonies in North America more than five centuries ago.¹

According to the Algonquian oral traditions, those ancestral sites are closely related to the spiritual sphere of the First Nations (as we call the Indians in Canada). However, in many parts of the Canadian

¹ The Nisula-Pepeshapissinikan site, located inland of the St Lawrence north shore, is the only one having been dated with the AMS dating method by Dr Alan Watchman. Two samples were taken in 1993 and 1994, suggesting that the site may be older than 2,000-2,200 years (see Arsenault 2002c; Aubert *et al.* 2002).



FIGURE 1. MAP SHOWING THE DISTRIBUTION OF ROCK ART SITES IN THE PROVINCE OF QUÉBEC, CANADA.
 LETTERS REFER TO THE ROCK ENGRAVING SITES, NUMBERS TO THE ROCK PAINTING ONES.
 THE SITES DISCUSSED IN THE TEXT ARE: GIRDWOOD (NO. 11), NISULA-PEPESHAPISSINIKAN (NO. 9),
 KAAPEHPESHAPISCHINIKANUUCH (NO. 1), DASHWA (NO. 6) AND MIKINAK (NO. 14).

Shield, the traditional sacred knowledge associated with rock art has been forgotten, especially with regard to the interpretation of its graphic content, but also in relation to the ritual practices conducted on those sites in ancient times. Nonetheless, elsewhere, notably in some of the more isolated regions of the Shield's northern parts, some groups have been able to maintain their traditional knowledge and practices alive, sometimes till now, and along with some historical accounts, those data may help

us to reconstruct what may have been the ancestral spiritual context proper of the Canadian Shield rock art.

Indeed from an archeological point of view, the meanings to be given to a rock art site always offer a big problem that cannot be challenged easily. For example, some scholars (Conway 1993; Conway and Conway 1990; Molyneaux 1987; Vastokas 1992) have argued that the interpretation of the motifs depicted, their meanings or even correct identifications remain impossible to achieve without the comments of the artists, those who made the drawings or engravings, because usually no oral accounts nor any written text related to a specific site is available. What is more, it is assumed that many sites might have been produced by individuals during a secluded session, called the vision quest, and no one but the author could know what has been really depicted (Conway 1984; Rajnovich 1989). Otherwise during the last two centuries, the collective memories related to the sacred ancestral knowledge of the Algonquians, including the one linked specifically to rock art, have been altered, if not erased, due to the conversion of many communities to Christianity and overall the proactive form of ideological conviction done by the missionaries themselves about the devilish works that rock art might represent for the Aboriginal individuals adhering to the new faith (Jones 1970 [1861]). All in all, the meaning content of a rock art graphic could remain idiosyncratic and therefore undecipherable without such original insights.

But this pessimistic view can be successfully challenged if one takes into account a series of relevant data that can give us significant clues about what is represented on a rock art site and why such a site has become sacred. What is more, it is even possible to determine to an extent what kind of ritual actions had been performed at that specific location. To do so, it is important to contextualize the raw materials available, that is, on the one hand, the archeological data gathered *in situ*, and on the other hand, the ethnographic and ethnohistorical sources collected over four centuries in Canada. This kind of contextual reconstruction has been also discussed by Chris Chippendale and Paul Taçon (see their introduction in Chippendale and Taçon eds 1998) as being a combination of formal and informed approaches. Therefore, and in spite of a lack of age estimation which might have given important clues about the historical and religious status of a site, I argue here that such a reconstruction is possible and can allow us to convincingly better figure out the past and actual spiritual contexts of those sites in the Algonquian sacred landscape.

Now, what are those relevant data that could represent the key elements for better construing the meaning content of a rock art site?

The archeological data compared with graphic content specific to a rock art site

The first key elements to evaluate are the archeological data yielded by a rock art site during its scientific investigation, that is:

- (a) The various motifs left on a rock surface as well as the natural features linked to them, such as a crack, a hole and any trace of calcite or silica deposit, altogether forming the iconography, that is the graphics *per se*.
- (b) The material remains surrounding the natural support, such as the tools used in the making of an engraving, a painting or a drawing, but also any architectural structure built in the vicinity of a site, a hearth (or oven) or a garbage pit, or any other artefact abandoned on the site when visited in the past.

In addition to these different data one can consider the elements proper to the natural setting of a site, that is, the rock formation, its location, shape and orientation of its decorated surfaces, plus its specific environment. However, such conditions are not so easily fulfilled in the Canadian Shield rock art, because we are coping with open-air sites occurring mainly on the vertical faces of various rock formations located on the lakes' or rivers' borderlines, always facing the water. Under such conditions, it means therefore that not only do we need a boat to reach the site during the summer



FIGURE 2. IN THE CANADIAN SHIELD, THE ROCK PAINTING SITES LOCATED IN THE BOREAL FOREST CAN USUALLY BEEN REACHED BY CANOE OR BOAT DURING THE SUMMER SEASON. AND IN A FEW CASES, THE PAINTED PANELS CAN ONLY BE SEEN AT SEVERAL METRES ABOVE THE CURRENT WATER LEVEL, FORCING THE ARCHEOLOGIST TO WORK AT PRECARIOUS STATIONS IF HE WANTS TO HAVE A CLOSER VIEW OF THE GRAPHIC (HERE, MY TEAM IS TAKING PICTURES AT THE GIRDWOOD SITE, LOCATED ON THE DUMOINE RIVER, TEMISCAMING REGION, QUÉBEC (PH. D. ARSENAULT, PETRARQ PROJECT).

(Figure 2), but when an excavation is possible, it can almost only be done underwater where the archeological evidence other than the graphic lies.

What is more, in the Canadian Shield rock art, and although a few petroglyph sites exist on horizontal rock outcrops (Vastokas and Vastokas 1973; Zawadzka 2011a), we usually analyse painted graphics made of red ochre rich in hematite usually applied with fingers and hands (Dewdney and Kidd 1967; Lemaitre 2013; Lemaitre and Arsenault 2011; Rajnovich 1994; Steinbring 1998). Because a painted graphic appears on the vertical surfaces of a rock formation bordering a body of water, one has to stand in a boat or a canoe, or otherwise go across the ice in winter, so as to carefully record its content or take samples. The motifs depicted are more often abstract, made of straight and curved lines, sometimes more or less interlaced in various patterns such as a grid. But there are also a series of figurative motifs representing either human or animal-like figures or hybrid forms (combining anthropomorphous and zoomorphous traits, see Figure 3), and material objects such as canoes, tents or bows and arrows. Some of those figurative motifs, and notably the illustration of animals and material objects, are usually depicted more naturalistically than any other figures. The best way to identify them is through their natural features, allowing us to distinguish for example a fish from a terrestrial mammal, or elsewhere a canoe from a tent, although for a hybrid personage or an abstract motif one has to refer to a second level of interpretation, usually when clues are given by Algonquian oral traditions. Anyhow, passing from the identification to the interpretation of a figure, natural or supernatural, as depicted in that rock art is obviously not enough if one wants to understand what this figure could have meant in the past, that is, from the original cultural perspective at the moment of its creation.

Clues from Algonquian oral traditions and some printed sources

To do so, the second set of data to be considered is therefore the Algonquian oral traditions. In many regions of the Canadian Shield, and despite the constant proselytism of Christian missionaries, there are still stories which can yield significant information either on the ancestral worldview of the Algonquian peoples, especially in relation to the sacred landscapes, to the kind of supernatural forces or entities who live, or used to live, in those specific locations, or even to the nature or importance of a rock art site, which can be revealed for example from its toponym, its place-name (Arsenault

FIGURE 3. SOME OF THE FIGURES DEPICTED IN THE CANADIAN SHIELD ROCK ART ILLUSTRATE HYBRID PERSONAGES WHOSE STRANGE COMBINATION OF HUMAN AND ANIMAL ATTRIBUTES SUGGESTS SOME POWERFUL SKILLS. FOR EXAMPLE, ONE OF THE HYBRID FIGURES SEEN AT THE NISULA-PEPESHAPISSINIKAN SITE IS SEEN WITH TWO BISON-HORNS ON HIS HEAD: IT CAN BE THE REPRESENTATION EITHER OF A MANITOU (A STRONG SPIRIT) OR OF A POWERFUL SHAMAN. THIS PECULIAR FIGURE STANDS JUST ABOVE A CRACK, AS IF HE WAS COMING OUT FROM THE INNERWORLD (PH. D. ARSENAULT, PETRARQ PROJECT).



2004a, 2004b; Chamberlain 1891; Diamond, Cronk and von Rosen 1994; Fabvre 1970 [c. 1695]; Gatschet 1899; Hallowell 1975; Morisseau 1965; Norder 2003; Radin and Reagan 1928; White 2008; Zawadzka 2008). Thus, it is noticeable that Canadian Shield rock art has been mainly left on rock formations considered to be at the junction of the four layers of the universe in the Algonquian worldview, that is, the Upperworld, the Earth's plane, the Underwater and the Underworld (or subterranean world), and all these worlds are interconnected, the rock art site becoming in some way the interface between them. In particular, cliffs and mountains are significant for Algonquian-speaking peoples because they can act as cosmic settings endowed with portals to other worlds in the form of caves and crevices. There are many examples throughout the Canadian Shield of such structural elements associated with rock art sites where the shaman, or medicine-man, used to go for an encounter with spiritual entities.

As a matter of fact, if many rock art sites can be considered sacred locations nowadays, it is due to the fact that in Algonquian oral traditions they are often associated with important spirits, such as the Thunderbird, the strongest spirit of the sky, and its arch-enemy, the Mishipishew, who lives under water, or at least with specific entities related to the Algonquian worldview (Chamberlain 1890; Fox 2004). For example, many oral traditions present horn-head figures as the representation of a manitou, that is, a spirit. Accordingly, the head of an anthropomorph depicted with what looks like the horns of a wood-buffalo (Figure 3) or the long ears of a hare could in fact refer to the representation of a strong supernatural creature, or at least might be the illustration of a powerful shaman, or medicine-man, in contact with a strong spirit.

These various pieces of information can indeed be gathered nowadays from native elders, the ones who are the keepers of the sacred knowledge, but in some instances also from ethnohistorical accounts and from scientific reports, those produced by anthropologists, geologists, geographers and botanists, to name a few. For example, is it interesting to note that during the 1620s and 1630s, under the French regime in Canada, the Catholic missionaries reported through their writings named relations, that the so-called Indians, or savages as they were qualified at that time, used to stop their canoes at some rock formations for a short period of time, depositing there some kind of offerings — usually some leaves of tobacco — in order to pay respect to the local spirits and safely pursue thereafter their journey.² It is worth mentioning here that the sacredness of those rock formations remains alive as

² Many examples of those rituals can be found in the Jesuit relations edited by Thwaites (1896-1901).



FIGURE 4. UNDER THE FRENCH REGIME IN CANADA, THE JESUIT MISSIONARY, FATHER PIERRE-MICHEL LAURE, MADE A SERIES OF MAPS BETWEEN 1731 AND 1733 OF WHAT WAS THEN THE DOMAIN OF THE KING. IF USUALLY MOST OF THE PLACE-NAMES WERE GIVEN IN NATIVE LANGUAGES, SOME OF THEM WERE ALSO ACCOMPANIED BY A FRENCH NOTICE. THUS ON THE UPPER NORTH SHORE OF THE ST LAWRENCE RIVER, THERE IS A LAKE (MARKED IN RED) NAMED PEPESHAPISSIGAN WITH A FRENCH INSCRIPTION, BOTH ENHANCED WITH A YELLOW TRAIT: 'ON Y VOIT DANS LE ROC DES FIGURES NATURELLEMENT PINTES' (AND ON ONE OF THE OTHER LAURE'S MAPS, THE WORD 'INEFFAÇABLES' HAS BEEN ADDED, SUGGESTING THAT THE PAINTINGS APPEARING ON THE ROCK CANNOT BE ERASED). THIS IS THE OLDEST MENTION OF A ROCK ART SITE EVER REPORTED IN AN ETHNOHISTORICAL DOCUMENT IN CANADA.

places of remembrance till now in the Algonquian oral traditions, either in the form of toponyms, traditional tales or special stories which refer to their specific nature and historical context (Arsenault 2004c; Conway 1984; Diamond, Cronk and von Rosen 1994; Lemaitre 2013; Norder 2007).

Indeed when combined with oral traditions, this type of data allows us to define the sacred nature of a rock art site. Let us consider this first example. The Nisula-Pepeshapissinikan site³ located on the upper north shore of the St Lawrence river, in the heart of the ancestral territory of the Innu people, is the first rock art site I have studied periodically since the beginning of the 1990s (Arsenault *et al.* 1995). This site has been dated through the AMS dating method, with two samples giving an age older than 2,000 years (Arsenault 2004c; Aubert *et al.* 2002). But still more interestingly, its specific location appears on a series of old maps produced by a Jesuit, Father Pierre-Michel Laure, between 1731 and 1733. On those maps, its ancient native place-name is given as Pepechapissinagan, but on a few of them Laure has added a mention in French appearing contiguous to native toponym: 'on a rock formation appearing of that lake one can see some natural painted figures that cannot be erased' (Figure 4). It is an obvious reference to a rock painting site, but also the oldest reported as such in an ethnohistorical document for a Canadian rock art site.

³ Nisula is the last name of a Finnish-born woman, Anne Nisula, who discovered that site in 1985, saying that the rock art graphic 'looked like the ones she used to see when she was a child in Finland' (A. Nisula, pers. comm.).

FIGURE 5. ONE OF THE HUMAN-LIKE FIGURES (SEEN NEAR THE CENTRE OF THE PHOTOGRAPH) DEPICTED IN THE ROCK ART GRAPHIC AT NISULA-PEPESHAPISSINIKAN. THIS PERSONAGE WITH A TRIANGULAR-SHAPED HEAD AND WITH HIS ARMS WIDE OPEN IS THE BIGGEST ANTHROPOMORPH (22 CM LONG) VISIBLE ON THAT SITE. IT LOOKS AS IF HE IS WALKING TOWARDS THE CRACK SEEN ON THE RIGHT. DUE TO HIS PECULIAR HEAD AND ATTITUDE, THIS HUMAN-LIKE FIGURE MIGHT BE IN FACT THE DEPICTION OF A MEMEGWESHUK, A REPRESENTATIVE OF THE 'LITTLE PEOPLE', USUALLY DESCRIBED BY THE ALGONQUIAN ORAL TRADITIONS AS A GROUP ON NON-HUMAN TERRESTRIAL ENTITIES CHARACTERISED BY A SMELLY HAIRY BODY AND A SHARP FACE ALLOWING THEM TO PENETRATE EASILY INTO ROCK FORMATIONS, THEIR DWELLINGS; IN THE PAST, THE ALGONQUIAN SHAMEN USED TO MEET THEM AT THE FOOT OF THE CLIFFS WHERE THEY COULD RECEIVE THE SACRED KNOWLEDGE, NOTABLY FOR MEDICINAL PURPOSES (PH. D. ARSENAULT, PETRARQ PROJECT).



Elsewhere, at about 600 km northwest of Nisula, on the Nemiscau Lake, in the heartland of the James Bay area, the land of the Eeyou (or Cree) people, there is a dome-shaped rock formation where a small cavern can be seen at its base. A series of rock paintings have been left along the many faces of that geological structure, 13 different painted panels in all over 50 m long. The name given to that site by the Eeyou elders I interviewed in 1997 and 1998 is Kaapehpeschapischinikanuuch, a native toponym quite similar to the one given about 270 years before to the Nisula-Pepeshapissinikan site, and with approximately the same meaning when the word is translated into English. Moreover, it appears that some spiritual creatures, called the Memegweshuk, used to live on that site, the cavern being the entrance to their home. The Memegweshuk used to be the intercessors between the humans and the spiritual entities of the subterranean world, transmitting to the former the sacred knowledge of the latter (Flannery 1931; Norder 2007; Wheeler 1975). It is worth mentioning that such creatures, the Memegweshuk, can have been depicted in rock art in the form of human-like figures with triangle-shaped heads on the two aforementioned sites (Figure 5; see also Waller and Arsenault 2008). This relationship between two distinct locations referring to the same concepts and features reveals how important rock art may have been through centuries for Algonquian-speaking groups, and how the sanctity of their rock art has been expressed through names and designs.

Otherwise at Kaapehpeschapischinikanuuch, the graphic content is interesting in many respects, but at least for one thing: it can be intriguing to compare one of its geometric motifs with similar ones appearing on other rock art sites, especially in the Province of Québec, that is, the triangle-like motif. This motif can be seen also on an Anishinabe site, the Dashwa site on Lake Buies, located in the Abitibi region to the south of the James Bay area, and on another one in the Canadian National Park of Mauricie, the Mikinak site (Figure 6). On this latter site located on the Attikamekw ancestral land, the

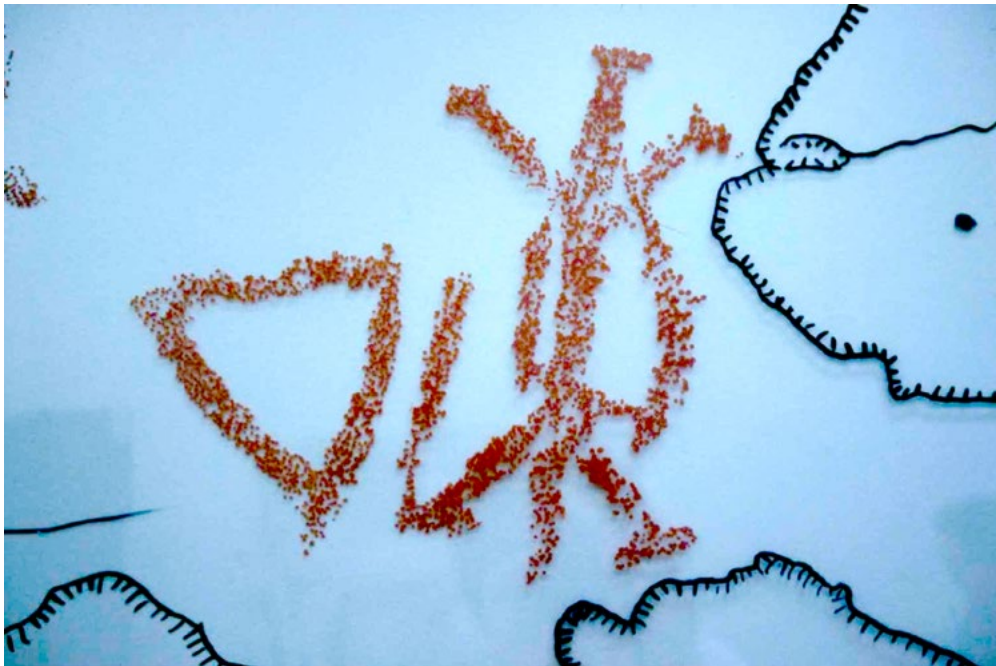


FIGURE 6. A STENCIL OF ONE OF THE PAINTED PANELS SEEN ON THE MIKINAK SITE, NATIONAL PARK OF MAURICIE, QUÉBEC. A TRIANGLE-LIKE MOTIF AND A TURTLE ARE DEPICTED SIDE BY SIDE. ACCORDING TO THE ALGONQUIAN ORAL TRADITIONS, THE TURTLE IS CONSIDERED TO BE A MEDIATOR BETWEEN THE WORLD OF THE HUMANS AND THAT OF THE SPIRITS. THE TRIANGLE-LIKE MOTIF MIGHT BE THE REPRESENTATION OF THE SHAKING TENT, A SMALL AND FRAGILE STRUCTURE INSIDE WHICH THE SHAMAN SITS FOR A WHILE IN ORDER TO BE IN CLOSE CONTACT WITH SOME SPIRITS, A SORT OF ANCIENT TELEPHONE BOOTH IN SOME WAY. AT MIKINAK, IT IS POSSIBLE THAT THE ARTIST WANTED TO EXPRESS THAT RELATIONSHIP BETWEEN THE SHAMAN IN A SHAKING TENT AND THE SPIRIT OF THE TURTLE SENT AS A MESSENGER TO THE UPPERWORLD (PH. D. ARSENAULT, PETRARQ PROJECT).

triangle-like motif is seen in association with a turtle (named Mikinak in the Algonquian languages), an important mediator between the Earth's plane and the Upperworld. This motif might have been a visual convention for the representation of the shaking tent, a small and fragile temporary structure in which the shaman used to be in touch with the spirits. So maybe that rock art site illustrates what may have been the sacred context where a shaman was in need of some medicine or other spiritual knowledge?

Discussion: the sacred nature of the Canadian Shield rock art sites

So what can we learn from these few examples here? For centuries, rock art sites of the Canadian Shield used to be an integral part of many Algonquian-speaking peoples' sacred landscape. But from the information I gathered among the First Peoples, a certain number of them are still visited and respected as active sacred sites because they remain inhabited by spirits. Furthermore, some religious ceremonies can even still be performed at those specific locations, including the deposit of special offerings.

As briefly shown with the rock art sites described above, for archeologists it is the material remains of a rock art site (including indeed its graphic content) and the intangible aspects directly associated with it (that is, the intangible as suggested by toponyms or place-names, by lore or by existing oral histories) which are the first to be considered when one thinks about construing those rock art sites

FIGURE 7. FOR THE ALGONQUIAN COMMUNITIES, MANY ROCK ART SITES IN THE CANADIAN SHIELD ARE STILL A SIGNIFICANT PLACE TO BE IN CONTACT WITH THE ANCESTORS AND THE SPIRITS OF THE PLACE AND RECEIVE TRADITIONAL SACRED KNOWLEDGE LINKED TO THEIR ANCIENT WORLDVIEWS. NOWADAYS, INDIVIDUALS AND GROUPS CAN STOP AT A ROCK ART SITE SO AS TO BE IN TOUCH WITH SUCH AN ANCESTRAL PLACE AND THEY MAY PROCEED WITH SOME RITUALS, INCLUDING THE GIVING OF TOBACCO OFFERINGS (PH. D. ARSENAULT, PETRARQ PROJECT).



as part of any ancient sacred landscape or identifying some of them as constituting the specific boundaries, material and symbolic, of a territory inhabited by one or more visible or invisible species (Arsenault 2004a, 2004b). Obviously it is not an easy task to carry out, especially when one considers that the sacred dimension of any rock art site in the Canadian Shield cannot be taken for granted.

The Algonquian-speaking peoples situate themselves within a landscape imbued with spiritual significance, and rock art locales along with other sacred venues, such as natural effigy formations, form the integral elements of that sacred landscape. I have shown elsewhere that the very location of the Shield rock art sites, the physical properties of their rock formations, the visual and acoustic phenomena which occur there all can reflect spiritual and cosmological beliefs linked to the Algonquian worldview (Arsenault 1998, 2004a; Waller and Arsenault 2008; Zawadzka 2011b).

If the First Nations peoples, such as the Ojibwa, the Anishnabe, the Eeyou, the Attikamekw and the Innu, currently acknowledge that all these criteria have spiritual connotations which enhanced the sacredness of the place and made it propitious for conducting ceremonies (Figure 7), archeologists have to look at the sites the same way. For researchers, such criteria are indeed just some of a series of data to be archeologically considered and recorded in the hope of better reconstructing the sacred landscapes of many First Nations peoples, with a certain amount of their tangible and intangible properties. Moreover, we have to look more carefully at a Shield rock art site as having been a potential interface between the various worlds of the Algonquian ancestral worldview, a spiritual universe where humans and other entities have been in contact and have exchanged material and symbolic resources. It is an ongoing interpretive process challenging all of us, and we should do that seriously but with great pleasure, experiencing the past as it may have been.

In this rather too brief a presentation I have referred to what I call a contextual approach to rock art sites in relation to what is known from Algonquian oral traditions and the ancestral ritual practices carried out on and toward this type of archeological site in the past. A contextual reading of rock art can therefore become a key approach for better integrating the intangible dimension specific to those

sites as well as the evidence of ritual attitudes and performed actions as having occurred at them in the long term. In many cases, the archeological data yielded by specific rock art sites and the tales given by traditionalists, or any other information coming from eye-witnesses, about the Algonquian rock art history, the people who created their graphic content and those who made use of their settings as a theatrical stage in the past – in other words the perceptions, attitudes, and practices related to the frequentation of those sites – can help us nowadays to convincingly reconstruct the spiritual nature and religious context of some of the rock formations where paintings or engravings appear in the Canadian Shield. This is an archeological story to be continued indeed.

References

- ARSENAULT, D. 1998. Esquisse du paysage sacré algonquien. Une étude contextuelle des sites rupestres du Bouclier canadien, in P. Dumais (ed.), *Recherches amérindiennes au Québec XXVIII* (2), 19-39.
- ARSENAULT, D. 2004a. Analyzing and Dating the Nisula Site, Quebec, in C. Diaz-Granados and J. R. Duncan (eds), *The Rock-Art of Eastern North America: Capturing Images and Insights*, Tuscaloosa (University of Alabama Press), 344-360.
- ARSENAULT, D. 2004b. From Natural Settings to Spiritual Places in the Algonquian Sacred Landscape: An Archaeological, Ethnohistorical, and Ethnographic Analysis of Canadian Shield Rock Art Sites, in C. Chippindale and G. Nash (eds), *The Figured Landscapes of Rock art: Looking at Pictures in Place*, Cambridge (Cambridge University Press), 289-317.
- ARSENAULT, D. 2004c. Rock-art archaeology, landscape, and sacred places in the Canadian Shield: attitudes in contemporary archaeological theory, in C. Chippindale and G. Nash (eds), *The Figured Landscapes of Rock art: Looking at Pictures in Place*, Cambridge (Cambridge University Press), 69-84.
- ARSENAULT, D., L. GAGNON, C. A. MARTIJN and A. WATCHMAN 1995. Le projet Nisula: recherche pluridisciplinaire autour d'un site à pictogrammes (DeEh-1) en Haute-Côte-Nord, in *Archéologies québécoises*, A.-M. Balac, C. Chapdelaine, N. Clermont and P. Desjardins (eds), Montreal (Recherches Amérindiennes au Québec, Paléo-Québec no. 23), 17-57.
- AUBERT, M., A. WATCHMAN, D. ARSENAULT and L. GAGNON 2002. L'art Rupestre du Bouclier Canadien: Potentiel Archéométrique, in *Canadian Journal of Archaeology* 28, 51-74.
- CHAMBERLAIN, A. F. 1890. The Thunder-Bird amongst the Algonkins, in *American Anthropologist* 3, 51-54.
- CHAMBERLAIN, A. F. 1891. Nanibozhu amongst the Ojibwe, Mississaugas, and Other Algonkian Tribes, in *Journal of American Folklore* 4, 193-213.
- CONWAY, T. 1984. An Ojibwa Rock Art Site Connected with Sorcery and Warfare. Manuscript on file, Ontario Ministry of Citizenship and Culture, Toronto.
- CONWAY, T. 1993 *Painted Dreams*, Minocqua (Northwood Press).
- CONWAY, T., and J. CONWAY 1990. *Spirits on Stone: The Agawa Pictographs*, San Luis Obispo (Heritage Discoveries Books).
- DEWDNEY, S., and K. E. KIDD 1967. *Indian Rock Paintings of the Great Lakes*, Toronto (University of Toronto Press).
- DIAMOND, B., M. S. CRONK and F. VON ROSEN 1994. *Visions of Sound. Musical Instruments of First Nations Communities in Northeastern America*, Chicago and London (University of Chicago Press).
- FABVRE, B. 1970 [c. 1695]. 'Racines montagnaises' compilées à Tadoussac avant 1695 par le père Bonaventure Fabvre, jésuite (final translation by G. E. McNulty). Quebec City (Université Laval, Centre d'Études Nordiques, Travaux divers no. 29).
- FOX, W. A. 2004. Horned Panthers and Erie Associates, in J. W. Wright and J.-L. Pilon (eds), *A Passion for the Past: Papers in Honour of James F. Pendergast*, Gatineau [formerly Hull] (Museum of Civilizations, Mercury Series Archaeology Paper no. 164), 283-304.
- GATSCHET, A. S. 1899. Water-Monsters of American Aborigines, in *Journal of American Folklore* 12, 255-260.

- HALLOWELL, A. I. 1975. Ojibwa Ontology, Behaviour, and World View, in D. Tedlock and B. Tedlock (eds), *Teachings from the American Earth. Indian Religion and Philosophy*, New York (Liveright), 141-178.
- JONES, P. (Reverend) 1973 [1861]. *History of the Ojebway Indians; with Special Reference to Their Conversion to Christianity*, Toronto (Canadiana House).
- LEMAITRE, S. 2013. *Kekeewin ou Kekeenowin. Les peintures rupestres de l'est du Bouclier canadien*, Montreal (Éditions Recherches amérindiennes au Québec, collection Paléo-Québec no. 33).
- LEMAITRE, S., and D. ARSENAULT 2011. L'art rupestre du Bouclier canadien, in D. Vialou (ed.), *La Préhistoire du Nouveau-Monde, du peuplement de l'Amérique à la période de contact*, Paris (Publications scientifiques du Muséum d'Histoire naturelle), 467-483.
- MOLYNEAUX, B. L. 1987. The Lake of the Painted Cave, in *Archaeology* 40, 18-25.
- MORISSEAU, N. 1965. *Legends of My People the Great Ojibway*, Toronto (McGraw-Hill Ryerson).
- NORDER, J. W. 2003. *Marking Place and Creating Space in Northern Algonquian Landscapes: the Rock art of the Lake of the Woods Region, Ontario* (unpublished PhD dissertation), Department of Anthropology, University of Michigan, Ann Arbor.
- NORDER, J. W. 2007. Iktomi in the land of the Maymaygwayshi: understanding lived experience in the practice of archaeology among American Indians/First Nations, in *Archaeologies* 3(3), 230-248.
- RADIN, P., and A. B. REAGAN 1928. Ojibwa Myths and Tales. The Manabozho Cycle, in *Journal of American Folklore* 41, 61-146.
- RAJNOVICH, G. 1989. Visions in the Quest for Medicine: an Interpretation of the Indian Pictographs of the Canadian Shield, in *Midcontinental Journal of Archaeology* 14, 179-225.
- RAJNOVICH, G. 1994. *Reading Rock Art: Interpreting the Indian Rock Paintings of the Canadian Shield*. Toronto (Natural Heritage/Natural History).
- STEINBRING, J. 1998. Aboriginal Rock Painting Sites in Manitoba, *Manitoba Archaeological Journal* 8.
- THWAITES, R. G. (editor) 1896-1901. *The Jesuit Relations and Allied Documents* (73 vols), Cleveland (Burrows Brothers).
- VASTOKAS, J. M. 1992. *Beyond the Artifact: Native Art as Performance*, Toronto (Robarts Centre, York University).
- VASTOKAS, R. K., and J. M. VASTOKAS 1973. *Sacred Art of the Algonkians: A Study of the Peterborough Petroglyphs*, Peterborough, (Mansard Press).
- WHITE, B. M. 1994. Encounters with Spirits: Ojibwa and Dakota Theories about the French and their Merchandise, in *Ethnohistory* 41, 369-405.
- ZAWADZKA, D. 2008. *Canadian Shield rock art and the landscape perspective* (unpublished M.A. thesis), Department of Anthropology, Trent University, Peterborough.
- ZAWADZKA, D. 2011a. Kinooomaagewaabkong/Peterborough Petroglyphs: Confining and Reclaiming the Spirit of Place, in *Penser et pratiquer l'esprit du lieu / Reflecting on and Practicing the Spirit of Place*, ed. Célia Forget, Quebec City (Les Presses de l'Université Laval), 103-125.
- ZAWADZKA, D. 2011b. Spectacles to behold: Colours in Algonquian landscapes, in *TOTEM, University of Western Ontario Journal of Anthropology* 19, 6-37.

Intellectual and Spiritual Expressions of Non-Literate Societies: Art and Culture, a Journey through the World of Mankind

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Abstract

Intellectual and spiritual expressions are the demonstration of humanity attempting to understand the forces of nature and of life. Nowhere on Earth, are there people without language or without art. The need for man to express and to produce has led him to the use of symbolic images, as fundamental language reflecting on how he perceives the world and decrypts it.

As an artist, I have been working for several years on projects related to intercultural diversities, which allow us to combine different approaches to art; scientific and artistic, cognitive and sensitive, which complement and enrich each other.

The intellectual and spiritual expressions of human beings are evidence of attempts to understand the forces of nature and life. The symbols, marks and lines found on rocks, in hidden caves, or in mountains or deserts are expressions of the endless endeavour of man to answer questions about the mysteries of the beginning of the world and its end.

Such expressions reflect man's intuitive ways of observing the unintelligible phenomena of life, while expressing his inner self and his questions about his existence, in a vast variety of interpretive forms. These forms of expression are our tools of communication. Among them are expressions of spiritual ideas via the creation of myths, while other fields of research include the continual observation of nature and the designing of new utilities, objects, notions, philosophies, ethics, aesthetics and methods.

To advance these ideas, I have had several exchanges with Luc Foubert, a neuroscientist, regarding the process between observation and the conceptualization of cognitive messages. According to Foubert:

Nowadays, most of the studies in neuroscience stand on this background acceptance that the development of this particular cerebral structure (our neo-cortex) responsible for perception, consciousness and cultural assimilation is based on the repeated presentation of 'shapes' that our mind has been imprinted and trained during early life through (ontogenetic) processes of learning and plasticity, leading to a multi-sensory mapping of a world we re-create.

It is also clear that pre-wired but unachieved structures (phylogenetic constructions) are also present at birth, then reshaped and tuned so as to be adapted to the organism's environment. Among species and in individual development, these phylogenetic or ontogenetic combinations are subject to shaded grades of plasticity of the sensory motor loops, from the lower levels (reflexes) to the higher levels (reflection) of our inner world's re-creation: a dynamics of a representation and recombination of prototypical forms.

The imprinting design of associations of past events can be acknowledged through conservative processes, from early-life individual developmental to the culturally trans-individual level (language and communication), each of which is providing networks of associations (co-occurrence of events, correlations of activities), giving rise to prototypes/archaic forms, any sensation, feeling, object, perception, concept, symbolic recognition, semantic field; the idea of an alter ego is an echo of an archaic form or prototypical association.

In our own consciousness, the resonances of archaic forms are evoked and reshaped by combinations of coincident colliding waves emerging on one side from the current states of our immersive environment, and the other side from the recurrent dynamics of our inner world.¹

The practice of art illustrates this hypothesis, as a proposed explanation for the general schema of human function and of communication that transcends time and difference. It permits us to better understand our existence and our limits. Francesco d'Errico, archeologist, states:

about the use of symbolic thinking, use of colors and forms, scientists go back as far as 250,000 years, in Europe or in Africa, their use was perhaps practical as symbolic; in one case to protect the body, from insects or sun, in the second case to draw with ... in the second practice, we witness double lecture of reality, where things are attributed sense and a name, and the immaterial become transmittable.²

D'Errico's work reinforces my understanding that the most fantastic gift bestowed upon humanity is its ability to transform human intuition into abstract or figurative messages. Mythology is our way to understand nature and our own humanity, offering explanations, justifications, or enlightenment to our limited perceptions of the world's phenomena.

Mythic conception and interpretation do not add new elements to an empiric existence, but the premier 'experience' is gradually penetrated through the figures of myths, as saturated in the atmosphere. Man does not live with things because they exist. He lives with the mythical figures, not as an appropriation of reality, nor does he become open to the real. He lets the world and himself melt together in his imaginary space, and by so doing, letting not only himself be in contact with his observations and conceptions, but also, in parallel, attributing interpretations and sense to them.³

From an artist's point of view, I have initiated comparative vertical (chronological) and horizontal (intercultural) studies via objects and artistic expressions like stories and myth. I sought to recognize the themes that have preoccupied mankind since the moment people could leave traces behind them, to see them as tools that have given similar, even identical – and thus universal – forms of expression.

For certain writers, and no less than Noam Chomsky, language is associated with an inner presence of a neuronal module, which is based on one universal grammar, and only humans were given this function. All languages of Homo sapiens include this universal grammar, therefore it is part of humans' cognitive aptitudes since its appearance. All research that is interested in the origins of languages agrees with this logic and reason.⁴

My modest supposition is that the expressions of non-literate people, like that of literate people, are a universal consequence of humanity's constant observation of the world, an intuitive and sensitive functioning of the brain, stemming from a need to understand and comprehend life, to communicate, to leave a trace, to construct self-identity and culture. The birth of what becomes human culture includes the ability to create both technology and art. The sense of the sacred and the creation of myth seem to be a unique skill of human beings and a tool of their survival. As estimated by Joan Zilhao, archeologist at the University of Bristol (UK),

Not only homo sapiens was given this trade of nature, the three hominids had phonatory tools (the hyoid bone) that connected to the pharynx. Therefore, humanity had the capacity to communicate ever since; the co-evolution between brain and language is a key point in the history of humanity

¹ Luc Foubert, PhD, 'The Introspective Mind', CNRS-UPR 3293, Unit for Neuroscience, Information and Complexity (<http://www.unic.cnrs-gif.fr>). His current research focuses on the structures and dynamics of the primary sensory cortices dealing with questions relative to the binding of the perceptive unity and multi-sensory integration.

² *Science & Vie*, 1159, April 2014, p. 51, a symbolic thinking; Francesco d'Errico, archeologist, University of Bordeaux.

³ Ernest Cassirer, *Language and Myth*, Yale University Press, New Haven, CT, 1953, p. 18.

⁴ Pascal Picq and Hélène Roche, *Les premiers outils: Les origines de la culture*, Le Pommier/Cité des Sciences et de l'industrie, 2006, p. 32.

... consequently, the brain's structure that is responsible to language was already developed in homo erectus, 1.5 million to 2 million years ago.⁵

Humanity, all over the world, seems to have used physical phenomena, like the elements and forces of nature and the body, as resources to form tools for communication. Mountains, deserts, night and days, animals, flowers, trees, colours, raging skies, light and winds, birth and death, dreams and memories became the bricks of all creation and communication.

Humanity explained the existence of the world and of the living through symbols. Goddesses and gods mirrored the miracles and wonders of the world; they incarnated stories of life and of creation, offering explanations for intangible phenomena. From intuitively observing, sensing, feeling, and comprehending the world, human beings rationalize, analyse, innovate, create, construct or destroy. Humanity accumulated prototypical forms and symbols as cultural references that served to cultivate complex ideas, and to create ethical and aesthetical compositions. Myths and philosophies are the expressions of those notions, emotions, thoughts, and questions, and the attempts to answer questions. Humanity developed its narrations, its representations of dynamic inner worlds, by the representation and re-combination of accumulated impressions and expressions, acting together with cognitive thinking.

Jean-Louis Dessalles, professor at the Ecole Nationale Supérieure des Telecommunications, emphasizes two main functions of the communication of humans, illustrating the universality of communication apparent in all human societies, and that exist only in humans. The first he titles 'events functioning, which consists of accumulating information, images and signals that can cogenerate all facts that seem interesting. The second is 'argument functioning', which consists of the ability to discuss, judge and construct specific ideas such as 'true' or 'coherent' for the accumulated information.⁶

In *The Origins of the World's Mythologies*, Michael Witzel, Professor of Sanskrit at Harvard University, gives evidence not only of the origin but also the communal structure of the fundamental narrations found in all of the grand myths of humanity, starting with the Paleolithic period:

Comparative mythology... produced a lot of work since the nineteenth century... what had not been done is to compare all the great mythologies in historical perspective. I had to compare the Greek theology of Hesiod, the Icelandic Eddo, and the Popol-Vuh Mayan, the mythologies of ancient Egypt, Mesopotamia, Japan and India. Once you do that comparison, you realize how these mythologies are similar, how they share a common story line, a chain of fifteen elements found almost always in the same order since the creation of the universe.

Of these important representations of man and the universe, says Witzel, legends are echoes of the great mythologies of the world. The thesis is ambitious and fascinating: a part of our mental reflexes, our means of representing the universe, come from a time when Homo sapiens adorned the walls of Lascaux or Altamira, using only tools made of bone, wood, or flint for instruments.⁷

The senses, our receptors of the world, are an intuitive source, or rather a mechanism of observation. Various disciplines of expression are available to man to produce logical ideas that are in constant evolution. Mircea Eliade's comparative method allows readers and historians to synthesize the most disparate, cross-cultural religious and mythological records. Working horizontally and vertically, he unites references by synchronic methods, creating historical structures as traditional academic exercises, demonstrated in the patterns he described in *Comparative Religion* (1949). Eliade is aware that 'every manifestation of the sacred takes place in some historical situation,' and 'the fact that a

⁵ *Science & Vie*, 1159, April 2014, p. 57, The birth of language.

⁶ Jean-Louis Dessalles, *Les origines de la culture*, Le Pommier/Cité des sciences et de l'industrie, 2006, p. 107.

⁷ Michael Witzel (Professor of Sanskrit at Harvard University, 14 March, interview with Stephan Foucart, *Cahier du monde*, 21510, 15 March 2014.

hierophant is always an historical event – that is to say, always occurs in some definite situation – does not lessen its universal quality.⁸ Universal characteristics and cultural or individual diversities are complementary, parallel and opposite concepts that may conflict with each other.

In his *Cahier d'un retour*, Aimé Césaire underlines: 'There are two ways of losing one self; walled in segregation within a singularity or by dilution in the universal. My conception of the universal is of a rich universal composed of all coexistence and deepening differences.'⁹ Everything man-made is a result of his emotions sustained with rational thinking, giving expression to our sensitive capacities to comprehend ourselves within the universe.

Myths and, later, religions are forms of intellectual spiritualism, an organization of people's sensitive inner worlds. They logically argue points of view, and compose roles and answers. Humanity is constantly aiming for the construction of organized societies, living in ethical circumstances, reflecting on universal realities, on our limits, on the cycle of nature and the cycle of life.

Myths offer an imaginative and creative organization of concepts that are significant to the understanding of values and functioning of peoples, later advancing into common laws and the building of collective organizations, while constantly remaining aware of the mystery of life and of the universe, that has become sacred.

Jean-Louis Dessalles concludes: 'at the same time as the appearance of argumentative functioning came the development of humans' aptitudes for reason and the practice of logic. Without any doubt, we talk here about a cognitive capacity of man that plays an essential role in the manner humans could master and understand their environment.'¹⁰

Conclusion

Humanity is a conscious life force, with ethics regarding property, belongings, relations, sexuality, interrogations, differences and similarities, birth, life, and death. Stories, traditions, habits, ceremonies and art are metaphors of nature and of man's life, often mixed with elements of history.

All traditions, myths, and religions evoke common ideas or similarities of notions, for example, a centre, an *axis mundi*, a centre of the world, similar to the centre of the body. An equivalent abstract form is the cross, a metaphor for man's form. The centre of the cross is parallel to a crossroads between the four corners of the world.

In all myth, we refer to an imaginative, idealistic, perfect place, free of laws, conforming to the ideals of perfection, a paradise that precedes our ordinary, struggling life and humanity. These similarities are found between visions of the world and the body, often using similar symbols and references borrowed from nature. The similarities of forms, signs, graphics and the use of references to bodies and animals illustrate a common functional behavior of the mind and body. These elements have served the arts and creativity of man ever since, until today's contemporary art.

This transconscious trade of human functioning allows us to understand messages, to communicate or debate with other cultures or civilizations. According to Emmanuel Anati:

The latest research shows that the most ancient different artistic expressions, throughout the entire world, illustrate one similar typology, the same choice thematic, and the same type of association.

⁸ Mircea Eliade, *Patterns in Comparative Religion*, trans. Rosemary Sheed, introduced John C. Holt, University of Nebraska, Sheed and Ward, New York, 1958, pp. 2-3.

⁹ Poem by Aimé Césaire (published in *Cahier d'un retour au pays natal*) found in a letter sent to Maurice Thorez in October 1956. (Césaire, then deputy for Martinique, left the French Communist Party as a protest against its silence during the Soviet Union's invasion of Hungary.).

¹⁰ Jean-Louis Dessalles, *Les origines de la culture*, Le Pommier/Cité des sciences et de l'industrie, 2006, p. 109.

Even their style is fundamentally inscribed in one and the same sequence limited in variations. Therefore it seems to be justified to speak about one and unique visual language, springing from the same language, from the exact same association of ideas and from universal symbolisms that compose the human mental essence, which produced his imprint, under the form we call art, and that is engraved on the rocks and walls the entire world where population lived in early civilization, before the birth of the written language.¹¹

Eliade believed that modern novels, ideologies, customs and pastimes contain ‘mythological elements’, and that some mythological elements fall within the ‘transcendental’, which he defined as a set of universal human images, symbols, and sentiments.¹²

Religions, myths and art contain organized, traditional, sacred stories that are believed to express profound preoccupations and universal meaning. They are also beliefs that have become integrated into man’s historical perspectives. According to Eliade, myths establish models for human behaviour.¹³ Via the practice of the arts, we can illustrate a general schema of humanity and its works, reflecting a way of thinking that transcends time and difference, from Neolithic to contemporary, which permits us to better understand our existence.

Cognition derives from the Latin verb *cognoscere*, which means ‘get to know’. This means that cognition focuses on knowledge, albeit not as a static substance or thing, but as a process. More generally, when we speak about cognition we are focusing on the mind as an information processor, i.e. a system that acquires uses and transforms information. It is important to note that cognition is not just about the kind of explicit knowledge and rational thinking that we typically find in scientific or philosophical reasoning. Cognition also includes subconscious, implicit, and affective experiences and feelings, since these too are based on the processing of information. For example, emotion, consciousness, and intention are all cognitive phenomena’.¹⁴

Creativity is an expression of the interaction between reality and the human psyche. Myth, religion and the arts are cultural agents for a dialogue between diversities, revealing that ‘the universal cannot be otherwise than the sum of the qualities of each and every one’.¹⁵

¹¹ Emmanuel Anati, in *La religion des origines*, Bayard Editions-Centurion, Paris, 1999.

¹² Mircea Eliade, *Myth and Reality*, trans. Willard R. Trask, Harper & Row, New York, 1963, pp. 181-93; Eliade, *Images and Symbols*, pp. 16-17.

¹³ Eliade, *The Sacred and the Profane*, 1957015679201X (ISBN13: 9780156792011) p. 100.

¹⁴ Francis Heylighen, Cognitive Systems a cybernetic perspective on the new science of the mind, Lecture notes 2008-2009 (ECCO: Evolution, Complexity and Cognition, Vrije Universiteit Brussels), p. 5.

¹⁵ Meeting around the work of Leopold Sedar Senghor and Aimé Césaire, Annals African Research of the Faculty of Arts, Humanities, Arts and Humanities of Bamako in partnership with the University of Gaston Berger of Saint Louis (Senegal), the University Cheikh Anta Diop of Dakar (Senegal) and the University of FALSH N’Gaoundéré (Cameroon), with the support of the university’s Agency for the Francophone.

Carved Footprints and Prehistoric Beliefs: Examples of Symbol and Myth Practice and Ideology

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Abstract

Carved footprints appear in a variety of prehistoric cultures and rock art sites and may be seen as a pictogram and an archetypical symbol. It has still been interpreted in different ways: as a sign of an invisible deity that could not be depicted but announced its presence by its footprint, as a sign of adoration or as representing a deceased person. In early historical and medieval legends they are said to represent the crowning places of kings or as representing a sacred stones on which saint have preached. This may, according to researchers like Oscar Almgren, actually be an interpretation, which is later than the original and expressing change of meaning that appear to be influenced by, and adapted to its contemporary cultural context. In this article we will present case studies on different types of footprints and explanatory concepts from different parts of Europe, mainly Scandinavia, Italy, Israel, Portugal, Scotland and Spain. The majority can be dated to the Bronze Age or Iron Age but some have most likely been added during the transition to historical times and the Middle Ages. This could be explained either as a result of complex processes involving societal and ideological elements and forces or as the result of the creative capacity of the human brain in interaction with its physical environment, or more likely, the sum of all these factors.

Background

Footprints are an image type often represented on prehistoric petroglyphs. The author made a first study of its design, sprawl, dating and interpretation in the archaeological source material as part of a further investigation of this theme (Bertilsson 2013). Case studies of significant rock art sites in Sweden, Norway, Italy and Israel showed that the footprint is quite a general phenomenon, occurring in all these areas during the time period starting c. 3000 BC and continuing until at least 500 BC. The earliest dating applies to Har Karkom in Israel, and the youngest, Zurla in Valcamonica in Italy. The widespread occurrence of the symbol on the prehistoric rock pictures means that it must be perceived as a pictogram or an archetypal symbol (Anati 1993, Fredell 2003: 9). The footprints have been interpreted in different ways; as the epitome of an otherwise invisible deity, a sign of reverence or as a symbol of a dead person (Almgren 1962, Anati 1994, Gavaldo 2009) (for a series of further proposals for interpretation of footprints see Coles 2005: 52).

Early research: Oscar Almgren

One of the first archeologists to describe the footprint, occurrence and interpretation was the Swedish archeology professor, Oscar Almgren, in his well-known work about the rock carvings in Tanum in Bohuslän, Sweden, *Hällristningar och kultbruk* (Petroglyphs and cults, translated here) (Almgren 1926-7). When Almgren in this study discusses the footprints, he describes several different types. Those which have marked toes he believed depicted bare feet and those having two horizontal cross bands inside an outer contour to depict sandal-clad feet. He reported examples of the first type from Ryxö in Brastad and the second from Underslös in Tanum (Almgren 1926-7: 213, Bertilsson 2013: 172). His interpretation of the contour-carved foot with two transverse bands he supported by an earthen vessel with a foot, showing the same form elements on its underside. The vessel was found at Stassfurt in Saxony and belongs to the Lausitz culture, with a dating to the late Bronze Age or early Iron Age (Almgren 1926-7: 212). Regarding the interpretation of the footprints on the rock carvings, Almgren made the following reflection: ‘Particularly noteworthy seems to me to be



FIGURE 1. FOOTPRINTS IN THE FORM OF A PAIR OF NAKED FEET DEPICTED TOGETHER WITH A RING-CROSS THAT IS SUPPORTED BY THREE ANTHROPOMORPHIC FIGURES. SOURCE: WWW.SHFA.SE. RUBBING: DIETRICH EVERS.

that footprints occur adjacent to both those as gods, or representatives of gods interpreted, large anthropomorphic images Fig. 92, 93 and at several of the solar cult images: Fig. 9, 60, 80', Almgren 1926-7: 213, translated here). The carvings Almgren discusses are in the first case, Backa in Brastad with 'The Shoemaker', and Litsleby in Tanum with 'The Spear God', and in the last case the carvings at Kalleby, Disåsen in Brastad and Fossum Tanum. On the first two are, indeed, images of naked footprints in direct proximity to wheel crosses, being interpreted as a sign of the sun (Figs. 1 and 2). On the latter there is in the upper left part a fully carved pair of footprints along with a figure that has been interpreted as the sun disk being pulled across the sky by birds (Fig. 3). This illustrates the importance of the depiction of the sun disk's journey across the sky being a most important part of Bronze Age mythological narratives, and that can also be embodied in the form of a 'solar horse', an image n that was more common in Scandinavian Bronze Age rock art (Kaul 2004, Kristiansen and Larsson 2005).

Almgren presented, however, a different interpretation of the figures connected to the solar disk at Fossum and on the big Aspeberg carving. He suggested that they are instead dancing adorants, and referred to a similar, but more stylized, figurative representation, which is engraved on the famous



FIGURE 2. FOOTPRINTS CONSISTING OF A PAIR OF NAKED FEET IN COMBINATION WITH SOLAR SYMBOLS REPRESENTED BY TWO RING-CROSSES AND A SPOKED WHEEL THAT TOGETHER FORMS A CHARIOT AT DISÅSEN, BRASTAD. SOURCE: WWW.SHFA.SE. RUBBING: DIETRICH EVERS.

Wismar Horn from the Bronze Age dated to c. 1400 BC (Almgren 1926-7: 90), recently revised to c. 1600 (Kristiansen and Larsson 2005: 195). Without penetrating too deeply into the solar cult mysteries that may be hidden in Bohuslän rock art, we wish to state that all the footprints that we have referred to which occur in this connection are completely carved and often provided with toes. This seems to correspond well with a dating of this type of footprint to the Early Bronze Age, which we have suggested for these at Järrestad (Bertilsson 2013; see Skoglund 2013 with references). For those who have studied Almgren and his contemporary colleagues' research into the symbols and images of the petroglyphs, it is obvious that they perceived these images as manifestations of religion and cult. Although this approach has been questioned and criticized, it nevertheless, in modified and developed form, has survived to the present day (Kristiansen 2012). A very broad, in-depth and critical analysis of these causes has recently been presented in the study: *Fornnordisk religionsforskning mellan teori och empiri. Kulten av anfäder, solen och vegetationsandar i idéhistorisk belysning* (Old Norse religion research between theory and empirical data. The cult of ancestors, the sun and vegetation spirits in the history of ideas lighting) by Andreas Nordberg (2013, title translated here). This is also evident from the following quotation:

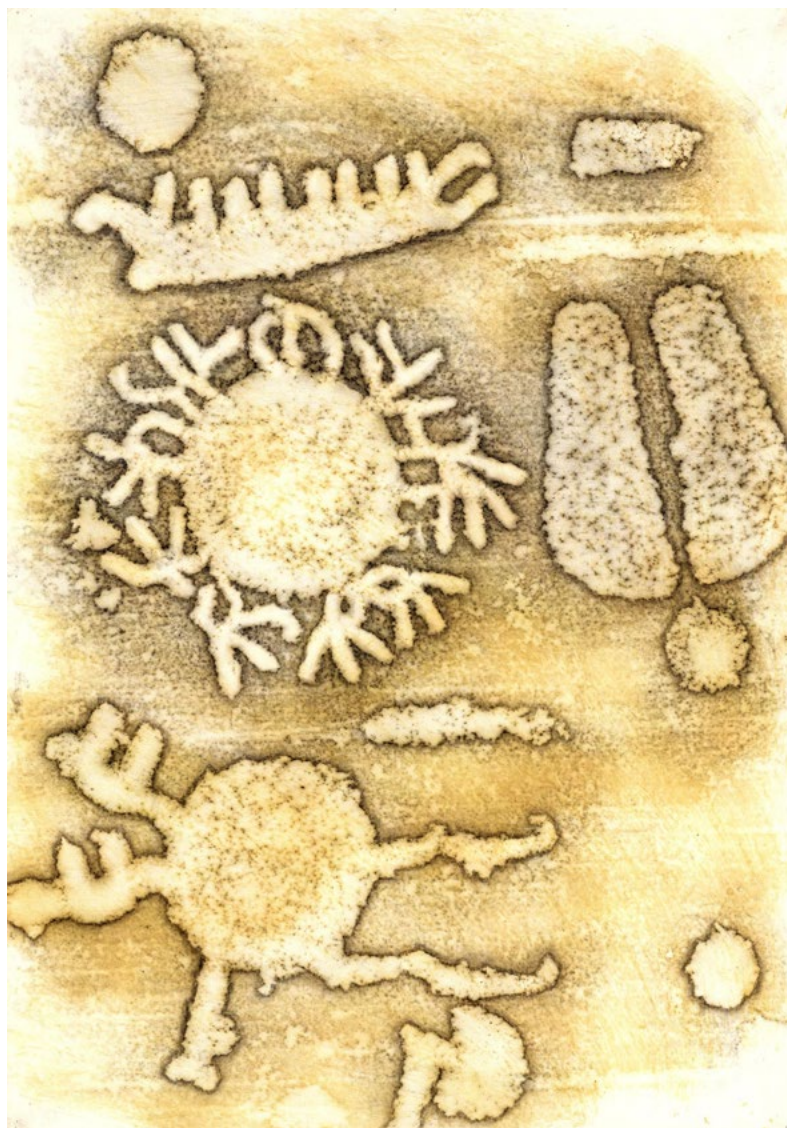


FIGURE 3. FOOTPRINT PAIR WITHOUT MARKED TOES AND A SOLAR DISK THAT IS SUPPORTED BY BIRDS.
IMMEDIATELY BELOW THESE FIGURES IS AN ANTHROPOMORPHIC FIGURE WITH A CIRCULAR BODY,
THIN LEGS AND TWO HEADS AND A SWORD SHEATH FROM THE BRONZE AGE.
SOURCE: WWW.SHFA.SE. RUBBING: DIETRICH EVERS.

Like the 1800s solar nature mythologists mainly perceived the sun as a medium in which the Infinite (holy, transcendent) was manifested, perceived many archaeological representative of the same school in Scandinavia sun as an indirect mediator of supernatural, sacred or divine power. Although, it is obvious this interpretation is liberal Protestant theology close. Possibly it is also this implicit heritage that has made the solar mythology as viable (Nordberg 2013: 389 translated here).

Nordberg also notes something interesting to us, in view of the introduction to this article, namely that:

In the history of religions perspective must Almgren's interpretations of 'Petroglyphs and cults' despite their age are considered as the most plausible attempts to explain the contents of the Scandinavian rock art motifs (Nordberg 2013: 221 translated here).

Design and execution of the footprints – nude or shod?

After this digression into religious and historical research, we now want to return to the theme of this article, that consists of pictorial representations of footprints in prehistoric rock art. Of interest in this context may also be the reason why the footprints were designed in several different ways. In our first example from Bohuslän, it was entirely carved and fitted with clearly marked toes, in this respect showing similarities to many footprints on the large rock carving at Järrestad on Österlen in Scania (Bertilsson 2013: 171). The footprints on Fossum carving in Tanum partly look different because, although also being completely carved, they lack marked toes. One may wonder why it looks that way. One possibility is that although there were certain conventions how the footprints would be designed and depicted, they were just determined to a certain degree, leaving the detailed design and final finishing to those who made the pictures. We deliberately use ‘those who’, since the wide variation of the design indicates that the images were performed by many different individuals. This would then be an example of an existing artistic freedom during the Early Bronze Age. Whether this was really the case, we cannot reasonably answer here, but only reflect on the possible cause. The issue becomes even more complicated if we bring yet another example into our investigation, this time from the Litleby (Fig. 4). To the left of ‘The Spear God’ there are two contour-carved footprints with toes, which thus gives us another variation on this particular prehistoric design theme.



FIGURE 4. THE LITLEBY CARVING DOMINATED BY THE 2.40-M TALL ‘SPEAR GOD’ WITH A SUN SYMBOL CONNECTED TO HIS PHALLUS, AND TO THE LEFT OF THIS TWO CONTOUR-CARVED, PAIRS OF FOOTPRINTS WITH MARKED TOES. SOURCE: WWW.SHFA.SE. PHOTO: ÅSA FREDÉLL.

The same is true, in fact, about the manner in which the solar symbols were executed. They occur in several variants, as a wheel cross, as a spoked wheel or as a fully carved disk. Overall, therefore, it seems as though there was no fully controlling convention on how the footprints or solar symbols would be executed. One thing was, however, obvious: the importance of being placed near each other on the rock surface, indicating that the combination of the two symbols was highly significant. It is also noteworthy that the fully carved soles with toes at Järrestad differ from those in our examples from Tanum in detail. A very typical trait of the former is that the arch is often clearly marked, although there are examples with completely straight sides. There are also several similar Early Bronze axes in the shape (Bertilsson 2013: 171, Kaul *et al.* 2005: 64). An example of an integration of two different elements, one materially valuable, and one physically expressive, in the Bronze Age world view that, as far as hitherto known, is missing in Tanum, and other areas with rock art in Sweden, except for Lökeberg in Foss, Bohuslän where, out of a total of 73 carved feet, there are several displaying some similarity, but also one having the clear shape of a flat copper axe from the transitional period between the Neolithic and Bronze Age, the Chalcolithic (Fig. 8 and Montelius 1971:12, I:2). Indeed, there is at least one other example of such a shape, this time on the big rock carving at Madsebakke on Bornholm in Denmark. This axe-foot is located about 1 m above the familiar wheel-cross with a cup mark enrolled in each quadrant, with 16 cup marks surrounding the wheel (Kaul 2005: 59). Some metres away is a footprint with toes, and in addition two ring-crosses (Fig. 9). Immediately adjacent is one that is probably intended as a ship's prow with a spiral, and another incomplete boat, that with some imagination could possibly be a halberd. Although this interpretation may seem far-fetched, its shaft being certainly very short, it has an angled bottom which otherwise can be seen on carved axes from the Early Bronze Age in Valcamonica in Italy (e.g. Anati 1976: 106-07). There is also a possible axe-foot in Portugal that consists of a putative footprint at a hill fort at Briteiros in Guimarães (Fig. 12).

But there are also anthropomorphic figures of a different type, with circular torsos, sometimes in the form of wheel crosses, considered to symbolize a shield, like the so-called Wismar warrior. The shield has often also been considered to represent the sun, and if so, in the form of an image transformation consisting of an anthropomorphic figure and an element of nature. This relationship was discussed in earlier research, and the Danish religious scholar Vilhelm La Cour claimed they were actual representations of the sun god himself and a testament to his 'anthropomorphization' (Almgren 1926-7: 93, Kristiansen and Larsson 2005: 196 and Fig. 5). The integration of those two elements also signals the presence of a sliding scale of values and an 'animistic' of material things. But we can hardly call these phenomena merely animist transformations, since they also contain human bodily elements. In this context it may be appropriate to point out that the newer, postmodern research has also addressed this field. The footprints have been interpreted as representing single individuals and expressions of personhood, rather than deities or other higher beings:

It is argued that these images (feet and shoe) represented ideas of dress and nakedness and that these concepts were ambiguous and manifold: nakedness was used in certain social and ritual contexts to express authority and rank, while in other contexts nakedness was used to express community and equality (Skoglund 2013: 1).

There can be little doubt that this approach reflects individual-centred postmodernism as it is expressed in some of today's archeological research. It may seem to be characterized by a certain lack of overall perspective and a desire for both decontextualization and deconstruction, but perhaps this is what has made it attractive. The chronological positioning of the various types of footprints, where the bare foot belongs to the older part of the Bronze Age and the sandal-clad to the late Bronze Age and early Iron Age shows that a temporal contextualization is still needed. But it is important to pay attention to the fact that the detailed design of these images often appears regionally or locally minted even down to a micro level. In this regard, it is interesting to note that on Järrestad a number of footprints look different, more stylized and looking like an integrated pair of footprints intended to be perceived as a wheel cross (Fig. 6). Let us, for a moment, reflect upon what this might mean for our understanding of what the footprint, as image and symbol, may represent. A footprint, alone or in



FIGURE 5. GRAPHIC DEPICTION OF THE ROCK CARVING AT ASPEBERGET WITH TWO ANTHROPOMORPHIC FIGURES WITH ROUND TORSOS, DECORATED WITH CONCENTRIC CIRCLES AND A (SOLAR) CROSS.

SOURCE: WWW.SHFA.SE. GRAPHICS: THU.

pairs, according to the scientists that we have referred to, may represent a deity and especially when combined with a wheel cross or a circular disk; or it may represent an individual whose naked foot was depicted with an intention to communicate social status or rank for example. Then we must pose the question regarding the intention behind the representation of the integrated and stylized footprints on the Järrestad panel. It can hardly be reasonable to interpret them as a direct representation or depiction of a particular individual's feet. In this case, it seems more probable that it was a conscious effort towards a more stylized, abstract form, intended to symbolize, represent and communicate a phenomenon of more general, ideological significance for those who had the opportunity to see them when the place still had an active function (cf. the concept of 'the iconic order' in Aijmer 2001, here referenced from Ling 2008).

Dating-wise, this also helps to make the interpretation of rock carving a tad more complicated. If you strictly follow the suggested dating (Skoglund 2013, with references), so this hybridized symbol would date to the Late Bronze Age or early Iron Age. This should then also be applicable to other carvings of the same kind. Simultaneously we know that the sun cross, in its more original form or



FIGURE 6. PART OF JÄRRESTAD PANEL WITH THREE PAIRS OF FOOTPRINTS
ILLUSTRATING THE TRANSFORMATION PROCESS TO WHEEL-CROSSES.
SOURCE: WWW.SHFA.SE. PHOTO: CATARINA BERTILSSON.

in combination with other images, appears on petroglyphs, in a context that suggests considerably earlier dating, like the Wismar warrior at Aspeberget in Tanum, possibly from Montelius Period 1 (Fig. 5). This suggests that the various forms of footprints may have more complex relationships that manifest themselves in a partly sliding form scale, which is also related to the time factor. Overall, this means that the footprints really stand out as symbols of great vitality and length and spread in the prehistoric imagery and world of conceptions. This in turn indicates that they can be attributed archetypal characteristics, and represent a phenomenon that in recent research has been termed a core universal.

Footprints from other areas

We have in other contexts studied footprints from other areas and in other archeological contexts, among others from Har Karkom in Israel and from Valcamonica in Italy. In the former case, dating to the Bronze Age, which means the third millennium BC, and in the latter the Iron Age, which means from c. 700 BC. Despite the large difference in time and archeological affiliation, there is a palpable shape similarity between the types of footprint found in the two areas. They are contour-carved and lack transverse bands. It is also the practice to place additional characters within its contour line at both locations. In one case, at Har Karkom, it consists of an anthropomorphic figure with the arms in a hip-attached pose similar to some terracotta figurines appearing in the Eastern Mediterranean Bronze Age cultures (Anati 2001: 134). In the Early Iron Age footprints in Valcamonica, the figures that are inserted within the footprints' contours are also of anthropomorphic type, but in the example from Zurla are spear-armed adorants (Bertilsson 2013). It seems that these carvings in their obvious stylized form have been designed according to a fairly strict standard, which also applies to the repertoire with depictions of warriors or adorers. In relation to the Israeli case, they may seem more narrative than depicting, even if the story itself also seems to have been rather limited and often repeated.

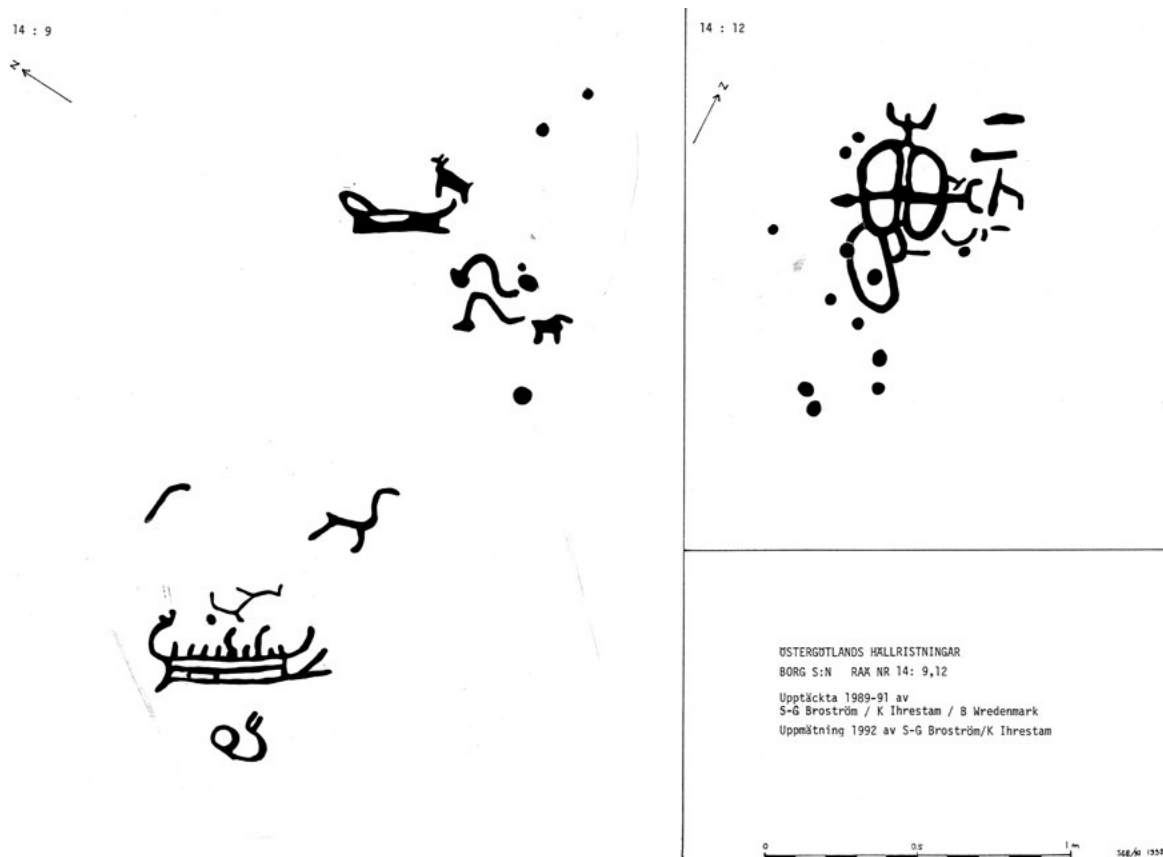


FIGURE 7. PAIR OF FOOTPRINTS WITH PENDENT ADORANT AT FRONT, PIERCED BY A SPEAR AND FITTED WITH A SWORD SHEATH OF BRONZE AGE TYPE AT BORG IN NORRKÖPING, SWEDEN.

SOURCE: WWW.SHFA.SE. DRAWING: BOTARK.

A footprint also linked to an anthropomorphic figure is found in Borg in Norrköping, Sweden, where an adorer is positioned on the fore end of the foot, seemingly in order to visualize the creature that the footprints belong to. There are also some other attributes: a spear that pierces the footprints and an attached scabbard (Fig. 7). An engraving of a similar representation is also found at Campanine Alta in Valcamonica (Gavaldo 2009: 299). There the footprints are carved over the lower part of the legs of an adorant and thereby made later. There are four additional footprints, fully or partially carved of the same type.

A similar motif, but far more naturalistically portrayed, is found at Kåfjord in Alta in Norway, but there the feet are replaced with snowshoes. The image is elegantly made with fine details such as the network on the snowshoes. The difficulty of depicting various elements of the image in proper perspective is evident from the fact that the snowshoes as well as its carrier are depicted from the front with his leg in a curved shape outside the snowshoes (Helskog 2012: 55). This reflects the same problem, as the carver at Borg must have experienced, although the execution did not reach the same artistic level. If it reflects a presentation of a similar prehistoric conception we find less likely, although still possible.

Footprints in motion

The footprints that we have so far discussed, with the exception of some at Järrestad, may be called stationary, i.e. intentionally carved in a certain place and in a particular context of symbols with



FIGURE 8. GROUP WITH PAIRS OF FOOTPRINTS AT LÖKEBERG IN FOSS, BOHUSLÄN WHERE THREE DIFFERENT TYPES OCCUR, ALL BEING CARVED OUT BUT ONE ABOVE LACKING TOES, THE ONE BELOW RIGHT, HAVING TOES, AND THE ONE BELOW LEFT, HAVING ONLY FOUR TOES AND SOMETHING LOOKING LIKE AN AXE-BLADE BEING PLACED BETWEEN THE FEET. SOURCE: WWW.SHFA.SE. PHOTO: ANDREAS TORELD.

special meanings, such as wheel crosses. But there are footprints that were inscribed with the intention to convey something more than simply confirmation or repetition of an already known symbolic significance. We are thinking of carvings with footprints that can give the impression that an anthropomorphic figure has been walking across the rock. An exciting example of this is found at Gärde rapids in Offerdal, Jämtland where, among the naturalistically contour-carved elks, there also is a smaller, c. 40-cm large such figure with a highlighted heart. And leading up to its hind legs, there is a row of 10 anthropomorphic footprints, and in front of it is four, in two pairs, of elk track marks going in a direction away from the elk. To the left of these is a lying, idol-like image (Figs. 10/10b). A few yards further up the same rock surface is another elk of the same type, behind which is also a double track stamp of an elk. These two elks are carved with a technique similar to the one used in southern carvings and for that matter also at Glösa and Nämforsen, with relatively wide lines. This scene seems to convey that an anthropomorphic being is moving in the direction of the elk. If so, to give the impression of a man sneaking up on an elk from behind as an expression of a kind of hunting magic? But maybe the scene has a deeper meaning than that? It is perhaps instead intended to convey that both man and elk were here, in a kind of physical and spiritual presence and contact, manifested in the rock carvings. And maybe it was that, by analogy with the theory of the invisible deity, that the man could not be imaged except for in form of footprints, while the animal, the elk, was probably also considered as divine, and actually could be depicted in his whole figure, but also in the form of his track stamps, to make him equal with the human god. And it is easy to realize that it was right here in this magical place, in the deep valley with the water-polished rock surfaces and the powerful and magical shimmering rapids, that these two beings could get into close contact with each other. Elks visited this site to drink water, usually at dusk, during thousands of years, as evidenced by the older, almost supernaturally large, cut and polished images of this magnificent animal, which to this day is called the king of the forest. When you visit the place it is easy to still perceive the shamanistic



a

b

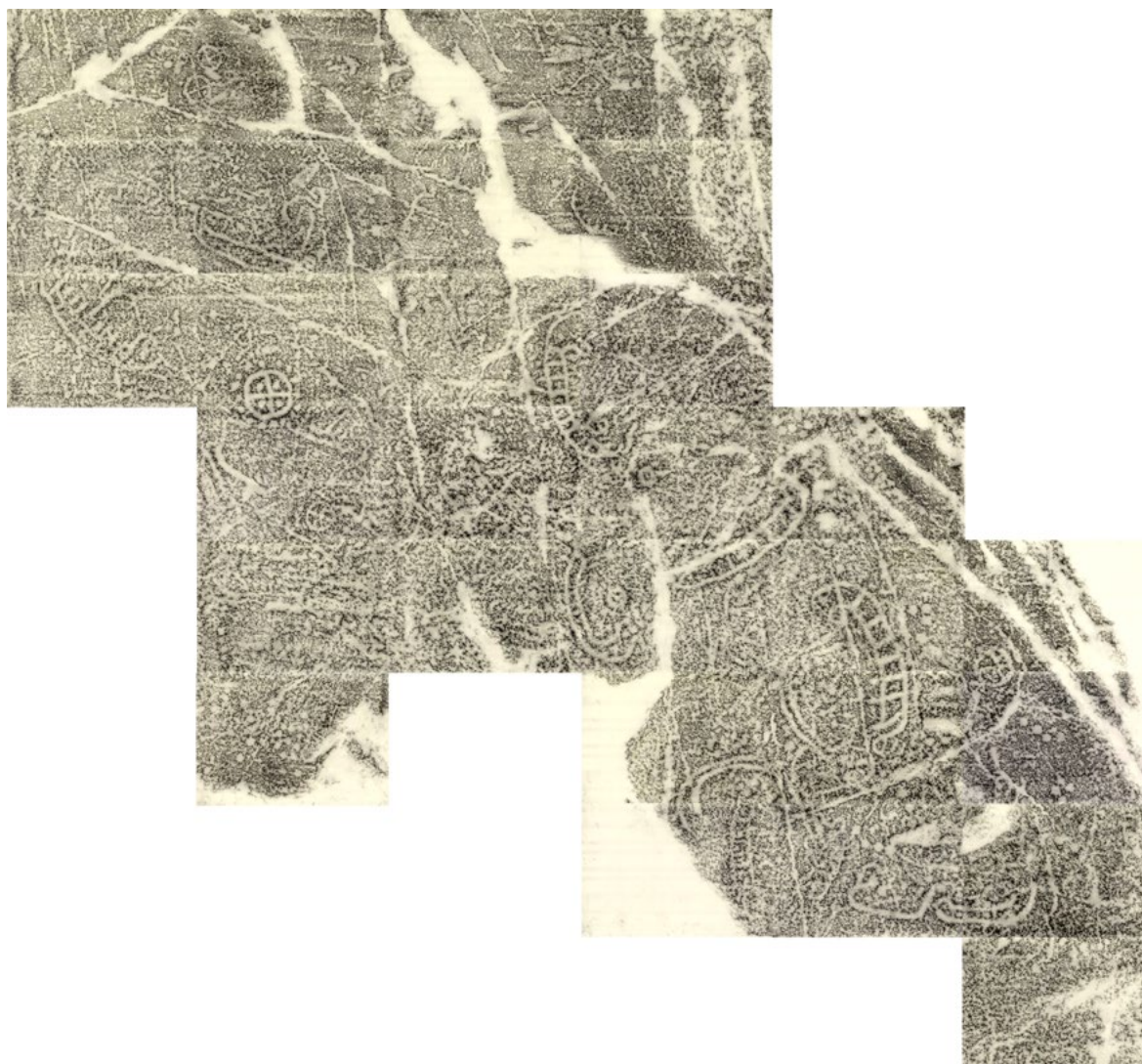


FIGURE 9. DENMARK'S BIGGEST ROCK CARVING, WITH BOATS, WHEEL-CROSSES, A NAKED FOOT WITH TOES, A FLAT AXE AND A POSSIBLE HALBERD. SOURCE: WWW.SHFA.SE. PHOTO: GERHARD MILSTREU.

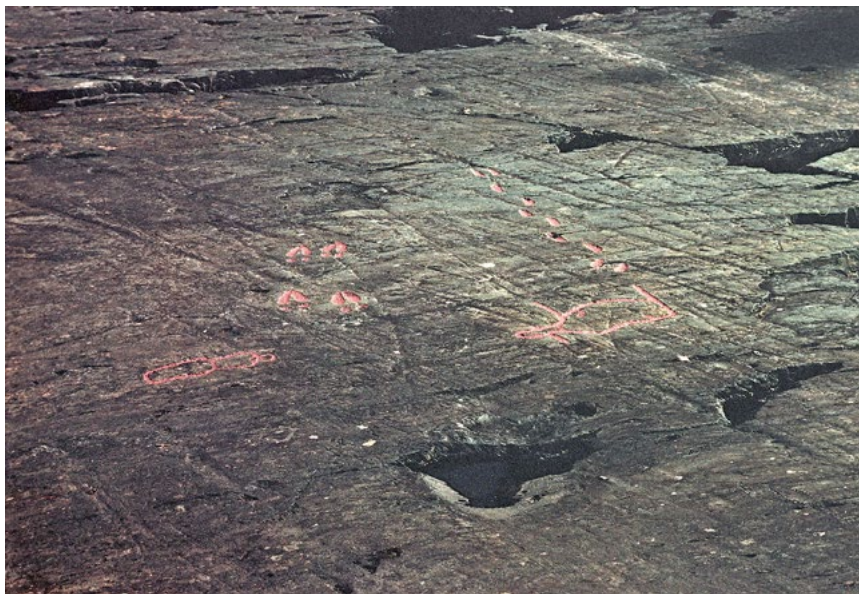


FIGURE 10A. ROCK CARVING AT GÄRDE, OFFERDAL IN JÄMTLAND WITH AN ELK, TO WHICH LEADS UP A ROW OF TEN ANTHROPOMORPHIC FOOTPRINTS. TO THE LEFT THERE ARE TWO TIMES TWO ELK TRACKS IN PAIRS AND AN IDOL-LIKE FIGURE. SOURCE: WWW.SHFA.SE. PHOTO: ULF BERTILSSON.

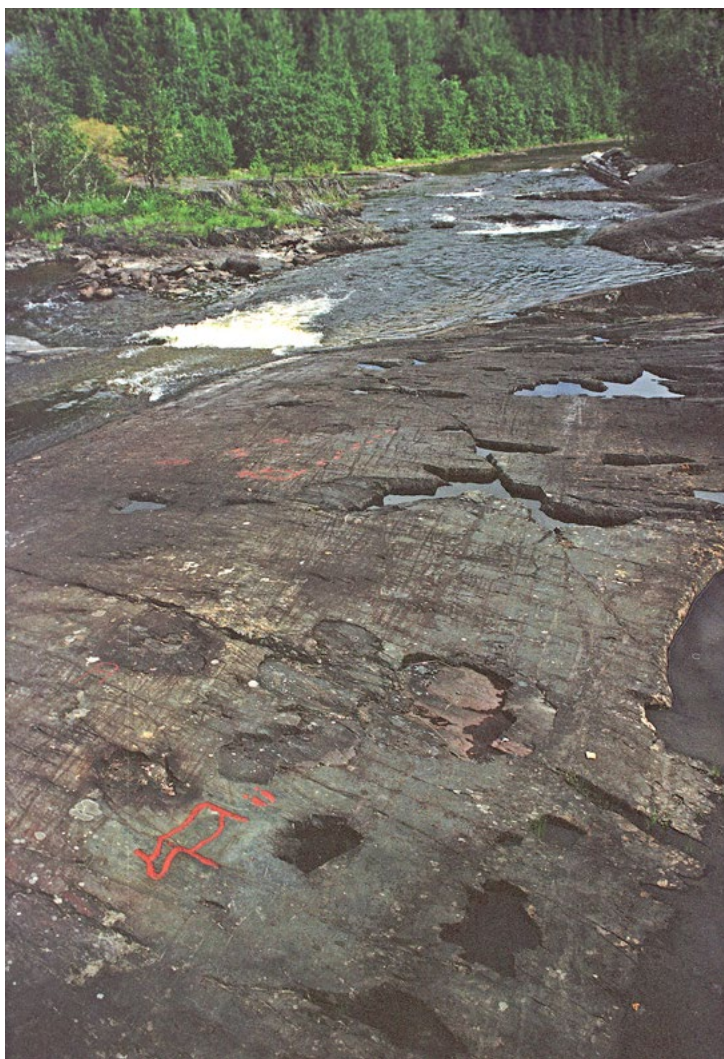


FIGURE 10B. CONTOUR-CARVED ELK WITH MARKED HEART, AND A PAIR OF ELK TRACK STAMPS AT GÄRDE RAPIDS IN OFFERDAL, JÄMTLAND IN SWEDEN. SOURCE: WWW.SHFA.SE. PHOTO: ULF BERTILSSON.

potential and the fact that it became the stage for this extremely rare but vibrant animistic integration, orchestrated almost 4,000 years ago (Bertilsson 2004).

Pictures of elks and footprints are also represented on several carvings in Alta, but nowhere where do they consist of track stamps with clear hooves, but instead are more schematically depicted. Footprints of bear directly linked to images of the animal itself, however, are frequent (Helskog 2012: 21, 47, 82). Another more widely known scene is one where man and elk hold the lead roles, found on an engraving at Zalavruga in Belomorsk in Russia. There, two or three hunters with bows and spears and on skis pursue two elks. It also depicted clearly on the carving how they catch up with two of the elks and drive a spear into the back of one of them, and shoot arrows into the other (Bertilsson 2004: 77). The essence of this scene seems to be hunting and killing, unlike the one at Gärde, that seems to be marked by a more respectful relationship with the elk.

We will now leave the rock art in the north, and again turn our gaze south to see if there are any pictures of footprints in motion there. After a review of more than 1,000 images with footprints found in SHFA's comprehensive database, including the most significant rock art sites in Sweden and Denmark, it is clear that this is not so. One can certainly get the impression that some footprints on the Järrestad panel are in motion, but because they usually comprise of right feet, or are over-stylized, it is less likely. A similar example is found on a carving at Tisselskog in Högsbyn Dalsland, where some 10 carved feet with toes look as if they move across a gently curved outcrop. There is only one problem with that interpretation: all are left feet, which in this case would mean that the owner must have hopped on one leg. However, there is one example from Kyrkoryk in Tanum where a series of three contour-carved footprints with cross bands give the impression of moving to the left in a horizontal direction on the upper part of the panel. Further, there is actually a fourth that may seem to move back in the opposite direction (Fig. 11).

After this survey, we note that virtually all feet except from the three above depicted in petroglyphs are intended to be static representations, and not to give the impression of being in motion. It probably means that they were primarily meant to serve as iconic symbols, and not as an illustrative basis for a story. The geographically widespread, frequent repetition of images of these types, also suggests that there was a need at recurring intervals to confirm prevailing beliefs, religious and ideological elements, essential for society's stability and survival. In this context it is also interesting to note that, especially in some major places, like Järrestad and Rikeby (www.shfa.se, Up Boglösa 138 Rikeby Almgren B 1983), the complete model series of feet from the nude to the shoe-clad, to the stylized, wheel cross similar type is represented. In light of the reasoning above, this should primarily be considered as having chronological implications, representing a change through time.

Footprints in hill forts

We will now briefly look at a completely different type of footprint that has been found in a completely different archeological context: the footprint in hill forts, of which we will present three examples from different parts of Europe. The first and most famous is from the hill fort at Dunadd, on the way to the carvings at Kilmartin in Scotland. The name, meaning 'the fortress on the River Add', indicates the significance of the place. On a rock high up on the hill are several carvings, and a wild boar in the Pictish style, an inscription in Ogham, and finally, a carving of a footprint. The carvings can be dated to around 800 AD. According to tradition, the footprint and an adjacent carved-out basin played an important role in the coronation rituals of the Dalriada kings, originally arriving from Ireland in the Argyll area (Butter 1999: 12, 98). Finds from the excavations show that the site was inhabited in different periods starting from around 500 AD. During the first centuries, the Scotti (the name of the people who came from Ireland) occupied the fort. In recent research, it is believed that the carvings and the inscription were actually accomplished by them and not by the Picts. The Dunadd footprint certainly resembles a foot, being deeply carved, having a slightly curved shape at the heel and forefoot, although looking much different from the older types of prehistoric footprint that we have discussed above.

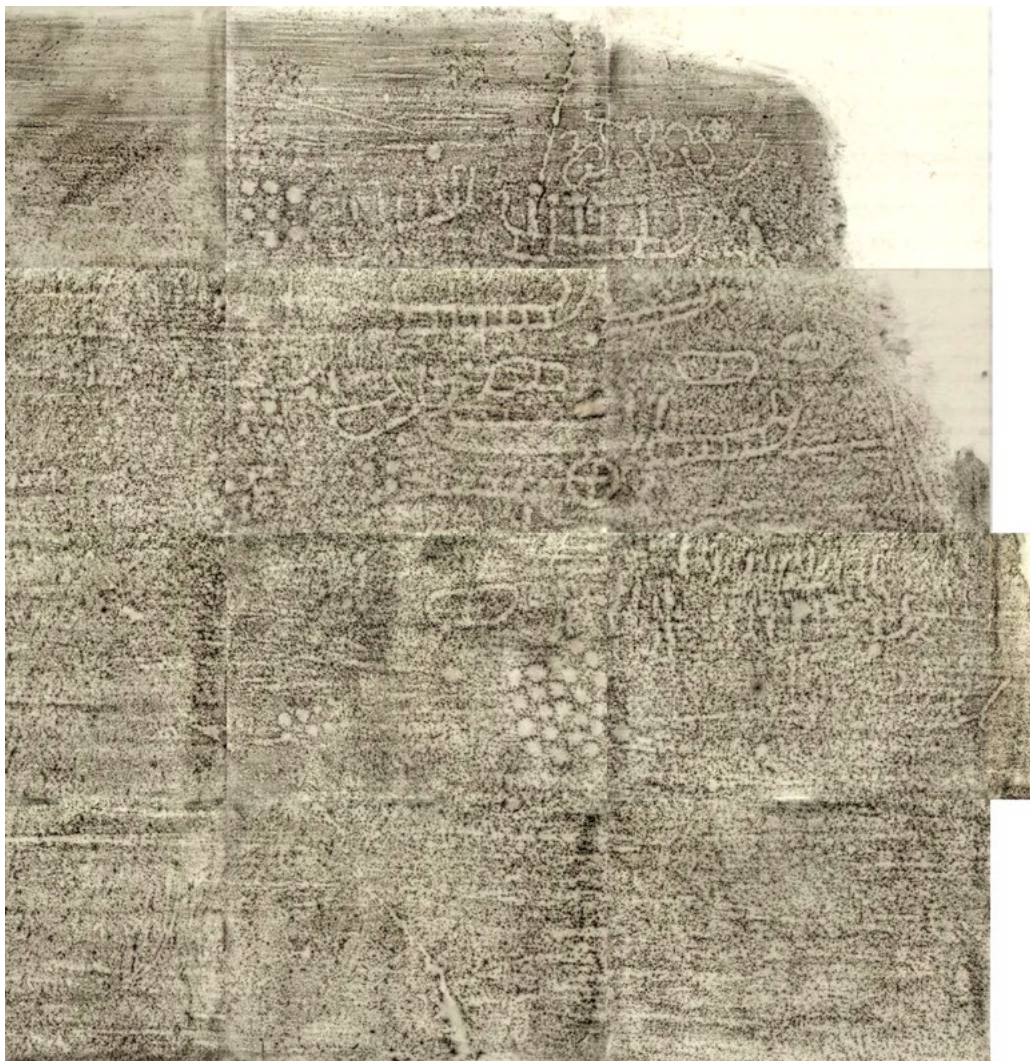


FIGURE 11. PHOTO OF BRONZE AGE ROCK CARVING FROM KYRKORYK IN TANUM WHERE, IN THE UPPER PART, THERE IS A HORIZONTAL ROW OF THREE FOOTPRINTS WITH HEEL LINES THAT SEEMS TO WALK ACROSS THE PANEL FROM RIGHT TO LEFT. BELOW THE FOOTPRINTS THERE ARE TWO WHEEL-CROSSES SUPERIMPOSED ON BOATS. PHOTO: ELLEN MEIER.

In connection with Österlens Museum Rock Art Course on Ascension Day in May 2009 an excursion was undertaken to the hill-fort on Stenshuvud, where the goal was also to look at the feet carved into a rock on the mountain's crest. The foot has been locally known, but unclear for how long, and to have been made in modern times, although its eventual age has been just as unclear. The question therefore is whether the opinion is true and if it is possible to date the carved foot closer. The carved footprint was documented through photography, and also in the form of frottage (Fig. 13, showing the photo). The footprint is placed on the crest of Stenshuvud and is composed of five toes and forefoot, while the arch, rear footpad and heel are missing. To the right of the foot is one of the National Land Survey's fixed points marking the highest point of the mountain. If one examines the foot thoroughly in terms of its design, appearance and location, it seems not to have been carved with modern tools or in recent times because of its patination and overgrowth of slow-growing lichen; the appearance is anatomically correct but also designed in a way that is hardly reminiscent of older carvings; the placement of the crest of the cliff in the hill-fort with extensive views also suggest that the location is selected with great care. The extensive view means that in clear weather you can see

the island of Bornholm, which is about 30 km away and the same distance from the Blekinge coast. That probably reflects the specific function and significance of the carving and can be seen as a symbolic illustration of the crowned king's power, at the footprint, and perhaps of the geographical area that constituted his domains, too.

It seems possible to assume that the footprints on Stenshuvud and Dunadd constitute expressions of a similar phenomenon. A phenomenon implicating both constituted an important element in the rituals of the coronation ceremonies for a new king dating to the migration period. There are in both cases the rock carvings premises from the Bronze Age in adjacent areas, although these particular places lack such. Unlike the hill-fort on Stenshuvud, in Dunadd archeological excavations have been conducted and several datable objects have been found. On Stenshuvud, the dating has been obtained through a C-14 analysis of coal residue from a wood structure that was part of the construction for the original embankment. The footprint in Portugal was placed inside a hill-fort too, and might of course be a result of a similar royal coronation process, like their counterparts in Scotland and Sweden (Figs. 12/12b, Coimbra 2008: 115 with references). The fact that it actually seems to have a shape looking very much like a flat copper axe is, however, an exciting complication. That is, however, a circumstance that we, unfortunately, have not have had the opportunity to delve further into here. In Portugal, there are simultaneously some footprints, usually naked with toes, already during the Early Bronze Age, while another main type, the sandal-clad, is considered to represent a younger stage from the Late Bronze Age and early Iron Age.

The end of the walk

We note that footprints occur early: in a Bronze Age context, in the archeological complex of Har Karkom in Israel; and late, during the early Iron Age, in one of the largest petroglyph concentrations in Valcamonica in Italy, both of the contour-carved type. Early Iron Age there means about 800-500 BC, and therefore corresponds to the Late Bronze Age in Scandinavia, the geographical area that we put the most focus on here. This type of footprint is frequent at Järrestad too, where it is suggested to belong to the Late Bronze Age or the Early Iron Age, and preceded by the naked foot with toes that is older, at least from the Early Bronze Age. The author has previously stated that



FIGURE 12. PUTATIVE FOOTPRINT FROM BRIEIROIS HILL FORT (GUIMARÃES) PORTUGAL, SHOWING A GREAT RESEMBLANCE TO SIMILAR CARVINGS IN SCANDINAVIA, HERE INTERPRETED AS DEPICTIONS OF CHALCOLITHIC FLAT AXES OF COPPER. PHOTO: FERNANDO COIMBRA.



FIGURE 13. THE DEEPLY CARVED FOOTPRINT PLACED ON THE CREST OF A HILL FORT, STENSHUVUD, IN SIMRISHAMN, SCANIA. THE HILL FORT HAS BEEN DATED TO THE MIGRATION PERIOD. THE FOOTPRINT IS CONSTITUTED OF FIVE TOES AND A FOREFOOT WHILE THE ARCH, THE REAR FOOTPAD AND HEEL ARE MISSING. TO THE RIGHT OF THE FOOT IS ONE OF LANTMÄTERIETS/NATIONAL LAND SURVEY'S FIXED POINTS MARKING THE HIGHEST LEVEL OF THE ROCK. PHOTO: CATARINA BERTILSSON, SHFA.

there it is also a type that originally has a great shape consistent with copper flat axes from the Chalcolithic period (Bertilsson 2013). Here is also presented further examples of this type, from Lökeberg in Bohuslän and Madsebakke on Bornholm. This relationship indicates that there has been a complicated connection between man and metal, which has been manifested and sealed in the carved rock, a relationship that also reveals the presence of a world where humans and matter have been integrated into an ideological discourse in a similar way as happened with humans and animals, or animals and matter both during the Stone Age and the Bronze Age in various types of animist transformations (Ling and Rowlands in press). If we look back at the various proposals of the meaning of footprints presented, we may conclude that this very careful, but memorable, reflection of John Coles can probably be considered as confirmed: 'this seems a simplistic view and there may well be more profound ideologies involved' (2005: 52). It has also been suggested that the footprints at Järrestad and in Bohuslän represented the 'soles of the dead', directing and commemorating the road from the grave to the sea of the dead (Bradley 1999: 665).

This could well be a plausible explanation, but however appealing it may appear, there are actually some complicating facts, such that some feet actually go upwards, and some also with a clear fusion of feet and wheel crosses. And besides, we have to consider the temporal discrepancy between the early, bare foot-type, and the tombs, relatively speaking, of a much later date. Richard Bradley later developed his view of this subject further, by contrasting the engraved images on the Bronze Age metalwork and in the rock art in Scandinavia (Bradley 2006, 2009). Our observation of the integration of metal axes and footprints suggests that the footprints after all are not to be perceived as of ordinary people or individuals, but instead of more divine beings but perhaps of people generally.

Could early metal axes seem to possess almost supernatural qualities that could only be compared with those possessed by gods, and consequently, characteristics that made them extremely worthy of worship? That, if anything could be a good reason to carve axe feet on the Scandinavian rocks. This is also supported by the following quotation: ‘But religion is, in culture stages, corresponding to the Nordic Bronze Age, particularly practical: people through religious acts want to obtain something from the divine powers’ (Almgren 1914: 596, translated here). According to Almgren, it is also clear that the soles of the feet represent divine beings and apparitions that through the legends are still (2014 included) connected to the footprints, whether they be Buddha’s or Christ’s, or for that matter a Catholic saint’s, and represents a modernization of the ancient pagan beliefs. This seems also a plausible explanation for the footprints’ resurrection in the royal coronation rituals in the Iron Age hill forts.

References

- AIJMER, G. 2001. The Symbological Project. *Cultural Dynamics* 2001 (13:1): 66-91.
- ALMGREN, O. 1914. *Tanums härads fasta fornlämningar från Bronsåldern. 1. Hällristningar*. Göteborgs och Bohusläns Fornminnesförenings Tidskrift. Första Bandet 1914-1920. Göteborg.
- ALMGREN, O. 1926-7. *Hällristningar och kultbruk*. Kungl. Vitterhets Historie och Antikvitets Akademiens Handlingar Del 35. Stockholm. Wahlström och Widstrand.
- ALMGREN, B. 1962. Den osynliga gudomen. In: *Proxima Thule: Sverige under forntid och medeltid*. En hyllningsskrift till H.M. Konungen den 11 november 1962. Svenska Arkeologiska Samfundet. Nordstedts. Stockholm.
- ANATI, E. 1976. *Evolution and Style in Camunian Rock Art. An Inquiry into the Formation of European Civilization*. Archivi 6 – English Edition – Edizioni del Centro. Capo di Ponte.
- ANATI, E. 1993. *World Rock Art: the primordial language*. Vol. Studi Camuni. Edizione del Centro. Capo di Ponte.
- ANATI, E. 2001. *The Riddle of Mount Sinai. Archaeological Discoveries at Har Karkom*. Vol. 21. Studi Camuni, Edizioni del Centro. Capo di Ponte.
- BERTILSSON, U. 2004. Rock Art of the Northern Hemisphere – Scandinavia, Finland and Russia – Cultural Contexts, Chronological Implications and Major Traditions. Eds. Bertilsson, U. And McDermott, L. *The Future of Rock Art – a World Review*. Rapport från Riksantikvarieämbetet 2004:7: 66-88. National Heritage Board. Stockholm.
- BERTILSSON, U. 2013. Divine Footprints. Traces of cosmological Archetypes and prehistoric Religion on the Rock Faces. In: *Art as a Source of History. L’arte come sorgente di storia. XXV Valcamonica symposium 2013*. 163-72. Anati, E. ed. Edizione del Centro. Capo di Ponte.
- BRADLEY, R. 1999. Dead soles. Eds. Gustafsson, A. and Karlsson, H.: *Glyfer och arkeologiska rum – en vänbok till Jarl Nordbladh*. Gotarc Series A vol. 3. Göteborg.
- BRADLEY, R. 2006. Danish razors and Swedish rocks: cosmology and the Bronze Age landscape, *Antiquity*, 80: 372-8.
- BRADLEY, R. 2009. *Image and audience: rethinking prehistoric art*. Oxford: Oxford University Press.
- BUTTER, R. 1999. *Kilmartin – Scotland’s richest prehistoric landscape. An Introduction and Guide*. Kilmartin House Trust. Kilmartin.
- COIMBRA, F. 2008. Portuguese Rock Art in Protohistoric Context. In: Osterbeek, L. and Buco, C. *Arte Rupestre do Vale do Tejo e outras Estudos de Arte Pré-histórica*. ARKEOS 24. Tomar,
- COLES, J. 2005. *Shadows of a Northern Past. Rock Carvings of Bohuslän and Østfold*. Oxbow Books. Oxford.
- FREDELL, Å. 2003. *Bildbroar. Figurativ bildkommunikation av ideologi och kosmologi under sydsandinavisk bronsålder och förromersk järnålder*. Gotarc. Serie B. Gothenburg Archaeological thesis no. 25. Göteborg.
- GAVALDO, S. 2009. L’impronta di piede. *Lucus rupestries. Sei millenni d’arte rupestre a Campanine di Cimbergo*, 299-304. Sansoni, U., and Gavaldo, S., eds. Edizione del Centro. Capo di Ponte.
- HELSKOG, K. 2012. *Samtaler med maktene. En historie om Verdensarven I Alta*. Tromsø Museums Skrifter XXXIII. Tromsø.

- KAUL, F. 2004. *Bronzealderens religion. Studier af den nordiske bronzealders ikonografi*. Nordiske Fortidsminder Ser. B. Bd.22. Copehhagen.
- KAUL, F., STOLTZE, M., 2005. *Helleristninger. Billeder fra Bornholms bronzealder*. Nielsen, F.-O. and Bornholms Museum Wormianum. Rönninge. Milstreu, G.
- KRISTIANSEN, K. 2012. Rock Art and Religion. The sun journey in Indo-European Mythology and Bronze Age rock art. *Adoranten* 2012: 69-86. Scandinavian Society for Prehistoric Art. Lyngby.
- KRISTIANSEN, K., LARSSON, T. B. 2005. *The Rise of Bronze Age Society. Travels. Transmissions and Transformations*. CambridgeUniversity Press. Cambridge.
- LING, J. 2008. *Elevated rock art – towards a maritime Understanding of Bronze Age rock art in Northern Bohuslän, Sweden*. GOTARC serie B. Gothenburg Archaeological thesis no. 49. Göteborg.
- MONTELIUS, O. 1917. *Minnen från vår forntid. I. Stenåldern och Bronsåldern*. Faksimiltryck. Arkeo-Förlaget. Gamleby.
- NORDBERG, A. 2013. *Fornnordisk religionsforskning mellan teori och Empiri. Kulten av anfäder, solen och vegetationsandar i idéhistorisk belysning*. ActaAcademiae Regiae Gustavi Adolphi CCXXVI. Uppsala.
- SKOGLUND, P. 2013. Images of Shoes and Feet: Rock-Art Motifs and the Concepts of Dress and Nakedness. *Norwegian Archaeological Review* 2013. Routledge. London.

Grid Patterns in NW Iberia Rock Art Iconography, Contexts and Interpretations

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Abstract

The grid patterns are relatively common in the post-Palaeolithic art of Northwestern Iberia appearing either painted in the slabs of the megalithic monuments, in rock shelter walls, engraved in granitic outcrops or in the burial pit covers.

It is therefore a motif that occurs from the Middle/ Later Neolithic to the Bronze Age period constituting a chronological marker obtained through the radiocarbon dating of funerary features.

Taking into account the funerary contexts which they were found we can interpret these motifs as symbols of transmutation, in this case, as markers for places that represent, warn or materialize one of the last rites of passage - death, i.e., the physical and spiritual transformation of one being into another being or spirit.

From this interpretation it is possible to infer that the grid patterns, very common in some Atlantic rock art outcrops, are symbols that indicate proximity of physical and spiritual transmutation places, or mark their entry.

This hypothesis was examined at various scales of analysis, making it plausible in all cases. In the large-scale analysis the case study chosen was the Mountain range of Santa Luzia, Viana do Castelo, Caminha, in the medium-scale analysis we studied the north of Santo Antão Mountain, Caminha, and the small-scale analysis was the rock art motif complex of Sinadora in Viana do Castelo.

Sexual Human Representations in the Paintings in the Serra da Capivara, Brazil: Relations in Action, Narrative Relations?

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Abstract

Rare are walls without paintings in the tocas/rock shelters of the park of the Serra da Capivara, Piauí, Brazil. Between one and several hundred in number, they are essentially human figures men, women and children and animals, whose numerous species are represented, a reflection of the endogenous fauna nearly always present in the caatinga. These figures are represented in dynamic interactive situations of relationships and very often in movement, which confers on them a live character, as captured from life, with something happening. There is life in the tocas of the Serra da Capivara and this life speaks to us. But what can we say about it?

We suggest here that we should consider more specifically the observable relations between the human figures and, first, determine the elements that allow us to identify female and male characters. The very detailed character of these representations constitutes a rich information source in domains for which we do not possess other remains, in particular the material data made by perishable materials, accessories and costumes, and also immaterial relation data, individual and collective.

Once the characteristics that distinguish female and male representations have been established, we shall attach ourselves to the observation of what puts them in relation to each other. What makes the relation on the wall is the arrangement of figures in the painted space and what takes place between them, the action, even the attitude, if there is one. In these paintings, the human figures are in contact very often. A frequent contact is the sexual one. In this case, the nature of the contact testifies an explicit physical relation. The physiological reproduction is, moreover, a subject in its various stages: conception, pregnancy, delivery, feeding. In these representations the female figure is major. Other figurative contacts exist, recognizable as 'rounds', 'swarms' or characters who carry to others. However, it does not mean that the nature of the relation is clear. Most often, the characters are not in contact. Nevertheless, they are in relation, because of their relative positions and, sometimes, because of particular postures.

The repetition of these representations, associations and varied positioning leads one to wonder about their significant values. The consideration of the sexual human representations (after some unpublished work about the recognition of the signs of their distinction on the paintings of the Serra da Capivara), will allow us to approach the questions of representation of the genre, not only graphically but especially from the point of view of the possible meanings of the network of their relations. Maison de l'Archéologie et de l'Ethnologie.

The park of the Serra da Capivara in the Piauí, Nordeste region of Brazil, is known to be rich in rock art, paintings and engravings. More than 1,300 sites are known today in the park and other places, which make it one of the major sites of north and south America. This constitutes an important information source. Human figures – men, women and children – and animal figures whose numerous species reflect the endogenous fauna always present in the *caatinga* are mainly represented. These figures are painted in dynamic interactive situations, situations of relation, very often in movement, which confer on them a live character, as captured from life: something is happening. We say that there is life on the walls of the *tocas* (rock shelters) of the Serra da Capivara and that this life speaks to us. But what does it tell us? And can we say something about it?

We consider here specifically the observable relations between the human figures and, first, try to identify the various represented figures, starting with the elements which allow us to distinguish the characteristics according to genre, female or male. Given the very detailed characteristics of

these paintings, realistic but not naturalistic, it is often easy to identify the represented subjects. They constitute a rich information source in domains for which we do not possess other remains, in particular material data made by perishable materials, accessories and costumes, for example.

Once these criteria have been established, we approach the question of their relations according to two aspects. On the wall, what makes the relation between the arrangement of the figures in the painted space and what takes place between them, the action, even the attitude, if there is one? What is told, even staged? This may supply us with information on immaterial data, in particular relational, individual and collective, for which we have no other remains in pre-literate societies.

Women and men

Among the paintings of the Serra da Capivara, the human representations are the most numerous. They recover a large diversity of depiction, in size, in style, not the cultural style but the artist's, in posture and in the numerous kind of representations of the human figure itself. However, within this diversity, constants are noticeable which allow us to distinguish various categories of human figures, to begin by a distinction of genre: women and men are present on the wall paintings of the Serra da Capivara. So we shall consider this question first: what criteria of representation can we recognize each of them?

Recognizing women and men requires us to sharpen our eyes so that we get acquainted with the modalities of representation. However, if there are always ambiguous figures, difficult to identify, the detailed realism of these paintings means that most of them are without ambiguity.

From the point of view of physiology, it is the sexual organs, the primary sexual characteristics, which differentiate women and men, which are internal in women (the ovaries) and external for men (testicles), and may be differently represented. In fact, testicles are rarely represented in the paintings of the Serra da Capivara.

On the other hand, the secondary sexual characteristics, including the external genitalia, are better indications. Because of their exteriority, they are visible and thus can be represented. For women it is the vulva and the breasts, for men the beard and the penis. Other characteristics, in particular the respective distribution of the muscular and fat masses, are not relevant here and are often very schematic. Actually, the penis is represented almost always but we do not see the beard. The breasts of the women, when they are present, are often discreet. Finally, previous studies mentioned the possible representation of the vulva, but we have a different interpretation.

The recognition of the principles of representation of these characteristics constitutes the first stage of establishing the genre of the represented human figures. Once established, their association with other elements constitutes a set of complementary data determining identification. These may be material, objects, accessories or clothes, or immaterial, like attitude, which are social and cultural sphere and can be considered as tertiary sexual characteristics. Their importance comes from their association with the secondary sexual characteristics. In the absence of one of these, only the presence of tertiary characteristics can allow us to identify certain human figures.

Round bellies and angled sexuality

Among the secondary sexual characteristics there are two predominant ones in the paintings of the Serra da Capivara: the first is the pronounced abdominal curve of some of them, seeming to indicate a pregnant woman the second, a kind of a third lower limb which seems to be the representation of the male genital organ.

Concerning the pregnant woman, the abdominal curve can cover a large diversity of forms close to physiological reality: round bellies, sharp bellies, carried high or low, and more or less prominent

(Fig. 1). If there is a doubt about this representation, a figure of the Toca do Caboclinho supports our comment, where the belly of the woman was painted in transparency, letting us see the fœtus without ambiguity (Fig. 2). This detail indicates an excellent physiological knowledge. As for the method of the depiction in transparency, to reveal internal, known but not visible characteristics, is not a very frequent mode of representation.

This drawing supplies us with other information on the modalities of representation of the feminine figures. So, two small lines just above the stomach represent breasts on an excessively long trunk, or two small sticks, that in the absence of a big belly we can consider as a sign of femininity (Fig. 3).

For the men, the main attribute which allows us to distinguish them is their sex. Either a straight line represents the penis between the legs, or the organ is depicted rising upwards, strangely angled (Fig. 4). This characteristic was often interpreted as ithyphallic and as a possible sign of unbridled sexuality. However, this shape is not anatomical. We also find it on symbolic representations of the paintings of the Serra da Capivara, figures which seem to come towards you running or jumping, with tense arms (Fig. 5). The facelessness, in spite of their arms and their legs, makes it difficult to treat them as human strictly speaking.

To report the strength of their anthropomorphous character and of the importance of this one coupled with our incapacity to award them a particular identity, we called them *Characteristics*. Indeed, the



FIGURE 1. TOCA DU CABOCLO, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – COUPLE WITH PREGNANT WOMAN © P. BINANT.



FIGURE 2. TOCA DO CABOCLINHO, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – REPRESENTATION OF A COUPLE OF WHICH A PREGNANT WOMAN, WITH A DEPICTION IN “TRANSPARENCY” OF THE BELLY IN WHICH WE CAN SEE THE FœTUS. © P. BINANT.



FIGURE 3. TOCA DO BOQUEIRAO
DU PARAGUAIO I, SERRA DA
CAPIVARA, PIAUÍ, BRAZIL –
SEVERAL HUMAN FIGURES
WITH, IN THE CENTER,
A FEMININE FIGURE WITH
BREASTS IN “STICKS”
© P. BINANT.



FIGURE 4. SERRA DA CAPIVARA,
PIAUÍ, BRAZIL – GROUP OF
MALE HUMAN FIGURES WITH
THE ANGLED SEX © P. BINANT.



FIGURE 5. TOCA DAS EUROPAS
II, SERRA DA CAPIVARA, PIAUÍ,
BRAZIL – SERIE OF THREE
CHARACTERISTICS
© P. BINANT.

absence of face transcends the notion of person even though the geometrical motives which recover them individualize them by being never identical. So, paradoxically, these *Characteristics*, with a non anatomical drawing, have no body and are only a body! Does ot this body have as ex?

We compares this strange appendix in hook with the very often angled sex of the male figures and we think, on the contrary, that this attribute is sign of manliness. In parallel, we considered that these *Characteristics* could represent individuals dressed in “costumes-masks”, such as those still used in Brazil today to the populations of culture *Jê*, as *Ticunas* (Goulard 2011, Binant 2013). So, that let us think that it is a representation of sexes wearing a penial case, a case which we can hang on on the side of the “costume-mask” of which it is possible that is was important to mention the genre. Rare are the *Characteristics* who do not wear this badge. By extension, except opposite element, we consider that all the *Characteristics* are male figures. Their very frequent association with another human, clearly feminine figure, seems to us to confirm it (Fig. 6 and 7). We called this associated figure *accomplice*, of smaller size, profile, arms up, folded down as well as legs, she is very often pregnant. To the *Toca do Zé Patú*, the feminity of this *accomplice* is confirmed by the fact that, besides being pregnant, she breast-feeds a baby (Fig. 8).

We are thus in presence of a couple of figures clearly posted as respectively male and feminine. The foundations of this conclusion result from the addition of natural characteristics and cultural features of which repeated association asserts the significant importance.



FIGURE 6. TOCA DO SALITRE, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – PERSONNAGE ET SON ACOLYTE FÉMININ ENCEINTE © P. BINANT.



FIGURE 7. TOCA DO CABOCLO, SERRA DA CAPIVARA, PIAUI, BRAZIL – CHARACTER WITH AN ANGLED SIGN ON THE SIDE WHICH WE INTERPRET AS A PENIAL CASE © P. BINANT.



FIGURE 8. TOCA DU ZÉ PATÚ, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – *CHARACTER* AND HIS FEMININE ACCOMPLICE, PREGNANT AND BREAST-FEEDING A BABY © P. BINANT.

The male and female principles necessary for the conception are gathered together here without giving evidence whether it is from the *Character* that the woman is pregnant. Except of the *accomplices* in the large panel of the *Toca' do Boqueirao do Paraguaio*, whose hand seems put on the *Character*, never they contact. The only link we can establish between these two figures is the one of their juxtaposition in the space of the representations. That is on the “plan surface” of the wall which supports paintings. It is a link represented only by the relative position of figures in this space and confirmed by the repetition of it. To such a point, that the very frequent repetition of this juxtaposition allows us to consider it as an entity of representation which we defined as an “associated situation” constituting an element of representation in itself (Binant 2013). We could also qualify this association as “relation of composition”, as far as the repetition does not stop in the closeness of both figures in the space of representations but also concerns the codification of the organization of the one with regard to the other one (Fig. 6, 7 and 8).

The “associated situation”, very often repeated, does not give us a sense to paintings but allows us to perceive a domain of meaning. We would say that this put in context is significant and opens new spaces of understanding.

Sex in the paintings

Character and accomplice are not in contact but without union the only closeness is sterile. Pregnant women, scenes of delivery, breast-feeding women are so much representations of pregnancy, births and childbirths which we could summarize in a term: fecundity. So this “associated situation” could illustrate the physical union necessary for the reproduction, such an allegory. Then, any need to represent the coupling to mean the strength “genetic” immanent in the male principle of the *Character* as much as the fertile susceptibility of the woman accomplice. More than man and woman, they would represent the Male and Feminine principles, actors by the strength of their reproductive power of the perpetuation of the life.

Representations of coupling also exist. However, they are not so frequent as he was able to said and are not characteristic of these paintings. Besides, contrary to the *Character* with his *accomplice*, they

are not specially given to see and are painted in the groups as a commonplace scene which nothing justify to put forward. These scenes are without ambiguity. Nevertheless, we shall consider certain details.

First, we shall raise the durability of the angled sex of the men. If, as we think, this particular representation corresponds to the wearing of a penial case, it is surprising that in such situation it continues to be use (Fig. 9).

We shall also notice the repeated presence of a little circle between the legs of the woman (Fig. 10a). This detail was able to be interpreted as the representation of the vulva, interpretation that we do not



FIGURE 9. TOCA DO RODRIGUEZ 2, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – SCENE OF COUPLING UP © P. BINANT.



FIGURE 10. A) TOCA DA ENTRADA DO BAIXÃO DA VACA, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – WOMEN WITH THE “LITTLE CIRCLE” WHICH WE INTERPRET AS A LOINCLOTH; LEFT: SCENE OF SEXUAL RELATION RIGHT: POSSIBLE BEGINNINGS OF A CHILDBIRTH; B) TOCA DO PASSAGEM, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – GROUP OF HUMAN FIGURES AMONG WHICH FOUR HAVE NO SEX BUT AN HORIZONTAL LINE BETWEEN LEGS WHICH WE INTERPRET AS THE DRAWING OF A LOINCLOTH, WORN BY WOMEN © P. BINANT.

find very explicit. On the other hand, we were able to observe that a line joins frequently the legs of the women represented up, we think that it represents a loincloth (Fig. 10b) and that the circle is the same line when the women are lengthened.

Finally, we observed that in these scenes with sexual character the sexes are not in contact. As if the evocation was otherwise more important, more significant, as the act itself. Nevertheless, the nature of the represented act associates these representations with the theme of the fecundity which we underlined previously and which we could decline here with that of fertility, even that of virility.

Relation, action, story?

Consider in the first degree these representations which do not show so much that they suggest, would seem us to reduce their capacity to inform us just as our to get how much they are rich. We have just seen it, the realism of the paintings of the *Serra da Capivara*, allows us to catch numerous details. However, we insist, realism is not naturalism. There are in these paintings many depictions which, so explicit they are, take liberties with the nature. Like the physical proportions, for example, as we already able to notice it by the pregnant woman of the *Toca do Caboclinho* (Fig. 2). This precision is important because it reminds the distance between the representation and its subject. Representation is not the represented subject. It is always a picture of it. As regards paintings of societies without writing, the considerations and the constraints occurring in the realization of these pictures were not formalized otherwise than in and by paintings. In other words, be interested in the rock paintings of these societies it is not only to identify the components and the composition but also to keep in mind this distance of the object painted in the paintings which, so realistic is, is not the object but its representation; object of our study is not *the* reality but *one* reality, that of the painted representations.

Concerning the subject which interests us, at first, the realistic details of these paintings allowed us to recognize several elements determining the genre, male or feminine, of the various human figures represented. Interesting us more in the situations of relation than in the isolated representations, we distinguished two main contextes which associate women and men in a repeated and not trivial way: a couple of figures, that we respectively named *Character* and *accomplice* and representations of the sexual act. The one as the other associate one or several feminine and male figures and seem to relate to the fertility.

In the case of the couple *Character/accomplice*, the fecundity is meant by the fact that the feminine figure, the *accomplice*, is often pregnant, sometimes accentuated by an additional datum as a child in the breast (Fig. 8). We could then add the maternity to the fecundity. However, we said it, the relation between these two figures is not physical – they do not contact, but spatial: it is their respective positioning in the space of representations – the wall, which indicates their relation. That the *Character* is an anthropomorphous and not a man strictly spoken, because of what we interpret as a «costume-mask» which recovers him from head to feet, introduces an additional distance. At the same time non-human being and nevertheless very human, by his hands, his legs and his dynamic attitude, he constitutes an abstract being. Abstracted but sexual because, penial case or not, looking like the angled sex of the majority of male human figures, the attribute in shape of hook which is attached almost always on the side of their costume asserts himself as the sign of their manliness which others wear more simply between legs. Anthropomorphous abstract figure of whom it was important to mean the male genre which one way or another, perhaps a symbolic one, had to be an actor of pregnancy of his feminine *accomplice*. So, to the maternity and the fertility, we could add the virility.

So, within this binomial, every figure represents a different sexual individual. Each of these figures is rich in further information which allow us to collect practices and lifestyles in relation with a disappeared society of which these paintings are among the last testimonies. According to the principle of what we called the “associated situation”, they form however a figure in itself, such an

entity of agreed representation, with clearly codified modes of organization, insistent repetition of which on the walls of *tocas* shows its importance in the corpus of these paintings. This importance is strengthened by the central, dominant position, which they occupy and their frequent big size.

In the sexual scenes, the sex of the human figures are also clearly represented: penis for the men, often angled; absence of penis for the women. In general, breasts are not represented, so it is the relative physical position of the feminine figure with regard to the male figure which is going to allow us to identify her. The positions of coupling are varied. The woman is not pregnant, not still... It happens that the male figure wear a headgear of feathers and the woman this little circle between the legs that we interpreted like a loincloth (Figs. 10a and b). But the look of each rather sober, simple description of a commonplace reality. Except this detail: the sex of the man tense towards the body of the woman do not touch it! Here still, even though it is question of representing a physical relation, bodies are not in contact as in the couple *Character/accomplice*.

Nevertheless, pregnancies happen, the figures of oregnant women testify of it, as well as the others representations among which those of childbirthes (Fig. 11). In the nature, these pregnancies result from a physiological process requiring a physical relation between a man and a woman, but the paintings do not show it to us. We can find the distance maintained by the bodies in the relation painted of this report in another representation: a figure of a couple, woman and man, back with back, with, between two a sign, often a sort of trident (Figs. 2 and 12). The woman can be pregnant or not, the sex of the man marked or not. This figure associates a feminine and a male figures without showing anything else, otherwise, sometimes, the back with back with bent loins, introduces, by this detail, a possible sexual notion.

This absence of contact, in every case, lets us think, that it is not so much the act which it is important to mean but what to what it sends back, namely: the coupling up, the virility of the male member, the approval of the woman, for, doubtless, an expected fecundity and thus a maternity to come. All these concepts works not only in the reproduction of the individuals and in the perpetuation of the society but also, and maybe espacially, in the participation of each in the active principles of the vitals



FIGURE 11. TOCA DO BOQUEIRAO DA PEDRA FURADA, SERRA DA CAPIVARA, PIAUI, BRAZIL – REPRESENTATION OF CHILDBIRTHES © P. BINANT.



FIGURE 12. TOCA DA FUMAÇA, SERRA DA CAPIVARA, PIAUÍ, BRAZIL – HUMAN FIGURES, FEMININE ONE TO THE LEFT, MALE TO THE RIGHT, CONNECTED BY A SIGN IN TRIDENT © P. BINANT.

dynamic, force of the equilibrium of the balance of the world and protected from its perduration (Heritier 1996, Binant 2013).

Space to time

For us who have no more the necessary culture to understand the meaning of these paintings, the determination of the various elements which compose them allow us to establish the corpus of the figurative subjects. Taken individually, every element constitutes an item that, often in the case of the paintings of the *Serra da Capivara*, we can identify again. So, it is about the item “human figure”. The presence of additional elements sometimes comes to clarify this basic item, as here indications relative to the sex of the individuals which their physical nature allow us to distinguish with certainty. The addition of the other characteristics, which we would say cultural, contributes to clarify the modes of representations agreed for each of these figures. But, as we are able to underline it besides: “these representations constitute pictures limited to themselves” (Binant 2013). The steady rehearsal of their presence on walls gives evidence of their importance within the established corpus but it is in the relations that we can establish between the various items recognized that we can perceive one or several recurring subjects.

We have just seen it, there are relations between items which constitute units of representation separate, so it is for the *Character* and his *accomplice*. Both painted separately will induce different situations and subjects, indeed. Unity of the compound representation, codification of the representation and repetition of the representation constitute the principles from which we can begin to understand the figurative subject. Are we in the presence of narrative structures?

Just stop to the story of these pictures would seem to us to reduce them to their only representational function and to remove them any abstract dimension. So that, involving paintings with sexual character, they would not more tell us than the necessity to copulate to give birth, or, in a more elementary way, that of any time men and women had sexual relations. If the picture can be a representation of the reality, we do not think that it had for function to call us back these evidences. We have just seen it, the repetition asserted by these scenes, respecting various agreements of depiction and structure, show

that it is not a question as long of representing a fact that an idea. For that purpose, the familiarity induce by the recognition of the multiple détails occuring in these scenes is misleading. Because the question is not to recognize wat depict these pictures but rather to reconstruct the history – the myth? that they illustrate more than they tell it.

Bibliography

- BINANT, P. 2013. “Les peintures rupestres nous racontent-elles des histoires? L’exemple de la Serra da Capivara – Brésil”, *In* Anati E. Dir.: *Art as a source of history*, XXV Valcamonica symposium, Capo di Ponte, Centro Camuno di Studi Preistorici, p. 301-308.
- CUIR, R. DIR. 2009. *Pourquoi y a-t-il de l’art plutôt que rien?*, Paris, Archibooks + Sautereau Editeur.
- GOULARD, J.-P. 2011. “La sur-face du masque: perpétuation et métamorphose chez les Tikuna”, *In* Goulard J.-P. et Karadimas D.: *Masques de hommes, visages des dieux*, CNRS Editions, p. 129-153.
- GUIDON, N. 1975. *Peintures rupestres de Varzea grande. Piaui, Brésil*, Cahiers d’Amérique du Sud 3, EHESS, Paris.
- GUIDON, N. 1991. *Peintures préhistoriques du Brésil*, ERC – Editions Recherche sur les Civilisations, Paris.
- HERITIER, F. 1996. *Masculin/féminin, La pensée de la différence*, Paris, Ed. Odile Jacob.
- LECOQ, A.-M. 2010. *Le Bouclier d’Achille. Un tableau qui bouge*, Paris, Gallimard.

The Stargazers: The Evolution of Knowledge, Beliefs and Rock Art

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Abstract

The closest primates to humans are diurnal animals. Chimpanzees are vulnerable during the night and build nests high in trees to sleep in safety as soon as night falls. It is plausible to assume that natural selection caused the evolution of primates which could actively exploit the resources and negotiate the dangers of their environments in the dim light of the night as well as the bright light of the day. This evolved competence would have opened up a new range of experience at a time when the atmosphere was clear, between the periods of time during which it was blurred by volcanic ashes.

There are still some places in the world such as the Atacama plateau in northern Chile from which the naked eye can perceive the starry sky with great acuity. Making sense of the phenomenal richness of this experience was bound to challenge the nascent cognitive adaptations, all the more so since the bright points which are particularly visible during moonless nights are not evenly distributed.

Looking for significant patterns appeared very early in organisms when vision evolved in its many forms. Primates' visual capacities are not the most advanced compared for instance with birds of prey, but their main means of survival depend on identifying food, mates and predators at a distance. When early humans could safely stay awake at least part of the night, we can assume that they saw patterns in the sky and strived to find meanings in them. The first natural step can be expected to have been the iconic identification of objects with which they were familiar in their diurnal environment.

We are used to the geometrical bias which drives us to connect points by lines and create meaningful figures, hence the names of the constellations which contemporary modern cultures have inherited from literate past civilizations. However, the night sky is ambiguous in as much as the dark space between the bright regions also forms patterns, which can be foregrounded and interpreted. There is evidence that the early native population of the Andes saw such black patterns and related them to the objects in their environment, such as lamas and birds.

This approach leads to a hypothesis regarding the figures that have been identified in rock art. If anatomically modern humans observed the dark patterns visible in the starry sky, they would have recognized images of their environment and possibly projected these images on rock surfaces as a means to get hold of their cosmology and probably to transmit it from generation to generation, since the resilience of these forms in the human cosmos would have required the education of perception. This hypothesis could provide an incentive to undertake our re-education of the perception of the starry sky and test our capacity to see with the eyes of our remote ancestors, as a way to access the meaning of rock art.

Introduction

The knowledge and beliefs of non-literate societies have been the constant preoccupation of literate societies which tended to see in these others not only significant differences but also the symmetrical inverse of their own intellectual and religious values. In the 19th century abusive interpretations of Darwinism mapped these differences on to the successive scales of biological evolution conceived as a cumulative progress which reached its apex with *Homo sapiens* and, more particularly, its modern avatars, the western European males endowed with intellectual powers and moral righteousness. This view justified among other things the exploitation and even extermination of autochthonous populations whose backward evolutionary status was characterized by a lack of intelligence and an abundance of irrational beliefs. Jean-Jacques Rousseau's early idealization of primitive humans was drowned in the discourse which sustained the forceful civilizing process of colonization.

With the advent of ethnography, the way of life of non-literate societies was more empathically described and documented. Their religious beliefs and rituals were scrutinized, and some anthropologists and philosophers pointed out the cognitive consistency of their intellectual constructs and the ecological soundness of their usually sustainable exploitation of the environment. In attempting to assess the intellectual and spiritual expression of non-literate societies, we must be careful not to confuse cultural evolution and biological evolution. It is only very recently that dramatic technological advances have unleashed transformative forces which might durably affect the biology of humans and their cognitive capacities.

The purpose of this paper is to draw attention to the cognitive commonalities which account for both literate and non-literate cultures, including prehistoric cultures, and to point out that these adaptive competencies carry some liabilities in addition to their adaptive advantages. Adaptations are indeed biological and cognitive traits of the phenotypes which are selected by the environment. Some of these adaptive traits can be carried over into new environments in which they are less optimal since optimality is a relative quality not an absolute one. They can persist as long as they do not turn out to be lethal in the new environments. Some may even prove to be beneficial by exaptation. But they may also have unexpected, even perverse side-effects. The case can indeed be made that the intellectual and spiritual defining features of *Homo sapiens sapiens* result from evolutionary flukes rather than straightforward adaptations by natural selection. These critical reflections will be applied to the emergence and role of stargazing in the human cultural construction of knowledge and beliefs.

The advent of the stargazers

The tree-dwelling common ancestors of primates was a rather small-sized tetrapod which had adapted to tri-dimensional environments characterized by a limited horizon and populated by proximal vital resources such as branches, leaves, fruits, insects, mates and predators. Looking up beyond this niche concerned only the possible identification of birds of prey, a typical behaviour which meerkats exemplify from the ground.

Early primates had evolved the capacity to distinguish colours which were relevant to nutrition and to mating. They also were adapted to the perceptual and motor management of space which allowed them to reach out toward relatively distal objects; jump from branches to branches; and aim projectiles at intruders. All these capabilities implied a sense of perspective, albeit a limited one since there was no survival value attached to processing spatial information beyond this organism's relevant horizon.

When, under physical and/or social constraints, these hominids evolved bipedalism and developed cultures adapted to their new environments, their upward posture necessitated adjustments to a form of visual space with respect to which their body plan and perceptual systems had not evolved. Their upright position allowed them to include the sky as a part of their phenomenological world and to process distal information, although the acuity of their vision and their assessment of distance were far less optimal in this new context than other organisms which had adapted much earlier to long-distance perception, both visual and acoustic.

Brains are attuned to monitor the changes which occur in their environment within the thresholds of their perceptual capacity and to control adaptive behaviour in response to information which is relevant to their survival and reproduction. From *Homo erectus* on, the sky was bound to become an important focus of attention as it was a portion of space in which both predictable and unpredictable, that is, maximally informative events kept occurring: fog, overcast, moving clouds, thunderstorm, lightning, apparent movements of the sun and the moon, eclipses, comets, meteors, aurora borealis, rotation of the constellations and, naturally, rain and snow with, in addition, occasional meteorite showers. There can be little doubt that scrutinizing the sky became an increasing preoccupation of the early hominins, which started moving beyond their ancestral niches across open space, as it both

provided orientation cues and resources. But how was this vital array of information interpreted by the brains of *Homo erectus*, then its further evolved successors and, finally, the anatomically modern humans, *Homo sapiens* and *Homo sapiens sapiens*?

The theory of mind

Psychologists have identified an early stage in ontogenetic development when the child becomes able to represent to himself/herself the mental states of those with whom he/she interacts and to behave accordingly. A mental state can be defined as a belief, an intention, or an emotion which will lead to action and whose result can be anticipated. The child is then able to intuit the points of view or attitudes of others which are different from his/her own. This competence was labelled 'theory of mind' (T.O.M.) because the child develops the concept of what it means to have a mind, both for his/her own and for others, and therefore can figure out that the two may not coincide.

From the point of view of phylogeny, it is obviously an advantage to be able to anticipate the behaviour of conspecifics as well as the likely strategies of prey and predators. Researchers in animal cognition have claimed that primates and even other mammals and some birds have evolved a nascent theory of mind which provided them with a vital adaptation to social life as it opened the way to manipulation and counter-strategies.

It is a reasonable assumption to consider that the common ancestor of apes and humans was endowed with such a nascent evolutionary asset. We can further assume that the progressive increase in brain volume and neuronal connections which characterize the *Homo* species from *Homo habilis* to *Homo erectus* and to *Homo sapiens* correlated with the improved capacity of representing with greater precision the mental states of others and to adjust physical and social survival strategies to such hypothetical information. We must, of course, keep in mind that evolution will necessarily favour poker game modes of interactions and will fuel an arms race both intra-specifically and inter-specifically.

Unpredictability of events is thus bound to be attributed to less decipherable minds in an environment in which recognizable behaviours enable the observers to anticipate the next expectable moves, or at least a limited range of possible actions. The scrutinizing of the sky offers many puzzling phenomena which can be attributed through analogical thinking to agencies endowed with states of mind and deliberate behaviour. The objects of the diurnal and nocturnal sky, and the events which occur there and directly affect humans, are naturally interpreted through applying the theory of mind and thus construing an intentional rather than gravitational cosmos. Early Babylonian astrology produced cuneiforms which referred to the luminous gods which populated the sky. This bears witness to the social centrality of the priests whose function was to interpret the will and intention of these gods as they related to human affairs. It has often been pointed out that Babylonian astrology is not an absolute beginning but continued oral traditions whose origins are lost in the deep time of human cultural evolution. There is no real gap between non-literate and literate cultures as far as beliefs are concerned. The assumption of intentions to account for the movements and events occurring in the sky can be explained by the evolutionary selection and success of a species whose brains could represent other organisms' states of mind but placed no intrinsic limits on the range of entities to which such assumptions could apply. Evolution is a short-sighted tinkerer devoid of long-term vision.

An adaptive cognitive trait can thus lose its beneficial pay-off and lead to ill-adaptive behaviour such as sacrificing resources to placate hypothetical agencies, following the same logic which consists of a group providing predators with prepared preys in order to avoid being attacked themselves. Cosmic fear is indeed no less powerful than the fear of predators and competitors. Still in today's world countless humans experience this kind of fear and assign to invisible agencies telluric and celestial harms which affect them. Random positive turns of events are sufficient to validate the efficiency of the rituals, however ludicrous they may be.

The theory of mind carries a heavy cost when it is extrapolated to irrelevant delusional entities. This is why it can be reasonably claimed that spiritual expressions such as the worshipping of gods are the result of an evolutionary fluke which led humans to construe physical objects as intentional entities. But a fluke is a side-effect of an adaptation which can turn out to be a handicap or an advantage depending on the contexts of its applications.

Analogical thinking

The capacity to abstract from a situation or an object some abstract features, either morphological or functional, was a crucial cognitive adaptation whose first evidence in the archeological record comes from the prehistoric lithic industry. Survival depends on the proper identification of kinds of objects which vary in size, shape and motion but implement the essential features of the template which has become wired-in in the brain during phylogeny and ontogeny. We, anatomically modern humans, spontaneously recognize human faces as soon as we open our eyes, and our brains are so attuned to this basic morphology that we often see faces where there is none as long as sufficient combinations of dots and lines prime our perceptual system. Not missing a face is a crucial adaptation for any altricial species, that is, a species whose offspring cannot survive without the care of the mother or other conspecifics.

However, the power of this algorithm is also a liability, as it exposes us to falling victims to lures. Random natural patterns which happen to coincide even vaguely with the facial template or the template of other significant objects can trigger behaviour which is irrelevant if not detrimental to an organism's survival. Such generalizations are the source of delusional knowledge and behaviour which is ill-adaptive. The nocturnal sky, in particular, provides a rich ground for misperception of this sort.

The patchy nocturnal sky

Visual perception is a tricky source of information. As many psychological experiments show, figure and ground are prone to flip and thus reveal different significant patterns. Another source of variability in perception is that what we know, or think we know, biases what we see. It is extremely difficult for us to replicate the empathic perception of the nocturnal sky by Pleistocene observers. We can only infer what they plausibly saw by trying to subtract from our experience what we have learned from centuries of scientific scrutiny of the sky with the help of ever improving telescopes; most of this knowledge is mediated by mathematical calculation and our inability to intuit the space-time of astronomical magnitude creates a gap between what we see and what we know. The latter is mostly counter-intuitive.

But let us attempt to imagine the way in which the starry sky of a clear night might have appeared to *Homo erectus*, Denisovans, Neanderthals and anatomically modern humans. Let us also keep in mind that industrial pollution had not yet blurred the eyesight of these observers and that the atmosphere was crystal-clear except, of course, at times when volcanic eruptions spread gases and ashes. For an organism which has inherited from its tree-dwelling ancestors a very limited sense of distance and perspective the celestial ceiling must have seemed quite close, somewhat like a monumental cave ceiling.

Observation of the nocturnal sky reveals that some of the dots maintain constant relations with each other while others present different kinds of relations and movements. Stable clusters can prime the perception of familiar animals whose contours fit the space delimited by these luminous points. Both the Chinese and the Indian zodiacs, whose origins are lost in the deep time of oral cultures, express each one of these configurations through stylized zoomorphic or anthropomorphic images. Stylizations like the ones produced by the use of cuneiform in Mesopotamia are not likely to be the most ancient ones.

But there is more. The bright dots of the celestial dome are not evenly distributed. There are dark patches which appear foregrounded once they are noticed. Black holes and cosmic dust clouds abound. Flipping the ground-figure relationship reveals striking patterns which are evocative of the shapes of various animals. Once lexical labels have been affixed to such patterns it becomes impossible not to perceive them as the relevant figures. The classical psychological experiment which consists of projecting on a screen a set of black dots on a white background bears witness to this. At first, subjects report seeing random patches. But as soon as the word dog is uttered everyone sees a Dalmatian dog frolicking in the snow. Once this perceptual switch has been activated this image will never appear to be a mere set of random patches.

Modern astronomers have identified numerous dark patches which they call *nebulae*, the Latin word for clouds. Some of these are silhouetted against areas which are saturated by stars and are noticeable from the earth without the help of telescopes. One of the most famous examples is the Horsehead nebula in the constellation Orion. What has been labelled the Pipe nebula is a long dark nebula visible within the dense star cluster Ophiuchus. Instead of identifying this dark patch through its morphological analogy with a contemporary artifact, it would be equally easy to 'see' an animal form with legs and a tail. The native populations of the Atacama Desert in northern Chile could see dark patches which resembled lamas and they assumed the existence of a spiritual link between the presence in the sky of a heavenly embodiment and a species which was essential to their survival. Lama silhouettes are abundantly represented in the rock art of this region and we can raise the question of whether they are meant to refer to the live lamas found in their environment or to the dark patch found in the sky.

Atlases of the universe offer many examples of dark blotches endowed with suggestive forms which can be easily related to earthly animals, plants, or landscape. See, for instance, <http://www.atlasoftheuniverse.com/darknebs.html> and <http://astronomy.swin.edu.au/cosmos/D/Dark+Nebula>

The perception of dark biomorphic patterns in the nocturnal sky might have preceded the geometrical constructions consisting of joining clusters of salient dots by straight lines and finding analogues of these schemata in the forms found in the natural environment. The latter is what gave rise to the zodiac and to the naming of the constellations. Such visual and intellectual elaborations presuppose cognitive competences which might have their source in the identification of blotches evoking familiar silhouettes in the mind of the hominins who had become stargazers as a side effect of bipedalism.

Only the systematic scanning of the nocturnal sky in conditions plausibly similar to some periods of time in the Pleistocene could yield interesting hypotheses, notably regarding rock art. This should include calibrating the patches thus identified, since cognitive biases precisely cause the natural calibrating of visual information towards known forms. Naturally, this scanning should not involve technological means which were not available to prehistoric populations.

Conclusion: stargazing and the meaning of rock art

The main hard evidence of the intellectual and spiritual expressions of non-literate populations is found in rock art. But this abundance of data in itself is far from being fully understood. Even in the case of contemporary productions of figurative and abstract paintings and engravings, their meaning remains elusive as they are often expressions of secret knowledge and sacred rituals. This is, of course, all the more true of prehistoric data as very little is known about the social and religious contexts in which these graphic representations made sense some thirty or forty thousand years ago. Moreover, the Pleistocene archeological record cannot be reliably interpreted through ethnographic analogies.

Many hypotheses have been proposed to explain the presence of rock art in its numerous forms all over the planet earth. Each one of these hypotheses concerns only a subset of the data available and attempts to find the function which might explain it, thus excluding from its purview numerous

other signs. But if the visual sets of figures are approached from a comprehensive point of view which acknowledges the full range of both iconic and geometrical signs and the complexity of their combinations, we may find there an analogue of the starry sky and a representation of the powerful agencies which rule its movements and events. This hypothesis displaces the referents of rock art from the immediate environment which is populated by animals to the dark presence of their 'divine' prototypes which can be perceived in the nocturnal sky but which could only be rendered in the guise of their terrestrial forms on the walls of caves and cliffs. The distinction between the spiritual and the intellectual is a recent dichotomy which is also manifested in the equally recent distinction between astrology and astronomy. Looking at rock art as the earliest attempts to map the sky and record its predictable and unpredictable behaviour, possibly in order to anticipate events or even control them, may sound like a far-fetched hypothesis but one which would be consistent with the first evidence of literate cultures in Mesopotamia and in China, where the creation of writing as we understand it today was rooted in astrological preoccupations carried over by oral and graphic traditions originating in deep prehistoric time.

As Above, So Below: Unveiling the Truth About Stonehenge's Sacred Landscape

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Abstract

Recent investigations emphasize relationships between solar and lunar phenomena and architectural features of sites such as Stonehenge, Durrington Walls and Woodhenge. However, archeologists and archaeoastronomers have been unable to identify any overriding design that would explain the purpose of placing the hundreds of Neolithic through Iron Age burial sites across the Stonehenge landscape.

Results of new research and analysis clearly show that the Stonehenge landscape c. 3500 BC was designed to represent an 'above, so below' cosmo-geographical relationship. The design pre-dates by 1,000 years the Orion-related geometry associated with the pyramids on the Giza Plateau. The objective of this paper is twofold. First, the type, shape, size and orientation of specific elements (such as long barrows, henges and the Greater Cursus) of Stonehenge's mid-Neolithic landscape are shown directly related to stellar spatial relationships. Second, it is demonstrated that the resulting pattern of ritual and ceremonial features concerning the death of the body represents the translocation of the astronomical otherworld – the spirit world – on to Salisbury Plain. Results of the analysis create a new paradigm for the meaning of Stonehenge, demonstrating conformity with an apparently worldwide Neolithic understanding of where the spirit comes from and where it returns.

Keywords: Stonehenge, cursus, archaeoastronomy, triangulation, winter hexagon

Introduction

Stonehenge” has been the focus of study by historians, antiquarians and archeologists for well over 300 years, a rather short period compared with the length of time since the monument's first architectural elements were built, perhaps more than 5,000 years ago. We know very little of the people who designed, built and made use of this greatest of European megalithic monuments. We have no record of why observations of the sun and Moon were important to the populace of the time, and how the culture related those astronomical observations to human mortality.

Our purpose for studying the Neolithic Stonehenge landscape was to understand the relationship between the landscape's early stages of development and the people who conceived, designed and built it. Between 3500 BC and 2900 BC more than 50,000 tonnes of soil and chalk were excavated, transported, placed and compacted to build henges” , long barrows and cursus located within a 3 km (2 miles) radius of Stonehenge. Excavation and mound building continued. Over 2,500 tonnes of megaliths were quarried, transported, shaped and installed at Stonehenge by 2400 BC.

Numerous ancient structures such as long barrows, round barrows, cursus and henges across the Stonehenge landscape were constructed between about 4000 BC and 1500 BC, some before and some after. An untold number of other structures appear only as crop marks on the ground surface or are buried and awaiting discovery beneath the surface. The Greater Cursus (also known as the Stonehenge or Amesbury Cursus) is located 800 m (2,600 ft) north of Stonehenge. It is nearly 3 km (1.7 miles) long and covers about 35 hectares (1.35 sq miles) of pasture. Although its great size makes it a prominent feature on the landscape, no one knows whether or not its purpose was for ritual or ceremony, or how it may relate to the purpose and functioning of other monuments on Salisbury Plain.

Social structure and a culture's sense of identity and territoriality of a landscape can emerge as they relate to ritual space.¹ This can be seen by analysis of constructions ranging from lithic monuments to simple arrangements of stones, topographical relationships, and locations of artworks, cemeteries or settlements within which a ritualized landscape may be defined. Many such landscapes have been developed by cultures in which archeologists can identify an archetypal package of Neolithic technologies. Examples are found in pre-dynastic Egypt, Brittany c. 3800 BC, and the pre-Columbian Americas.

There are numerous prehistoric sites throughout the UK and Ireland that are associated with astronomical alignments. They include Stonehenge, Avebury, Maeshowe, Newgrange, and many other passage tombs, long barrows, round barrows, henges, stone circles and so on. Through the work of archeologists and archaeoastronomers we know that a number of those structures are associated with burial of the dead and observations of certain solar, lunar or planetary phenomena. People observed astronomical events and related them in some way to burial structures and remains of the dead. Some of those burial sites were of importance during the mid-Neolithic or earlier.

Archeological evidence suggests ceremonies and rituals took place at burial sites. Polished stone axe heads, pottery, disarticulated bones and other items were placed in burials, and there appears to have been a greater emphasis on alignment with the solstices in British passage graves. By about 3000 BC construction of causewayed enclosures had evolved to building henges that included alignments with solar and lunar events. Together the various Neolithic structures across the UK and Ireland are indicative of several important spatial and temporal relationships.

- In general, construction of monumental architecture in the British Isles began with the arrival of Neolithic technology from mainland Europe, including farming and the domestication of animals, and working megalithic stone.
- There was an evolution in the location of monumental architecture across the British Isles throughout the Neolithic, early to mid-Neolithic structures often found on hill tops, with increasing use of plains and lowlands over time.
- Many of the burial structures were located in the vicinity of, or within sight of water bodies.
- Many of the structures were circular or sub-circular, including cairns, mounded soil and henges.
- The complexity of monumental landscapes increased through time, beginning with the construction of individual structures and progressing to the development of large landscapes such as Stonehenge, Maeshowe and Newgrange, where structures of different types became components of a larger framework.
- Long barrow construction began by about 4000 BC, with many of the structures located in the south and east of England.
- Cursus appear in Scotland by about 3800 BC and the construction of the ditch and bank structures spreads southward to southern England within two to three centuries; most cursus are located in England (more than 100) and Scotland (50); only a few are in Wales and Ireland (12).
- Henge construction began by about 3000 BC.
- As the design of monuments increased in complexity over time, so did the complexity of monumental landscapes, the as type, size and location of individual monuments within the largest environmental context became part of the design process.

Geography

Salisbury Plain is located in the south portion of Wiltshire County and adjoining Hampshire County in the central south of England (Figure 1). The Stonehenge monument is located in the north-central portion of Salisbury Plain. It sits on a rather level ground surface (elevation 102 m, 335 ft) of a less

¹ Curton, Rafael P. and Beróni, Mónica A. Percepción, Identidad y Sentido en la Construcción Social y Ritual del Paisaje: las Sierras de Lihue Calel, La Pampa, Argentina. 2011. www.revistas.uchile.cl/index.php/RCA/article/download/18168/19025. Accessed 22 Jan 2014.

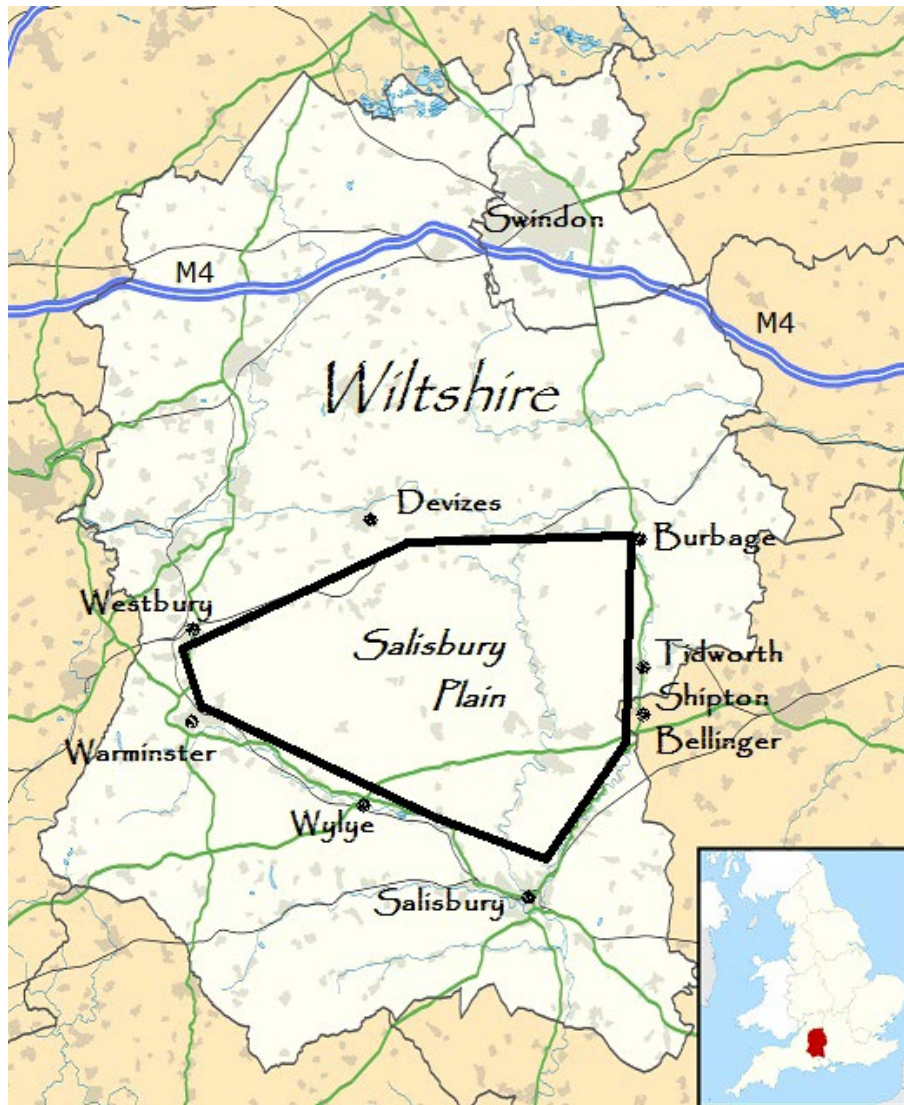


FIGURE 1. LOCATION OF SALISBURY PLAIN, WILTSHIRE COUNTY, ENGLAND.

than prominent ridge (Figure 2). The ground surface dips gently east, towards a swale 500 m wide named Stonehenge Bottom. Coneybury Hill is located southeast of the bottom and overlooks the River Avon further east. Normanton Down is about 1 km south of Stonehenge. The ground surface west of Stonehenge slopes gently westwards into Stonehenge Down. Larkhill attains an elevation of 147 m (485 ft) above mean sea level about 3 km north of Stonehenge, and is the most prominent topographic feature of the area. The hill slopes east to the River Avon, south to Stonehenge Bottom and Stonehenge Down, southwest to Winterbourne Stoke Down, and north to Alton Down.

The underlying bedrock of Salisbury Plain consists of a chalk plateau that has been dissected by various surface waters mentioned below. The rolling chalkland directs runoff rapidly off the hills and into the streams and rivers. This results in rather dry soil conditions.

Almost half of Britain's unimproved chalk downland is located on Salisbury Plain. Ninety-five percent of the plain is dry grassland, some of which is used for grazing. During the 4th millennium BC Salisbury Plain was grassland with little if any woody vegetation. The numerous copses and extensive lines of woods (some of them planted) now seen on the slopes of Larkhill and other areas

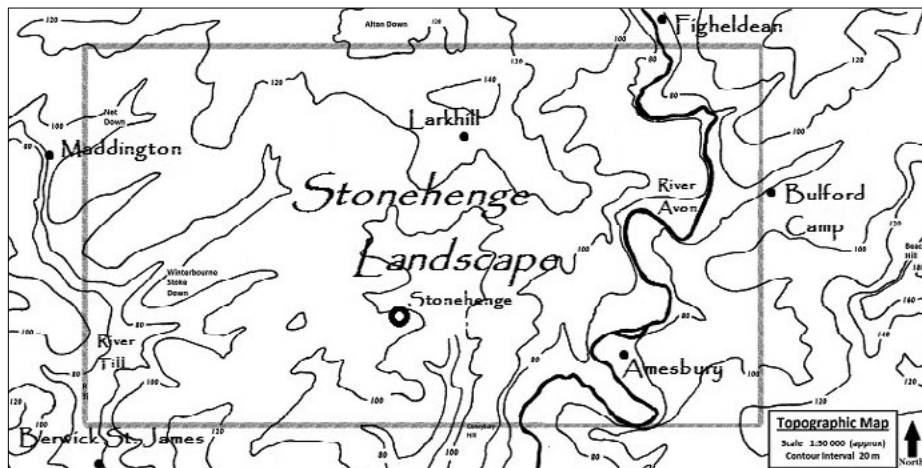


FIGURE 2. GENERAL EXTENT OF THE STONEHENGE LANDSCAPE LOCATED IN THE SOUTH PORTION OF SALISBURY PLAIN. STONEHENGE IS LOCATED IN THE CENTRAL AREA OF THE LANDSCAPE.

did not exist during the mid- to late Neolithic, when a number of significant henges, burial features and other structures were built.

Symbolism

A universal trait of humans is concern and care for the bodies of the dead. There is a great amount of evidence demonstrating that the loss of loved ones in Neolithic Britain was of great concern. Just as today, people during the Neolithic arranged appropriate means for burying the body, and conceived ways in which the spirit would continue living. Death is a natural and necessary part of human existence, indeed of all life. Prehistoric hunter-gatherers, farmers, and indigenous tribes recognized this reality. They knew death is not the end of life, but part of the cycle of birth, life, death and rebirth.

Architectural and archeological evidence suggests that the Stonehenge landscape expresses prehistoric concern for the dead. But that is only part of the story. Current theories about Stonehenge conclude that ancient ritual and ceremony pertained to the death of the body. However, they do not address an issue that has been and remains a central concern in all cultures: the continued life of the spirit.

There is much to be said about fundamental geometrical symbolism and its application to art and architecture. This includes symbols relating the concept of death as part of the natural and universal cycle of life. Plainly all evidence points to ancient and indigenous cultures understanding that the death of the body does not mean the death of the spirit. If for no other reason, the mere fact that the architecture of Stonehenge includes circles of stones of megalithic proportions should alert us that recognizing and understanding context – space and time is important to solving the riddle of what Stonehenge meant to the people who built it.

Throughout history people have not been as concerned with death as they were about the continuation of life. Universal sacred symbolism reflects the idea of the eternal cyclicity of all things.² One life is not as important as the whole. Each person strives to contribute for the benefit of all, and upon passing we honour him or her, we pay tribute through funerary ceremony and ritual, and remember and celebrate life.

² Burley P. 2012. *The Sacred Sphere: exploring sacred concepts and cosmic consciousness through universal symbolism*. Edina (MN): Beavers Pond Press. p. 6.

Honouring and celebrating the lives of the departed is a global phenomenon. It is evidence of human intent and action, gaining knowledge by observing and experiencing life in its broadest array of form, recognizing, appreciating and honouring the eternal cycle of life. And for many ancient and indigenous cultures this related to all things animate and inanimate.

In Irish mythology Lugh is skilled in the use of the sword, spear and sling. His sling rod is the Milky Way. He can throw lightning bolts. His dog is Failinis. He is *Lámhfhada* (“long arm” or “long hand”), *Ildánach* (“skilled in many arts”), *Samhildánach* (“Equally skilled in many arts”), *Lonnbeimnech* (“fierce striker”) and *Macnia* (“boy hero”). The Welsh call him Nudd or Lleu Llaw Gyffes, “The Bright One with the Strong Hand”. The same characteristics and attributes of Lugh are seen in Nuada (‘silver hand’), Dagda (Proto-Indo-European **Dhagho-deiwos*: shining divinity).

Thor, Týr, Apollo, Jupiter, Mercury, Osiris, Shiva, as well as many other gods, are also associated with bringing life, destroying and light. This is not to say that all of those gods have direct correspondence, as Lugh. However, all of them and many other deities represent various aspects of the masculine human being.

From perspectives of mythology and cosmology in many Indo-European cultures, the astronomical representation of Lugh and his various derivatives is the constellation Orion, his right arm reaching up into the Milky Way, his hand at the ecliptic, his weapons the spear, sword and sling. As he rises above the east horizon during the summer, he carries the orb of the sun in his right hand. He is the Bringer of Light. He is the Sky King. The form of the Orion constellation represents numerous male and female deities.

Greater Cursus

In 1723 William Stukeley was observing the Stonehenge countryside about 1 km north of the monument when he noticed a shallow ditch oriented almost due east-west. A low bank adjoined the outside slope of the ditch. Upon further observation he discovered the ditch and bank system was about 2.7 km (1.71 miles) long. A similar ditch of equal length and approximate cross-section paralleled the first, the two separated by a distance of about 100-150 m. The west ends of the ditches were connected by another ditch oriented north-south. The east ends of the ditches were similarly connected. A long barrow oriented north-south extended along the east end of the cursus.

Stukeley thought the unusually lengthy ditch and bank structure might be some sort of ancient race course, rather similar to a hippodrome, an ancient, oblong course and stadium constructed for horse-racing and chariot-racing. He referred to it as a cursus (plural cursus or cursuses), a Latin word meaning ‘course’.

The structure Stukeley discovered is the Greater (Stonehenge, Amesbury) Cursus (Figure 3). Simply, the Greater Cursus happens to be the largest single architectural feature in the Stonehenge sacred landscape. As for its monumental function, we should expect it to be related to the purpose and sacred meaning of its architectural form.

Dr Terence Meaden, a professional physicist, meteorologist and archeologist, has made significant contributions to the research and interpretation of Neolithic and Bronze Age archeology. His particular interests include unlocking the mysteries of Stonehenge and Avebury. In the 1990s Meaden noticed that each of nine long barrows within the site of the cursus has its long axis oriented in the direction of one end or the other of the cursus.³ His measurements were accurate to within a range of 1-3 degrees, depending on the condition of the respective barrow. In total, the long axis orientation was measured for nine of sixteen long barrows within 5 km of Stonehenge (Figure 4).

³ Meaden T. 1997. Stonehenge: The secret of the solstice. London: Souvenir Press. pp. 52-73.



FIGURE 3. LOCATION AND EXTENT OF INDIVIDUAL PREHISTORIC STRUCTURES READILY APPARENT ON THE GROUND SURFACE OF THE LANDSCAPE. NOTE THE CENTRAL LOCATIONS OF STONEHENGE, THE AVENUE EXTENDING EAST AND SOUTHEAST FROM STONEHENGE, AND THE GREATER CURSUS LOCATED NORTH OF STONEHENGE.

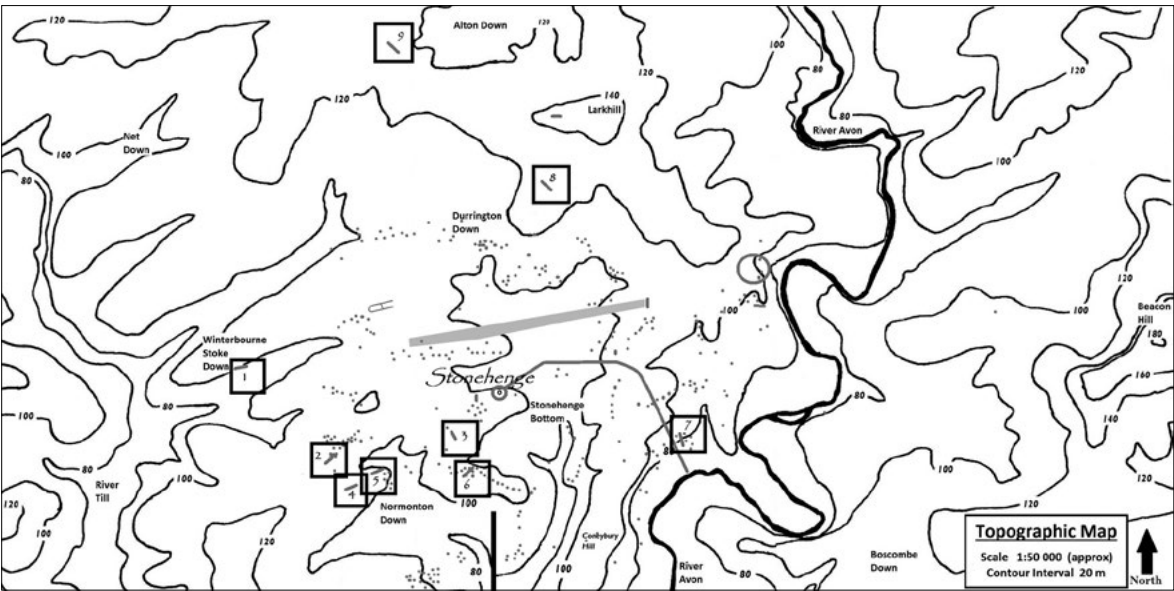


FIGURE 4. LOCATIONS OF THE NINE LONG BARROWS TERENCE MEADEN DISCOVERED WERE ORIENTED WITH EACH LONG AXIS DIRECTED TOWARDS (OR AWAY FROM) ONE END OR THE OTHER OF THE GREATER CURSUS.

The results of Meaden's alignment measurements of long barrows 1-9 are provided in Table I of his book.⁴

⁴ *ibid.*

Radiocarbon dating of a red deer antler pick discovered at the bottom of the western terminal ditch suggests that the Stonehenge Cursus was first constructed between 3630 and 3375 BC.⁵ Each end is about 100 m wide. Nearly 700 m east of its west end the cursus widens to about 150 m. The azimuth of the north side ditch is approximately 84.9 degrees (measured clockwise from due north). The west 700 m of the south ditch has an azimuth of 90 degrees, but turns slightly northward at an azimuth of 83.3 degrees to the east end of the cursus.

About 550 m (0.34 miles) northwest of the west end of the Greater Cursus is the Lesser Cursus. With a length of about 400 m (0.25 miles) and width of nearly 60 m (200 ft), it is much smaller than the Greater Cursus and is little more than a cropmark located in an agricultural field that has been ploughed for many years, rendering the ground surface nearly level.

Barrows and henges

While not surprising, it is curious that people would align burial barrows with the Cursus, and the Greater Cursus in particular. There are literally dozens of alignments between two, three, even four of the sixteen barrows, two cursus termini, two henges and two hill tops. But beyond simple curiosity we should reasonably expect there was purpose to investing great time and effort accomplishing this network of alignments across Salisbury Plain. Alignments of three or more features are certainly of interest. Each feature has a specific location – a point or node – along an alignment. Alignments may be seen as links between nodes.

It was mentioned above that symbols communicating the cyclical nature of birth, life, death and rebirth are found across the Stonehenge landscape. Henges and round barrows are obvious examples of the symbolism. Most often greater than 20 m in diameter, a henge is a circular or sub-circular ditch and bank; it is typical for the ditch to be inside the bank.⁶ Figure 5 includes sample plans of several henges. Inspiration for creating these structures, some quite monumental in size, has been attributed to continental Europe, with the development of causewayed enclosures of various configurations.⁷⁸

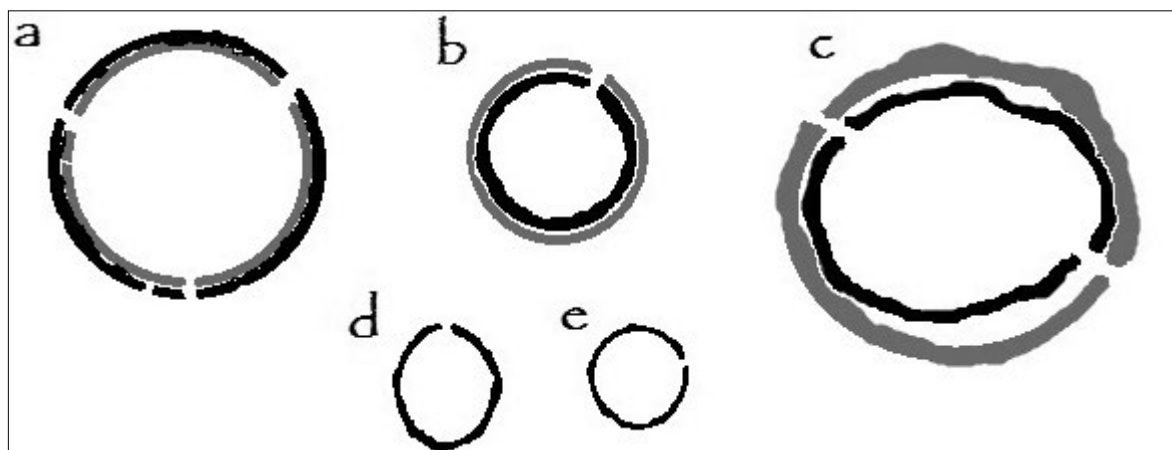


FIGURE 5. CONFIGURATION OF THE HENGES AT FIVE LOCATIONS AT OR NEARBY THE STONEHENGE LANDSCAPE.⁹

⁵ Thomas J, Marshall P, Parker Pearson M, Pollard J, Richards C, Tilley C and Welham K. 2009. The date of the Greater Stonehenge Cursus. *Antiquity* 83 p. 40-53.

⁶ "Early Prehistoric Monuments – Henges, English Heritage <http://www.eng-h.gov.uk/mpp/mcd/sub/henges1.htm> Accessed 30 Dec 2013.

⁷ Whittle, A. 2005 *The Neolithic Period in The Archaeology of Britain*, Hunter, I. and Ralston, J. (eds.), Routledge, London.

⁸ Malone, C. 2001 *Neolithic Britain and Ireland*, Tempus, Stroud.

⁹ Figure 15: from Burley, 2014 based on a) Stonehenge (based on Cleal et al. 1995), b) Woodhenge (based on Cunnington 1929, plate 3), c) Durrington Walls (based on Wainwright and Longworth 1971, figure 2), d) Coneybury (based on Richards 1990, figure 97), e) Waterbourne Stoke (based on David and Payne, 1997, figure 13).

For ancient and indigenous cultures circles (and spheres) separate interior space from exterior space, inner space of spirit from infinite space beyond. This may explain why there is scant evidence of henges being occupied, since their function is spiritual rather than corporeal.

We first learned of Terence Meaden's discovery of the nine long barrow-cursus alignments upon noticing map he included in his book 'Stonehenge: The Secret of the Solstice'. The map depicts locations and long axis orientations of the long barrows with respect to the ends of the Greater Cursus. It quickly appeared to us that we were looking at a map of specific locations and alignments that a land surveyor would make prior to and during a construction project. It isn't a map of pairs of points connected by a line, as has been assumed archaeologists who have sought the purpose of the apparent alignments. It is a map of triads of points creating triangles. Could the purpose of the various alignments between the cursus and long barrows be found by reconstructing the surveyor's map ca. 3500 BC?

Triangulation

When it is desired to determine a specific location on the ground surface by means of land survey, one of the easiest and most common ways is the method of 'triangulation' (Figure 6). Simply, if locations of two points of a triangle are known (surveyors call those locations 'control points') and the angle from the line between those locations (the 'baseline') to a third point is known, then the location of the third point can be determined. Three points not in a straight line form corners of a triangle. They also define a planar surface or area.

Triangulation is a simple, quick and accurate method for plotting points, creating alignments, and defining areas. At its core it is an easy way to measure space, an exercise of fundamental geometry that does not require mathematics beyond adding and subtracting. The Neolithic agricultural package necessitated setting points and alignments, and delineating and mapping plots of land for cultivation. Egyptian records of surveying by triangulation go back 5000 years, to the beginning of ancient history.¹⁰ It was used in ancient Sumeria, India and China.

Even today most map production is based on the setting of control points and baselines from which a series of triangles of known shape and size extend across the mapping surface. That network of triangles may then be subdivided into smaller triangles, increasing accuracy of the map with each subdivision. The process begins with setting control points and baselines surrounding or extending through the area to be mapped.

We can imagine triangulations surveyed for each of the twenty four cursus, long barrow, henge and hilltop locations listed within sight of the Greater Cursus. A complete list of those features and locations is provided in Burley 2014.¹¹ Figure 6 depicts the network of alignments listed in Table I. Only alignments that provide naked eye sighting from one point to another are shown.

Looking at the plan we see most of the alignments are located in the central portion of the network, specifically between the west and east termini of the Greater Cursus. We know we can set or reset any of the points using triangulation. Known angles and distances are all we need.

Network points outside the central area are not generally viewable from many of the locations within the interior of the plan. From a surveying perspective nine long barrows (and possibly the Lesser Cursus) likely served as control points for constructing the central network, or were extensions of triangulation beyond the core network. In either case we remove those eight points from the plan of alignments so that the core network and baselines are more readily apparent. The resulting network is shown in Figure 7.

¹⁰ Hong-Sen Y and Marco C. 2009, International Symposium on History of Machines and Mechanisms: Proceedings of HMM 2008, Springer, p. 107.

¹¹ Burley p. 2014. Stonehenge: As Above, So Below. London: New Generation Publishing.

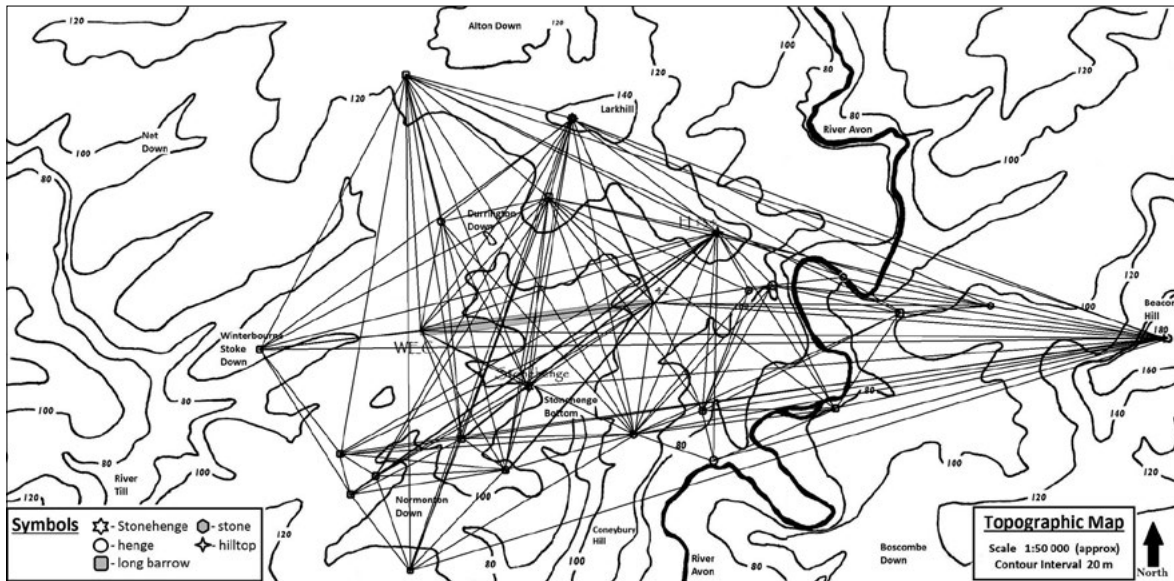


FIGURE 6. MAP OF THE STONEHENGE LANDSCAPE SHOWING EACH ALIGNMENT BETWEEN CURSUS, LONG BARROW, HENGES AND/OR HILLTOP LOCATION THAT COULD BE SEEN BY NAKED EYE DURING THE MID-NEOLITHIC.

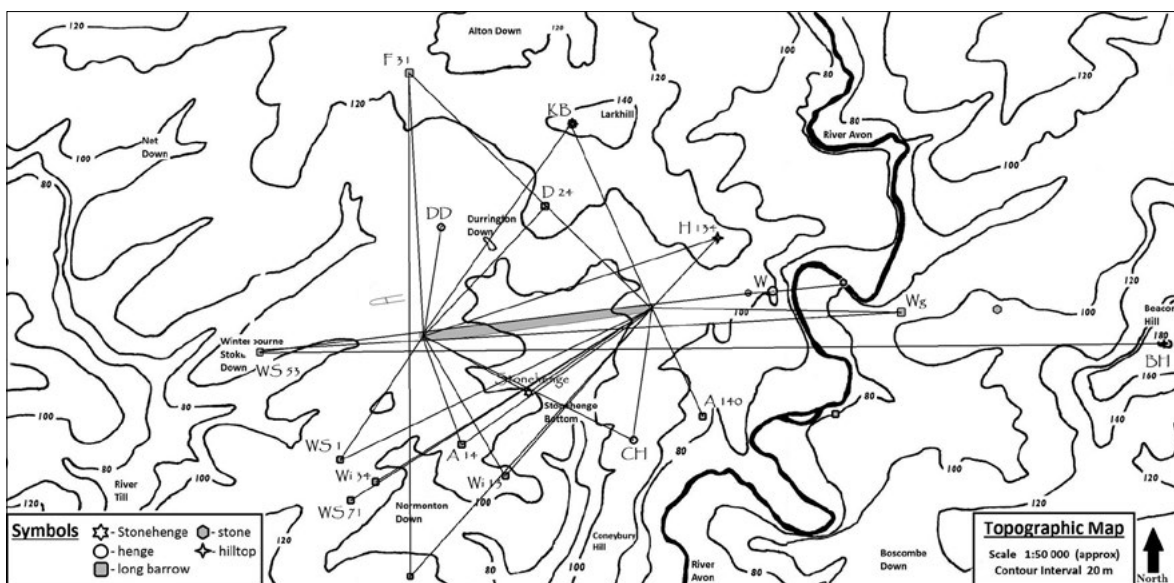


FIGURE 7. THIS ILLUSTRATION REMOVES NAKED ALIGNMENTS ASSOCIATED WITH NINE LONG BARROWS WHERE THOSE LOCATIONS APPEAR TO HAVE SERVED AS CONTROL POINTS DURING LAND SURVEYING FOR THE CORE STRUCTURE. NOTE THAT BILATERAL SYMMETRY REMAINS. THE NORTH-SOUTH AND WEST-EAST BASELINES ARE READILY APPARENT. EACH OF THE REMAINING POINTS LOCATED IN THE CENTRAL PORTION OF THE LANDSCAPE APPEARS PLACED TO OFFER VIEWS OF BOTH ENDS OF THE CURSUS.

Five long barrows (and the Lesser Cursus) offer alignments to both Greater Cursus termini. Yet their importance for us in identifying the structure constructed on the landscape is of less concern now, since the core points of the network provide more than enough control for the plan. Those five barrows and cursus may have been placed to take advantage of, or to create alignments that relate the respective barrow or cursus to the network. In other words they were located by triangulation after control points, baselines and the first set of triangles were set.

The order in which the barrows were located is unknown. However we set our sights on the central part of the plan, knowing that barrow WS53 (extreme west side) and barrow Wg (east of the River Avon) are providing an extremely precise baseline for control of the network of alignments between them. We then remove baselines and few remaining locations that offer limited alignments peripheral to the core network. The result is shown in Figure 8.

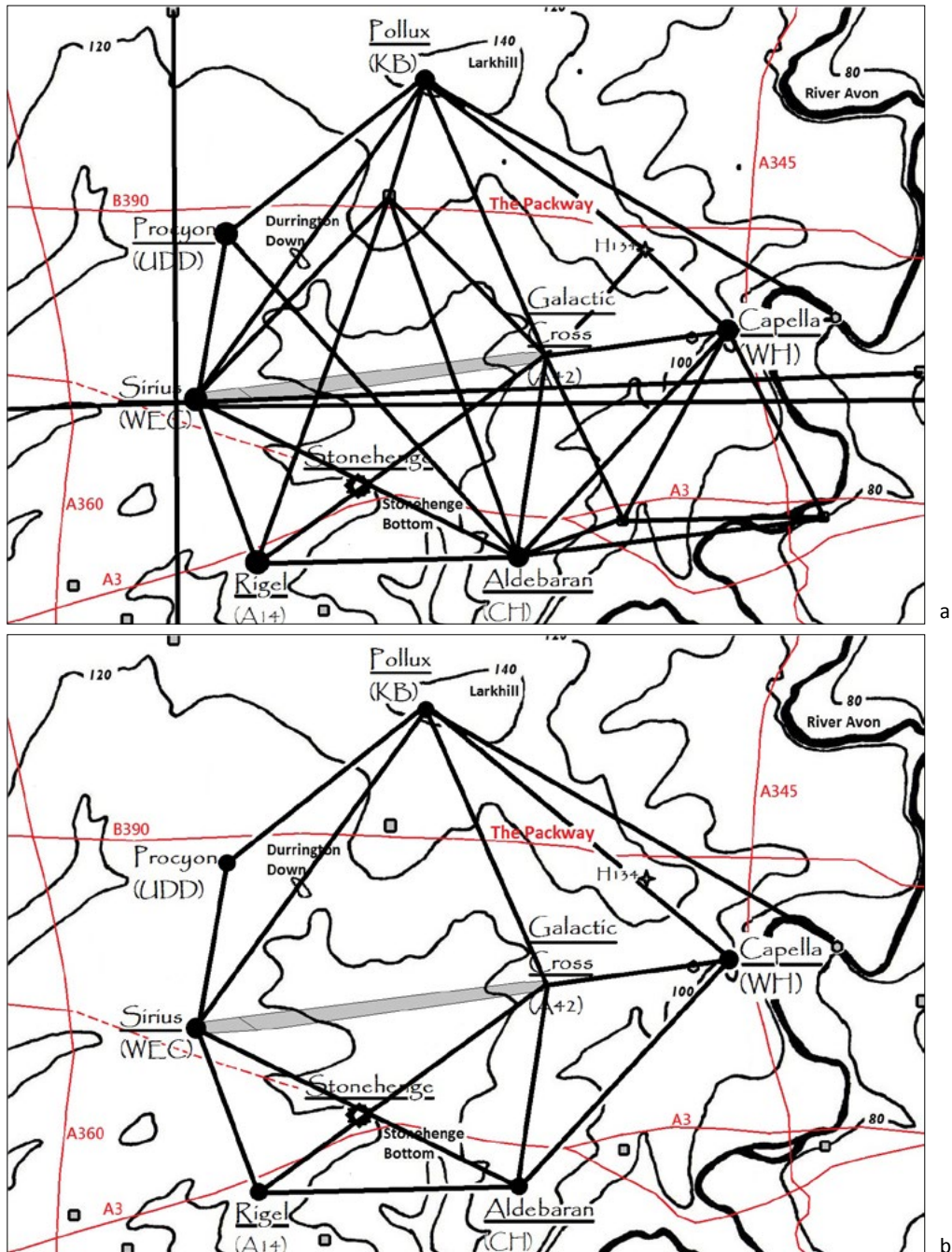


FIGURE 8. A) ALIGNMENTS ASSOCIATED WITH FIVE ADDITIONAL MONUMENT LOCATIONS ARE REMOVED FROM THE PLAN BECAUSE THEY ARE BEYOND THE CORE AREA AND/OR EACH DOES NOT PROVIDE NAKED EYE SIGHTING OF THE TWO ENDS OF THE GREATER CURSUS. THE INTENDED STRUCTURE IS BEGINNING TO BECOME APPARENT.

B) ADDITIONAL ALIGNMENTS ASSOCIATED WITH MONUMENTS PROVIDING LIMITED SIGHTING OF OTHER MONUMENTS ARE REMOVED, AS ARE THE TWO PRIMARY BASELINES. THE RESULTING STRUCTURE APPEARS TO BE AN IRREGULARLY SHAPED HEXAGON WITH THE GREATER CURSUS EXTENDING APPROXIMATELY WEST-EAST ACROSS THE WEST AND CENTRAL PORTIONS OF THE HEXAGON.

The network of alignments now concerns eight locations in the core of the network: the west and east ends of the cursus (WEC and Amesbury 42 (A42)), and counterclockwise from the west terminus: Amesbury 14 (A14), Coneybury Henge (CH), Woodhenge WH), Larkhill at Knighton Barrow (KB), and DD. The many alignments associated with each of those points suggests not only the import of those locations and features, but more so an important relationship amongst all of the surveyed locations (refer to Figure 6).

Very accurate alignments (measured to within two to three degrees or less) can be visually set between two or more points with the aid of intermediary points at key topographical locations. West-East baseline WS53-Wg is evidence that a complex, well thought out plan related to the Greater Cursus and nine long barrows was put into effect 5500 years ago. There is every reason to assume the network was intended, conceptualized, planned and constructed. Its purpose must have been to create an effect – perhaps vital in nature - that people would understand and relate 5500 years ago.

Leaving aside the two ends of the cursus, of the remaining five nodes in the alignment network one is located at a long barrow on top of a prominent hill, one is at a henge, and three are additional barrow locations. From a surveying standpoint (identifying specific locations on the ground surface) topographically high points are most valuable. The highest elevation in this area of Salisbury Plain is the top of Larkhill. At the hilltop much of the ground surface to the south can be seen other than some stretches of valley bottoms such as along the River Avon. Most of the network alignments can be observed from Larkhill. For this reason it is highly probable that the hilltop served as a critically important control point for the entire network. Each of the other centrally located nodes of the network (including the two cursus termini) is visible from that location. It is a first rate location for using triangulation across the Stonehenge sacred landscape.

Similarly, barrow Durrington 24 is well located for observing the network area since it is high up on the south flank of Larkhill, about 1 km (0.6 mi) from the summit. About 1.3 km (0.8 mi) southwest and 40 m (130 ft) below Knighton Barrow is DD. This area has been under cultivation for perhaps thousands of years. Barrows and other structures in the area are little more than crop marks, if apparent at all. Yet the location was ideal for setting alignments across much of the plain to the south, from the west terminus to Coneybury Hill.

The physical geography of Salisbury Plain would play a key role in siting the cursus, barrows and henges upon the landscape. Yet the various nodes of the alignment network were located with relative ease using triangulation given the local topography. Perhaps the entire ground surface within the central network of alignments could be seen from one location or another of the central plan.

The numerous alignments available at each location tie together the plan of cursus, barrows, henges and hilltops into a unified structure. Both Amesbury 14 and Coneybury Henge were located to take advantage of the view shed toward the north, from Winterbourne 53 to Woodhenge and the overlapping view shed shared between them.

A Grand Plan

What is that structure, and what does it represent in this Neolithic sacred landscape? The area is an architectural landscape, designed, surveyed and engineered. Geometry and the sacred were understood here, as it was by numerous prehistoric, ancient and indigenous cultures around the world. Geometry and sacred knowledge common to the Neolithic can help us identify and understand the symbolism expressed on Salisbury Plain.

The network of points (nodes) and lengths between nodes (links) were constructed by a series of triangulations. In other words locations and orientations of the long barrows about the cursus are evidence of triangulation used for the purpose of constructing monuments at specific locations on the Stonehenge Landscape. The engineers used triangulation to place long barrows and possibly

other monuments according to a plan. Our analysis included use of known monument locations to identify triangulations that form the core geometry – the intended geometry – from which further triangulations were based. The plan of the Stonehenge Landscape is revealed when we discover that core geometry.

Referring to Figure 8b, it is evident that A14, CH, WH, KB and D provide a unified plan of points related to each other and the cursus. With the addition of WEC they form a hexagon of somewhat irregular shape surrounding the cursus. The polygon exhibits bi-lateral symmetry about the cursus. Stonehenge and EEC are located within the ring of other monuments. Several important facts are associated with these locations. Stonehenge, A14, CH, KB and DD have lines of sight to both ends of the cursus. KB has a most prominent location at the top of Larkhill. Henges are located at Stonehenge and CH. While WH does not benefit from triangulation with both ends of the cursus, it is located along the longitudinal axis of the cursus, is seen from A42, and is the location of a henge.

The design is certainly uncomplicated and was relatively easily achieved. Undoubtedly its simplicity of form was beneficial to achieving the intent of the designers and builders. However, it is not the design that is so important, but the symbolism it offers to anyone familiar with ancient and indigenous cultures, including that of central south England during the Neolithic.

Figure 9a is a star map of the southern sky at Stonehenge at 3:19 AM on 21 September, 3500 BC. The map was made using Starry Night Enthusiast 4.5. The base map depicts configurations of modern day constellations including Canis Major, Canis Minor, Gemini, Auriga, Taurus and Orion. Stars generally do not appear to move relative to each other. The second column of Table 1 lists notable constellations and stars shown on the map.

Landscape Feature	Corresponding Element of the Cosmic Dome
West end of Greater Cursus	Sirius
Amesbury 42	Intersection of ecliptic and galactic plane
Greater Cursus	Milky Way between Sirius and ecliptic
Amesbury 14	Rigel
Coneybury Henge	Aldebaran
Lost Stone (LS)	Capella
Knighton Barrow (Figcheldean 27)	Pollux
UDD	Procyon
Stonehenge	Alnilam
Orion Nebula	Long barrow 330 m west of Stonehenge

TABLE 1. FEATURES OF THE STONEHENGE LANDSCAPE CORRESPONDING TO ELEMENTS OF THE COSMIC DOME.

Sirius is the brightest star in the sky. Nine of the stars listed in Table I make up half of the eighteen brightest stars in the northern celestial sphere. The other ten stars include a fourth of brightest stars in the southern celestial sphere. Together they form one of the brightest parts of the night sky today, the same as it was during the Neolithic.

That area of the cosmos is found in an asterism known as the Winter Hexagon. It can be observed from almost any location on Earth. There are additional unique features of this area of the sky. The Milky Way extends across the constellations from Canis Major to Auriga.

Figure 10a shows several important astronomical features in the same area of sky. These include the galactic plane, ecliptic and galactic anti-centre. Neolithic cultures in Babylonia, Egypt, India, Europe, the Americas and other locations across Earth recognized this area of the cosmic dome as vital to all life across time and space. They perceived something special where the ecliptic crosses galactic plane, near the galactic anti-centre and surrounded by constellations.

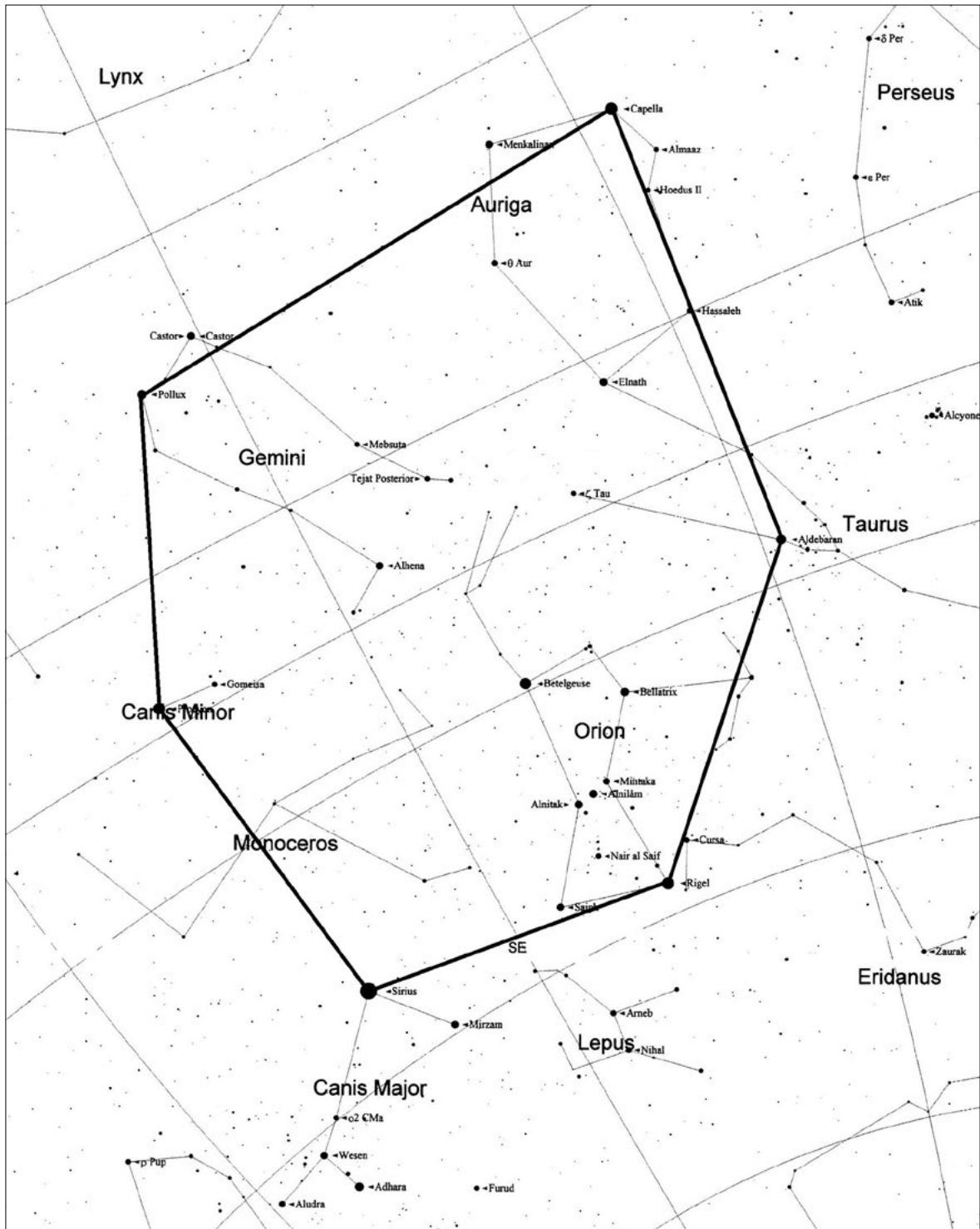


FIGURE 9A. THE ASTERISM OF THE WINTER HEXAGON LOCATED IN THE VICINITY OF CONSTELLATIONS CANIS MAJOR, CANIS MINOR, GEMINI, AURIGA, TAURUS AND ORION. SIRIUS, BRIGHTEST STAR IN THE SHY, REPRESENTS THE LOW END OF THE HEXAGON, WHILE CAPELLA IS LOCATED OPPOSITE, AT THE TOP.

Figure 10b is a map centred on the Stonehenge Sacred Landscape depicting locations of the Greater Curse, Stonehenge and the six Neolithic sites that make up the trans-located Winter Hexagon on Salisbury Plain. Comparing the Figure 10a and figure 10b we can see immediately that the spatial

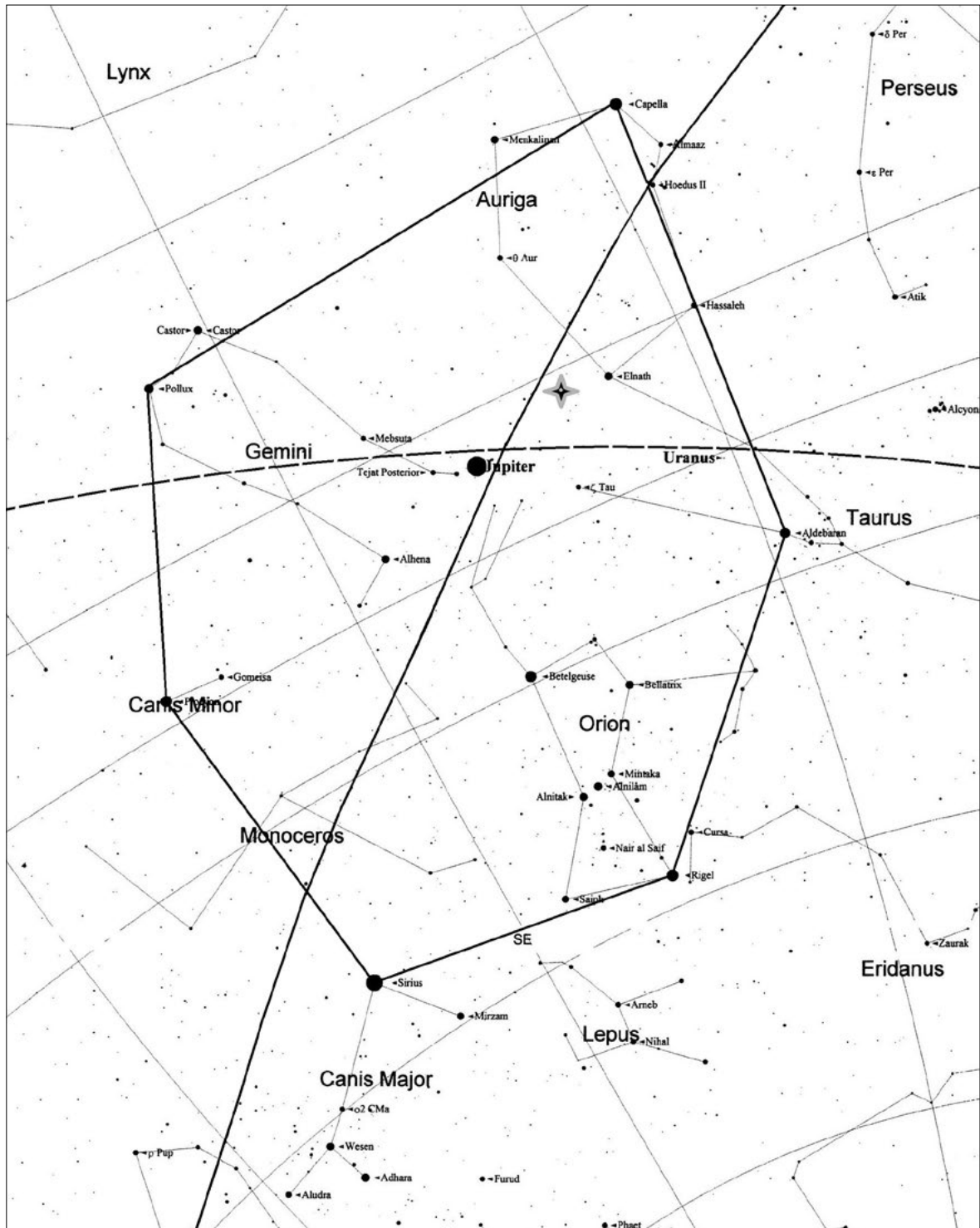


FIGURE 9B. THE MILKY WAY EXTENDS ACROSS AND BEYOND THE LINE BETWEEN SIRIUS AND CAPELLA; THE LINE DRAWN FROM BOTTOM TO TOP REPRESENTS THE GALACTIC PLANE. THE DASHED LINE IS THE ECLIPTIC. JUPITER IS SEEN IN THIS VIEW NEAR THE CENTRE OF THE CROSSING POINT OF THE GALACTIC PLANE AND ECLIPTIC. THE FOUR-POINTED STAR UP AND LEFT OF THE CROSSING POINT IS THE LOCATION OF THE GALACTIC ANTI-CENTRE.

relationships between elements of the Stonehenge Landscape correspond to specific features of and inside the Winter Hexagon. Table I lists correspondences between cosmos and landscape.

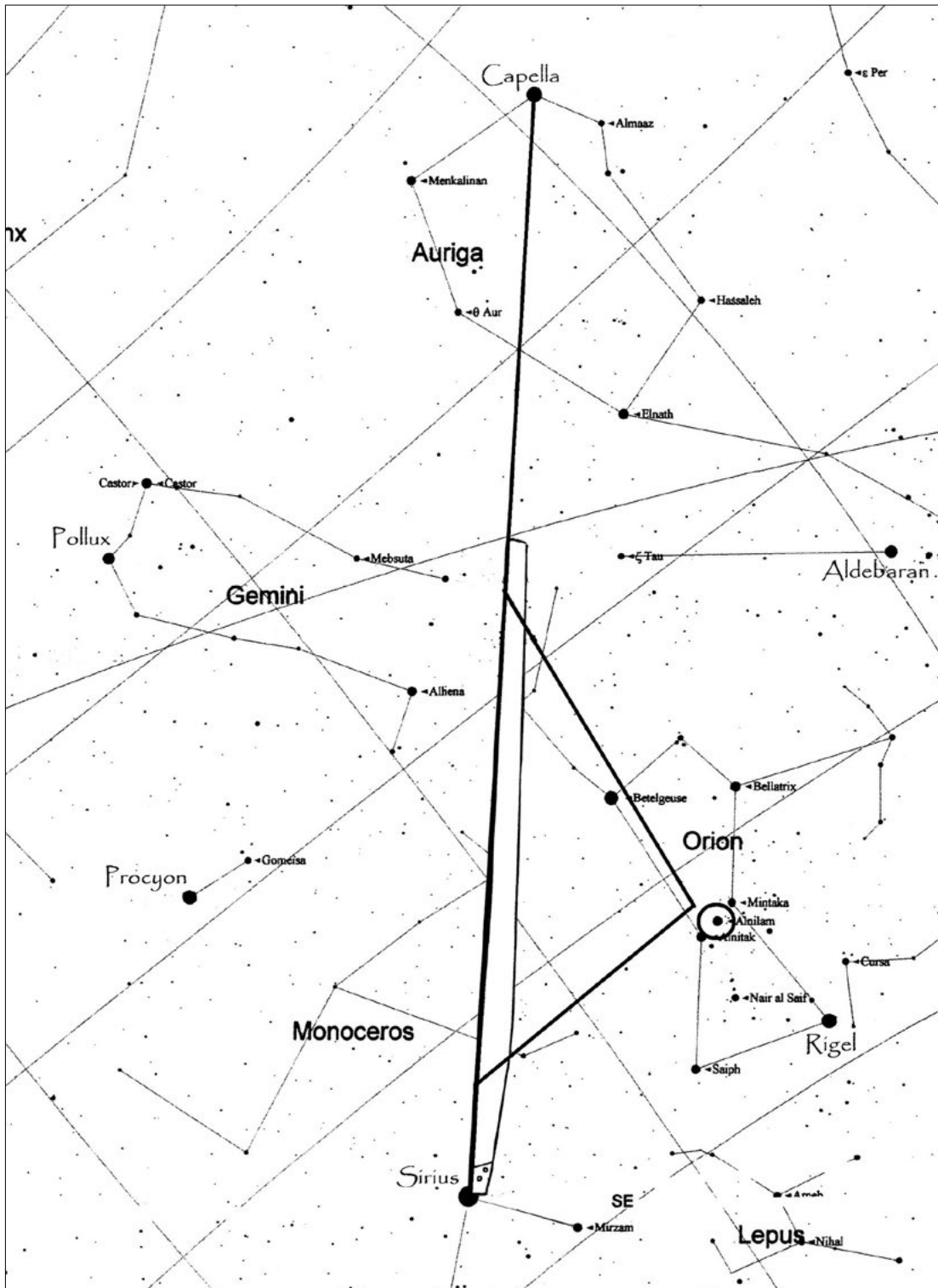


FIGURE 10A. STAR MAP OF THE STONEHENGE LANDSCAPE SHOWING THE GALACTIC PLANE, ECLIPTIC, ORION AND THE SIX STAR LOCATIONS FORMING THE HEXAGON. STONEHENGE PLOTS ACCURATELY ONTO ALNILAM, MIDDLE STAR OF ORION'S BELT. THE GREATER CURSUS PLOTS PRECISELY BETWEEN SIRIUS AND THE ECLIPTIC.

This correspondence between landscape and astronomical features represents a Neolithic translocation of the Winter Hexagon onto the Stonehenge. This is the original *Grand Plan* of the



FIGURE 10B. SCALING THE DISTANCE FROM THE WEST END OF THE GREATER CURSUS TO WOODHENGE, AND PLOTTING THAT DISTANCE ONTO A STAR MAP WITH THE WEST END OF THE CURSUS AT SIRIUS AND WOODHENGE AT CAPELLA, THE EAST END OF THE CURSUS WITH ADJOINING AMESBURY 42 LONG BARROW PLOT PRECISELY AT THE ECLIPTIC.

Stonehenge Sacred Landscape. The area centres on the intersection of the ecliptic and the galactic plane, the corresponding feature on the landscape being long barrow Amesbury 42 (A42), oriented perpendicular to the cursus.

The Grand Plan on the Stonehenge Landscape is the Winter Hexagon, Milky Way, ecliptic and Orion trans-located onto Salisbury Plane. This is clear from the correspondence between locations of long barrows, henges and the Greater Cursus, and the configuration of the Milky Way, galactic plane, ecliptic and stars. It is one of the greatest examples, and possibly the oldest example, of prehistoric hierotopy to be found anywhere, at anytime. It symbolizes the Milky Way, Winter Hexagon, Orion, and path of the Sun. Each point surveyed onto Salisbury Plain represented a star. This is the larger context within which ritual and ceremony would take place at individual locations such as Stonehenge and Woodhenge. Each monument was a microcosm of the universe, built as a more intimate context for communication with the Sun and Moon.

Conclusion

The Stonehenge Sacred Landscape remains symbolic of human relationships with the cosmos and source of life. It demonstrates the strength of relationship between people and Earth. It was a means of communicating human understanding of the never ending cycle of life as spirit, and a place where both the body and spirit could begin their journey back to where they came. It relates mortality of the body with eternal life of the spirit. It connects life on Earth with life of the spirit. Since about 3500 BC it has represented the end of life of the body, and return of life as spirit to the Netherworld and the care of Orion.

The Winter Hexagon is where spirits came from, and where spirits return. Upon death the body was interred to Earth, while the spirit took to the spirit path – the Milky Way beginning at Sirius – on its return journey from Earth to the centre of the Winter Hexagon. During the mid-Neolithic the Winter Hexagon of the spirit was symbolically replicated on Salisbury Plain – *As above, so below*. The sacred symbolism and underlying ‘knowing’ of the cosmic source of the spirit in all things are common to many Neolithic cultures through time. Mid-Neolithic Britain may now be placed with those cultures which expressed the universal symbolism on the face of Earth in the most grand of ways.

Research and Study on the Guizhou Rock Art Heritage

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Abstract

The Kaiyang rock art heritage of Guizhou was discovered and researched in the 1980s. Since then, a series of rock art heritage sites have been successively discovered and aroused public attention.

Following the surveys of 23 cities and counties of Guizhou province located in the Yangtze River Basin and Pearl River Basin, more than 40 rock art heritage sites have been discovered. Relevant survey materials and research achievements were collected in the thesis so as to make comparative research and discovery on the rock art heritage. This involved five aspects, including spatial distribution and the natural environment of rock art, the relationship between rock art and other archeological heritage, technique and artistic expression of rock art, the rock art and ancient nationalities of Guizhou, and the geographic and cultural characteristics of rock art. The thesis aims to develop rock art heritage research and study on the basis of Guizhou rock art towards Southeast Asia and the South Asia circle. Research on rock art serves as an associated study to reflect geographic culture, national culture and the variety of geographic units in southwest China, Southeast Asia and South Asia.

Pre-Literate Art in India: A Source of Indigenous Knowledge, Ethno-History and Collective Wisdom

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Abstract

Indigenous art traditions as practised by pre-literate communities may be viewed as a continuing oral tradition in the pan-human cultural phenomenon. Therefore, pre-literate art in the contemporary pre-industrial situation is the modified and refined forms of prehistoric art forms and so both forms have a common ancestry. In the present study, a huge corpus of data on pre-literate and prehistoric art corresponding to both past and contemporary societies are compared in the Indian context. The study aims to ascertain the thematic content and related functional implications from varied and actual contexts. Empirical studies suggest that in hunter-gatherer foraging societies certain types of visual representations are predominant. Similarly among pastorals, marginal cultivators and settled agriculturists or other basic subsistence-based pre-literate communities, the major functional role of pre-literate art forms is actually the reflection of the occupationally determined life opportunities and common traditional values that they practise for generations. Each pre-literate group conserves its own concept about art practices. In this study, the range of variation in the pre-literate art, associated activities and the range of indigenous knowledge for sustenance, intellectual abilities and its expressions, communication of ideas and its associated forms are systematically analyzed for identifying the general trend common in pre-literate art. The empirical data on contemporary pre-industrial and pre-literate societies indicate that such an art tradition is largely considered as a mode of expression for the communication of ideas and experiences and the maintenance of social norms and solidarity among each ethnic entity rather than for beautification or ornamentation purposes. In this study, all available forms of indigenous visual art tradition, including varied forms of painting, sculpture, tattooing, symbolic representations related to supernatural belief and performances, myths, icons, megalithic burial practices, etc, are viewed and analyzed with a view to deciphering its cognitive role and meaning, deciphered to discern the basic principles of indigenous knowledge embedded in pre-literate art.

Indigenous knowledge is an acquired set of ideas collected spontaneously by a trial and error method in a society through generations. Such ideas help the society for better subsistence through the adjustment of a community in a locality that gradually evolved by the utilization of local resources. In a pre-literate society, such acquired knowledge is shared and transmitted through a learning process of oral interactions and practices. Sometimes refinement of ideas and new breakthroughs in the form of innovation are initiated by individuals which are successively selected and shared by the others. Indigenous knowledge is also a culmination of new ideas, technology and methods that are nurtured and applied when found successful for suitable adjustment and which harness the nature, habitat and society in its totality. Rock art sometimes provide visual information to identify such use of indigenous knowledge shared and practised by a group. Indigenous knowledge is more appropriate and suitable for its application, limited to a particular topographic and cultural zone where it has developed in successive generations. (Figs 12 a, b, c).

Rock art in central India mostly projects elaborate visual narratives, whereas other representations are mostly single individual and separate images. Combinations of several images are rarely available in other zones which can suitably portray an episode or distinct message as meaningful pictographic evidence. Therefore, pictographic evidence of central Indian sites is primarily selected for further study of its imagery to ascertain the expression of indigenous knowledge and its views through rock art imagery developed in different chronocultural periods. Rock art imagery is a more direct, dependable and tangible form of cultural evidence of the past, which may reveal the life opportunities, world

view, belief patterns, norms and aspirations of the society involved in its creation. Such a tangible form of evidence is unique as it may also be a source to determine the non-tangible aspects, such as values and norms acting as the basic guiding force of the community concerned. The visual narrative may explain both overt and covert aspects, natural and supernatural means of their livelihood. Such interpretations revealing their society and culture are uncomplicated, decipherable when the rock art imagery is realistic or naturalistic. Such sites portray panels containing visual narratives and episodes with combinations of various figures arranged on a common theme. But non-figurative motifs, abstraction of forms, signs and symbols also coexist in rock art. The interpretation of such symbolic forms and icons is another challenging hurdle for deciphering rock art. A general pan-human methodology is to be worked out, beginning with a site-wise consideration.

A work of art on a rock surface was not only restricted during prehistoric past. Rock art itself is a blanket term in which art of any form and of any period executed on the rock wall enables study and discussion. In the Indian context, during ancient and medieval periods rock-cut caves and natural rock shelters were transformed into monasteries and became part of religious complexes where both murals and intricate carvings are evident. Ritualistic practices of art in different pre-literate communities are also evident and could be analyzed from the ethnographic records. Such records reveal that the rock surface is still being selected among several pre-literate communities for carving and preparing other forms of expression for traditional ethnic art imagery, which follows a definite form of expression of their inherent ideas.

A thorough study of the rock art depictions to identify each of the forms of the imagery, its detailed documentation and cataloguing is essential to trace the overall technological level of the society represented in the imagery. The prepared data repository is then compared cross-culturally. The comparison with other similar sites as well as contemporary ethnographic data is a meaningful effort to trace the affiliation and identical forms, if any.

In the Indian context, the primordial art tradition in refined rock art under the fold of a great tradition coexists. Therefore, comprehensive identification of the prehistoric and primordial art is essential. Two distinct traditions have developed in the course of time, almost parallel with the patronage of different level of societies. The primordial rock art in India is essentially a cultural expression of pre-literate societies. Rock art may be defined on the basis of its inherent and essential features.

It may be recapitulated that in the central region four successive and partly overlapping cultural phases are noticeable in rock art imagery. The stages are:

1. Earliest level of figurines representing hunting-gathering, foraging groups with large figures of wildlife.
2. Intermediate phase indicating marginal stage of food collection, group hunting by improved technological means and the beginning of pastoral economy.
3. Fully fledged pastoral society with magical beliefs and aspirations for the breeding of domesticates. This phase illustrates a wide range of group activities and life opportunities.
4. Presence of extensive battle scenes and use of metal weapons by rival groups confronting each other in varied contexts.

In rock art, at least in Central Indian rock shelters, each of the illustrations are either with a single motif or in combinations of several different types connected with a same central theme or episode (Mathpal, 1984; Neumayer, 1983, 1993; Wakankar and Brooks, 1976).

In the rock art of central India, a distinct but overlapped phase is marked by the presence of pastorals in rock art. With the display of essential activities for animal domestication, providing suitable security for domesticates against threats indicates the major issues for concern for the community. As is revealed from the images, the threat from wild carnivores was in its initial period. The pastoralists had to remain prepared to combat attacks from other rival groups, particularly plunderers who raided their herds.

Such periodic insecurity and conflict both seem to be the prime motivating factors for the creation of rock art. In the rock art of the early historic period, descriptive accounts of various battle scenes, mostly feuds, influenced the artists. Rather, such theme or view had turned to an obsession affecting the mental imagery of its creators (Chakraverty, 2003). Sometimes, intimate visual records in association with more realistic contextual assemblages convincingly support the view that possibly the painters had witnessed such conflict and genocide themselves directly. No distortion of tool and weapons are observed in art compositions illustrating such battle scenes. Use of wheel and chariots are illustrated, signifying organized effort by urban influences.

The art of tribal communities and other indigenous populations, due to its simplicity in representation, provides us with certain indications to understand the aspirations and obsessions in the mindset of the artist and their community. The tribal artist is conditioned in his social cultural matrix. Thus the work of an individual tribal artist largely represents the ideas, beliefs and sentiments of the group or society (Chakraverty, 2009).

The majority of the rock art imagery, particularly in India, has close ethnographic parallels and this study, being based on visual imagery, ultimately reveals the validity.

Among pre-literate tribal communities, the oral tradition including myths and legends is the major source for reconstruction of ethno-history. In order to understand the culture continuum, the comparison between rock art and the ethnographic account of relevant tribal societies from the same region may be attempted for a more rational approach to deciphering rock art. In addition to the study of tribal art, different aspects of material culture, social organization and the cultural expressions as reflected in rock art could be a useful source to trace the ethnic milieu in rock art.

It may be mentioned that similarities are often observed between rock art and tribal art with regard to theme, forms, styles and motifs. In addition, there is a significant overlapping of the distribution pattern between the two sets. Based on the above argument, it may be hypothesized that tribal art is a continuity of the total tradition of rock art.

In central India, the early rock art represents a community which was closely similar to contemporary tribal societies, especially the pastorals and marginal cultivators. Both similarities and differences are important for reconstruction of the early society and understanding their art as an integral cultural element. The basic similarity between the arts of two different chronological periods may be explained in terms of common economic pursuits, social organization and material culture. The cultural continuity of certain elements is prevalent in the cultural area under consideration.

Rock art in India: its distribution and content

The distribution pattern of rock art sites in India reveals that it has maximum concentration in the central region, particularly in Vindhya and in the Satpura hills region, in the states of Madhya Pradesh, Chhatisgarh, parts of Rajasthan and in the Mirzapur region of Uttar Pradesh and in its adjoining Kaimur range of Bihar, which is further extended up to the plateau region of Jharkhand in the east and up to Sambalpur and the Sundargarh region of Orissa on the southeast border of Chhatisgarh. (Fig 1) The vast stretch of sandstone hills comprises the majority of rock art sites in India, where there are more painted motifs than other forms of representation such as petroglyphs or rock carvings, engravings, etc. In the same locales, the prevalence of natural or realistic forms of motifs is numerically dominant and signs, symbols and abstract forms of non-figurative motifs are less represented. In the entire region, the rock art is mostly associated with archeological remains of microlithic and Chalcolithic tools, with both ceramic and aceramic assemblages. Both stylistic as well as thematically the imagery of rock art signifies a periodic development from Upper Paleolithic hunting, gathering, foraging conditions during the Pleistocene epoch which continued in successive Mesolithic times, the Chalcolithic phase and on to early and later historic periods.

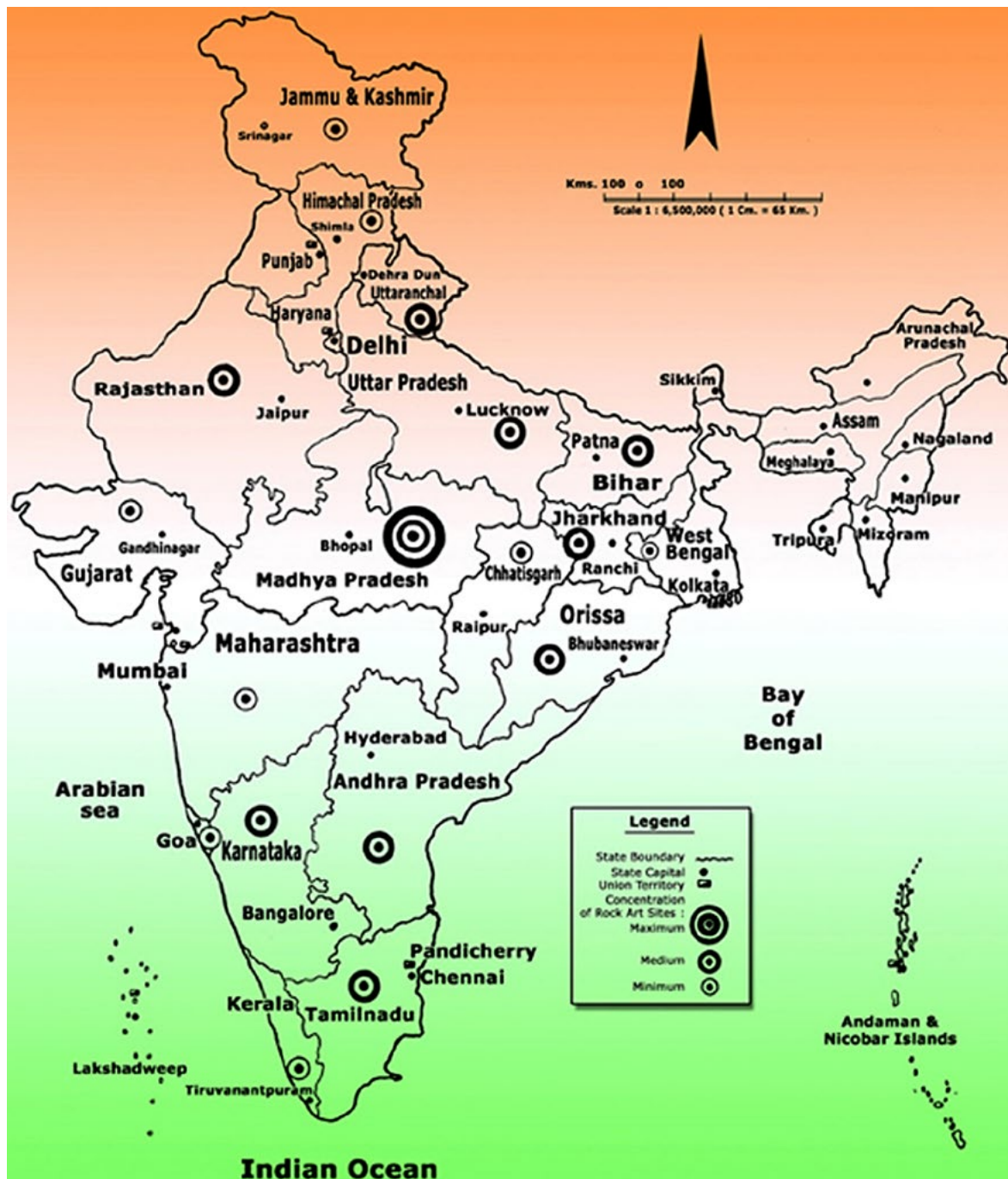


FIGURE 1. MAP OF INDIA SHOWING THE STATE-WISE CONCENTRATION OF ROCK ART SITES.

The presence of rock art sites in the Chhotanagpur plateau region comprising the state of Jharkhand and the recently found site from the Purulia District of West Bengal reveal that gradually towards the eastern valley areas, engravings are more common. In Subarnarekha river and Kangsabati river valleys the rock art sites are possibly more related to megalithic burial traditions. Both the rivers are considered as ritually sacred to the local Mundari-speaking tribal communities and other indigenous people in the area.

In the extreme west, particularly in Gujarat, rock art sites are few and rock art imagery represents much later periods. In the Deccan region, particularly in the states of Maharashtra and Karnataka, rock art

sites represent a combination of both petroglyphs and painted motifs, with greater number of realistic depictions, but signs and symbols are not rare. In Karnataka, Andhra, Tamil Nadu and Kerala region, rock art imagery is distinguished by some common features such as the presence of a maximum number of figures of bulls, sometimes with prominent humps; engraved figures of individual or single type are exclusively present in sites. In the rock art imagery of the entire peninsular region larger panels comprising several figures representing a detail narrative is uncommon. Rather, such wider and intricate visual accounts are more prevalent only in the central India region. In Pansaimal and other sites of southern Goa, on the bank of a narrow hill stream, the lateritic bed rock is carved with figures of animals and labyrinths, etc. In the southern peninsular region of India, in general, rock art is mostly associated with Iron-Age antiquities and megalithic burial practices.

In the northern region, rock engravings are common in Jammu and Kashmir, Uttarakhand and Himachal Pradesh. In the Himalayan region, figurines represent an individual archaic type of basic motifs only. Use of polychrome and bichrome is entirely absent. In the Ladakh area engravings on the surface of boulders represent animals, anthropomorphs of rudimentary form and a wider range of Buddhist epigraphy, and Buddhist signs and symbols.

In Chhotanagpur plateau region in Jharkhand and West Bengal, rock art is represented as engravings on open-air boulders. In the Chhotanagpur region, particularly in Ranchi, Hazaribagh and its adjacent areas, rock art sites are located near the sacred Munda burial grounds. In Chhotanagpur region, the rock art sites are locally identified as related to *Kohbar* or marriage booths. The local tribal communities, including Oraons, Munda and Cheros, relate the rock art sites with a folk story. The folk story points to a historical episode shared by locals in their oral literature, where a king or a tribal chieftain marry a local tribal girl and they spend the first night of conjugal life in a cave or rock shelter. Then on the next morning, the newly wed bride is found dead and her body is floating in the hill stream nearby the cave. Thus, the rock art site of the region is associated with the cult of dead and is also related to megalithic burials still practised by tribal communities in the Karanpura forest region.

In the northeast, particularly in the state of Assam, Manipur, Meghalaya and in Nagaland, rock art is also a part of similar cultural traditions among a number of tribal and other indigenous societies. Following ancient Kirata social tradition, among Bodo-speaking groups, Khasi, Garo and Naga, such practices have continued for generations. In the entire northeast, there are megalithic monuments in different structural forms such as menhirs, dolmens, cromlechs, stone circles, cists, cairns, stone henges, clan ossuaries and sarcophagi. The Bodo-speaking people and the Mon Khmer-speaking population of the northeast part of India had maintained and evolved a distinctive tradition of megalithic culture which is still being practised by their successors. It may be relevant to mention that in the southern peninsular part of India, a similar megalithic culture is also a predominant culture, contemporary with antiquities of the Iron Age. But in major parts of south India, the megalithic culture represents past cultures, except for some reminiscences of the practising tribal population, whereas in the northeast, the megalith monument is still a surviving tradition, where material aspects and visual art are essentially integrated into belief, social norms and ritual practices with folklore, dance and musical performances.

Indigenous knowledge as represented in rock art and tribal art

In rock art sites of India, as represent particularly in the central region where visual narratives are particularly concentrated, the earliest strata contain images of large wild animals, with overlapping scenes and various metaphors of hunter-gatherers and foragers. The most significant examples of indigenous views and accumulated knowledge are certain secrets of hunting (Fig. 2) that are essential for success. The artists shared their knowledge and experiences to detect the type of animal, the age and size of the game, gender and its other habits to trace their movement and direction and to locate its possible presence. Footmarks of various species of wild animals are drawn on rock shelters. Such images of footmarks (Fig. 3) are common in Sambalpur and Sundargarh districts of North



FIGURE 2. HUNTING OF DEER BY USING HARPOON. SITE: LAKHAJORE; MADHYA PRADESH.



FIGURE 3. ENGRAVED FOOT MARKS OF WILD ANIMALS. SITE: TONGO; SUNDARGARH DISTRICT; ODISHA.

Odisha, where rock art sites in clusters further extend towards the east from the central Indian zone of concentration. Among hunter-gatherers, footmarks on sand or clay, excreta of wild animals and such other marks are always important clues to trace the game during hunting expeditions.

The technique for manufacture and use of specific weapons suitable for success in hunting various types of animal are skilfully narrated in rock art imagery covering the entire central zone. The harpoons fitted with microlithic blades as barbs are largely depicted in the rock art of Madhya Pradesh, (Fig. 4) Rajasthan and Bihar states. In such areas where painted rock shelters are plenty, tribal concentration is also predominated. In such forested areas hunting is still being practised by villagers as a source of food during seasons when scarcity of food becomes more acute. Hunting of wild animals is generally prohibited by contemporary law but tribal communities perform it as their ritual and sport. The indigenous knowledge of hunting and finding an animal is inculcated by a tribal sorcerer, medicine-man or a village elder through practical training imparted to youths during hunting rituals.

Setting of various types of traps, nets and other methods employed for both groups and individuals are well illustrated in rock art imagery. The type of bait for hunting specific animals in traps is displayed in rock art. Scenes of fishing, (Fig. 5) catching crocodile and other aquatic fauna are also mentioned in rock art galleries. In Rajat Prapat, a rock art site in Pachmarhi, such traps and nets are shown in rock art where men are engaged in catching fish. The site is located adjacent to a waterfall.

The collection of honey (Fig. 8) is another most popular theme in rock art of central India. Particular techniques were adopted for it, where usually in the beginning trained monkeys were employed in inaccessible parts of the forest and on the peaks of rocks to eradicate the bees and wasps from beehives. Then men used long ladders to collect the honeycombs and then honey was extracted. Similar techniques are still being used by several forest dwelling tribal communities living in the same habitat.

In the hunting-gathering phase, wild animals are often shown in figurative details with their internal organs or a schematic symbolic abbreviation of them. Sometimes, on such compositions, the arrow or any such weapons are indicated as striking particular delicate and vulnerable points in their body. Such figures point to the transmission of codified images from their own knowledge-base to communicate instruction to future generations. Similar figures of animals with internal organs or X-ray painting (Fig. 6) is also conspicuous in the subsequent stage of pastoral subsistence.



FIGURE 4. GROUP HUNTING SITE: LAKHAJORE; MADHYA PRADESH.

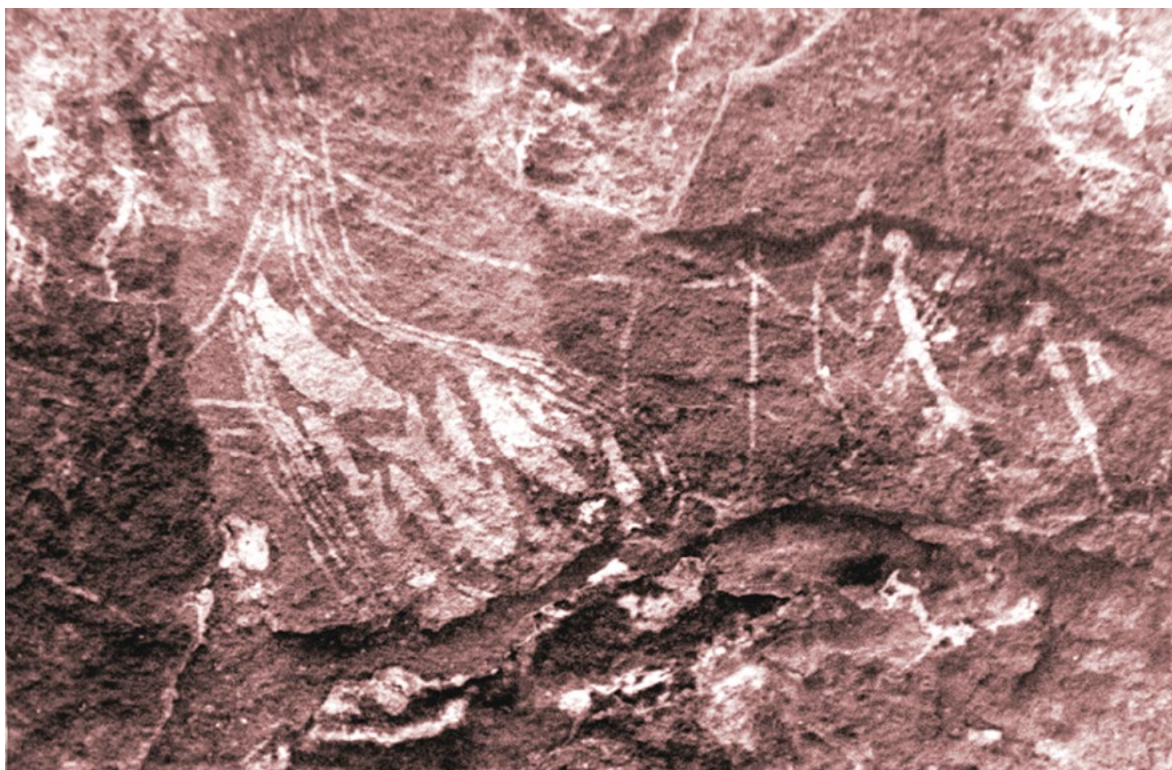


FIGURE 5. FISHING BY USING A TRAP. SITE: PACHMARHI. MADHYA PRADESH.

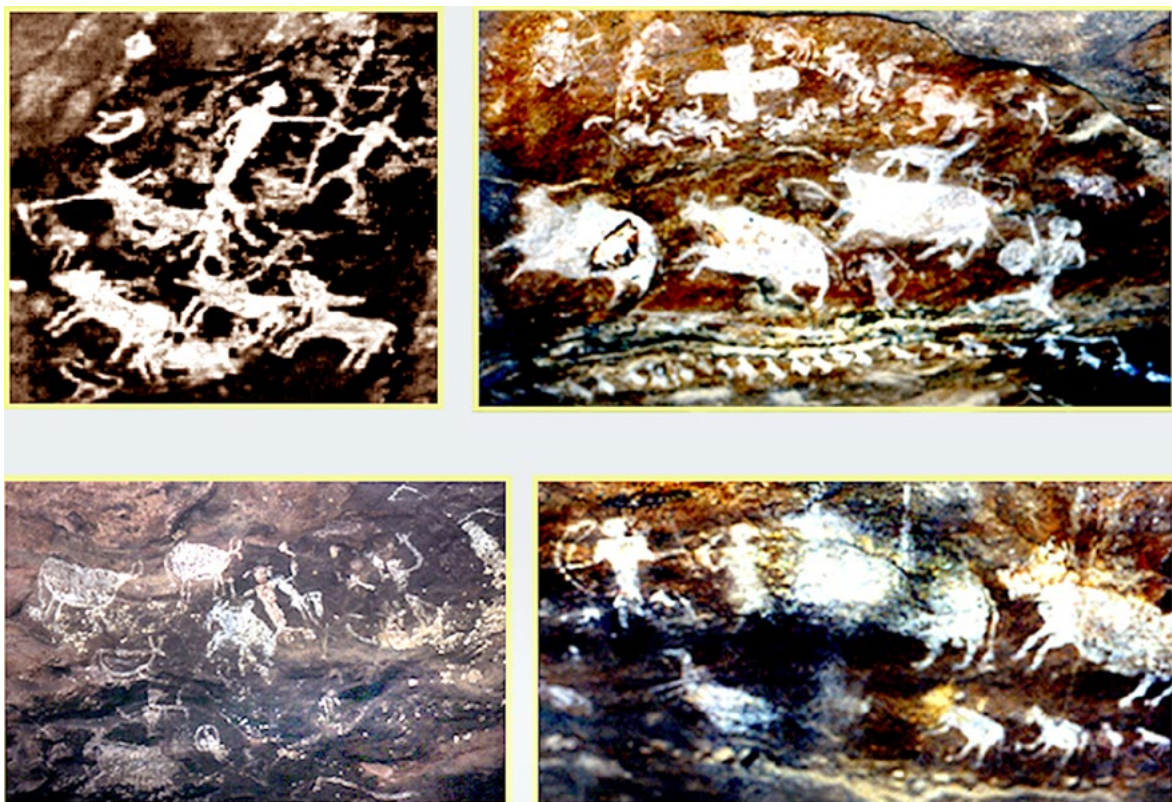


FIGURE 6. PASTORAL COMMUNITY AND THEIR DOMESTICATES. SITE: PACHMARHI; MADHYA PRADESH.

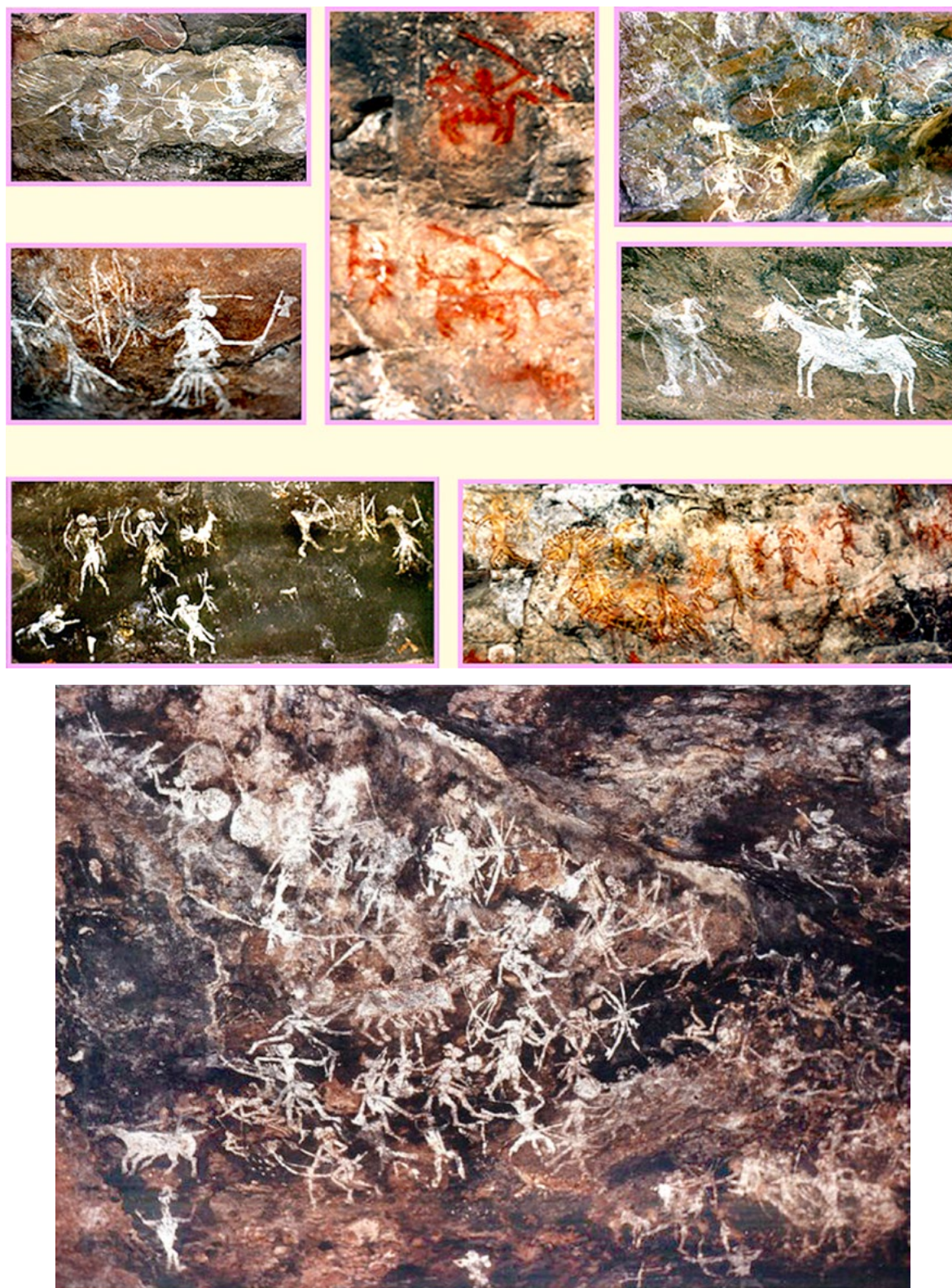
The earliest phase of pastoral economy is marked with the view of eliminating or killing carnivores to protect and multiply suitable domesticates and other wild varieties such as deer and wild pigs. In the beginning of domestication the attempts to eliminate predators were essential to protect them for easy breeding and uninterrupted multiplication to ensure sole human consumption. In rock art imagery, a significant number of metaphors are evident, where the security of domesticates is shown by groups of guards holding offensive and defensive weapons. Scenes of battle between two groups on the issue of the ownership of herds are also common. Domesticated varieties of certain animals are shown as arranged in line with their small progeny and even sometimes cubs are shown within their mothers' wombs to represent the social belief in the fertility cult. Methods and techniques of propagation and rearing of various domesticates and their use as resources are all narrated in rock art imagery as a source of indigenous knowledge and views. Rock art imagery is also a source for a visual data repository for understanding measures for treatment of diseases for domesticates, care techniques and how to protect the herds from plunderers and other wild carnivores. Dogs are shown as essential for hunting expeditions and also to protect each individual household or temporary camp. The use of dogs during fowling or hunting of birds and other aquatic creatures is not rare.

In the third successive phase of rock art battle scenes are major themes. Any glimpse of cultivation is rarely traced in a few selected sites only. In battle scenes, two similar groups in appearance, at least in their dress and ornaments, are combating each other. Use of horses and elephants in the battlefields, signifying different rank and files, groups accompanying with musical instruments, and the use of flags and umbrellas all signify the presence of a hierarchical order and an organized form of battle, where the participation of the king or nobles with ordinary hired forces are all recorded in the imagery. In battle scenes, different tactical arrangements of warriors, the use of varied weapons (no use of firearms), the figure of a leader shown as demon-king, the use of the chariot in the battlefield, incidents of head-hunting and the norm of fighting between soldiers of equal rank (Figs 7 and 9) are all well illustrated as acquired knowledge through possibly direct participation and experiences.

In a rock shelter of Pachmarhi, Madhya Pradesh, in the middle part of an extensive battle scene, where slain bodies of warriors are shown as scattered all around, two vultures are shown seated on the trees as if they are waiting for a grand feast. The painted panel and its arrangement of figures indicate the ultimate lesson of what may result from rivalry and bloodbath. Such a view promotes the concept of peaceful coexistence which is definitely a valuable intellectual achievement for that pre-literate community.

One such example on contemporary votive figurines and its link with early rock art coexists in Kathotia Karad rock shelters near Bhopal, the capital of the state of Madhya Pradesh in central India. In the Kathotia Karad site, more than ten rock shelters have extensive painted galleries. In the same site, a particular rock shelter is considered as the abode of a tribal deity, which is believed to cure pains and other various ailments of both hands and legs. For such diseases the local tribal villagers pray in this shrine for mystic cure. On fulfilment of their wishes, they again visit the shrine and then offer a pair of life-sized wooden replicas of both hands and legs (Fig. 10) with other essentials and perform a ritual with the help of the tribal shaman or priest. In that particular site, dominant items of rock art imagery illustrate horse-riding warriors and battle scenes. During combats in battles, the possibility of losing hands and legs, or even death, is usual. From such a trauma of battle as reflected in rock art, mythical realities had emerged which encroach on the minds and beliefs of the indigenous pre-literate population. The tribal communities encounter the visual messages from the rock art most frequently and repeatedly during their regular collection of forest products, which is also a substantial source of their sustenance. In this event, the narrative elements of folklore depicted in rock art motivate and are transmitted through generations as a living tradition, which is not lost in the passage of time and events.

The figures of horses or horse-riders are prevalent in tribal and folk art of central and western parts of India. Various votive figurines representing horses or horse-riders are an integral part of rituals, beliefs and practices among tribal societies like the Gond, Muria, Bison-horn Maria, Korku and



FIGURES 7 AND 9. BATTLE SCENES. SITE: PACHMARHI; MADHYA PRADESH.

Baigas, living in similar eco-cultural areas in the state. Among these tribal societies, the horse is considered as the most suitable seat for an honourable person and so it is the symbol of might, authority, power and prestige.



FIGURE 8. HOUSEHOLD SCENES AND MONKEYS WITH HONEY BEES AND HONEYCOMB.
SITE: PACHMARHI; MADHYA PRADESH.



Kathotia Karad : Votive offerings in a Rock Art Site



FIGURE 10. WOODEN MODELS OF HAND AND FEET AS VOTIVE OFFERINGS IN A ROCK ART SITE.
SITE: KATHOTIA KARAD NEAR BHOPAL; MADHYA PRADESH.

Community dance scenes and further expressions of ideal community life, household scenes, following animistic religious faith and participation in rites and rituals, building strength and solidarity among the members in different ways – all are thoroughly disseminated in the rock art imagery.

Compared with animal and human activities, in rock art imagery the representation of plants and their uses are relatively rare (Chakraverty). It is revealed from the data that to rock artists, crisis had inspired them to perform the art activities. The plants, at least in such climatic conditions as prevail in India, during the entire Pleistocene and Holocene periods, had sufficient rainfall to influence plenty of vegetation growth. Therefore, plants were perpetual sources for food and resources for living. Therefore, human-plant interactions were least represented in rock art.

In tribal India, certain artifacts are usually identified by outsiders as art objects whereas for tribal societies they are considered as objects of utility rather than any aesthetic significance. Among Bhil and Banjara and other nomadic communities of western and central India, women essentially wear large and heavy metal bangles on both hands and feet. The design of such heavy bangles and anklets contains sharp spine-like projections as decoration all around their surfaces. This is sometimes identified as the sharp teeth of venomous snakes like cobra. Beside these ornaments for personal adoration, heavy metal pieces with sharp bristles are used by nomadic tribal women as weapons for their personal protection, security and safety. They are advised by senior women how to use them for their personal protection from attacks of forest animals or any hostile man who may attack suddenly. Thus an object which is apparently known as jewellery or an object of art may have another significance and use for the pre-literate tribal community.

Another example is the tattoo designs among several tribal groups from almost all parts of India, which apparently show body designs as personal adornments. Sometimes, such decorations serve as supplementary or alternatives for wearing jewellery. In actual practice, such tattooing is intimately related to tribal custom and ritual practices during the puberty rites of girls. Another use of such tattoos is for curing certain pains and other ailments that are usually recommended by witch doctors. The tribal belief is that the insertion of needles into the skin mixed with turmeric paste and extracts from margosa (neem) leaves and often the use of breast milk have the capacity to cure some diseases. Therefore, in visual embellishments popularly known as art, tradition has an apparent role, whereas its actual significance remains as a dormant or vestigial expression of an actual cognitive role influenced by indigenous knowledge.

The usual or overt form of culture is different from the actual, cognitive or covert form of behaviour common among pre-literates. The apparent significance, identified as art or aesthetic expressions, is nomenclature and ideas, ordinarily conceived and imposed by outsiders.

Another example of the dual process and expressions is more common among the Lanjhia Saora, Bondo and Khond tribal women of Odisha. Odisha state is located near the eastern coastal region. To outsiders, women maintaining the traditional customs of the three tribal groups decorate their faces with permanent marks, scars, by tattooing and the arrangement of burn-marks (*sika*) before the attainment of a certain age before their puberty rites. According to their tribal folklore, faces of women are deliberately given an ugly look so that no outsider men become attracted to the pretty face of their women and do not molest them. The tribal priests and shamans narrate a folk legend in which it is mentioned that the powerful raiders, a king and his soldiers of the royal army, had previously conquered the tribal region, massacred all men and continued atrocities upon women. Experiencing this, and to avoid further brutal force, the tribal elders decided to initiate the custom of making the faces of each woman ugly, frightening and repulsive to all outsiders.

In tribal art, particularly in art practices among 13 different tribal societies in parts of India, some relevant observations (Chakraverty, 2009) may be mentioned. The tribal wall paintings, more common among Lanjhia Saoras of Orissa (Fig. 11), Rathvas and Warlis in western India, are ritualistic drawings depicting the sacred seats of a series of deities, departed ancestors and their souls, myths



FIGURE 11. PAINTED ICON IN A HOUSEHOLD OF LANJHIA SAORA TRIBE. DISTRICT: RAYAGADA; ODISHA.

of creation, icons and their praises to fulfil their aspirations in mortal life. Such murals, in very many households are painted in the rooms and are usually not visible from outside the courtyards. Among the Saora tribe, such icons are protected in dark areas and covered by hanging seeds, pots containing water, weapons, etc. The Saora icons (Fig. 11) are secret visual narratives and prayers to their propitiating deities that are strictly maintained only by the family members. All outsiders, including the neighbours, are not allowed to locate the exact deity. The idea behind such practices is that if any evil force from outsiders could identify the deity, then it might divert the deity which may ultimately be harmful for the family. Therefore, the inner walls of rooms and the protective coverings are essential for painting of covert icons for magico-religious purposes. Among Santals, a numerically dominant tribe in eastern India, wall paintings, with mostly decorative motifs, are more commonly found on the outside walls of their huts, signifying their prosperity, wealth and happiness, that they prepare or renovate during their annual autumn festival. Traditional Santal society maintains several customs and taboos related to witchcraft and sorcery. But wall paintings have no immediate connection with such magico-religious practices (Chakraverty, 1987). Therefore, their art is more communicative and open to all viewers. In addition to that, in eastern India, Santal art practices sometimes visually narrate their symbols of tribal identity, myths of creation, their glorious past and historical episodes of their battle for freedom against the forces of the British imperial army.

It is also relevant that in tribal sacred groves in India, terracotta or metal votive figurines are placed as offerings after the fulfilment of expectations and hopes. The figures of horses and elephants are the most common votive figurines present throughout the entire length and breadth of India. The uniqueness of village sacred groves is that a particular type of figure is repetitively found in clusters within a limited space where the range of variation of form is least. Sometimes, in rock art sites, such an overwhelming presence of a particular type of figure within a distinct locality or region is very common.

For a proper understanding of the views on indigenous societies and their acquired knowledge through generations, both verbal and non-verbal evidence must be accumulated. These studies in totality may reveal the significance and continuity in art tradition, if any. Therefore, evidence of early rock art and similar performing traditions of ethnic art are both to be conceptually considered as the polar ends of a unique uninterrupted tradition.

Compared with other archeological evidence, rock art imagery is more direct, dependable evidence of the past, which may reveal the life opportunities, world views, belief pattern, norms and aspirations of society. The visual narrative may explain both overt and covert aspects, natural and supernatural means for their livelihood. Such interpretations revealing their society and culture are less complicated and more decipherable when the rock art imagery is realistic or naturalistic. Such sites portray the arrangement of panels containing visual narratives and episodes containing combinations of various figures based on a common theme. But non-figurative motifs and abstraction of forms, signs and symbols also coexist in rock art. The interpretation of such symbolic forms and icons is another challenge for deciphering rock art. A general pan-human methodology should be evolved based on site considerations.

References

- BOAS, Franz 1955. *Primitive Art*. New York: Dover Publications.
- CHAKRAVERTY, Somnath 1987. Tribal Murals of Chhotanagpur. *The India Magazine*. 6 (2): 20-27.
- CHAKRAVERTY, Somnath 1995a. Isco: Rock Art Site in Hazaribag. In *Recent Perspectives on Prehistoric Art in India and Allied Subjects*. Edited by R.K. Sharma and K.K. Tripathy, pp. 74-9. New Delhi: Aryan Books International.
- CHAKRAVERTY, Somnath 1995b. Rock Art and Ethnographic Data Retrieval in India. In *Rock Art vis-à-vis Ethnography*. Edited by Rabindra Nath Agrawal. Nagpur, Maharashtra: Gupta Publishers.
- CHAKRAVERTY, Somnath 1999. Primeval Rock Art and Ethnographic Analogy in India. *Bollettino del Centro Camuno di Studi Preistorici* (31-32): 213-22.
- CHAKRAVERTY, Somnath 2003. *Rock Art Studies in India: a Historical Perspective*. The Asiatic Society. Kolkata.
- CHAKRAVERTY, Somnath 2004. Mystical Icons of Lanjhia Saoras: a Primordial Tribal Art Tradition of India. In *New Discoveries, New Interpretations, New Research Methods*. pp. 155-163. Brescia: Centro Camuno di Studi Preistorici.
- CHAKRAVERTY, Somnath 2009. Indigenous Tribal Art: Strategy for Conservation and Promotion. *Journal of Social Anthropology*. 6 (1-2): 87-102.
- DALMIA, Yashodhara 1988. *The Painted World of the Warlis: Art and Rituals of Warli Tribes of Maharashtra*. New Delhi: Lalit Kala Akademi.
- DAS, A. K. 1979. *Tribal Art and Craft*. New Delhi. Agam Kala Prakashan.
- DAS, A. K. 1992. North East India, in *Tribal India: Ancestors, Gods and Spirits*. pp. 3-22. Bombay: Marg Publications.
- ELWIN, Varrier 1948. Notes on the Juang. *Man in India*. 28 (1-2): 1-182.
- ELWIN, Varrier 1951. *The Tribal Art of Middle India: a Personal Record*. Bombay: Oxford University Press.
- ELWIN, Varrier 1955. *Religion of an Indian Tribe*. Bombay: Oxford University Press.
- ELWIN, Varrier 1959. *The Art of North – East Frontier of India*. Shillong: North-east Frontier Agency.
- FAWCETT, F. 1901. Notes on Rock Carving in the Edakal Cave, Wynaad. *The Indian Antiquary* 30: 409-421.
- FIRTH, Raymond 1992. Art and Anthropology. In *Anthropology, Art and Aesthetics*. Edited by Coote, J. and A. Shelton, pp. 15-39. Oxford: Clarendon Press.
- FISCHER, J. L. 1961. Art Styles as Cultural Cognitive Maps. *American Anthropologist*. 63: 79-93.
- GHOSH, Asok K. and Somnath CHAKRAVERTY 1988-89. Genesis and Changes of Tribal Art – Examples from West Bengal. *Indian Museum Bulletin*: 23 and 24: 136-141.

- GHOSH, A.K. and Somnath CHAKRAVERTY 1995. Rock Arts of Eastern India and their bearing with local Tribal arts: a cross-sectional study on continuity in India at the dawn of history. *In India At the Dawn of History* Edited by Asok Datta, Asok K. Ghosh and C. Margabandhu. Delhi: Agam Kala Prakashan.
- GORDON, D. H. 1939b. Indian Rock Paintings – II; the Rock Paintings of Kabra Pahar, Raigarh State. *Science and Culture* 5(5): 269-275.
- GORDON, D. H. 1940b. Animals and demons in Indian Cave Art. *Science and Culture* 5(11): 662-667.
- GORDON, D. H. 1940a. Warfare in Indian Cave art. *Science and Culture*. 5(10): 662-667.
- GORDON, D. H. 1958. *Prehistoric Background of Indian Culture*. Bombay: N.M. Tripathi Publications.
- HADDON, Alfred C. 1895. *Evolution in Art*. London: Walter Scott.
- HASELBERGER, H. 1961. Methods in Studying Ethnological Art. *Current Anthropology* 2: 341-384.
- JAIN, Jyotindra 1984. *Painted Myths of Creation: Art and Ritual of an Indian Tribe*. New Delhi: Lalit Kala Akademi.
- LAYTON, Robert 1991. *The Anthropology of Art*. Cambridge: Cambridge University Press.
- MATHPAL, Y. N. 1984. *Prehistoric Rock Paintings of Bhimbetka, Central India*. New Delhi: Abhinav Publications.
- MATHPAL, Yashodhar 1995. *Rock Art in Kumaon Himalaya*. New Delhi: Indira Gandhi National Centre for the Arts.
- MILLS, J. P. and J. H. HUTTON 1929. Ancient Monoliths of North Cachar. *Journal of the Asiatic Society of Bengal* (N.S.) 25: 285-300.
- MURDOCK, G. P. 1957. World Ethnographic Sample. *American Anthropologist*. 59: 664-687.
- NEUMAYER, E. 1983. *Prehistoric Indian Rock Paintings*. New Delhi: Oxford University Press.
- NEUMAYER, E. 1993. *Lines on Stone – the Prehistoric Rock Art of India*. New Delhi: Manohar.
- PANDE, B. M. 1972. A Neolithic Tectiform from Burzahom, Dist: Srinagar. *Journal of Indian Anthropological Society* 7: 175-177.
- PANDE, B. M. 1971. Neolithic Hunting Scene on a Stone Slab from Burzahom, Kashmir. *Asian Perspective*. 14: 194-198.
- PANDEY, S. K. 1993. *Indian Rock Art*. New Delhi: Aryan Books International.
- REDFIELD, Robert 1956. *Peasant Society and Culture*. Chicago: University of Chicago Press.
- SUNDARA, A. 1968. Rock Shelter, Hire Benakal Hills, Raichur. *Indian Archaeology 1967-68 – A Review*, p. 67.
- SUNDARA, A. 2006. Karnataka Rock Art: Some Distinctive Aspects. *Purakala*. 16: 35-49.
- WAKANKAR, V. S. and R. R. R. BROOKS 1976. *Stone Age Paintings in India*. Bombay: D. P. Taraporevala Sons & Co.

The Anthropomorphic Figurine of Can Sadurní Cave, Begues, Barcelona

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Abstract

In summer of 2012, the upper part of the body, with a complete arm and the start of the other one, from a human figurine made of ceramic was found in Can Sadurní Cave. It appeared in the archaeological layer 11, dated to c. 4500 cal BC, which makes it one of the oldest ceramic figurines found in the Prehistory of the Iberian Peninsula.

Despite the existence of earlier examples during the Upper Paleolithic, the phenomenon of the votive imagery in Europe has a strong Neolithic accent. Ever since its appearance, the oldest sites in Israel and Jordania provided little statues that represent feminine figures, associated by most authors to the concept of fertility. This concept will expand throughout the Mediterranean, as well as central and western Europe. This happened during more or less 1500 years and the generalisation of the process occurred during the Vth millennium cal BC.

Several interpretations have been proposed for these figurines: from a religious role (mother goddesses); to having connection to the magic world of priestesses and witches; or being representations of ancestors or symbols of identity or lineages; as amulets; or "toys" without any further symbolic connotation.

The layer in which the figurine was found is culturally ascribed to the Middle Neolithic I or Early Middle Neolithic, which is known in Catalonia as Postcardial Neolithic Molinot/Montboló type. All elements point to the fact that this figurine had a symbolic and spiritual connotation. This paper will present its characteristics and it will be observed that they coincide with what has been defined as an idol. Having this magical-religious component in mind and given that the inhabitants of Begues are traditionally known as Els Encantats (the Enchanted), the figurine was named The Enchanted of Begues.



Archeology, Rock Art, Archeoacoustics and Neuroscience: What Kind of Relation?

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Abstract

The present paper is a multidisciplinary approach based on data available from archeology, rock art, archeoacoustics and neuroscience. After some introductory theoretical remarks, the article is organized in two parts: the first one analyses the relation between archeology, rock art and archeoacoustics, approaching some aspects of the early use of sound among hunter-gatherer societies and some examples regarding the presence of sound in post-Palaeolithic rock art. The second part discusses the relation between archeology, archeoacoustics and neuroscience, focusing on acoustical properties from prehistoric chambers in the UK, Italy and Malta. Among these acoustical effects, special attention is given to a common resonance in the vicinity of 110 Hz, present in almost all the chambers, which was studied by neuroscientists for its effects on the human brain of several volunteers, monitored with electroencephalography. Some cases of mind/body experiences with acoustic origins within prehistoric chambers are also analysed.

Key words: archeology, archeoacoustics, neuroscience, resonance, frequency, standing waves

Introduction

The archeologist is not digging things, but people.
(Sir Mortimer Wheeler)

This quotation from the 1960s, by the British archeologist Mortimer Wheeler, is a good basis for starting the present article, because it is deeper than it looks at first sight. Indeed, archeology focuses initially on the study of material culture but, as R. Bradley (1998) mentioned, this approach represents no more than the first phase of an intellectual construction process, which resonates with other sciences, either social or exact.

Archeology has, therefore, an anthropological dimension and the initial studies of the material heritage can constitute a source to discover the immaterial heritage of past societies.

In order to fulfil that aim, the present article presents a multidisciplinary approach based on data available from archeology, rock art, archeoacoustics and neuroscience. From these four disciplines, archeoacoustics and neuroscience are obviously less familiar at a congress of archeology. Thus, it is necessary to make some statements about them.

Archeoacoustics can be considered as an interdisciplinary field of study, which tries to analyse the use of sound(s) in past societies, combining archeological data with modern acoustic engineering. Despite some methodological problems regarding the determination of deliberate actions by prehistoric human beings, as C. Scarre (2006: 9) said, ‘the archeoacoustics of prehistoric contexts is potentially a vital part of the understanding of the lived experience of past societies.’

Neuroscience will be mentioned in this article following some pilot studies based on data resulting from experiments involving sound in prehistoric and protohistoric chambers in the UK and Italy¹ and their effects on the human brain, monitored with electroencephalography.

¹ The hypogeum from Cividale del Friuli, near Udine.

In the present text we first analyse the relation between archeology, rock art and archeoacoustics and, after that, the relation of archeology, archeoacoustics and neuroscience. Archeoacoustics is therefore used as a common link in an attempt to develop this discipline among the archeological community, since the past was surely not silent.

Archeology, Rock Art and Archeoacoustics

Since the origins of mankind there have been sounds in nature: thunder, wind, rain and the sound of the waves in the sea, among others, were obviously familiar to the first human groups during the Palaeolithic.

But did those men and women produce sound in that period?

Archeological records have revealed several Paleolithic objects making sound, such as the group of bone flutes and whistles from Isturitz and Maisières and the bullroarer from Laugerie-Basse (Dordogne), all in France (Otte, 1995) and the rasps (or idiophones) from Pekarna, Moravia (Czech Republic), Abri Lafaye Bruniquel (France) and Mas d'Azil, Ariège, France (Morley, 2006).

These artefacts constitute archeological evidence of the intentional production of sounds in the Palaeolithic.²

Among the five human senses, besides vision, hearing has a crucial protective character and even today, when on the street we hear an unexpected sound, we immediately turn our heads to see if there is any danger for us.

Looking back at the Palaeolithic hunter-gatherer societies, there were predators such as lions, bears and also dangerous animals such as rhinoceros, boars and others, as well documented by cave art. When walking in open country outside the protection of the caves, groups of hunters might be attacked by any of these animals and certainly acoustical warnings from a distance would have been very helpful. This could be, for example, the function of whistles: to warn about imminent danger or call for help, producing louder sounds than the human voice (Coimbra, 2014).

In a pioneering work of archeoacoustics, I. Reznikoff and M. Dauvois (1988) suggested that caves were remarkable amplifiers of sounds, due to their inner resonance,³ arguing that the acoustics of several caves in France had an important role in determining where the Paleolithic paintings were located, leading to 'the supposition that music or chants were important elements in cave ceremonies around 20,000 years ago' (Scarre, 1989: 382). However, some sounds produced inside caves can have been made by the human body itself, when vocalizing, hand clapping and foot stamping.

Besides the evidence of sound production from these archeological artefacts, post-Paleolithic rock art provides some examples of the depiction of sound, as in engravings from Saimaly-Tash (Kazakhstan), dating from the second millennium BC, representing ritual dancing in front of a man holding a sun (Fig. 1). Observing this scene carefully, it is surely difficult to conceive it independently from chanting or music, because nobody dances without any kind of sound.

Furthermore, Reznikoff and Dauvois (1988: 238) also said that 'il n'y a pas de sociétés sans chants et plus précisément il n'y a pas de rituel ou de célébration qui ne soit aussi sonore.' This seems to be the case in another rock art scene depicted on Rock 32 from Naquane (Valcamonica, Italy), where seven female 'praying figures' are mourning the prone female (possibly dead), or praying for her health.

² We are not going to discuss here if they were used for making any kind of music or just to produce sound, because this is not the aim of this article.

³ Resonance is not considered here as an echo but as the amplification of sound in intensity or in duration.

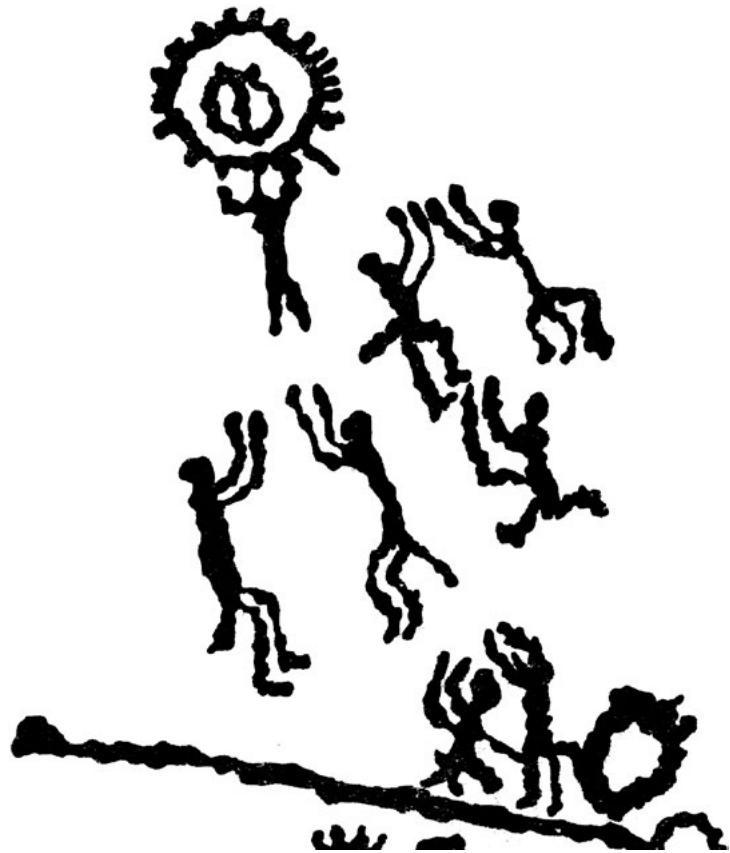


FIGURE 1. DANCING TO THE SOUND
OF CHANTING OR MUSIC
(AFTER MARTYNOV, 1995).

The importance of sound when producing different rock engravings in the Scandinavian Bronze Age tradition is mentioned by the Swedish archeologist Mats Malmer: ‘If you smash two stones into each other you get a loud sound and the sound alters with the shape and bedrock of the panel. A solid panel gives a bright sound, a cracked panel a more hollow sound ... The rhythm of the pounding was most certainly a well-known sound for the people during the Bronze Age, and it certainly transmitted the message that there was something very important going on out there on the rocks.’ (Malmer, quoted by Goldhahn, 2002: 38).

P. Nordström developed Malmer’s arguments, suggesting that ‘the sound of the stones can also be understood as a form of ritual communication with the various spirits that were thought to dwell in the rocks’⁴ and that ‘the echo that emanated from the pecking and pounding of engravings could have been interpreted as a carrier of messages between the world of the living and the dead ancestors’ (Nordström, quoted by Goldhahn, 2002: 38).

The relation between rock art and sound can also be seen in several examples which represent musical instruments, for instance the drums depicted in the Bronze Age rock art from Bhimbetka, India (Meshkeris, 1999) and the representation of people dancing to the sound of the asymmetric lyre in the rock art from Wadi Harash (Negev, Israel), dating from the second millennium BC (Anati, 1994), among other examples.⁵

⁴ The idea of a spiritual world within the rock can also be seen among the San (Bushmen) of South Africa, besides other cultures (Waller, 2006). That is probably why some rock art figures in different parts of the world seem to emerge from cracks in the rock surfaces.

⁵ Men playing flutes often appear in the rock art from North and South America, dating from more recent periods (Coimbra, 2014).

Archeology, Archeoacoustics and Neuroscience

Archeology only can mature when the philosopher and the archeologist are the same person.
(Richard Bradley)⁶

Several studies of megalithic structures from the UK revealed that ‘some possess remarkable acoustic properties, suggesting that sound may have played an important role in any ceremonies held at the monuments in prehistory’ (Watson, 1997). Indeed in the chambers of monuments such as Camster Round (Scotland) and Maeshowe (Orkney Islands) an acoustic effect known as standing waves occurs. According to Watson (2007) sound waves interact while reflected between walls, being either enhanced or cancelled, changing the nature of the sound. To a listener passing by the patterns of these standing waves some effects may happen, the sounds becoming louder with distance from the source; some frequencies can also resonate parts of the body.⁷

Aaron Watson (2007) argued that ‘standing waves might have been understood as the voices of spirits, ancestors or other forces. They might have contributed to the special character of the monument as these sounds could not have been reproduced anywhere else.’ Furthermore, Jahn *et al.* (1995) reported the similarities between some cases of megalithic art from Newgrange and Loughcrew and the resonant sound patterns that characterize these chambers. For example, these authors argue that two zigzag figures ‘etched on the corbel at the left side of the west sub-chamber of Newgrange have precisely the same number of “nodes” and “antinodes” as the resonant standing wave pattern we mapped from the chamber centre out along the passage’ (Jahn *et al.*, 1995: 9).

Other acoustic phenomena occur in some chambered mounds, like the so-called Helmholtz resonance, being ‘caused by the repeated oscillation of sound waves between an enclosed chamber and the outside world along a confined passageway. Under certain conditions a single frequency can be powerfully amplified to levels that far exceed the original source’ (Watson, 2007). Watson also argues that the format of the passage grave of Maeshowe (Fig. 2) is very similar to the classic Helmholtz Resonator.

Some acoustic tests were carried out at Maeshowe by A. Watson and D. Keating using a single drum, which caused a resonance with a frequency of 2 Hz. Although this infrasound cannot be heard by humans it can induce a variety of sensations such as dizziness, headaches and disorientation (Watson, 2007). Some individuals who participated in acoustic tests inside chambered cairns reported other physiological effects, such as changes in breathing and pulse pattern (Watson and Keating, 1999). Furthermore, according to P. Debertolis and N. Bisconti (2014), infrasound can create feelings of awe or fear in humans, in some cases resulting in a misplaced belief that some strange or supernatural event is taking place.

Other experiments carried out at the chambered cairns of Camster (Caithness, Scotland) revealed interesting results. For example, drumming in the chamber of Camster Round created a bass sound that was felt around the back of the monument as if it were ‘emerging from beneath the ground rather than from inside the cairn’ (Watson, 2007). The sound of that drumming was heard within another chamber (Camster Long) 200 m away, although it could not be heard in the open air between the two monuments.

Aaron Watson and D. Keating (1999: 330) argue that ‘drumming could have been used as a form of communication between tombs which were in close proximity’, mentioning the examples from Camster and also from Knowth, ‘where a large tomb is surrounded by a number of smaller cairns’

⁶ Author’s translation of a quote from Bradley’s article in Portuguese (1998), after the original in English: R. Bradley, ‘The philosopher and the field archeologist: Collingwood, Bersu and the excavation of King Arthur’s Round Table’, *Proceedings of the Prehistoric Society*, 60 (1994), pp.27-34.

⁷ Sound effects and bodily sensations also happened in the interior of the Hal Saflieni hypogeum in Malta, during an experiment in which the author participated. They are described below.

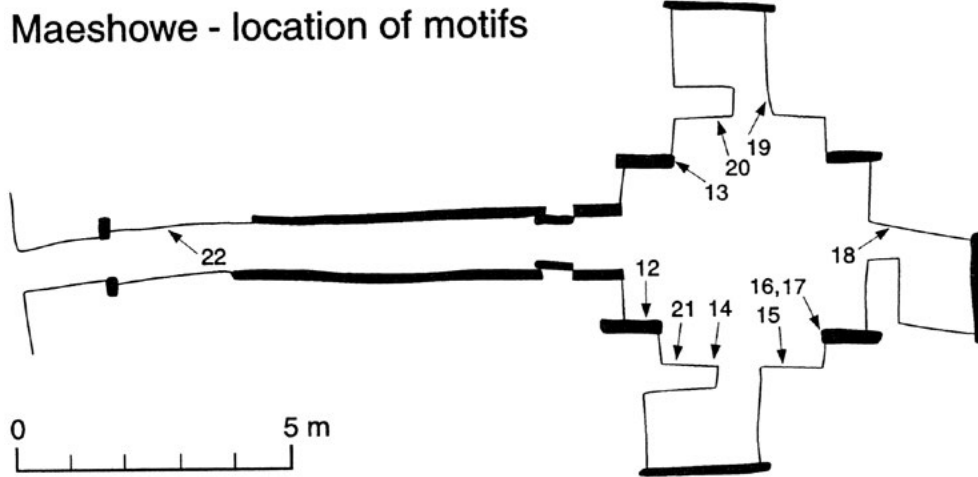


FIGURE 2. THE PLAN OF MAESHOWE PASSAGE GRAVE AND THE LOCATION OF ROCK ART MOTIFS. (AFTER BRADLEY *ET AL.* 2000).

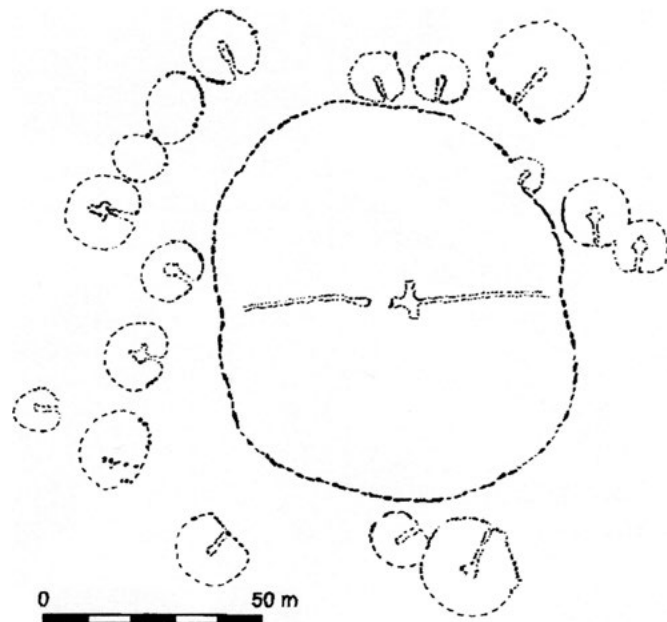


FIGURE 3. KNOWTH AND ITS SATELLITE TOMBS (AFTER WATSON AND KEATING).

(Watson and Keating, 1999: 330). Curiously, ‘many of these satellite tombs have their passages oriented towards the main mound, perhaps assisting the transmission of sound between what were otherwise separate components of a cemetery’ (Watson and Keating, 1999: 330-1) (Fig. 3).

Standing waves, Helmholtz resonance and infrasound don’t prove, of course, that prehistoric megalithic chambers were built with the aim of producing expected acoustic results. However, ‘it seems unlikely that acoustic effects would have gone unnoticed in prehistory’ (Cook and Watson, 2006: 107). For example, in the hypogeum of Hal Saflieni (Malta) there is archeological evidence of prehistoric burials during a long period of time (Pace, 2004), where funerary rituals took place, probably accompanied by the sound of chants or instruments such as drums or horns. This human permanence in the hypogeum is also confirmed by the presence of several groups of red ochre prehistoric paintings, consisting of intricate spirals, some disks and other geometric patterns (Fig.



FIGURE 4. PREHISTORIC PAINTINGS FROM HAL SAFLIENI (PHOTO: OTSF).

4). According to A. Pace (2004: 37) some of these motifs ‘in certain places, they overlap slightly, suggesting that they may have been painted at different times.’ Thus, the continuous presence of people inside the hypogeum surely led to the perception of several sound effects (Coimbra, 2014), that would be impossible to be unnoticed.⁸

The permanence of human groups inside prehistoric chambers occurred also at Irish passage graves, where megalithic art ‘might have celebrated the passage of the deceased into another world’ (Bradley *et al.*, 2000: 64). It occurred also at Maeshowe, where filiform carvings (Fig. 5) are very similar to others found in nearby Neolithic settlements, seeming to ‘create a sense of community in which the deceased remained involved in the everyday activities of the living’ (Bradley *et al.*, 2000: 64).

Now we are going to relate some of the acoustical effects in prehistoric chambers in connection with recent research in neuroscience.⁹ Archeoacoustic investigations inside prehistoric chambers such as Newgrange, Loughcrew, Chun Quoit (Cornwall) and Wayland’s Smithy (Berkshire), among others, identified acoustic resonances between 95 Hz and 120 Hz (Jahn *et al.*, 1995). In a later neurophysiologic study, 30 healthy adults listened, in sequence, to tones of 90-130 Hz, while their brain activity was monitored with electroencephalography. It was noticed then that brain activity in language at 110 Hz is significantly lower¹⁰ than at other frequencies, allowing other processes to become more prominent (Cook *et al.*, 2008). This process results also in ‘a shift in prefrontal activity that may be related to emotional processing’ (Cook *et al.*, 2008: 96).

⁸ Indeed, the acoustic properties of the hypogeum are very impressive. During the author’s recent visit to this monument he decided to vocalize a sound that, in fact, reverberated to a great extent throughout the entire structure. It is also interesting to mention that some sounds inside the hypogeum reverberate for 7.8 seconds after the original sound had stopped (reported by Dr Rupert Till during the conclusions of the Archeoacoustics Conference, Malta, February 2014), which must have highly impressed the prehistoric listeners.

⁹ We are not going to discuss here the theory of phosphenes in prehistoric art, because it would be a theme for a separate article.

¹⁰ Paul Devereux (2006) argues that this kind of brain activity is associated with the half-awake/half-asleep hypnogogic state with vivid mental imagery and auditory hallucinations. According to J. Goldhahn (2002: 50), ‘visual and aural hallucinations can also be induced through the application of loud and repetitive noise, so called audio-driving’.

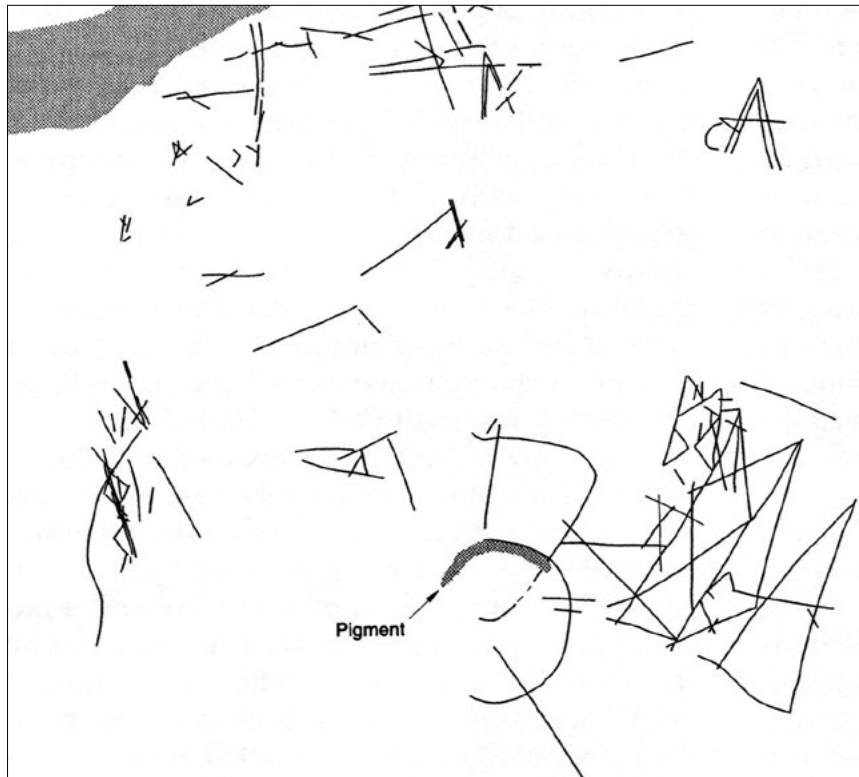


FIGURE 5. FILIFORM CARVINGS FROM MAESHOWE
(ADAPTED FROM BRADLEY *ET AL.* 2000).

Similar research carried out by P. Debertolis, G. Tirelli¹¹ and F. Monti¹² at the hypogeum of Cividale del Friuli,¹³ Italy (Fig. 6), revealed that activity in the left temporal region was found to be significantly lower, closer to 110 Hz, than at other frequencies. Additionally, the pattern of asymmetric activity over the prefrontal cortex shifted from one of higher activity, on the left at most frequencies, to right-sided dominance at 110 Hz. The results of these experiments showed that each volunteer had his/her own individual frequency of activation that can be significantly different from 110 Hz, but always in the range of 90-120 Hz (Debertolis *et al.*, 2014).

The same researchers reported that the volunteers with frontal lobe prevalence, during the tone hearing, received ideas and thoughts similar to what happens during meditation, while those with occipital lobe prevalence visualized images (Debertolis *et al.*, 2014).

Recent neurophysiologic research regarding meditation based on hearing a traditional mantra, or a non-semantic meditation sound, seems to support not only the discoveries of Cook *et al.* (2008) but mainly these arguments of Debertolis, Tirelli and Monti. Indeed, studies assessing brain activity by functional magnetic resonance imaging, in experienced practitioners of meditation, revealed that this practice ‘increased activity in the prefrontal cortex, showing a large cluster with the point of maximal activation in the straight gyrus, covering a large part of the right orbitofrontal cortex as well as medial prefrontal areas’ (Xu *et al.*, 2014: 5). The same authors (2014: 9) argue that this activity ‘is related to the relaxed focus of attention, which allows spontaneous thoughts, images, sensations, memories and emotions’.

¹¹ Debertolis and Tirelli are at the Department of Medical Science, University of Trieste, Italy.

¹² Head of Clinical Neurophysiologic Unity. Department of Neurology, University Hospital of Trieste.

¹³ Some stone heads discovered in this hypogeum seem to date it from the Iron Age (Debertolis *et al.*, 2014).

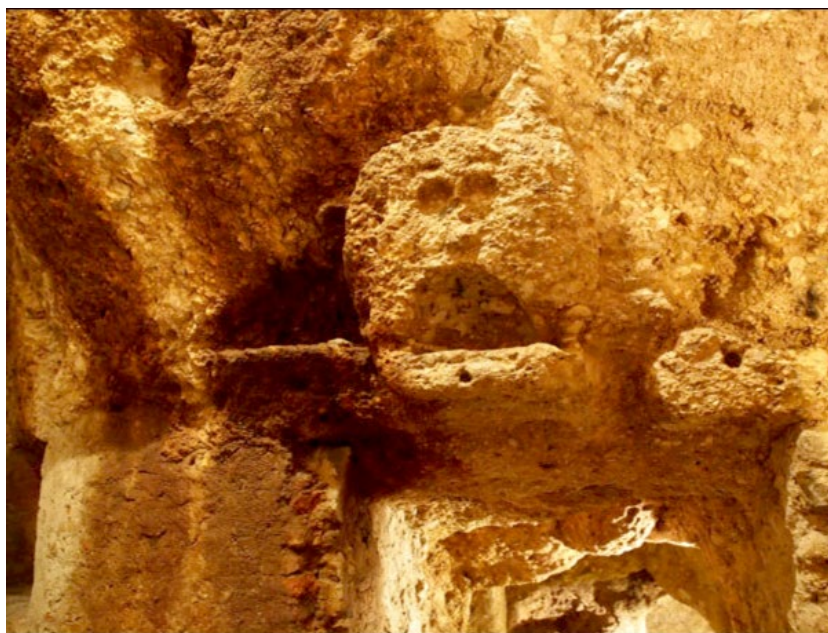


FIGURE 6. STONE HEAD FROM THE HYPOGEUM OF CIVIDALE DEL FRIULI
(PHOTO: P. DEBERTOLIS).

Returning to the acoustical properties of some prehistoric chambers, it has been noticed that they can result in the experience of sensations and emotions. For example, P. Devereux mentions that the acoustician David Keating, during one acoustic experiment at Maeshowe, ‘reported being put into a state in which his body became relaxed but his mind alert, an initial stage of deep trance’ (Landscape perception, not dated).

Also the author of this paper experienced bodily sensations¹⁴ caused by sounds during the experiments carried out at Hal Saflieni in February 2014. In fact, standing in front of the prehistoric paintings in Room 20, the sound of a horn played in the Oracle Room was felt ‘crossing’ the author’s body at high speed, leaving a sensation of relaxation. The instrument was played again, after a short break, with the result similar but even more relaxing, followed by the illusion that the sound was reflected from the author’s body to the wall that contains the engravings (Coimbra, 2014).

In the sequence of these two cases of mind/body experiences, with acoustic origins, reported by two different researchers and in two different places, some questions arise: did Neolithic human beings feel similar sensations, caused by sound, while inside chambered monuments? Could the prehistoric art that exists in some of these chambers be the depiction of bodily experiences with acoustic origins?

It is not easy, of course, to answer these questions without being speculative. In order to reach more objective and conclusive results further research must be done in several European prehistoric chambers, especially in those that have megalithic art on their walls and sound reverberations with a frequency around 110 Hz. These studies should involve obviously not only archeologists but also acousticians and neuroscientists, among other researchers.

Meanwhile, the discovery inside the Hal Saflieni hypogeum of the clay model known as the ‘Sleeping Lady’, lying on a couch (Fig. 7), led to the feasible and acceptable idea that it ‘was partially a dream

¹⁴ Goldhahn (2002: 41) argues that ‘bodily experiences of a place are vital for the interpretation of the prehistoric ‘mindscape’ of that landscape’, quoting authors such as Tilley, Nash and Ouzman.



FIGURE 7. SLEEPING LADY (PHOTO: F. COIMBRA).

incubation temple, a practice that was widespread in at least the later ancient Mediterranean world' (Devereux, 2009: 226). In fact, being laid on a couch inside a highly resonant chamber could be a procedure for comfortably hearing reverberating sounds and getting mind/body experience through them, involving probably similar experiences to those reported by Xu *et al.* (2014: 9), such as 'spontaneous thoughts, images, sensations, memories and emotions'.

Could some sounds produced inside prehistoric chambers be related to the origin of traditional mantras? It is curious to note that in the middle of the second millennium BC the Vedanta tradition (4.22) mentions that 'by sound vibration one becomes liberated', meaning that sound is already known to be a vibration by those times. It could be the case of the traditional mantra 'AUM', that has, of course, a specific frequency leading to a desirable (or expected) influence on people, that is, a socially organized sound (Coimbra, 2014).

Final Note

In this article we have discussed some aspects of the relation of a recent field of research, archeoacoustics, with disciplines such as archeology, rock art and neuroscience. It was also mentioned that archeoacoustics has some methodological problems about deliberate actions by prehistoric human beings, or in another words, the intentionality of their acts. However, these difficulties can be reduced with the work of an interdisciplinary team, never forgetting that archeoacoustics deals with the human past and therefore it is indispensable to have the contribution of an archeologist (Coimbra, 2014).

Furthermore, as I. Cross and A. Watson (2006: 115) outlined, 'it is critical that, alongside the application of rigorous methods, acoustical investigations acknowledge the social contexts within which sound may have been experienced, and remain aware that is easy to impose modern cultural understandings and experiences onto past societies' and, therefore, 'to risk hearing only echoes of ourselves' (Cross and Watson, 2006: 115).

Indeed, it is not enough to measure very precisely standing waves, resonant patterns and other sound effects if the past social contexts where those acoustic phenomena were experienced are ignored. Therefore, in disciplines like archeoacoustics it is important to first establish a coherent theoretical basis, which will contribute to the definition of a scientific methodology, which is indispensable for further interpretation.

Nevertheless, a multidisciplinary research involving archeology, rock art, archeoacoustics and neuroscience can be very useful for better understanding past ways of thought.

Bibliography

- ANATI, E. 1994. World rock art. The primordial language. *Studi Camuni* XII, 153.
- BRADLEY, R. 1998. O filósofo e o arqueólogo. *Trabalhos de Antropologia e Etnologia*, 38, 171-183.
- BRADLEY, R.; PHILLIPS, T.; RICHARDS, C.; WEBB, M. 2000. Decorating the Houses of the Dead: Incised and Pecked Motifs in Orkney Chambered Tombs. *Cambridge Archeological Journal*, 11:1, 45-67.
- COIMBRA, F. A. 2014. An Interdisciplinary Approach: the Contribution of Rock Art for Archeoacoustic Studies, in *Proceedings of Archeoacoustics: The Archeology of Sound*, Malta (OTSF Foundation), 51-58.
- COOK, I. A.; PAJOT, S. K.; LEUCHTER, A. F. 2008. Ancient Architectural Acoustic Resonance Patterns and Regional Brain Activity. *Time and Mind*, Volume 1, Issue 1, 95-104.
- CROSS, I.; WATSON, A. 2006. Acoustics and the Human Experience of Socially-organized Sound. In, *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge, (McDonald Institute for Archeological Research), 107-116.
- DEBERTOLIS, P.; BISCONTI, N. 2013. Archeoacoustics Analysis and Ceremonial Customs in an Ancient Hypogeum. *Sociology Study*, Volume 3, Number 10, 803-814.
- DEBERTOLIS, P.; BISCONTI, N. 2014. Archeoacoustics analysis of an ancient hypogeum in Italy, In *Proceedings of Archeoacoustics: The Archeology of Sound*, Malta (OTSF Foundation).
- DEBERTOLIS, P.; MIZDRAK, S.; SAVOLAINEN, H. 2013. The Research for an Archeoacoustics Standard, in *Proceedings of 2nd ARSA Conference (Advanced Research in Scientific Areas)*, Bratislava 305-310.
- DEBERTOLIS, P.; TIRELLI, G.; MONTI, F. 2014. Systems of acoustic resonance in ancient sites and related brain activity, in *Proceedings of Archeoacoustics: The Archeology of Sound*, Malta (OTSF Foundation), 7-14.
- DEVEREUX, P. 2006. Ears and Years: Aspects of Acoustics and Intentionality in Antiquity, In *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge (McDonald Institute for Archeological Research), 23-30.
- DEVEREUX, P. 2009. A Ceiling Painting in the Hal-Saflieni Hypogeum as Acoustically-Related Imagery: A Preliminary Note. *Time and Mind*, Volume 2, Issue 2, 225-231.
- ERRICO, F. D.; LAWSON, G. 2006. The Sound Paradox: How to Assess the Acoustic Significance of Archeological Evidence? In, *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge (McDonald Institute for Archeological Research), 41-57.
- GOLDHAHN, J. 2002. Roaring Rocks: An Audio-Visual Perspective on Hunter-Gatherer Engravings in Northern Sweden and Scandinavia. *Norwegian Archeological Review*, Vol. 35, No. 1, 29-61.
- JAHN, R. G.; DEVEREUX, P.; IBISON, M. 1995. Acoustical resonances of Assorted Ancient Structures. *Journal of the Acoustics Society of America*, 99, 649-658.
- LANDSCAPE-PERCEPTION – ARCHEOACOUSTICS (not/dated) www.landscapeperception.com/archeoacoustics/ Accessed on 8 February 2014.
- MARTYNOV, A. 1999. Rock images of the ancient sanctuary Saimaly-Tach, in *NEWS-95 International Rock Art Congress Proceedings*, Pinerolo (CeSMAP).
- MESHKERIS, V. A. 1999. Musical phenomena of convergence in Eurasian Rock Art. *NEWS-95 International Rock Art Congress Proceedings*, Pinerolo (CeSMAP).
- MORLEY, I. 2006. *The Evolutionary Origins and Archeology of Music*. PhD Dissertation. Cambridge University.

- OTTE, M. 1995. Regards sur la musique paléolithique, in NEWS-95 International Rock Art Congress Proceedings, Pinerolo (CeSMAP).
- PACE, A. 2004. The Hal Saflieni Hypogeum, Sta Venera (Heritage Books/Heritage Malta).
- REZNIKOFF, I.; DAUVOIS, M. 1988. La dimension sonore des grottes ornées. Bulletin de la Société Préhistorique Française, tome 85, N. 8, 238-246.
- SCARRE, C. 1989. Painting by resonance, *Nature*, 338, 382.
- SCARRE, C. 2006. Sound, Place and Space: Towards an Archeology of Acoustics. in, *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge (McDonald Institute for Archeological Research), 1-10.
- XU, J.; VIK, A.; GROOTE, I. R; LAGOPOULOS, J.; HOLEN, A.; ELLINGSEN, Ø.; HÅBERG, A.K.; AND DAVANGER, S. 2014. Nondirective meditation activates default mode network and areas associated with memory retrieval and emotional processing. *Frontiers in Human Neuroscience*, 8, 1-10.
- WALLER, S. 2006. Intentionality of Rock-art Placement deduced from Acoustical Measurements and Echo Myths. In, *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge (McDonald Institute for Archeological Research), 31-39.
- WATSON, A. 1997. Hearing again the sound of the Neolithic. *British Archeology*, 23. Online version www.archeologyuk.org/ Accessed on 7 April 2014.
- WATSON, A. 2006. (Un)intentional Sound? Acoustics and Neolithic Monuments, in *Archeoacoustics*. Scarre, C; Lawson, G. (eds.), Cambridge, (McDonald Institute for Archeological Research), 11-22.
- WATSON, A. 2007. Aaron Watson Archeological Research www.monumental.uk.com Accessed on 7 April 2014.
- WATSON, A.; KEATING, D. 1999. Architecture and sound: An Acoustic Analysis of Megalithic Monuments in Prehistoric Britain, *Antiquity*, 73, 325-336.

Heralding the Sun

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Abstract

Jean-Pierre Mohen, at the UISPP World Congress in 2006, presented a stimulating hypothesis concerning western megalithism as a follow-up of the insularization of the British Isles 8,000 years ago. For the inhabitants near the seashore, the period between 14,000 and 7,000 years ago, of a breathtaking fast rise of the sea level at a rate of 15 cm per year, must have been a source of deep frustration. The calm prevailing ever since might have created the necessary peace of mind to herald the Heliocene and to record in the landscape the performances of the solar orb.

The discovery, in 1963 at Newgrange by Michael O'Kelly of an 18-m long corridor funnelling, for the 5'200th solstice, the light of the winter solstice sunrise upon a labyrinthine figure, was a major breakthrough in the understanding of our cultural heritage. It is not yet clear, though, if the existence of a light box separate from the entrance is of significance. In Malta, we heard an old visitor reporting that as a youngster around Christmastime, he used to go down deep into the Hypogeum with friends and without torches.

The use of megaliths to record solstitial points testifies faith in the sun far more than just choosing a cave whose entrance points, as at Lascaux, at the solstitial point.

Captive to his magical way of thinking, we feel reassured Homo sapiens conceived time as cyclic. His quest for the origin of time led him to modify the landscape in order to stage the sun in its solstitial turnaround. The amount of labour involved depends of course on local conditions: the architects on the Giza plateau had to build hills, while, at Tell el Amarna, they only had to position correctly the temple to Aton in the existing landscape, or the relevant engravings at Mogor and Compostela.

In Egypt, parallel to the megalithic avatars, there exists a hieroglyphic form, akhet, which Champollion translated as 'horizon'. It is difficult to be sure if the two large pyramids of Giza imitated the sign akhet or the reverse. On the first day of the first month of the season of inundation, it might well have happened that Imhotep, the-smartest, staged the solstitial sun at the bottom of a well, the Nilometer on Elephantine Island, and launched the 365-day Egyptian calendar. FR-48500 Soulages, <http://www.archaeometry.org>

Abstract

The lull of the last 7,000 years in the sea-level rise suggests that clear skies finally allowed Homo Sapiens to herald the sun. We will refer to this period of cultural revolution as the Heliocene. The solar-related event dated 2 March 1336 precisely locating both in space and time, will be discussed as the first one no longer being the expression of non-literate people.

The recent compilation by Robert Rohde for the Global Warming Art Project of the World data on sea-level rise for the last 20 millennia (Fig. 1), suggests that the lull of those last 7,000 years might have cleared the sky and allowed Homo Sapiens to herald the sun, a period we will refer to as Heliocene. In contrast, between 14,000 and 7,000 years before present was a period of a breathtakingly fast rise of the sea level at a rate of 1.5 cm per year. Such a rise might have generated permanent overcast skies and for the inhabitants near the seashore, it must have been a source of deep mental frustration.

The relative calm prevailing through the Heliocene has obviously created the necessary peace of mind to herald the sun, to engrave its face. These pieces of rock art sometimes had anthropomorphic features, like in Helanshan (Ninxia) (Fig. 2) or in Murujuga (Dampier).

Other testimonies of those early Heliocene activities are the records in the landscape of the apparent behaviour of the sun. Some of these records are located in the middle of urban centres, e.g. the

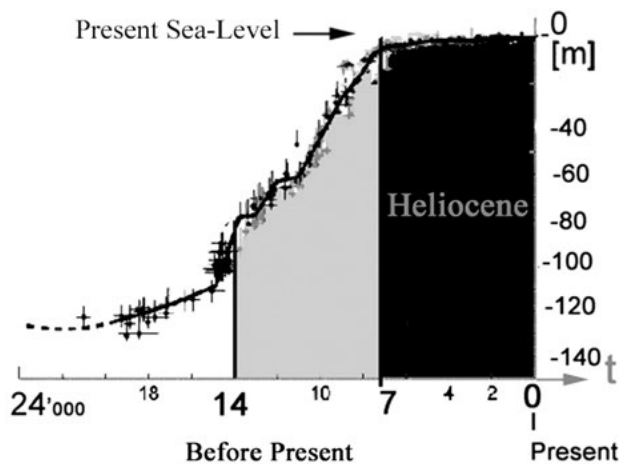


FIGURE 1. POST-GLACIAL SEA-LEVEL RISE AFTER R. ROHDE (GOBAL WARMING ART PROJECT).



FIGURE 2.
ANTHROPOMORPHIC SUN
AT HELANSHAN (PRC).
(PHOTO M. LARREY).

cathedral of Zürich, whose orientation stands out in sharp contrast to the other buildings facing the river (Fig. 3). This cathedral was built in the twelfth century, but not just anywhere. Carolus Magnus ordered the cathedral to be built on the ruins of a proto-Celtic temple, which had features connected with solstitial sunrises and sunsets. Today, dusk on summer solstice days is still worth seeing. The aerial view on Google Earth includes a depiction of the rays of the setting sun threading their way between the two towers towards the Grossmünster's spire. (The picture of this solstitial show on 21 June 2003 is in the inset of Fig. 3.)

The discovery in 1963 at Newgrange by Michael O'Kelly of a 19-m long corridor funnelling the light of the winter solstice sunrise on to a labyrinthine figure for the week of 17-25 December (Fig. 4) was a major breakthrough in the understanding of the heritage of non-literate people. It is not yet clear, though, if the existence of the roof-box, the separate light-box over the entrance, is of significance (Fig. 4).

FIGURE 3. SUMMER SOLSTICE SUNSET
AT ZÜRICH GROSSMÜNSTER (CH).
(PHOTO M. LARREY).

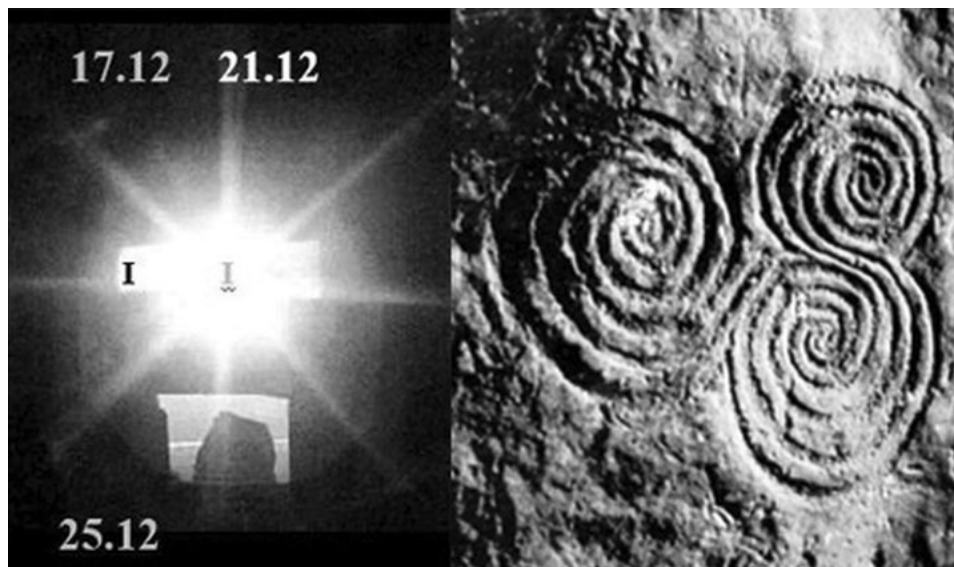
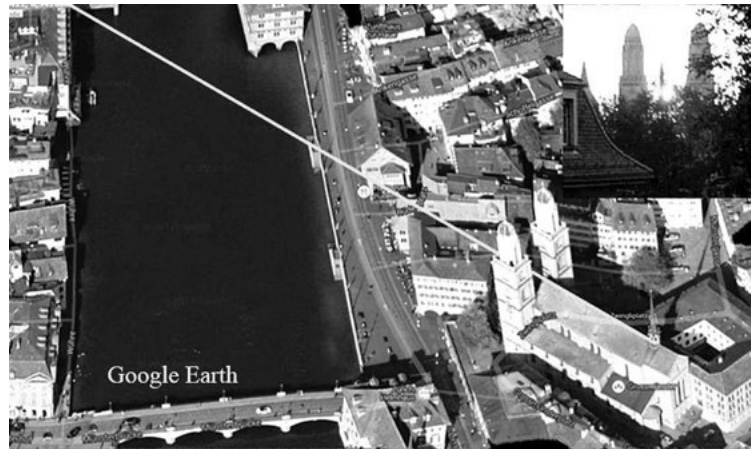


FIGURE 4. LABYRINTH AND WINTER SOLSTICE SUNRISE AT NEWGRANGE (IRL).
(PHOTO M. O'KELLY).

At Hal Saflieni in Malta, we heard an elderly visitor reporting that, as a youngster around Christmas time, he used to go down with friends and without the need of any torch deep into the Hypogeum.

Long before the Heliocene, as shown for Lascaux by Chantal Jègues-Wolkiewiez and Jean-Michel Geneste, the entrance of decorated caves might have been selected on the basis of their orientation towards the solstitial point. The use of megaliths to frame solstitial points expresses a great faith in the sun. Captive of his own magical way of thinking, Homo Sapiens conceived time as cyclic in order to reassure himself. Labyrinthic figures such as the one in Newgrange are the perfect metaphor of this cyclic time and it is not a surprise to find open-air engraved labyrinths pointed towards the setting sun. Jose Luis Galovart discovered that 590 hours before the vernal equinox, seen from the labyrinth of Mogor (Galicia), the sun is setting, between two 'Finisterrial' islets, Ons and Onza, located 11 km away from Mogor (Fig. 5).



FIGURE 5. LABYRINTH OF MOGOR (SP) /
SUNSET BETWEEN ONS AND ONZA 590
HOURS BEFORE VERNAL EQUINOX.
(PHOTO P. GALOVAR T).



FIGURE 6. SUMMER SOLSTICE
SUNRISE AT DOS SULIF (I).
(PHOTO M. LARREY).

At Dos Sulif (Valcamonica), the rising summer solstitial sun casts the shadow of the plumb-line on the axis of Camunian roses (Fig. 6). The sun first appears there at 9:30 a.m.

Seen from La Gardettes/Cèze (Gard) the winter solstitial sun rises against the slope of La Loubière. The shadow on the plumb-line falls parallel to the symmetry axis of the numerous anthropomorphs and cruciforms of this gneiss outcrop (Fig. 7).

Seen from the Castriño de Conxo (Galicia), at the winter solstice, the sun is rising against the slope of Pico Sacro, as shown in the picture of Anton Bouzas (Fig. 8). The engraving looks more like a sledge

FIGURE 7. WINTER SOLSTICE SUNRISE
AT LA GARDETTE S/CÈZE (F).
(PHOTO M. LARREY).

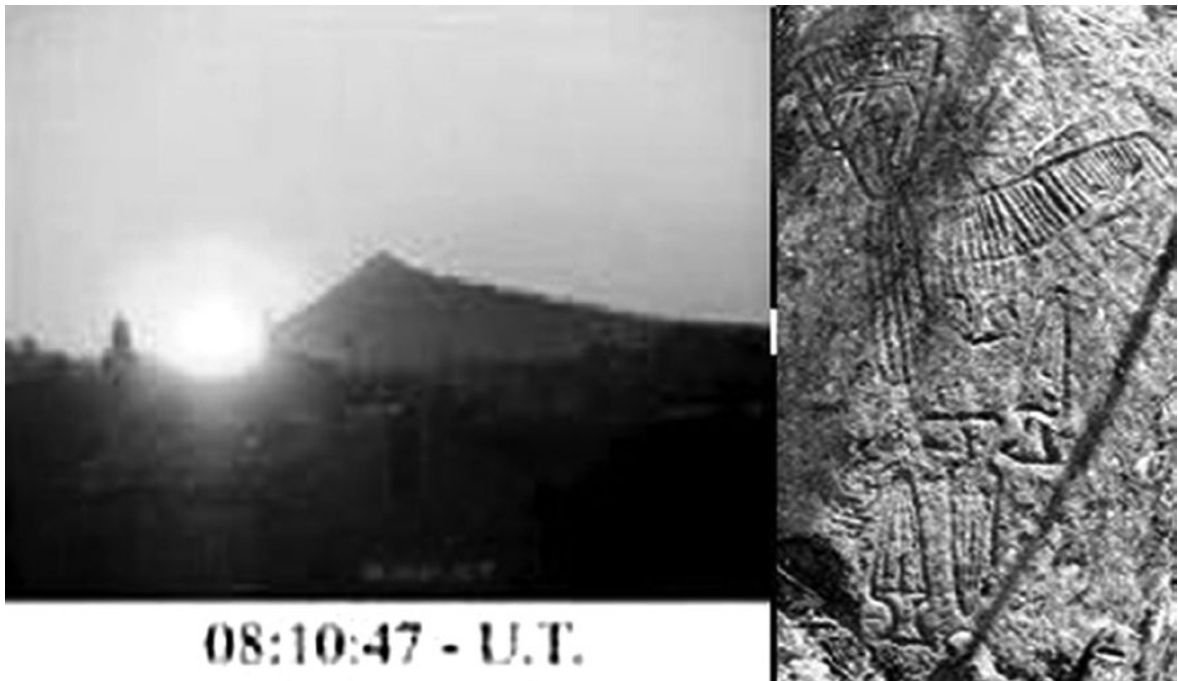
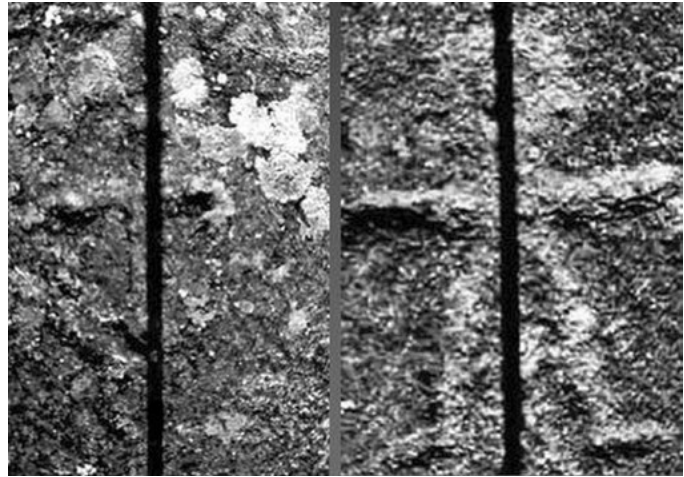


FIGURE 8. WINTER SOLSTICE SUNRISE AT CONXO (SP). (PHOTO A. BOUZAS)

than a labyrinth, and might well be at the origin of the ninth-century legend of the transportation of St James's sarcophagus from Pico Sacro to Compostela.

At other sites, the challenge to freeze the location of the origin of cyclic time led to modification of the landscape in order to stage the sun in its solstitial turn-around. The amount of labour involved depends of course on local conditions. Fig. 9 shows the sign *akhet* as drawn by Champollion. He translated this hieroglyph of 'the sun coiling up two mountains' by 'horizon'. In the lower half is an anonymous picture whose caption was suggestive: 'Seen from the sphinx at summer solstice, the sun is drawing, between the two large pyramids, the hieroglyph horizon.' This sounds like an invitation to look at the pyramids from the sphinx.

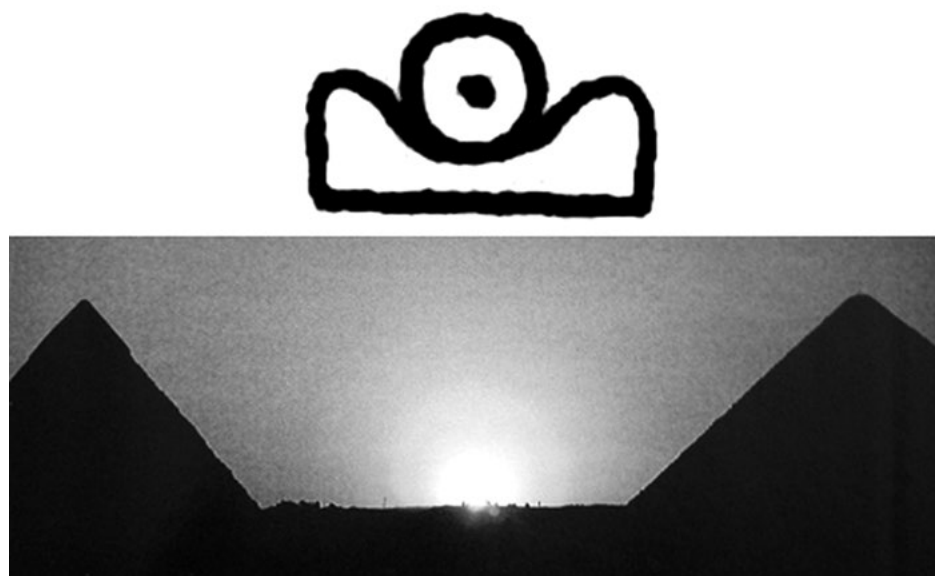


FIGURE 9. ARTIFICIAL LANDSCAPE IN FRONT OF THE SPHINX HERALDING THE SUN BEFORE ITS SHORTEST NIGHT / CHAMPOLLION'S HORIZON. (PHOTO ANONYMOUS).



FIGURE 10. THE SPHINX'S HEAD AS PIVOT FOR THE SUMMER SOLSTICE SUNSET AT GIZA (UAR) ON GOOGLE EARTH.

The sphinx head, studied by K. Lal Gauri in the early 1990s, was carved out of hard grey limestone, standing out of the sand of the desert, while the rest of the body was carved out of a much softer limestone. Thanks to Google Earth, anybody can now study the structure of the solar scene at Giza, and one has to admit that the setting of the pyramids and the sphinx is not fortuitous. Fig. 10 shows

the direction of the summer solstice setting sun just between the two large pyramids, taking the head of the sphinx as the pivot. It sounds as if, in the absence of an adequate landscape to stage the hieroglyph *akhet*, the pharaoh Kheops simply decided to erect two hills.

Thirteen hundred years later, Amenhotep IV, while he was still living in Thebes with his wife Nefertiti, witnessed on 14 May -1337, a partial solar eclipse of magnitude 94 per cent. Thanks to the retrodiction freeware 5MCSE, one can investigate the uncertainties here, which are concerned with the time of occurrence of the maximal obscuration, 12:12 or 12:25? This eclipse was total for four minutes over Akhet-Aten/Tell el Amarna, midway between Memphis and Thebes. Totality would have probably threatened the pharaoh and his wife to death. As five stelae recorded (Fig. 11), the pharaoh disguised himself as a sphinx in order to decode the 'atenic' message, which was an injunction of the solar disk Aten: 'He shall build the horizon of Aten in Akhet-Aten'.

The monumental boundary stela K at Akhet-Aten provides us with precious information on the foundation stone ceremony for the first temple to Aten. It occurred during the fifth royal year and *peret* season, in its fourth month and 13th day. On Google Earth the aerial view shows the direction of the rising sun, 103°N, pointing towards a wadi indentation, 764 hours before vernal equinox. The photo of M. Gabolde (Fig. 12) depicts the scene at the same time in the seasonal cycle, actually on 19 February 2005, at 04:38UT, 704 hours before equinox. Again the *akhet* symbolism was at work...

The most remarkable feature of the reign of Akhenaten is the time span between the solar eclipse on 14 May -1337 and the foundation of Akhet-Aten on 2 March -1336. It is ten lunar months, just about the period of a lengthy human gestation. The day the founder event of the cult to the solar disk Aten took place was a new moon day, a day when the solar disk reigns alone in the sky. This solar event of 2 March -1336, precisely located in both space and time, might well be the first expression of a literate people.

One may argue that the very first event, precisely located in space and time, is when the great architect Imhotep might have declared solstice day 16 July -2767, the first day of the first month of the inundation season (i.e. 1 akhet I, the first day of the Egyptian calendar). Indeed, it is in agreement with: the recent radiodating of the Zoser pyramid; the coming of Imhotep described on the starvation stela on Sehel Island; the start of the rise of the Nile level which by a mere geographical accident occurs normally at summer solstice; and the lighting of the bottom of the Elephantine's nilometer when the solstitial sun reaches its zenith. Unfortunately there was no solar eclipse at this date.



FIGURE 11. STELA OF AMENHOTEP IV AS SPHINX (GENEVA MUSEUM) DECODING THE 'ATENIC' MESSAGE / SOLAR ECLIPSE PATH 14 MAY -1337 ON GOOGLE EARTH AND 5MCSE. (PHOTO ANONYMOUS).

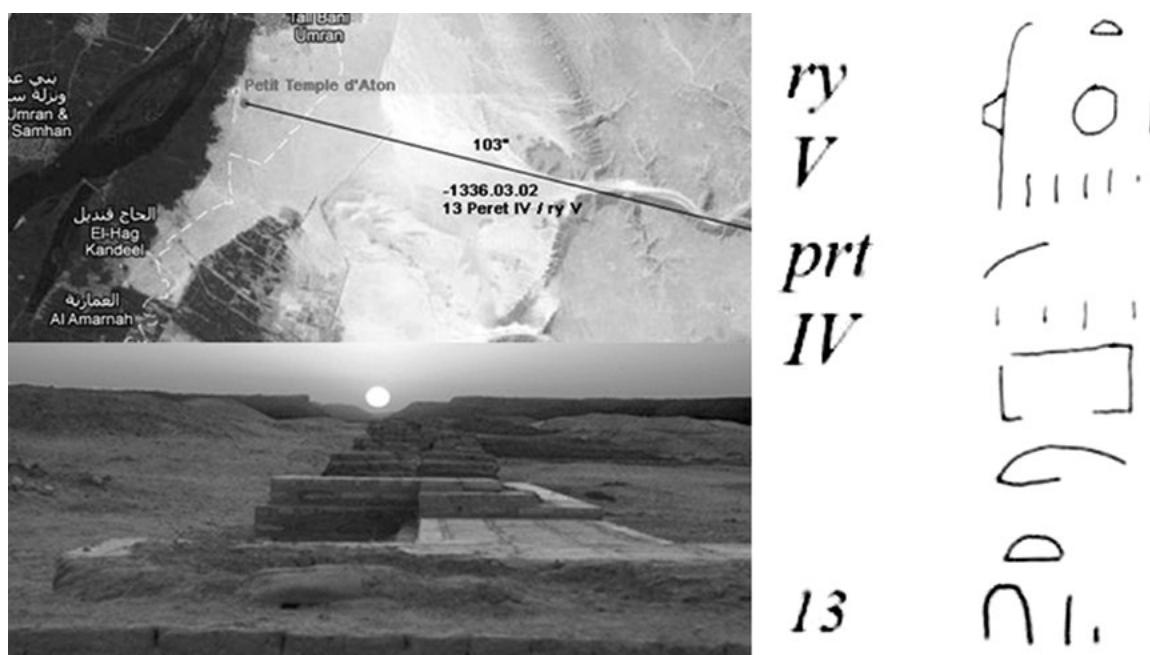


FIGURE 12. SUNRISE FROM ATEN SMALL TEMPLE, 704 HOUR BEFORE VERNAL EQUINOX GOOGLE EARTH VIEW OF TELL EL-AMARNA 3 FEBRUARY -1336: CELEBRATION DATE ON BOUNDARY STELA K. (PHOTO M. GABOLDE).

The Treasures from the Russian City of Zaraysk

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Abstract

This contribution considers the intellectual and spiritual expressions of non-literate people through the example of two outstanding portable art figurines from the Russian city of Zaraysk. These figurines were made by employing flint tools on mammoth ivory which were discovered by the archeological expedition of Dr Khizry Amirkhanov (Moscow), while he was working at Zaraysk from 1995. The great discoveries were made during the excavations in 2001 and 2005 near the entrance to the Zaraysk Kremlin with the date of 22,000 years old.

At the same time, it is just the very beginning of the story, which is 12 years old and has an outstanding international scientific context. The real possibilities of the analyses of those ivory figurines are considered here, in order to obtain important objective evidence of the intellectual and spiritual expressions of non-literate people.

The field discoveries at Zaraysk in 2001 and 2005

The scientific investigation of the intellectual and spiritual expressions of non-literate people means presenting the physical evidence which should be available to check at any time. This is mainly a question of private personal luck. The very beginning of the discovery was 13 years ago at the city named 'Beyond Paradise' (translation of Zaraysk, a city located 162 km southwest of Moscow). The bison figurine made from mammoth ivory (Fig. 1) was found near the ancient walls of the Zaraysk Kremlin in 2001 (Fig. 2).



FIGURE 1. THE BISON FIGURINE MADE FROM MAMMOTH IVORY.



FIGURE 2. EXCAVATION NEAR THE
ANCIENT WALLS OF THE ZARAYSK
KREMLIN IN 2001.

The Russian archaeologist from Zaraysk, Dr Sergey Lev, found this portable figure in pit no. 71, 2.14 m deep in situ surrounded by the wider archeological context of the mammoth's tooth and shoulder-blade, as well as some other unknown animal bones and red ochre pigment. The bison figure is 16.4 cm long, 10.4 cm tall and 3 cm wide with the date of 22,000 years old. The left side of the beautiful ivory figure of the bison was artificially destroyed, with two legs from the left side (of four) of the figure artificially broken, and red ochre was found on the front part of the bison's right side chest (Amirkhanov and Lev 2004).

The artifact's first publication with six pictures taken from all sides was in 2004 (Figs. 3, 4). The damage to the figurine was for some spiritual reason, and happened before it was placed on the specially prepared small podium at the bottom of the pit, according to the authors' point of view. After the detailed investigation Amirkhanov and Lev wrote that this is 'an ordinary three-dimensional portable young female bison sculpture' and they could not feel 'any attempt of specific expression of the author of figurine' (Amirkhanov and Lev 2004, pp. 311-12).

The Zaraysk site became very famous immediately after the bison figurine's publication. Many foreign colleagues from all over the world visited the excavations of the Russian archaeologists in Zaraysk. Some of them were from the UK. A British scientist, Dr B. Bradley, visited Zaraysk in 2005, as well as a group of British students from the archeological department, who participated in the Zaraysk excavations in 2005 (Fig. 5). They were very lucky to discover the three-dimensional mammoth ivory figurine of the first Zaraysk Venus 16.6 cm tall, 4-5 cm wide and 3 cm thick (Fig. 6).

The next big publication of Zaraysk art objects was in 2009 with very short summaries in English: 'Zaraysk figurine represents an artistic advance in comparison with the portable art from the Aurignacian layers of caves such as Vogelherd and Geissenklösterle (more than 32-30,000 years BP) in southwest Germany' (Amirkhanov 2009, p. 449). Concerning the female figurine no. 1 the English summaries included the next: 'The figurine had been carefully placed in the pit when it was about one-third full of sediment. The pit apparently was covered by a mammoth scapula at the same time ... The figurine's overall preservation is poor. Its head and legs are the best preserved parts; they exhibit traces of polish. The head is particularly accurate in shape; it was rendered with short, regular vertical cuts. The figurine is typical of the "Avdeevo style" of such objects.' (Amirkhanov 2009, p. 450).

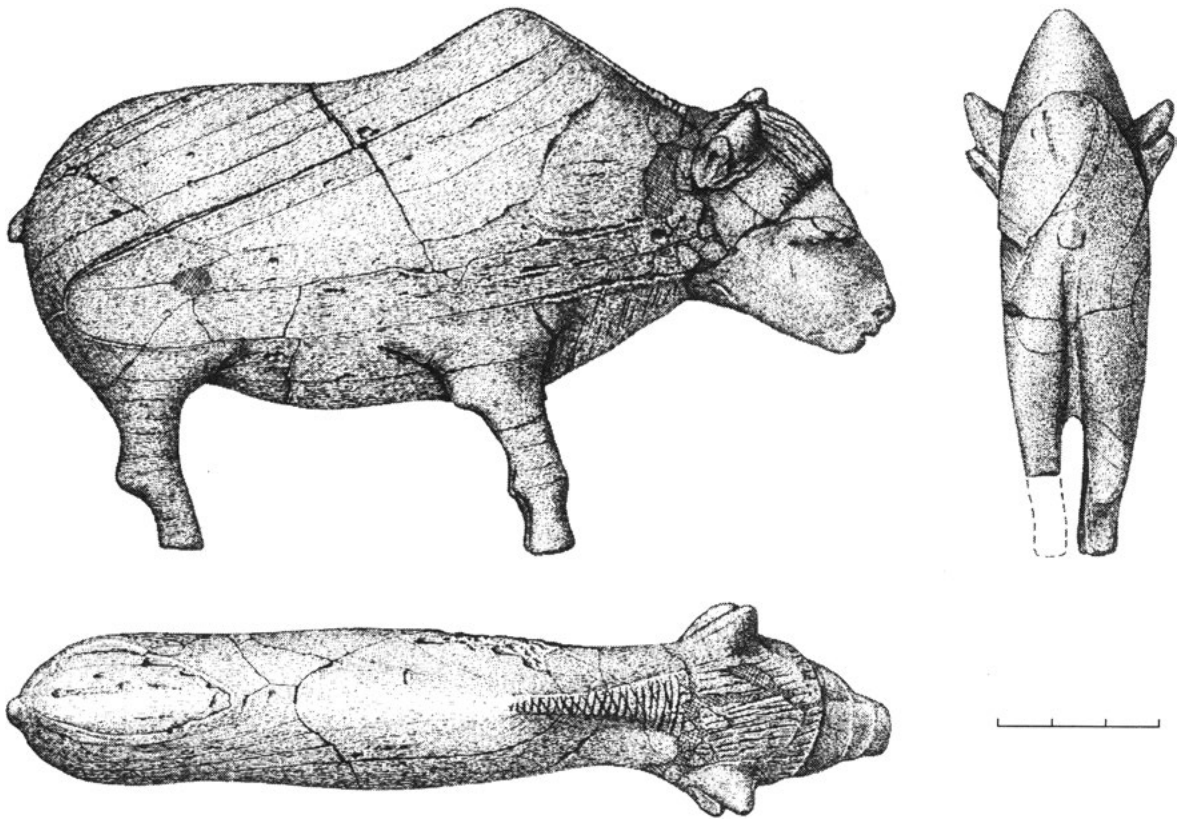


FIGURE 3. BISON PICTURES FROM THREE SIDES AFTER KRAVTSOV.

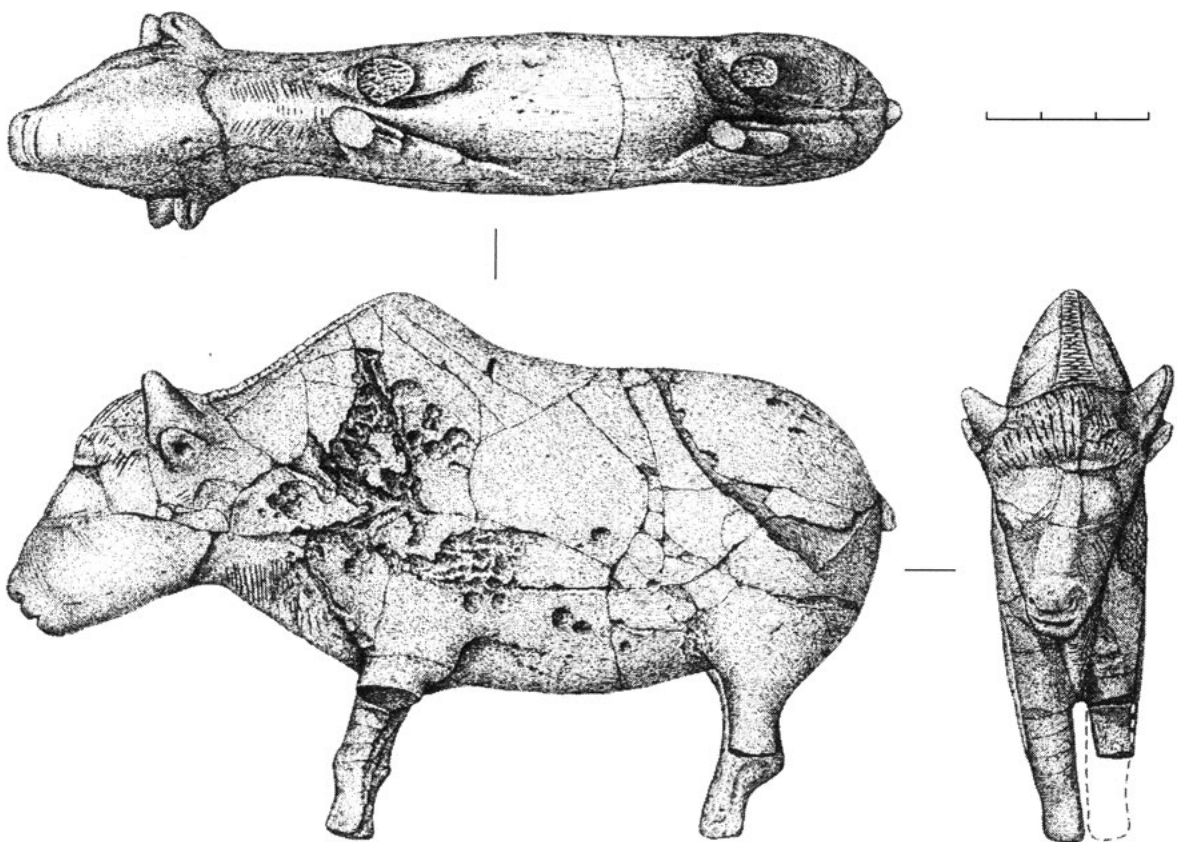


FIGURE 4. BISON PICTURES FROM THE OTHER THREE SIDES AFTER KRAVTSOV.



FIGURE 5. GROUP OF ENGLISH STUDENTS FROM THE ARCHAEOLOGICAL DEPARTMENT, WHO PARTICIPATED AT THE ZARAYSK EXCAVATIONS IN 2005.



FIGURE 6. THE ZARAYSK VENUS.

However, it was impossible to see the treasures from Zaraysk anywhere else in Russia as three-dimensional portable art for many different reasons. Nobody thought of it in Russia and there was no official exhibition in Russia or media advertisement. It was not exhibited at the local Zaraysk museum, or at the world-famous Hermitage museum at St Petersburg, or at the State Historical Museum at Moscow (originally built in Red Square in 1875-81 on the inspiration of the Russian

archeologist, Alexey Uvarov, as a special state archaeological museum). Even nowadays the Zaraysk treasures of portable art are not available to the general public at the local Zaraysk museum, though they are available at any time for special guests, according to the internet.

Therefore, the great luck for the Zaraysk portable art discoveries was after eight years, in 2013. The British Museum organized the outstanding exhibition named 'Ice Age art. Arrival of the modern mind' a first in the museum's history. British archeologists invited their Russian colleagues to participate in this unusual London exhibition.

The exhibition at the British Museum 2013

The exhibition took place under the professional supervision of Dr Jill Cook, a senior curator in the Department of Prehistory and Europe at the British Museum. She wrote the preface to the museum catalogue: 'The British Museum is exceptional among the world's museums in curating such works together with those of the great civilizations ... Consequently, starting the first major British exhibition of Ice Age art here suggested the need for an approach that lifts Ice Age images out of their archaeological confines and the unwitting prejudices of traditional art history. This is art made by fully modern humans with brains like us. It is treated as part of the deep history of art and the mind' (Cook 2013, p. 8).

Dr Cook mentioned that the task of the museum was to borrow for exhibition unique, fragile pieces, some of which are national treasures. It is also important that without the support for the project of many of the British Museum's sponsors this exhibition would have foundered, not to speak of the great team work of many colleagues of Dr Cook, without which this exhibition would never have happened. However, from my point of view the key point is what Dr Cook offered in the catalogue when she wrote 'of two unrelated Robinsons: the sculptor, John, who encouraged my artistic eye and my father, Kenneth, who taught me to be curious' (Cook 2013, p. 9).

The exhibition included a collection of Europe's oldest sculptures 40,000-30,000 years old, soft curves and full figures: female sculptures 30,000-20,000 years old, art and identity 40,000-20,000 years old, animals in art 30,000-20,000 years old, Renaissance art in western Europe 22,000-12,000 years old, sex or symbol? Images of woman 18,000-11,000 years old and the late drawings, sculptures and stories, 15,000-10,000 years old.

For the jacket of the museum catalogue it was obvious that there were many to select from; however, the period of 30,000 years ago was selected for the jacket of the museum volume. This selection took place and it was the beautiful photo of the ivory bison figure from Zaraysk by Khizry Amirkhanov and Sergey Lev (Fig. 7).

The windows of the exhibition hall were completely covered with thick fabric to avoid the daylight from outside the hall entering in. There were large spaces between the showcases to let visitors walk all round the exhibits. The visitors felt themselves inside mysterious prehistoric time as a reality 'that lifts Ice Age images out of their archaeological confines' and concentrated their attention on the artifacts. The showcases were well lit, and underlined the unique aspects of the artifacts in the showcases. The bison figurine from Zaraysk was in a separate showcase which allowed visitors to observe this three-dimensional artifact from all sides.

Description of the Zaraysk artifact

According to Dr Cook, who studied the bison artifact, she wrote in a chapter in the catalogue entitled 'Animals in art 30,000-20,000 years old':

The figure is produced from a substantial piece of tusk and is fully sculpted in the round. It represents an adult female bison scaled down in exact proportion from the living animal. The



FIGURE 7. CATALOGUE OF THE EXHIBITION *ICE AGE ART. ARRIVAL OF THE MODERN MIND*, 2013.

detail does not stop there. As in life the forequarters of the bison are more developed than the hindquarters and the taper of the tusk has been cleverly exploited to achieve this.

The higher shoulder area comes from the wider diameter of the cone and the dip in the center of the back, which is a distinguishing feature of European bison, follows the upper curvature of the tusk. Even utilizing this geometry to advantage, the sculptor's task to achieve the shape of the head and body and to separate the legs using stone tools was considerable ... Seen in front view the animal is clearly animated. With her head slightly angled to one side she appears to be walking or, perhaps, trotting forward if the missing left leg was raised.

Her mouth is slightly open as if she is calling and the characteristically broad nostrils give vivacity to the gentle face with its typically small eyes shown in relief and an incised line for the lids. The bump on the forehead between the horns is covered with incised lines to indicate the mass of curly hair forming the forelock covering this chignon and the top of the nose. The short, broad ears below and slightly behind the horns are also incised to show the curls of hair found there. The top of the thick mane, which covers the shoulders adding to their massive appearance in life, is simply represented by transverse incisions crossed by oblique lines along the neck and shoulder and the bottom of this fleece is shown by oblique incisions on the front of the chest.

Horizontal lines on the top of the right leg coincide with the area thickly covered by hair. There is no shading on the rear of the animal because there is much less hair towards the end of the back. The tail is shown in the correct position by a thin, short stalk although in life it is long with a tassel of curls at the bottom. The joints between the legs and the body are detailed with the musculature sculpted in relief. The hock and prominent heel are clear on the surviving back leg and the knee is defined on the front leg but the hooves do not show the split into two parts. (Cook 2013, pp. 165-8).

The other example of portable art from Zaraysk is the figure of a woman in the early stages of pregnancy. It was found during the excavation in 2005 in a pit located between hearths. This figure, called the Zaraysk Venus, was portrayed holding her abdomen. It was shown at the exhibition in a large showcase together with many other Pleistocene 'Venuses' from different Russian sites, such as Kostienky-1, Avdevo, Eliseevitchi. They are different in shape, size and materials and give a rare opportunity to the public and paleoart specialists to compare them.

Dr Cook wrote this about the figure: 'tall but pregnant, the ivory figure from Zaraysk ... is sculpted in a style reminiscent of the Avdevo examples. Her bowed head has no face but a hairstyle or hat is indicated by short vertical incisions. The object was carefully placed on a small lenticular-shaped spread of fine sand in a pit with a patch of red ochre behind her head and covered by a mammoth shoulder blade. Although poorly preserved, the skilful separation of her legs slightly bent at the knee gives a sense of movement to the figure' (Cook 2013, p. 84). This is a rare detail for Venus portable art figures created 22,000 years ago.

The intellectual and spiritual expressions of non-literate people at Zaraysk 22,000 years ago and now

The Zaraysk archaeological excavations continued for more than 20 years before the great discovery of the bison figure in 2001. Amirkhanov and Lev published information concerning the archaeological context: the mammoth's tooth and shoulder-blade, as well as some other unknown animal bones and red ochre pigment. The left side of the beautiful ivory figure of the bison was deliberately damaged in several places, for instance two legs from the left side, and red ochre was found on the front part of the bison's right chest. This could be evidence of the spiritual expressions of non-literate people 22,000 years ago. they felt that was 'an ordinary three-dimensional portable young female bison sculpture' and did not see 'any attempt of specific expression of the author of figurine' (Amirkhanov and Lev 2004, pp. 311-12).

Many different things needed to happen before Dr Cook could make a scientific investigation of the Zaraysk artifacts in proper laboratory conditions.

As the result, Dr Cook wrote in 2013 about the bison figurine: 'Seen in front view the animal is clearly animated. With her head slightly angled to one side she appears to be walking' (Cook 2013, p. 165-8). On the other hand, she wrote concerning the Zaraysk Venus found in 2005 that: 'the skilful separation of her legs slightly bent at the knee gives a sense of movement to the figure' (Cook 2013, p. 84). This is evidence of the intellectual expression of the non-literate people at Zaraysk.

Conclusion

This is the very beginning of discoveries of the treasures from Zaraysk. They are useful in several senses. First they are different from the many other static Pleistocene figurines that visitors could see in the exhibition. The bison and the Venus portable art look very modern, are full of intellectual and spiritual expression, and 'give a sense of movement to the figure'. Second, it is not difficult to see that the Zaraysk portable art treasures showing the differences between the intellectual and spiritual expressions of non-literate people.

The spiritual evidences of expressions could be identified only during the proper professional excavations. They are very fragile, and therefore, could only be found in situ at the excavations. It is very important to emphasize that the two legs from the left side of the figure were artificially broken..

The full detailed story is available in the museum volume (Cook 2013, pp. 267-71). I would like to draw attention to the fact that in 1887 two pieces of ivory portable art: 'were sold to the British Museum but it was not until a visit by the French archaeologist Abbé Henry Breuil (in 1904) that they were finally recognized as parts of a single sculpture' (Cook 2013, p. 271).

Acknowledgement

I am grateful to my friend Jeffrey Kottmyer for his great help in editing this article.

References

- AMIRKHANOV, H. (ed.) 2004. *Problemy kamennogo veka Russoiy Ravniny* (in Russian), Russian Academy of science, Institute of archaeology, Nauchny Mir, Moscow.
- AMIRKHANOV, H. (ed.) 2009. *Palaeolithic Studies in Zaraysk 1999-2005* (Chapter 3 in Russian pp. 187-288; in English pp. 445-8; Chapter 4 in Russian pp. 289-340; in English pp. 448-51), Paleograph Press, Moscow.
- COOK, Jill, 2013. *Ice Age art, arrival of the modern mind*, British Museum Press, London.

Several Understandings on the Cave Paintings on the Turtle Stone in Anshan

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Abstract

During the third national survey of cultural relics, the Anshan survey team discovered 49 cave painting groups, 114 group patterns, 1,846 recesses in 14 places in Haicheng (a country-level city), Qianshan district, Lishan district and Tiedong district. These cave paintings were mainly distributed on the sunny side of the mountain, and some are carved on turtle stone. Through the interpretation on the origins, connotations, age and other relevant circumstances, by analyzing the shape and distribution of the cave paintings in Anshan, together with the cave paintings on 8 turtle stones as the main content, this paper brings forward that cave painting is not only an important part of Liaohe civilization, but also an important part of Chinese civilization. This paper also introduces the situation faced by Anshan cave painting, and puts forward proposals on how to protect, and construct more enhanced regional cooperation for cave painting.

Earth and Underground in Early Sumerian Sources

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Abstract

In this paper, through an analysis of the Mesopotamian sources, I will try to reconstruct the pre-protohistoric perception of subterraneity developed between the two rivers. Before the formation of a bipartite underworld, that contained and separated the two opposite poles connected to fertility and death in a structure that denied any form of cyclicity, the subterraneity related exclusively to the liquid, potential, chaotic sphere of the primordial substance. In early Sumer, before the subterranean sinking of the afterlife and all the other levels of alterity, the afterlife was confined to a purely geographical, horizontal, otherness (the mountains, the steppes). The beliefs of a civilization without writing will be extrapolated tentatively from iconographical but also written sources, since the demarcation between non-literate and literate people was fluid and often ambiguous, especially at the turn of the problematic period of the invention of writing (but what is writing?).

The two poles of the classical Mesopotamian underworld

In the late Neo-Assyrian cosmological systematization (from Assur) called KAR 307 (30-38), dating to the first millennium, but that could be traced back (for the list of cosmic regions) to the Kassite period,¹ the universe was elegantly divided into six symmetrical levels, three celestial and three earthly. The top half, also described by other texts (*AO 8196, Etana Epic*²), was composed of three spheres of different stones: the upper sky, seat of Anu;³ the median sky, of lapis lazuli, seat of the Igigi; and the lower sky, of *luludānitu*,⁴ seat of the stars. The three lower were symmetrical (34-37): the higher ground, seat of men; the median ground, aquatic seat of Ea (Apsu); and the lower ground, where dwelt the 600 Anunnaki, chthonic deities.⁵

Following this tradition, the underworld appears to be vertically bipartite, constituted by a huge ‘cistern’ of fresh water, reification of the primordial god Apsu, creative source of life and of first matter, to which the realm of the dead, arid and barren, is subjected. To reach the latter it seems necessary to go through the former, and hence, according to some scholars, the function of rivers and streams as an obligatory passage to the hereafter,⁶ and the same image for the infernal river Ḫubur.⁷

This view, due to its rare – within the fluid, ‘incoherent’,⁸ Mesopotamian mythology – systematic nature, has often been taken as a model for the reconstruction of Mesopotamian cosmology, although nothing indicates that it was actually very widespread, and even less unique. Indeed, in addition to being of non-unique interpretation,⁹ it cohabits with (or was preceded by) different systematizations, such as the seven heavens and seven earths of the Sumerian spells, perhaps referring to a cosmographic tradition,¹⁰ and the *Enuma Eliš* cosmogony (tab. V),¹¹ in which the underworld is not mentioned and

¹ See Horowitz 1998, pp. 4-5.

² See Horowitz 1998, respectively pp. 3-19, 43-65.

³ Powerful celestial god who according to a mechanism well known in the history of religions, otiosus, was replaced by a more dynamic god (Enlil, or Marduk); see Eliade 1976, §19.

⁴ Unidentified red stone, see Verardi 2006, p. 40. Sumerian words are written in roman type, Akkadian ones in italics.

⁵ See Horowitz 1998, pp. 3-4 and Verardi 2006, pp. 39-40.

⁶ See inter alia Chiodi 1994, passim.

⁷ See George 2003, pp. 500-01.

⁸ See e.g. Kramer 1960, p. 65.

⁹ See Bottéro 1980, p. 31.

¹⁰ See Horowitz 1998, pp. 208-20.

¹¹ See Bottéro, Kramer 1989, pp. 602-79.

the cosmos, created by Marduk from the body of Tiamat, seems divided not into six but five levels – and, what is even more important, with different ‘imaginaries’, often far away from the rigour of theological systematizations. In fact, if the hereafter is always placed underground¹² from the second millennium onwards, its ‘specific’ position (just below the earth’s surface, deep, located under, or not, the Apsu) is far from stable. In the words of Jean Bottéro (1980):

De la disposition interne de cet Enfer ainsi meublé, il est probable qu’on n’avait qu’une idée fort confuse: tout ce qui touche à l’Au-delà étant, de soi, absolument incontrôlable, se trouvait donc, en Mésopotamie comme partout ailleurs, plongé dans le même à-peu-près, le même flou, le même vague et, peut-être encore davantage que d’autres secteurs de la Mythologie, farci d’inconséquences et de données variables et contradictoires.

Two aspects should be pointed out: on the one hand, the substantial relationship, ontological and not geographical, between the two poles of the underground, a highly significant relationship that has attracted little interest among scholars; on the other hand, the importance in the Mesopotamian imagination that gradually only one of these two poles takes on.

Regarding the relationship between the place of *post mortem* and the Apsu, it is interesting to look at their subterranean co-presence and at the same time at their rigid separation (sometimes embodied in the hard surface of the cistern of fresh water, the *dannatu*¹³): they convey opposite and complementary values that together account for those assigned to the subterranean world. Hence, under this interesting decoupling, the cistern of fresh water (and the deities and figures related to it) absorbs all the values associated with the beginning (life): purity, potential, dynamism, creativity, fecundity, fertility. By contrast, the opposite values are absorbed by the other pole: the end (death), dirt, staticity, sterility, dryness.¹⁴

Every culture, in constructing its imaginary picture of the underground, must somehow deal with its dialectical nature, with one eye towards death and the other towards birth; elsewhere through a kind of *coincidentia oppositorum*, while the Mesopotamian culture, which for most of its was indifferent to eschatological conceptions and the cyclical structuration of *post mortem*, developed an interesting split, a real bipartition of the underground.

The two poles of the underground live together, but do not occupy the same space in the Mesopotamian imagination. The pole of death seems more and more extended and ramified,¹⁵ reaching an apex with the baroque and terrorizing images of the Neo-Assyrian period, perhaps increased or favoured, as has been suggested,¹⁶ also by rhetoric and imperialistic propaganda. The subterranean world increasingly recalls dark atmospheres: ‘I cannot tell you, my friend, I cannot tell you! / If I am going to tell you the

¹² See Van der Stede 2007, pp. 38-42.

¹³ See Horowitz 1998, p. 345.

¹⁴ Significantly, Enkidu’s description of the underworld in the 12th tablet of Gilgameš begins, at lines 96-7, not entirely known to Andrew George 2003 (see Cooper 2009, p. 29) with an allusion to infertility, and in particular to atrophy of the sexual organs: ‘the penis is like a rotten beam, termites devour it ... the vulva is like a crevice filled with dust’ (Cooper in 2009, p. 29). The infertility of the underworld (see also Kirk 1970, p. 110 and Van der Stede 2006, p. 34), interwoven with that of other peripheral places (see Wiggermann 1997, pp. 216-17) such as deserts and steppes, emerges from a number of images (e.g. the salt water which Ur-Nammu must drink (see Hays 2011, p. 50)) and descriptions, such as, in particular, that of Ningišzida’s journey to the netherworld (29-31): ‘The river of the netherworld no water flows, Its You Should not drink water, / would you sail then? / The field of the netherworld grows no grain, flour milled from it is not, / then would you sail? / The sheep of the netherworld carries no wool, cloth is not woven from it, / would you sail then?’ (Katz 2005, p. 67. See also Horowitz 1998, pp. 351-2). This non-productive (and therefore antisocial) conception of the underworld is intertwined, on the other hand, with the subject of the constant dependence of the dead on the offerings of the living (see Scurlock 1997, pp. 92-3 and Hays 2007, p. 322).

¹⁵ See e.g. Jacobsen 1976, p. 228 (‘The ubiquity of the powers of sudden death led understandably to an increased interest in what these powers and their domain, the netherworld, were like; stories and descriptions of them became popular’) and Hays 2011, p. 34 (‘there was a flourishing of baroque portraits of the underworld and of protective spells against demons and the dead’).

¹⁶ See Hays 2011, p. 56.

rules of the Netherworld That I saw, / sit you down (and) weep!’ These are the first agitated words of Enkidu resurfacing in front of his friend.¹⁷

The underground becomes, first of all, the glum house of the dead (*Eršetu mītūti*, *bīt dumb*, ‘the land / house of the dead’) similar to shadows and demonic beings, the realm of non-life, non-existence, otherness’ As opposed to life, health, virility, there was a huge (as the quantity of the dead is huge¹⁸) anti-kingdom, a ‘big city’ (*urugal*), mirroring that of Earth.¹⁹

The image of *post mortem* is interwoven with the image of subterraneity ever more closely, creating a reality where the borders of the two constituent elements are fluid, no longer distinguishable. The subterranean world is more and more dominated by the idea of afterlife, but at the same time provides the images with which afterlife itself is conceived. Beginning with the concreteness of the grave, the underworld will be built on the images of darkness (*é.kukku*, *bīt eṭuṭi* / *ekleti*, ‘the house of darkness’²⁰), and dust (*bīt epri*, ‘the house of dust’²¹):

[...] to the house whose residents are deprived of light,
Where dust is their sustenance, their food clay.
They are clad like birds in coats of feathers,
And they cannot see light but dwell in darkness.²²

This kind of the underworld is usually associated with Mesopotamian beliefs, an underworld that is, *pars pro toto*, the seat of the afterlife. Actually, the ideas of early Sumerians were almost antithetical. What could be defined as the essence of the underground was conceived as something primordial and fertile, apparently extraneous to the realm of death, in spite of the fact that the dead were buried.

The aquatic underworld in early Sumerian sources

The relief of the famous Uruk vase,²³ of the end of the fourth millennium, is highly representative of Mesopotamian ideology of early history, displaying ‘the hierarchical relations between the physical world, mankind, the ruler and the gods’²⁴ (Fig. 1).

The lower register shows the natural world divided into three levels: at the bottom, as the foundation of the whole iconographic system, there is water, the underground principal source of life, and above that the livelihoods of men and gods, starting with water and human labour: wheat and flax (agriculture) and rams and ewes (sheep). In the middle register the population bears the fruit of the harvest to Inanna, patron goddess of the city, and in the upper one the priest-king (*en*) and

¹⁷ *The Epic of Gilgameš* XII, transl. by George 2003, p. 733. With ‘Epic of Gilgameš’ I mean the *Standard Babylonian Epic*; see George 2003, pp. 418-43. The edition and translation of reference are those of Andrew George.

¹⁸ Obviously much higher than that of the living, as pointed out by Ištar (The Descent of Ištar, The Epic of Gilgameš VI) and Ereškigal (Nergal and Ereškigal) in their threat to pick up the dead on earth: ‘I shall make the dead outnumber the living’ (The Epic of Gilgameš VI, 100, George 2003, p. 625).

¹⁹ The process of urbanization of the afterlife, from the later centuries of the third millennium, becomes more systematic and complex, contextually with the evolution of real Mesopotamian urbanization. The image of the afterlife as an urban society is attested by the middle of the third millennium by the name *urugal*, the ‘big city’, while an inscription dedicated to Ereškigal ‘queen of the underworld’, dated to 2300 BC, is the first secure evidence of the concept of the netherworld as a kingdom. In the funeral laments for the death of King Ur-Nammu, comparisons with the terrestrial kingdom become even closer, with a defined hierarchy (Ereškigal the queen, Namtar the vizier and scribes, judges, officers) and an administrative system that, from then on, will often be the image of the contemporary and real one (see Katz 2004, p. 478 and 2005, p. 82). Even at the architectural level – think of the doors, the walls, the palaces (*è.gal*) of the deities and even, in rare cases, the roads – the afterlife is often built, although not necessarily in a realistic manner, through urban elements. The idea of the artificiality of the underworld emerges also from its classification as *e, bītu*, ‘home’: house of the dead (*bīt mūti*), of darkness (*é.kukku*, *bīt eṭuṭi/ekleti*), of dust (*bīt epri*), house of Dumuzi (*bīt ddumuzi*), house of Irkalla (*bīt dIrka*).

²⁰ See Horowitz 1998, pp. 289-90, 352; Katz 2005, p. 70; and Van der Stede 2006, pp. 30-1.

²¹ Particularly Gilgameš VII; see George 2003, pp. 632-47.

²² George 2003, p. 645. See Pettinato 1992a, pp. 185-7.

²³ See Avery 2007 and Wiggermann 2011, pp. 663-4.

²⁴ Wiggermann 2011, p. 663.

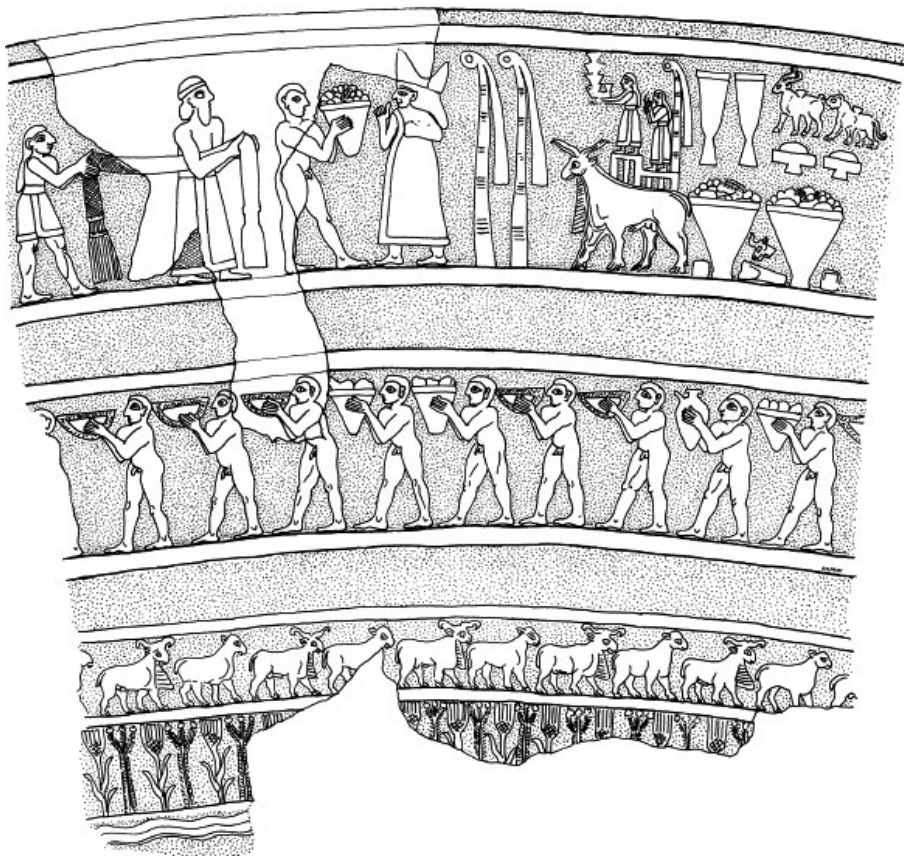


FIGURE 1. 'WARKA VASE'. RELIEF-CARVED ALABASTER VESSEL, LATE FOURTH MILLENNIUM, FROM URUK; AFTER F. WIGGERMANN 2011, P. 664.

his assistant (*lagar*?) present themselves to the goddess in front of her temple. The cloth that the main figure is holding could recall, according to Jacobsen's interpretation,²⁵ a dramatization of the marriage of the goddess with Dumuzi,²⁶ an important theme for the dynasty of Ur III,²⁷ which would close the circle with a return to earth and fertility, to which everything refers in this 'exceptionally explicit iconographic monument'.²⁸

Later, the first written texts also insist on similar conceptions. Since the second half of the third millennium royal inscriptions often focus on specific problems relating to irrigation, the maintenance of gardens and water management. Up to the first part of the second millennium, literary sources show a great interest in issues related to cultivation and fertility. To the *hegal*: the opulence, abundance, prosperity.²⁹

In the Uruk vase, water is placed as foundation, basis and principle of that agricultural pyramid; water in Sumerian significantly is indicated by the same sign as for 'seed', a.³⁰ Water as *fons et origo*: Enki / Ea, the god of water, was 'Lord of depth' ((en.) engur) and 'Lord of Life' (en.ti).

²⁵ Jacobsen 1976, pp. 24 ff. See Pisi 2001, p. 39.

²⁶ On the theme of sacred marriage, see in particular Kramer 1972b, Frankfort 1978, pp. 295-8, Sanmartín 1993, pp. 311-16 and Pisi 2001, pp. 43-5.

²⁷ See Kramer 1972b, p. 131.

²⁸ See Wiggermann 2011, p. 663.

²⁹ Kramer 1972a, p. 130.

³⁰ About the association of water-sperm into other cultures see Eliade 1976 §60.

As pointed out by Mircea Eliade (1976, §61), in ancient cultures cosmic manifestations are usually supported by water, not by earth. Under earth there was that watery dark matter, chaotic, from which the entire universe was formed, and about whose role there was substantial agreement in the ancient Mesopotamian cosmogonies.³¹

It is not surprising that in this way it was in Eridu, an ancient sacred city, small but extremely important,³² placed in the marshes and seat of Enki's shrine. In the theology of Eridu, clearly reaching out towards chthonic and material aspects,³³ the cosmos is derived by the female element (ki) remaining an, the sky, a secondary actor. Everything originates from the parthenogenetic (as initial, original) procreation³⁴ of the primordial goddess Nammu, ^dAma-tu-an-ki, 'the mother who gave birth to Heaven and Earth' in a god list,³⁵ a kind of a huge matrix intimately connected, beginning with her name (usually written with the same sign, engur, used for 'Apsu') with the fruitful waters, the 'deification of the river bed', according to Jacobsen (1976).

Even more interesting is, perhaps, the essentially coeval cosmogony elaborated in Nippur, a powerful sacred and political city theologically 'rival'³⁶ of Eridu, seat of the Enkur, the sanctuary of Enlil, and heading towards the height and the male and bright element. Although in the sacred texts here elaborated the role of the earth will soon become secondary to the celestial one, everything began in the dark, in the depths. Everything had its origin in the 'City of Ancient Times' (uru-ul-la), black city, inhabited by ghosts, immersed in the primeval waters, a sort of proto-Ade who suddenly generates, again parthenogenetically, the first deities, An and Ki, closely together, heaven and earth (an-ki) until the division (at the origin of creative evolution) made, as in Greece but here peacefully, by a divine son.

In some ways these views are resumed much later in the Babylonian cosmogony, recited annually to stimulate the renewal of the world, water being considered the raw material from which everything originates. From the union of stagnant water, the Apsu, and the flowing one, Tiamat (or maybe the fresh and the salt water), possible ancestors of the Greek Okeanos and Tethys, originates the creation.

The same conceptions emerge from many images, scattered in Mesopotamian traditions, combining sexual activity with work, especially ploughing³⁷ the earth (*uraš*, the arable surface, 'the tilth' in the translation of Jacobsen³⁸), the birth of man³⁹ and that of gods⁴⁰ such as plants, with a furrow in the ground. In Mesopotamia, as in other Middle Eastern cultures and unlike the Egyptian one, which recognizes a creative role only (or almost⁴¹) for male gods (Re-Atum, Ptah, Khnum), creation is associated with chthonic female energy.⁴²

In a famous text translated by Diane Wolkstein and Samuel Noah Kramer (1983, pp. 35-9), the goddess Inanna compares her vulva to an uncultivated land, that Dumuzi is invited to plough: 'Who will plough my vulva? / Who will plough my high field? / Who will plough my wet ground? [...] / Then plough my vulva, man of my heart! Plough my vulva.' Without breaks, therefore, the narrative

³¹ About oppositions and parallels between the Mesopotamian and Egyptian cosmologies see Frankfort 1978, pp. 233-6.

³² See Roux 1994, p. 36 ; Sanmartín 1998, p. 25.

³³ See van Dijk 1964, pp. 6-12.

³⁴ See Wiggermann 1992, p. 289.

³⁵ See Wiggermann 1992, p. 283.

³⁶ The first one to oppose the 'chthonic and agricultural' theology of Eridu to that, 'cosmic and pastoral', of Nippur, was probably Jan van Dijk (1964, p. 5-28). On this theme, see also, recently, Snell 2011, pp. 22-3.

³⁷ See Wiggermann 2011, p. 681.

³⁸ 1976, pp. 95 and 249.

³⁹ See particularly, The song of the hoe, 6-21 (Pettinato 1992b, p. 312).

⁴⁰ Teogony of Dunnu; see Wiggermann 2011, p. 672.

⁴¹ With the notable exception of the goddess Neith.

⁴² See Frankfort 1978, p. 284.

celebrates the rebirth of nature: ‘At the king’s lap stood the rising cedar. / Plants grew by high their side. / Grains grew there high by side. / Gardens flourished luxuriantly.’⁴³

As in almost all polytheistic religions, depth and darkness precede light and height. They precede creation. The mythologeme of the battle, more or less violent, between chaos and cosmos, between old, chthonic disorder and new heavenly order (which will take in Greece, among others, the form of titanomachy); and we find, implicitly, the same theme in the Hurrian image of the ‘ancient gods’ (*karuileš šiuneš*), chthonic, and in India in the opposition Asura-Deva) tersely emerges from some Mesopotamian myths.

Shortly explained in what William Moran (1987) defines as the ‘Igigu myth’, in the *Atra-Ḫasīs* (I i 1 – v, 248),⁴⁴ in the relationship between ‘inferior’ and ‘superior’ gods, between Igigi, primal gods, collective and anonymous,⁴⁵ pisciform (in this theriomorphism a further indication of their antiquity),⁴⁶ chthonic (only after celestial) and linked to the waters, and the heavenly gods (the Anunna⁴⁷), which forced them to work ‘as men’ (*Inuma ilu awilum*, ‘When gods were men [...]’) until their rebellion. Much more explicit in the *Götterkämpfe* (celebrated, what ‘for the mythopoeic mind, means “realized once more”⁴⁸) between Enki and Apsu and (according to the same pattern) between Marduk and Tiamat in the already mentioned *Enuma Eliš*, model for future struggles between Indra and Vrtra, Yahweh and Leviathan, Tannin, Behemoth, Baal and Yam, Zeus and Typhon, Apollo and Python,⁴⁹ and for the numerous, successive traditions of St George, up to the parodic inversion of the classical canon in the Tolkienesque *Farmer Giles of Ham*.

The ‘essence of the underground’ is something ancestral, chaotic and fertile, prior to the new world order, and to represent this generating and potentially dangerous charge there are, on the one hand, the various mother goddesses, such as Tiamat and Nammu, and on the other, above all, the image of abzu / *apsû*, or *engu/engurru*⁵⁰, at first perhaps a representation of the fertile waters of the marshes, then cosmic place and finally, etiologically, the primordial divinity defeated.⁵¹ The fact that no Sumerian text testifies its creation or separation from sky and earth at the beginning of time seems to corroborate, as claimed by Wayne Horowitz (1998, p. 335), that the Sumerians conceived this entity as a ‘primordial element’.⁵²

Apsu, ‘pure’ place,⁵³ primeval, translatable (maybe) with ‘the waters’ (ab) ‘of wisdom’ (zu),⁵⁴ represents the underground setting of the beneficial and chthonic Enki / Ea who, in the *Enuma Eliš* knew

⁴³Paola Pisi (2001, p. 44) is sceptic: ‘Né tantomeno può essere indicativo di una finalità fertilistica del rituale l’utilizzo, nei dialoghi amorosi tra i due amanti, di un codice espressivo vegetale, ricorrente, peraltro, più nei canti d’amore che nei testi ierogamici veri e propri: si tratta infatti di metafore sessuali ben note nel linguaggio erotico sumerico, e non di simboli di fecondità del suolo.’ What the researcher avoids explaining, however, is the crux of the matter, namely the conceptual basis on which such metaphors have been developed.

⁴⁴See Kvanvig 2011, pp. 19-20.

⁴⁵Aside from the head of the rebellion, *ša īšû ilu tēma*, ‘the god who had planning capacity’ in a Late Babylonian fragment.

⁴⁶Maybe linked with the subsequent figures of the ‘seven wise men’; see Lara Peinado 1984, pp. 123-4.

⁴⁷In the third millennium the Anunna were seven celestial deities (see Katz 2005, p. 83). Only from the Kassite period the Anunnaki become infernal gods. On the complex issue of the Igigi and Anunna see also Sanmartín 1993, pp. 335-6.

⁴⁸Frankfort 1978, p. 327.

⁴⁹See Fontenrose 1974, p. 151.

⁵⁰Engu is the most common name in Sumerian, *apsû* in Akkadian; see particularly Horowitz 1998, pp. 306-17 and Espak 2010, p. 216.

⁵¹See Wiggermann 1992, p. 283.

⁵²‘Just as the divine Apsu exists at the very start of *Enuma Eliš*. In Enki and Ninmah, for example, the Apsu already exists in EN 12-14, where Enki is present in *engur.buru* ‘the deep Apsu’, although the Apsu is not mentioned when heaven and earth are separated in EN 1-2’. An exception is the spell *When Anu Built the Heavens*: ‘When Anu built the heavens; / Nudimmud built the Apsu, his home / Ea in the Apsu pinched off cla[y]’ (transl by Horowitz 1998, p. 335).

⁵³Enki e la fondazione del Eengurra; sSee Lara Peinado 1984, pp. 69-76.

⁵⁴According to a probable but not certain hypothesis; see Horowitz 1998, pp. 307-08: ‘The origins of the word are uncertain. Akkadian *apsû* may be a loanword from Sumerian *abzu*, but it is also possible that *abzu* is borrowed from Akkadian, or that both *abzu* and *apsû* are borrowed from a third language. If the term is originally Sumerian, *abzu* may derive from the

how to tame and reify it.⁵⁵ Source of the subterranean, aquatic and primigenial ‘raw material’,⁵⁶ it plays an essential role not only at the cosmogonic level, but also at an anthropogonic one. In the anthropogony developed in Eridu (*Enki e Ninmah*), the craftsman god Enki finds in Apsu the clay that, according to a widespread mythologeme,⁵⁷ mixes with the form (wisdom) of primordial man (*lullû*), and presumably also in the anthropogony of Nippur there was an implicit reference to the underground fresh waters, bearing the primordial man directly from the earth like a plant (*Song of the hoe*).

If this aspect of the underworld related to the moisture is probably the oldest one in southern Mesopotamian conception, and always will survive, materialized and defined in the ‘tank’ of Apsu, as part of the underground, nevertheless soon it will not constitute yet its ‘essence’. Since the end of the third millennium, subterraneity itself, as well as the theme of agricultural fertility, raises less interest; sensitivity becomes more urban and increasingly less interested in the sphere of food production, and into this vacuum penetrates a new vision, perhaps of a Semitic matrix, with which, from the beginning of the second millennium, the underground returns to gradually acquire centrality and vitality. But its essence is now quite different: during the Babylonian empire, Kassite and then Assyrian, the essence of the underground, as we have seen, is connected to the frightfulness and darkness of the afterlife.

Inside-outside, above-below: the verticalization of the otherworld

Where therefore was the afterworld placed before its sinking underground, and when and why did this change happen? For ancient Sumerians, the realm of the *post mortem* was located in an undefined peripheral, outside world, the realm of the monstrous, demonic and bestial, extraneous to civilization, that is, the cultural package (agriculture, urbanization, writing, religion) created and taught to men by the gods (or, in later texts, by intermediary figures, the *apkallû*, the sages) to be adequately served.⁵⁸

Other is what is beyond civilization, the white space on the map of Fara⁵⁹ (Fig. 2) and, at the same time, without a clear disjunction between the two plans, what is before it (the cosmos of the origins, the demons, the wild primeval man): ‘synchronic and diachronic other’, according to the wording of Wiggermann (2011, pp. 668-76). The imagery of the afterlife was interwoven with all the other plans of otherness, which are essentially interchangeable: ‘the inimical fuses with the demonic, and the peripheral with death and the Underworld, thus resulting in a more or less unified image of all that is evil and conspires against civilized life’.⁶⁰

In a fluid overlap of the mythic and natural place, the afterworld, located ‘sur le même plan horizontal que celui des vivants’,⁶¹ as in many other traditions,⁶² was identified through a geographical

Sumerian name for the sea, ab. If so, abzu may mean ‘knowing sea’ (ab.zu), since the Apsu belongs to Enki, the Sumerian god of wisdom. A later interpretation of the word as ‘distant sea’ may be found in a hymn to Enlil: [...] ‘Its (Ekur’s) mes are mes of the Apsu which no one can understand. Its interior is a distant sea which ‘Heaven’s Edge’ cannot comprehend.’

⁵⁵ See Bianchi 1987: ‘uno schema che parte da entità immani e precosmiche, le quali del cosmo saranno peraltro le fondamenta immancabili, allorché la vittoria degli dei giovani avrà per così dire reificate quelle medesime, primordiali presenze’.

⁵⁶ See Verderame, in press.

⁵⁷ Consider for example the Ugaritic epic of Kirta or the biblical theme (Gen. 2.7) of the formation of ‘ādām from hā’adāmā, ‘earth’; see Kvanvig 2011, p. 48 and n. 112.

⁵⁸ See Wiggermann 1997, pp. 216-17.

⁵⁹ At the centre of the world, identified by the cuneiform sign for kur, ‘mountain’, there is Nippur (seat of the Ekur, ‘house mountain’), and all around the four cuneiform signs asag indicate fields (irrigated). The city centre is surrounded by lands devoted to agriculture, and these lands are watered by four rivers surrounding the composition, developing in four directions. The text and other images make it clear that in the empty space outside the four waterways le monde géographique and le monde imaginaire, to use an image of Gabriel Germain (1954, p. 536), interact. Here (hic sunt leones) is located the ‘other’, the enemy, beasts, nomads (āšib namê, āšib kultāri), monsters, demons, spirits of the dead.

⁶⁰ Wiggermann 1996, p. 215. See Graziani 2011, p. 781.

⁶¹ Van der Stede 2007, p. 38.

⁶² See particularly West 1997, pp. 153-4. About the process of superimposition of the vertical and the horizontal plane in the conception of the afterlife in the Greek world, see West 1996, p. 359 and especially Burgess 1999, pp. 184 ff.

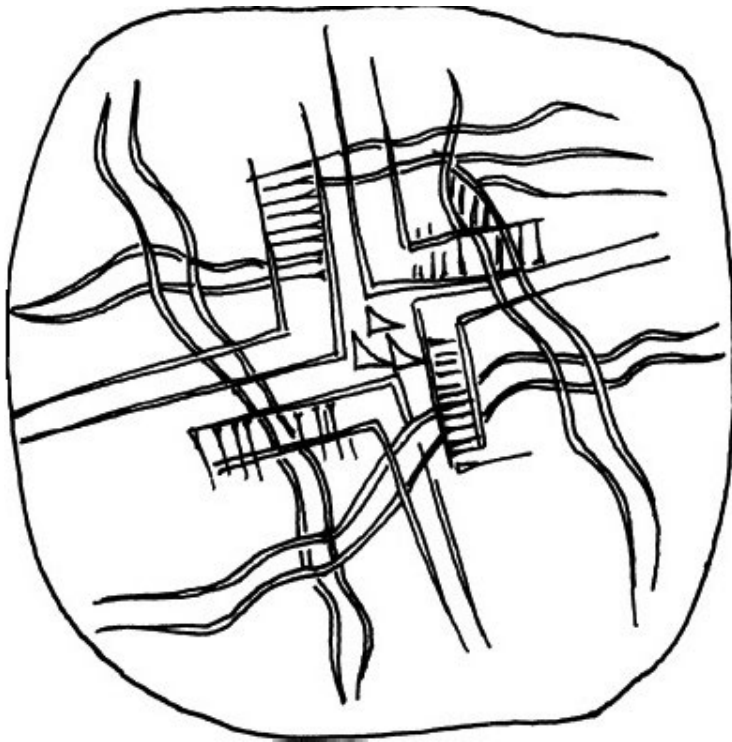


FIGURE 2. SCHEMATIC MAP OF THE WORLD. CLAY TABLET OF THE MIDDLE OF THE THIRD MILLENNIUM, FROM FARA; AFTER WIGGERMANN 2011, p. 673.

terminology; the dead lived where demons and monsters lived, where the animals were wild, where the enemies came from: the mountains (*kur*) and steppes (*edin*, *ṣēru*). The journey of the dead was a horizontal journey from the centre to the periphery westbound, across the desert,⁶³ like the journey of *Lamatšu* and, once a year, of (the dead?) *Dumuzi*, that brings the dead along with him,⁶⁵ or towards the northeast towards the Iranian mountains.⁶⁶ This view, as we shall see, remains rooted in the Mesopotamian mentality: in the *Death of Gilgames* the phrase ‘climb the mountain’ seems to be used as a euphemism for ‘to die’.⁶⁷

A beautiful representation approaching this imagery comes from a lyre of the third millennium, placed as a grave good in the grave PG 789 in Ur (Fig. 3).⁶⁸ The panel describes the preparation of a banquet and it is divided into four registers that, starting from the bottom, represent: a scorpion man (*girtablullū*) holding a dipper and a gazelle with two beakers (first register), a donkey playing the lyre and other animal figures (a fawn, a jerboa or jackal and a dancing bear) (second register), a wolf-butcher with a butcher’s knife in his belt, holding pieces of animals (lamb’s and wild boar’s heads and a leg of mutton) and a lion with a large vessel and a lamp (third register); and finally a hairy hero (*laḥmu*) holding two alim (man-faced bisons). As the lyre in the third register is probably the same on

⁶³ See Bottéro 1980, pp. 31 ff., Hays 2011 and Graziani 2011, p. 781.

⁶⁴ See Chirassi Colombo 2001, p. 204.

⁶⁵ See Bottéro 1983, pp. 191 ff.

⁶⁶ See Chiodi 1994 and Katz 2005.

⁶⁷ See Horowitz 1998, p. 361. On the diffusion of this image in other cultures see Eliade 1976, §32: ‘In assiro ‘morire’ si esprime abitualmente con ‘aggrapparsi alla montagna’. Lo stesso in egiziano, ‘myny’, ‘aggrapparsi’, eufemismo per ‘morire’. Il sole tramonta fra le montagne, e la strada del defunto verso l’altro mondo deve passare sempre di là. Yama, il primo morto della tradizione mitica indiana, ha percorso ‘le alte gole dei monti’ per mostrare ‘la strada a molti uomini’. Nelle credenze uralo-altaiche, la strada dei morti varca i monti; Bolot, l’eroe kara-kirghiso, come Kesar, re leggendario dei Mongoli, penetra nel mondo di là, nella prova iniziatica, attraverso una grotta in cima ai monti; il viaggio all’Inferno dello sciamano si svolge superando qualche altissima montagna.’

⁶⁸ See Wiggermann 1997, pp. 229-30.



FIGURE 3. FANTASTIC REPRESENTATION OF THE PREPARATION OF A BANQUET IN THE HEREAFTER. PANEL ON LYRE FROM THE TOMB PG 789 IN UR, THIRD MILLENNIUM; AFTER WIGGERMANN 1996, P. 230.

which the panel is represented, it is easy to assume, with Wiggermann (1997), that the animal figures were preparing the feast awaiting the arrival of the dead, which is absent (as was observed already by Frankfort) because he is still in the other (that is, in this) world.⁶⁹ The scorpion man, liminal figure connected to Utu, as in the *Epic of Gilgamesh* (Table IX), is placed in transition between one world and another, and awaits the invitee with a beverage. In the upper register, the two alim ‘signify the dominion of Utu’, the sun, divinity that every day illuminates the peripheral lands, and the wild animals behaving unnaturally ‘signify the shift into the demonic which is typical for the periphery’.⁷⁰

The system of images that defined otherness in the third millennium is always intertwined with the image of the *post mortem*, even when the otherworld is turned into something profoundly different. Even when the otherworld is firmly anchored in the underground reality, it continues to be called Kur, ‘mountain’,⁷¹ and therefore also ‘foreign land’ (as opposed to kalam, ‘our land’).⁷²

⁶⁹ About the imaginary of banquet in the hereafter see George 2003, pp. 487-8.

⁷⁰ See Wiggermann 1996, p. 213.

⁷¹ The word is rendered by a graphic sign that summarizes a mountain.

⁷² The more thorough study on the concept of kur is that of Françoise Bruschweiler (1987, in part. pp. 97-9).

Between the late third and early second millennia⁷³ we see a profound cultural and religious change,⁷⁴ visible, rather than at mythological level, in the perception and imagination, in the *Weltanschauung*. The nodal period around which these changes gravitate is that of the decline of the southern cities with the Sumerian linguistic tradition, which died as a spoken language, of the destruction or abandonment of many religious centres as a result of the fall of Ur III and of the simultaneous ascension of the dynasties of pastoral and nomadic origin, the Amorites (*amurrû*) and the northern cities.

In this period of transition it can be observed, in particular, a shift of interest towards the figure of man, and a greater systematization – and at the same time a strong reworking, the result of new ideologies and a different sensitivity – of what Jean Bottéro (1980) termed *la mythologie de la mort*.⁷⁵ With regard to the conception of the underworld, perhaps the more interesting revolution lies in the process of verticalization of the *post mortem* localization, that takes root in the earth, the underground.

Véronique Van der Stede (2007, p. 34) suggests that this change is attributable to the Sumerians' advances in geographical knowledge,⁷⁶ but this hypothesis by itself has only partial validity: the Sumerians had known and been present in the mountains and steppes for a long time, but this physical knowledge did not interfere rigidly with their beliefs: monsters and demons continued, albeit with less intensity than before, to inhabit deserts and mountains even when the spirits of the dead were firmly located underground.⁷⁷

Of course, it is normal that the expansion of trade and knowledge of neighbouring territories affected the perception of the natural world, but this does not explain why the movement of the *post mortem* took place underground and not simply in different 'geographical *non lieux*' (as happened to the monsters that were partially moved from the mountains to the sea in the second millennium⁷⁸). A probable concomitant cause seems instead to be external, specifically linked to the increasingly influential Semitic culture in the north.⁷⁹ At the same time, changes in internal sensitivity made it possible: on the one hand familiarization with the environment, and on the other, above all, the constant process of emancipation of the land from the idea of fertility.

At the end of this important process of cosmic verticalization, and after an interesting liminal phase (in which religious conceptions of southern Mesopotamia are focused on the figures of the snake gods⁸⁰ and the spheres of death and life seem to be closer), which cannot be analyzed here, man, at the end of his life, returns to the earth, from which it also was, according to an ancient ideology, shaped, following the cyclic imaginary, familiar to us through the mediation of the Old Testament, of the link dust/earth – life – death – dust/earth.⁸¹ The traditional mode of disposal of the dead, the burial, returned to convey, as perhaps previously in human history, a series of images, myths, rituals related to the descent, the final entry into the new underground environment.⁸²

Bibliography

EVERY, B. P. 2007. 'The Uruk Vase: Sequential Narrative', in D. Schmandt-Besserat (ed.), *When Writing met Art. From symbol to story*, Texas: University of Texas Press, pp. 41-6.

⁷³ That is between the end of the first phase and the beginning of the next in the schematization reported by Joaquín Sanmartín (1998, pp. 24-7).

⁷⁴ See Kirk 1970, p. 86; Sanmartín 1993, p. 221, 1998, pp. 26-27; and Katz 2005.

⁷⁵ See Dina Katz 2005, pp. 87-9: 'Man shows concern about his own existence, he recognizes and defines his limitations, describes his fears and helplessness, and looks for explanation and guidance. Thus the netherworld came into focus.'

⁷⁶ See also Katz 2004, p. 478.

⁷⁷ See Burgess 1999, p. 191: 'Real places that had political and economic ties with the homeland would be known, but only in an inexact manner which could easily become semi-mythical'.

⁷⁸ See Wiggermann 1994, p. 228.

⁷⁹ See Mender 1999, p. 93.

⁸⁰ Ninazu, Ningišzida, Tišpak, Inšušinak, Ištarian Ninmada. See Wiggermann 1997.

⁸¹ See Epic of Gilgameš VII, 187-92 (George 2003, p. 645).

⁸² See Bottéro 1980, p. 30.

- BIANCHI, U. 1987. 'Per la storia della teologia dei Greci: la *Teogonia* di Esiodo', in AA.VV., *La coscienza religiosa del letterato pagano*, Genova: Università di Genova: pp. 10-11.
- BOTTÉRO, J. 1980. 'La mythologie de la mort en Mésopotamie ancienne', in B. Alster (ed.), *Death in Mesopotamia: XXVIe Rencontre Assyriologique Internationale*, Copenhagen: Akademisk Forlag, pp. 25-52.
- BOTTÉRO, J. 1983. 'Les morts et l'au-delà dans les rituels en akkadien contre l'action des 'revenants'', *Zeitschrift für Assyriologie* 73, pp. 153-203.
- BOTTÉRO, J., KRAMER, S. N. 1989. *Lorsque les dieux faisaient l'homme. Mythologie mésopotamienne*, Paris: Gallimard.
- BRUSCHWEILER, F. 1987. *Inanna, la déesse triomphante et vaincue dans la cosmologie sumérienne: recherche lexicographique*, Leuven: Peeters.
- BURGESS, J. 1999. 'Gilgamesh and Odysseus in the Otherworld', *Echos du monde classique / Classical Views* XLIII n.s. 19, pp. 171-210.
- CHIODI, S. M. 1994. *Le concezioni dell'oltretomba presso i Sumeri*, Roma: Accademia Nazionale dei Lincei.
- BURGESS, J. 1999. 'Gilgamesh and Odysseus in the Otherworld', *Echos du monde classique / Classical Views* XLIII n.s. 19, pp. 171-210.
- CHIRASSI COLOMBO, I. 2001. 'Postfazione. Why a God must die', in P. Xella (ed.), *Quando un dio muore. Morti e assenze divine nelle antiche tradizioni mediterranee*, Verona: Essedue, pp. 199-208.
- COOPER, J. S. 2009. 'Wind and Smoke: Giving up the Ghost of Enkidu', in M. Poo (ed.), *Rethinking Ghost in World Religions*, Leiden: Brill, pp. 23-32.
- ELIADE, M. 1976. *Trattato di storia delle religioni* (1948), Torino: Boringhieri.
- ESPAK, P. 2010. 'The God Enki in Sumerian Royal Ideology and Mythology', *Dissertationes Theologiae Universitatis Tartuensis* 19.
- FONTENROSE, J. 1974. *Python. A study of Delphic Myth and its origins*, New York: Biblo & Tannen.
- FRANKFORT, H. 1978. *Kingship and the Gods: A Study of Ancient Near Eastern Religion as the Integration of Society and Nature* (1948), Chicago: University of Chicago Press.
- GEORGE, A. R. (ed.) 2003. *The Babylonian Gilgamesh Epic: Introduction, Critical Edition and Cuneiform Texts*, Oxford: Oxford University Press.
- GRAZIANI, S. 2011. '“L'inferno è pieno di terrore!” Terrore della morte e angoscia dell'oltretomba nella Mesopotamia antica', in A. Cerbo (ed.), *Lectura Dantis, 2002-2009. Tomo III, 2006 e 2008*, Napoli, Università degli Studi di Napoli 'L'Orientale', pp. 769-94.
- HAYS, C. B. 2011. *Death in the Iron Age II and in First Isaiah*, Tübingen: Mohr Siebeck.
- HOROWITZ, W. 1998. *Mesopotamian Cosmic Geography*, Winona Lake: Eisenbrauns.
- JACOBSEN, T. 1976. *The Treasures of Darkness: A History of Mesopotamian Religion*, New Haven, CT: Yale University.
- KATZ, D. 2004. 'Death, the Afterlife, and Other Last Things. Mesopotamia', in S. I. Johnston (ed.), *Religions of the Ancient World: A Guide*, Cambridge and London: The Belknap Press of Harvard University Press, pp. 477-9.
- KATZ, D. 2005. 'Death They Dispensed To Mankind. The Funerary World Of Ancient Mesopotamia', *Historiae* 2, pp. 55-90.
- KIRK, G. S. 1970. *Myth: Its Meaning and Functions in Ancient and Other Cultures*, Berkeley and Los Angeles: University of California Press.
- KRAMER, S. N. 1960. 'Death and the Nether World According to the Sumerian Literary Texts', *Iraq* 22, pp. 59-68.
- KRAMER, S. N. 1972a. *Sumerian Mythology. A study of Spiritual and Literary Achievement in the Third Millennium B.C.* (1944), Philadelphia: University of Pennsylvania Press.
- KRAMER, S. N. 1972b. 'Le Rite de Mariage Sacré Dumuzi-Inanna', *Revue de l'histoire des religions* 181, 2, pp. 121-46.
- KVANVIG, H. S. 2011. *Primeval History: Babylonian, Biblical, and Enochic*, Leiden: Brill.
- LARA PEINADO, F. (ed.) 1984. *Mitos sumerios y acadios*, Madrid: Editora Nacional.
- PETTINATO, G. (ed.) 1992a. *La saga di Gilgameš*, Milano: Mondadori.

- PETTINATO, G. 1992b. *I Sumeri*, Milano: Bompiani.
- PISI, P. 2001. 'Dumuzi-Tammuz. Alla ricerca di un dio', in P. Xella (ed.), *Quando un dio muore. Morti e assenze divine nelle antiche tradizioni mediterranee*, Verona: Essedue, pp. 31-62.
- ROUX, G. 1994. 'I Sumeri venivano dal mare?', in AA.VV., *L'Oriente antico. Dai Sumeri alla Bibbia*, Bari: Dedalo, pp. 29-48.
- SANMARTÍN, J. 1993. 'Mitología y Religión Mesopotámicas', in J. López, J. Sanmartín (eds.), *Mitología y Religión del Oriente Antiguo, I, Egipto – Mesopotamia*, Sabadell: AUSA, pp. 207-560.
- SANMARTÍN, J. 1998. *Historia Antigua del Próximo Oriente. Mesopotamia y Egipto. Libro I. El Próximo Oriente Asiático. Mesopotamia y sus Áreas de Influencia*, Madrid: Akal.
- SCURLOCK, J. A. 1997. 'Ghost in the Ancient Near East: Weak or Powerful?', *HUCA* 68, pp. 77-96.
- SNELL, D. C. 2011. *Religions of the Ancient Near East*, Cambridge: Cambridge University Press.
- VAN DER STEDE, V. 2006. 'Le monde des morts en Mésopotamie', in L. Denooz, X. Luffin (eds.), *Autour de la géographie orientale... et au-delà. En l'honneur de J. Thiry, Lettres Orientales* 11, pp. 19-38.
- VAN DER STEDE, V. 2007. 'Mourir au pays des deux fleuves. L'au-delà mésopotamien d'après les sources sumériennes et akkadiennes', *Lettres Orientales* 12.
- VAN DIJK, J. 1964. 'Le motif cosmique dans la pensée sumérienne', *Acta Orientalia* 28, pp. 1-59.
- VERARDI, V. 2006. 'Vison du ciel et de la terre en Mésopotamie', in L. Denooz, X. Luffin (eds.), *Autour de la géographie orientale... et au-delà. En l'honneur de J. Thiry, Lettres Orientales* 11, pp. 19-38.
- VERDERAME, L. i.p. 'L'immagine della città nella letteratura sumerica', in R. Dolce, A. Pellitteri (eds.), *Spazi pubblici e privati, e luoghi di memoria nella città dell'area del Mediterraneo e del Vicino e Medio Oriente: trame di storia e sguardi incrociati dal passato al presente*, Palermo (in press).
- VERDERAME, L. 1996. 'Scenes from the Shadow Side', in M. E. Vogelzang, H. L. J. Vanstiphout (eds.), *Mesopotamian Poetic Language: Sumerian and Akkadian*, Groningen: Styx.
- WEST, M. L. 1966. (ed.) *Hesiod. Theogony*, Oxford: Oxford University Press.
- WEST, M. L. 1997. *The East Face of Helicon. West Asiatic Elements in Greek Poetry and Myth*, Oxford: Clarendon Press.
- WIGGERMANN, F. A. M. 1992. 'Mythological foundations of Nature', in D. Meijer (ed.), *Natural Phenomena. Their Meaning, Depiction and Description in the Ancient Near East*, Amsterdam: KNAW, pp. 279-304.
- WIGGERMANN, F. A. M. 1994. 'Mischwesen. A', in *Reallexikon der Assyriologie. 8 Band. Meek – Mythologie*, Berlin: De Gruyter, pp. 222-246.
- WIGGERMANN, F. A. M. 1996. 'Scenes from the Shadow Side', in M. E. Vogelzang, H. L. J. Vanstiphout (eds.), *Mesopotamian Poetic Language: Sumerian and Akkadian*, Groningen: Styx, pp. 33-55.
- WIGGERMANN, F. A. M. 1997. 'Transtigridian snake gods', in I. L. Finkel, M. J. Geller (eds.), *Sumerian Gods and their Representations*, Groningen: Styx Publications, pp. 33-55.
- WIGGERMANN, F. A. M. 2011. 'Agriculture as Civilization: Sages, Farmers and Barbarians', in K. Radner, E. Robson (eds.), *Cuneiform Culture*, Oxford: Oxford University Press, pp. 663-89.
- WOLKSTEIN, D., KRAMER, S. N. (eds) 1983. *Inanna: Queen of Heaven and Earth*, New York: Harper & Row.

From Survival to Conatus: Comparative Axiology from Engraving To Painting

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Abstract

In prehistoric, tribal and contemporary practices, incision and engraving have been associated with pigmentation and painting on different surface media: rock, bone, skin, flesh and teeth (ivory). By reviewing a cross-section of interdisciplinary research in paleontology, prehistory, archaeology, ethnology, anthropology, psychology, neurosciences, linguistics, history of art/religion, contemporary art and social critique, we note different meanings assigned to these engraving and painting practices.

In selecting the comparison of specific examples (parietal, moveable objects, corporal), from different periods and continents (prehistoric Europe, modern Africa, contemporary Polynesia), we relate how the repetition of certain gestures, incising and painting rocks, bones and bodies function, in each time and place, to develop intellectual and spiritual expression from an original survival value, determined by the fulfilment of food, water, sex, reproduction, child care, shelter, warmth (clothing), mobility for flight or fight, and all of the above. Cultivating these needs into a mode of being in the world, over millions of years, develops into a resistance against death itself; self-perpetuation becomes the ethics of a perseverance in being.

In each stage of development of the individual's life, from conception to death, and for the group, in specific spaces and times, as well as for the species, from Homo erectus to Homo sapiens, this primordial value of striving to be perseveres in the effort and desire to flourish and perpetuate through a transformation tantamount to development, initiated, as it were, through a sliced open wound, healed over, bonded together by sticky paint.

The Intellectual and Spiritual Expressions of a Nomadic Tribe, the Birhor (of Hazaribagh, Jharkhand, Eastern India)

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Abstract

How did the earliest primitive expressions from the Paleolithic peoples begin with marks which would eventually evolve into complex spiritual and intellectual foundations and form the very basis of modern religious and emotional experience? How would changing circumstances in primitive societies grow into modern forms of thought and the physical expression of the sacred? For these answers we must go to the last primitive societies left on the planet struggling to adapt to ecological and industrial change being forced upon them through the new globalization, which is leaving no place untouched.

My personal involvement for over the past four decades with the most primitive hunting and gathering nomadic tribe of the leaf-dwelling Bihors of the scrub forest lands of the Hazaribagh plateau, in the state of Jharkhand in eastern India, heightened with my discovery of more than 14 Mesolithic painted caves which these people claim were decorated with haematite and lignite by their ancestors and whose forms appear in their earth drawings.

Today, the Bihors are a leafdwelling tribe in about 60 food groups scattered across the plateau living in small circular leaf dwellings called kumba (meaning upturned pot), and made of branches of leaves of the saal or Shorea robusta tree comprising the main type of our dry deciduous forests. In the middle of each circular leaf house is a fire pit around which the family with their dogs and nets and snares sleep on the bare earth, which is smooth with use and warmed by the fire. The kumba never leaks even during the heaviest rain. It does not fly away even in the severest storm. It is a part of the earth on which it is built and through it its inhabitants are always in contact with Dharti Ma, the earth mother. These people of short stature and protoaustraloid Mundaric speech using a click are the masters of the ways of the creatures of the forest floor, from insect larvae to birds and animals, which they trap, collect, use, exchange and have intimate knowledge of for food and medicine along with the yams, roots, tubers, creepers and epiphytes which form the basis of their unique ethnobotany and economy.

My research has included their songs and folklore, sacred belief system and art and social organization. In my view, this tribe, as it stands between the old forest India and new industrial India, is poised at a time of momentous change and gives us a last chance to understand the fast disappearing intellectual and spiritual consciousness of a Paleolithic mind, and how it is forced to adapt to a modern environment and consciousness even as these simple people are being forced into government cement housing to mainstream them. Up until now their lives have continued undisturbed for millennia in the scrub forests they live in and depend upon for subsistence.

The oldest human consciousness in its first form is in these Paleolithic looking people. I have recorded their songs and stories, studied their dances, ethnobotany and ways of hunting, and collected as much of their ideas of what the sacred constitutes for them as possible. Their unique relationship with the changing environment they have all along depended upon and now being ruthlessly destroyed in a fast industrializing India of which new traces begin to appear in song, worship and lifestyle.

New elements have begun to enter their forest songs, new objects of worship have appeared. For example, I found them worshipping big nuts and bolts and pieces of metal picked up on the side of the national highway built through their territory. Earlier on they only worshipped small logs of wood tied together. Vermilion red, which was never used earlier, appeared as a sacralization of the objects. In their songs the sacred springs were now connected with handpumps and tube-wells. When forced to abandon their leaf houses and enter the new government brick and cement shanties with flimsy tin roofs, they carried their leaf houses inside along with all their hunting equipment, pet birds and animals, including the ubiquitous Indian pariah dog which is their constant companion. They began to sleep around the fire again to keep warm and hung up their clothes and hunting nets around them. The children started making mud toys such as trucks, filling them with gravel and pulling them around with strings. The Birhor women, finding their forest creeper chope (Bauhinia scandens)

disappearing, started to unravel the strings of the cement bags and worked them into the fine string used for making the hunting net kulay jhali.

The ethnobotany of the tribe is mainly centered on the old women who have a unique knowledge of the forest floor's medicinal plants; many animal and bird parts have sacred significance, and there is much magic involved in their use and application in treating sicknesses. I have made a thorough study of the ethnobotany of this tribe.

*On the walls of the new government housing the Birhor children began drawing their world with charcoal sticks from the fire, and created a visual record of a new world alongside the hidden sacred figures which only those who know will recognize. I was reminded of Australian Aboriginal art and Albert Namatjirra and the idea of desacralization of art for a secular audience. Bird and animal tracks, dots and circles were absorbed within ordinary forms. The worship places or bonga-sthan (place of the bonga or deity) stand a small distance from the settlement with its wood, nuts and bolts, and vermilion daubs, in the midst of lantana (*Lantana camara*) bushes, where none can ever find it without searching. The modern was being absorbed into the timeless to be detoxified within the ancient seminal spiritual consciousness of a disappearing people our own ancestors, in our own time, the passing of the Paleolithic mind and way of life in a crazy modern world.*

The Birhor are the most primitive tribe in India. Interestingly, they associate themselves with Lord Rama and his sojourn in the forest (Ramayana), and I have recorded their version of the epic. Their physical aspect is primitive, with long arms and bent bow-shaped short legs prominent in the men, but less so in the women. Older men and women have a pronounced stoop, probably due to carrying heavy hunting nets and string bags of forest produce on their daily trapping and foraging expeditions. H. Paddington compared them to the Orang-Hutan ape of the Malay peninsula (*Journal of the Asiatic Society of Bengal* 34, 1855, pp. 207-10). The name Birhor comes from the Mundaric words *bir* for forest and *hor* for man.

I have personally made a long and deep study of the primitive art of this tribe and find in it forms remarkably similar to our region's Mesolithic rock art (frogs, nets, magical human figures, animals and birds but no fish; trees with monkeys, enigmatic symbols such as concentric circles, land and plant forms in iconic capsules, etc). The Birhor claim their ancestors painted our region's rock art. Today they draw in the dust of the earth with sticks, or with charcoal on the walls of whitewashed government housing. They believe the frog or toad has magical powers and it is recorded that people having connections with toads have an unusual power over animals. That this remarkable jungle people are still living a Stone-Age lifestyle in the jungles of Hazaribagh is a unique opportunity to study them and their beliefs, which I have done in a monograph on their lifestyle, sacred beliefs, hunting and gathering techniques, art and songs, dances, and an in-depth study of their ethnobotany, which is based on the roots of plants on the forest floor, barks and epiphytes, charms and medicines from ground bones of certain small animals and birds, and the significance of black and white fowls for sacrifice by a medicine-man (*mati*).

They worship land forms. There is a recumbent landscape figure (RLF) in the form of a female lying on her back on the hill of Sitagarha, called Jul-jul by the Birhor, not far from Hazaribagh town, a settlement once surrounded by forests. Jul-jul means to light a fire, and at certain times of the year like the spring during April they gather to worship it. Birhor worship has very little ritual. On the south side of this hill on which the figure reclines due east to due west with the head in the west, on the south side of what would be the stomach or abdomen there is a 70-ft tall stone distinctly resembling a male human face which they worship as Mahadeva or Shiva. Once I met one of the old medicine women of a nearby Birhor settlement, under whom for many years I studied their ethnobotany. It was in the afternoon and there was no one else on the jungle road when she folded her hands and pointed to this stone face solemn in the light of the evening sun and told me with a voice full of awe, 'Mahadeva', as if the stone would come to life. During the first full moon of the month of May the Buddha-Purnima is celebrated by the Santals and other non Buddhist tribes, and at this time the local people at the foot of the hill go to the top of this stone head and offer rice milk to the rising moon.

This is a forest through which the Buddha passed and Buddhist relics are to be found in every part of the hill. The memory of the forest god Shiva Mahadeva and the Buddha merges.

Today the Birhor are increasingly exposed to highways being built through their forested territory. A couple of years ago I visited a settlement (*tanda*) not far from the highway where the government was trying to resettle them in cement houses. Looking about the settlement for the worship site I found it in a small cleared space amidst the dense lantana bushes (*lantana camera*) and to my great surprise in the centre of this cleared patch was a huge nut and bolt smeared with red vermilion. Upon my questioning one of the men told me they had found it on the side of the highway and had brought it to worship it. An unknown power is a god!

I am fortunate in having spent most of my life on and off in intimacy with this tribe, of which I am very fond for their great knowledge of animal and bird ways and forest plants, and whose songs which I have recorded are among the simplest and most direct examples of expression. The Birhor sleep on the bare earth in leaf huts, or *kumba* as it is called. Their visual perspective is always from the ground up and in the middle of the circle is a pit where a fire is always burning, with the family including the dogs and may be a goat or pet forest animal sleeping around it. Most *kumbas* contain a bamboo cage with a parrot or a partridge used to decoy other partridges when trapping.

When a Birhor child is born the afterbirth is taken out of the *kumba* from a hole in the rear. The same sort of thing happens when a man or woman dies. There is no clear idea of a belief in rebirth, but it strikes someone now and then if a child is born about the time an old man dies that the old man's spirit has entered the child. But there is no set religious belief in these matters. They believe that life is breath and that when breath ceases life ceases, but that wherever the breath goes life goes with it, and this is shown in the creation legend in which the first man and woman are made by the creator Singbonga (sun god) out of clay and he blows breath into their faces and so they become alive and continue to raise progeny. This first man and woman were Nanga Baiga and Nanga Baigin. *Nanga* means naked, and *baiga* is a term used for a medicine man, also a well-known tribe of central India; but above all it means 'man'.

The Birhor are not particularly given to decorative bodily tattoos which are an expensive luxury their more affluent agricultural neighbours indulge in conspicuously, but the belief exists among these people that the tattoo can identify a person in the after-life, which means they must have some concept of an astral life. I think this is very important, because the idea of an astral life is an advanced Hindu idea, and very likely they heard about it from their Hindu neighbours. The Birhor do believe that there is life and soul in all things, in plants, trees, water, etc, and that in the stone lies the eternal, the deity all must worship. The worship of the spring flowers at the Sarjom festival (Sarhul) and the bathing in the sacred springs where a stream starts, and the deep caves where some markings of the ancestors may be found are for them places of worship. And who would not worship here?

Their knowledge of ethnobotany is vast and I spent 20 years understanding its principles in a rudimentary manner, but I could make out certain principles such as the sickness and the shape of the root or the nature of the bird or animal whose bone or hair was used in the treatment having an esoteric connection. The black or white birds sacrificed, the number of peppercorns or quantity of rock sugar added might have been mere indulgences. But there is some connection physically in shape or substance between sickness and medicine, for example anti-venom roots are snake-like; medicine of hydrocile are yams resembling testicles; the root for arthritis is arthritic in shape, and so on. But the fact of the medicines working is proved by the large number of clients a Birhor medicine-man or medicine-woman has in the marketplace where they sell their dried roots on market days.

I have not found a common tradition between the soul and a bird such as between the soul and the peacock among the Marias of Chhatisgarh. They make no memorials to their dead. They cremate if possible, when not possible they bury. There is no hard and fast rule. No memorials are erected. I do not think they believe in an individual soul. These people live a very hard subsistence foraging

life and have absolutely no luxuries except shade from sun and rain, food, warm clothing and clean drinking water. Their lives are elemental, so elemental that the sacred itself can be considered a luxury. And here we come to the bottom line of man's existence from earliest times and the most urgent duty to sustain life itself, and from which all later civilized social manners, customs and beliefs followed.

Because of the very rareness of such primitive societies vulnerable to the sweeping industrialization and changed environment, we are on the point of losing one of the last living indicators about the past of our race. With regard to the transmigration of the soul not a single Western authority to my knowledge has commented on it in such primitive tribes. There is a lack of mention of beliefs in the transmigration of the soul in primitive societies by Western theosophists of the 19th and 20th centuries with regard to primitive Indian tribes, nor is there any mention of the religions of these people which are basically forms of animism, and ancestor and nature worship. Their beliefs have been suppressed under the tide of vedic and brahmanical religious teachings which allow no place for tribal beliefs. However, Buddhism did not deny the primitive tribal beliefs which lie at the roots of Buddha's teachings. Although denying the existence of the personal soul or ego, the belief in karma was seen as an existential human phenomenon of the race rather than the individual in the Buddha's own words. This has been altered and adapted by the different schools which appeared in Buddhism. There is a story of the Buddha one day when as a wild hare he met a hungry Brahmin to whom he offered his body as food, saying, 'Collect wood and light a fire and I will roast myself and you may eat me.' Does this then not bring to mind the old Birhor tradition of an old dying Birhor offering his body as food to his hungry family? Once when I was speaking to an old Birhor medicine-man, I brought up the matter of this old tradition which the Birhor still remember and I told him the above story about the Buddha, to which he replied 'Then what is wrong with it? Mahadeva understood the ways of animal and man and that the body has to one day die and it will make no difference.' The jungle in which we were speaking was not far from the great centre of Bodhgaya where the Buddha experienced his realization or nirvana. As I have noted earlier, the Birhor call Buddha Mahadeva. The teaching of the Buddha is that there is no personal soul and that it is but a part of the world soul which is the animate force of nature. The songs which I recorded of the Birhor in Hazaribagh include a ritual mortuary song sung when a person dies which tells of the return of the soul to the over-soul,

Without It I cannot live,
Without It I have to die;
Both of us are one – Body and Breath,
In life It is in me, in death with It I fly.

The foundations of the Indian spiritual culture have their sources in the primitive societies of the subcontinent. Buddhism and perhaps Jainism of all India's religious sects have drawn most heavily upon these original sources of Indian culture. Buddhist spiritual culture was moulded on the nomadic system of seasonal settlements or shifting of abodes of the monks carried on in the Sramana tradition of wandering mendicants. Attachment to material things, even the body, was denied as a requirement for finding the truth, self was denied and the life of the mind was idealized. All attachments were rejected as untruth. This view of the world and the natural events of a mortal existence were accepted.

The intellectual and spiritual expressions of pre-literate societies express these truths in their recorded traditions and their way of life is the highest expression of adherence to these fundamental beliefs. The idea of karma or reward or punishment for personal actions among the Birhor is not related to rebirth, but is expressed in the idea of the good or evil that will affect the tribe as a whole because of their actions. This is the highest teaching of Buddha and he could only have found it among these simple people. With regard to their idea of life I will recount a talk I had now over 35 years ago with a wise old medicine-man named Babulal who was teaching me their ethnobotany. Babulal Birhor told me that the breath we inhale and exhale mixes with the breeze that mixes with all the winds of

the world and gives life to everything which lives. He said that when breathing ceases in death it returns to the great soul of the world (*anima mundi*), the whirlwind which the Birhor call *baliman*. This idea of the wind being the soul prompted me to ask this wise old man what connection there might be between the breath of life which he so eloquently spoke of and the breath which forms itself into words through which we express our thoughts. He told me that as the breath flows in the spring season from the throats of songbirds in the mating season or of young animals seeking their mothers or of mothers seeking their lost offspring, they were all natural expulsions of breath through emotional sounds and that in this way people first heard the animals and birds begin to use words and those sounds they left as signs. Later they learned to make signs which the eyes could see and so they began making marks on the earth or on stone which they associated with expressions of their feelings, and these developed into what we now call rock art so that others seeing them could understand what had been spoken. Rock art is spoken visual sound. This observation for me was to be taken literally, since the Birhor, like the Bushmen, associate rock art with the works of their ancestors. They place great significance on markings, be they the tracks of creatures or their own markings, and this is important to note in a people who still do not read or write. These words of Babulal Birhor made me wonder at his deep understanding of the development of speech into physically visible forms in rock art or elsewhere made by primitive people. We know the importance of rock art, in conveying to us even thousands of years after the breath of the artist ceased, what he was trying to express.



FIGURE 1. BIRHORS WITH THEIR CATCH (OLD PHOTO 1970s).



FIGURE 2. BUILDING THE KUMBA OR LEAF HOUSE⁴ (DANUA TANDA).



FIGURE 3. BIRHORS.



FIGURE 4. BIRHORS.



FIGURE 5. BIRHORS.



FIGURE 6. SULTANA TANDA- BIRHOR
WOMEN MAKING PLAM LEAF MATS.



FIGURE 7. BIRHOR TRIBE INDIA.



FIGURE 8. BIRHORS.



FIGURE 9. HUNTING SCENE
SHOWING ANIMALS TRAPPED IN
THE NET (CRAYONS ON ART PAPER).

Prehistoric Rock Art, the Information Era of Humans which has been Overlooked

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Abstract

Communication is a new social science which appeared in the 20th century. In it the emergence of language is considered to be the genuine beginning of human communication, and the communication activities of humans are divided into four stages, oral communication, literal communication, press or public communication and electrical communication. Most scholars affirm that writing was developed on the basis of pictures, but they have ignored the significance of prehistoric rock art, which is an important part of the original picture in the history of human communication.

Prehistoric rock art researchers have noticed this problem. However, most of them have preferred to focus on data, image classification, connotation analysis and archeological dating.

As noted by Emmanuel Anati in his essay titled Archetypes, Constants and Universal Paradigms, "Rock art was a form of written communication, it constituted the largest and most significant recording process in the forty thousand years of history since humans appeared to conventional and modern ideograph until alphabetic writing appeared". Prehistoric rock art widely existed in 120 countries in five continents as the information carrier of primitive tribes, thus bearing the function and meaning of information transmission.

We cannot determine whether there is a human language at the time of prehistoric rock art, but the expression of prehistoric rock art is more close to reality, has more information and is more intact. In this article the author uses communication research methods, study as information symbols. The rock art's nature and characteristics contains the meaning in the original transmission. The prehistoric rock art period is the earliest human communication period.

Some Aspects of the Contemporary Use of Ancient Symbols

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Abstract

In this paper I analyze some forms of modern use of ancient symbols. Some of the symbols, such as spirals, rosettes, figurines, etc, are used today in Kosovo in various forms either as logos for institutions, decorations for mobile and immobile objects, elements of artistic creativity, or various forms of contemporary social practices.

In the paper I explain how some ancient symbols of human motives, those of the flora and fauna, and various symbols of abstractgeometric style, have become part of everyday visual experience today. I try to give answers to the following questions: what is the meaning of the use of ancient symbols or pre-literal culture in modern culture and modern life? Is it about the mental structure, which produces the same archetypes in different epochs, or does it represent the return of memory as a form of cyclic movement or cultural model? Is it the myth of antiquity aiming to become the dominant ideology, or is it the lack of invention and easy use of what is available? Whatever the reason, it is important to examine multiple aspects of ancient culture's impact on the intellectual and spiritual expressions of modern culture. My presentation contains the data illustrated with photographs, which reflect the ancient symbols used today in modern culture.



FIGURE 1.

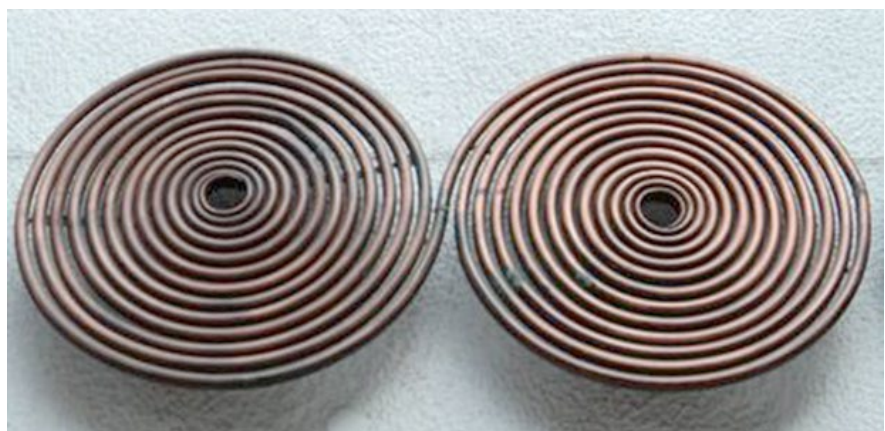


FIGURE 2.

Discovery and Pilot Study of the Jinsha River Chiselled Rock Art in Shangri-La

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Abstract

Since the 1980s, many rock art remains have been found in the Jinsha River Basin, called the Jinsha River rock art. Most Jinsha River rock art which has been discovered is rock painting, but a small amount of chiseled rock art was found. Now researchers believe that chiseled rock art belongs to the Jinsha River rock art, but there are many differences of technique, themes and styles between the chiseled rock art and the rock paintings. The chiseled rock art is more similar to the rock art in Helan Mountain and Yinshan Mountain. This phenomenon not only reflects the rich diversity of the Jinsha River rock art, but also suggests that the local rock art may have had a close relationship with rock art in north China.

Rock Paintings in Southwest China, Focusing on the Coffin Paintings in the Rock Cave at Xianren Bridge, Huishui County, Guizhou Province

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Abstract

After carefully looking at rock paintings and the patterns of coffin paintings on the cave burials and cliff burials in southwest China and neighbouring Southeast Asia, the author believes that there is a very close relationship between them. Moreover, rock painting, in a sense, is related to some burial customs such as cremation and ground burial. Referring to the related studies of ethnology and mythology, the author reinterpreted some of the rock paintings in southwest China and found that the rock carvings largely reflected the creation myths of local ethnic minorities. Ancestor worship was an important scene in rock carvings. It is, therefore, closely related to burial, including the cave burials and cliff burials. The rock paintings of southwest China were mainly made between the Han and Ming dynasties. They were largely made and used by the ancestors of the Zhuang, Dai and Gelao people, who spoke Kradai languages. The neighbouring Miao, Yao, Nu and Wa people also began to use rock paintings due to the migration of ethnic groups. The murals on the wall of big houses of the Wa people, the canvas of the Wa people and the coffin paintings of the Miao and Yao people could be treated as the relicts of rock paintings as mentioned above. The early rock paintings (between the Han and Song dynasties) are closely related to creation myths, so they were used for building an ancestral world to persuade the dead to get together with their ancestors and be reborn. The main motif of the late rock paintings (from the Song to Ming dynasties) is the horse, which probably reflected the rise of horse breeding, because the central government of the Song dynasty set up a horse market in Guangxi. Ancestor worship was a belief under the guidance of animism, which tried to please the ancestors, let the dead go far away, and bring many kinds of benefits to the descendants. The aim of ancestor worship is to remove disaster or misfortune from the living and give blessings to the living, which could be regarded as the chief function of rock paintings in southwest China. The author's preliminary research indicates that it is probably a feasible and efficient way for us to use the folk beliefs, mythologies and legends, especially the creation myths, to interpret the rock paintings of southwest China in the future.

Survey of the Status and Protection Strategy for the Ancient Rock Paintings in Guizhou

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Abstract

Guizhou is a large province for rock art resources. Rock paintings in Guizhou are mainly distributed in ethnic-minority areas, and had been executed by ancient ethnic ancestors, reflecting the ethnic development of economy and culture in ancient Guizhou. Due to natural factors or human destruction, or some combination of the two, it was found that rock art resources in Guizhou are at risk of disappearing.

Although some government departments began to focus on the protection of rock paintings resources, the situation is not optimistic and there are rock protection difficulties. Rock protection needs to happen without delay. Petroglyph protection measures need to be carried out by the whole of society, and will involve literacy, funding, talent introduction, usage and other regulations. To this end, the task force on the basis of investigation has proposed some measures and suggestions. These include:

- *in-depth investigation to establish credible rock resource files;*
- *strengthening research and providing an academic basis for rock protection and utilization;*
- *strengthening the construction of the relevant administrative departments to improve the management of rock resources;*
- *strengthening rock art resources to improve protection;*
- *establishing petroglyph or rock art museum theme parks, since petroglyphs enhance values and aesthetic appreciation;*
- *learning from previous experience to provide an effective method of protection and utilization of resources among the Guizhou petroglyphs.*

Lifestyle of Human Groups during Palaeolithic at Har Karkom

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Abstract

Har Karkom (HK) is a mountain in the southern Negev (Israel) which was intensively populated during all Palaeolithic periods. During the careful survey of the 8 Km² of HK plateau, 155 Palaeolithic campsites have been recorded and drawn. The exceptional preservation of the hut floors and the deep investigation of the flint industry found in the sites allowed hypotheses on the demography of each period. The campsites appear as temporary stations, occupied for a variable period of time, from few days to seasonal, and probably they were re-used during further occupations. This analysis took into consideration 117 campsites, out of them 6 belonging to the Lower Palaeolithic, 54 to the Middle Palaeolithic and 57 to the Upper Palaeolithic period. In the remaining 38 campsites lithic assemblages of different periods were found, and they were discarded for this analysis. In the 117 campsites, elected for the demographic analysis, the study of the sites allowed to recognize areas in the sites where specific activities took place, such as flint knapping, animal skinning or vegetable peeling. In certain sites hut floors for resting or sleeping were recognized from those where group meetings and activities took preference. On the basis of the above findings, hypotheses on the lifestyle during the different Palaeolithic periods were put forward.

Aspects of the Nature and Purpose of Specific Symbols and Images in the Non-Literate World of Neolithic and Bronze Age Britain and Ireland (Including Stonehenge)

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Abstract

For Neolithic and Bronze Age Britain and Ireland this research explores aspects of the nature, range and meaning of symbols and images used for storing knowledge, transmitting information and expressing the spiritual concepts of religious non-literate agricultural communities.

Portable stone artifacts and megalithic settings and structures including recently found sites in southern England and southern Ireland were studied with regard to shapes, artwork and positioning—together with the place of megaliths in the broader archeological context of the open landscape—for evidence of planned symbolism.

It was found that skilful flintwork had produced what devotees saw as spiritually expressive forms that could serve as meaningful charms or talismans. Thus at a newly recognized Neolithic site in Wessex in southern England—namely, a megalithic shrine with a cavity used for long-term storage—the author found artifacts including nine stones chipped roughly into lozenges which is a shape anciently and enduringly associated with the female gender. Also at this site among related examples, a 13-kg isosceles-triangular stone had been drilled through at the apex to articulate its feminine fertility significance. At another site 1 km distant two similar triangular portable stones bore a cup-mark hollowed at the apex. The lozenge and triangular forms are found at the scale of huge megaliths too. The usefulness and eloquence of such images and symbolism stem from a belief that divinities would comprehend and react sympathetically. Symbols served as signs without writing.

Furthermore, the lozenge and pillar megaliths at Drombeg Stone Circle when seasonally paired by sunshine and shadow at the equinoctial sunrises create a breathtaking communicative fertility spectacle, the same as visibly happens at Stonehenge at midsummer sunrise via the principle of the hieros gamos. This same symbolic intercourse by sunlight and shadow between positioned stones has been witnessed and photographed at Drombeg for all eight festival dates of the ancient agricultural year. Avebury is explained similarly. Symbolic coupling between male and female stones is a sensational dramatic stage-set. It is the ultimate in a community's articulate expression of earth/sky union and displays high spirituality. As a consequence, the meaning of the design plan of Stonehenge is fully explained, not only for the summer-solstice union at sunrise but for a midwinter sunrise coupling between two other positioned stones. In this fashion dramatic artistry is intelligently combined with religion in a manifestly moving spectacle.

Introduction

Before the invention of writing, much knowledge was stored and safeguarded by a community's collective memory, and passed orally through the generations using mnemonic techniques like storytelling and legends, saga traditions and various poetic devices, some of which were descriptively anchored to features of local panoramas – e.g. Basso (1996); Bowker (1997), Darvill (2008) – that can be recalled and recapitulated from the ancestral landscapes.

Communication involving symbols and images was immensely helpful. For instance, non-literate people who had reason to preserve astronomical data or give instruction regarding seasonal timekeeping for the benefit of the community and descendants created symbols and memorable visual effects when designing monuments and deciding on orientations and alignments. This aided discourse with divinities who were held to be responsible for celestial and terrestrial matters, in

addition to the usual concerns regarding wisdom, ethics, manners, morals, and agricultural and fertility expectations.

The research reported in this paper focuses on aspects of information storage and transmission using shaped stones and positioned stones, great and small, found by the author.

Besides the purposeful shaping of lithic outlines of all sizes and the application of careful – often ingenious – inter-megalith positioning, symbols were carved on portable objects, standing stones and immovable earthbound megaliths and rock slabs.

Using examples from the British and Irish Neolithic Age, we examine aspects of the nature, range and meaning of symbols and images. Some are familiar worldwide. Where there is an absence of migratory contact, the ubiquity of cerebral talent would have arisen from the universal nature of the human psyche.

As for the survival of artifacts bearing symbols and images, it is unfortunate that, where wood, bone, and soft or perishable materials like chalk and leather were used, little has survived to the age of archeological discovery and examination. Hence, in providing examples for discussion, this is why we are largely dealing with stone monuments and portable stone objects.

However, among rare examples of surviving fragility in this context one may cite the example of a shaped lozenge cut from fairly soft chalk found at Neolithic Windmill Hill at Avebury in England. It survived only because it lay in the trench of a causewayed enclosure, backfilled with chalk rubble, until excavated by Alexander Keiller in the 1930s (Smith 1965, 134 and Plate XXIb; Meaden 1991, 136 with illustration).

Struck Flints and Shaped Stones

The careful striking of flints produced distinctive shapes that worshippers used as talismanic amulets and personal offerings that the community comprehended for their spiritual significance, sometimes with gendered connotation. The expectation was that deities would understand the message and respond favourably. Thus the isosceles triangle and the lozenge shape were widely recognized and much valued.

To exemplify, inside and alongside a small natural shrine-like cavity at a Neolithic site discovered by the author east of Avebury in southern England, there were eight flints and one stone chipped into lozenges along with a flint saw, a scraper and a concentration of other objects, some of which are presented in Figs. 1-4. The lozenges are crudely chipped, as if hurriedly made for immediate service as symbol-bearing offerings to the divine. The appeal of the lozenge in this fashion helps to introduce the meaning of the lozenge-shaped megaliths discussed below. Three more lozenges came from a nearby megalith. Otherwise only three more came from the vast area that is Upper Overton Down.

The next examples, from inside the cavity, would have expressed meanings familiar to believers. These pieces could be paraphernalia that a spiritual practitioner or medical specialist might use, say for spiritual purposes including sympathetic magic (Fig. 2). One object, weighing 1.090 kg, has the meaningful form of a skull-top or cranium with grainy brain-like interior.

Directly outside the cavity that had likely sheltered it long-term was a 13-kg triangular stone made of sarsen that had been artificially drilled right through at the apex (Fig. 3). Sarsen is a silica-cemented sandstone local to the Avebury area, and almost as hard as granite.

Nearby lay an artificially rounded sarsen stone (27 kg) fashioned primitively as a human face (Fig. 4). Together, triangle and face constitute a purposeful pair presenting an inimitable duality of raw beauty, pregnant with meaning for an impressionable religious tribal society.



FIGURE 1.



FIGURE 2. SOME OF THE FLINT OBJECTS FROM INSIDE THE ROCK CAVITY: SKULL TOP, FIGURINE, AND A CHIPPED LOZENGE-LIKE NON-FLINT STONE.



FIGURE 3. FRONT OF A SARSEN TRIANGULAR STONE WEIGHING 13 KG PIERCED AT THE APEX.



FIGURE 4. A FACE CARVED FROM HARD SARSEN ROCK, WEIGHT 27 KG, FOUND WITH THE TRIANGLE.

The eloquence of such symbolism stems from a strong belief that divinities would comprehend the community's symbolic language and react sympathetically. Symbols are signs without writing.

Cup-marks and isosceles triangles

Although the meanings of cup-marks are unclear in many situations, occasionally circumstances emerge where the intended meaning is irrefutable. Examined next are pertinent cases from Wessex. Support from prehistoric India is helpfully proposed by Das (2014a) as to the meanings of some cup-marks (see also Das 2014b and Meaden 2012).

The next figure illustrates a variation on the common theme about cup-marks (see Fig. 5). On this piece of hard sarsen the sculptor pecked a cup-mark 70 mm diameter and nearly 60 mm deep, signifying the female opening, at the exact point of the triangle's apex. The reverse side of this stone had been carved and polished in a double-dished fashion that suggests it was intended to be comfortably sat upon, as might happen in a fertility-appeal ritual. With a woman's legs astride the main triangular point and the cup-mark pressed against the soil.



FIGURE 5. ONE SIDE OF THE SAME 31-KG PORTABLE STONE ARTIFICIALLY SHAPED FRONT AND BACK. A CUP MARK 70MM DIAMETER, AND NEARLY 50 MM DEEP, IS CHISELED AT THE APEX. THE REVERSE SIDE HAS BEEN SMOOTHED AND SHAPED FOR THE BETTER COMFORT OF BARE BUTTOCKS.

What might this mean? The piece could have been a bridestone. If so, the idea may have been a wish for pregnancy from the Earth Mother, or a prayer for safe delivery or some related idea based on a hope that a spirit or soul emanating from Earth and from the Earth Mother might enter the womb of an expectant woman. It is another example of intelligent supplication and interaction with a deity in a non-literate society.

Elsewhere in the prehistoric world there are cup-marks in rock carvings of the human figure that are positioned as to clearly indicate the female sex. Numerous examples are known for Bronze Age Sweden, for instance, Coimbra (2001) who also cites anthropomorphic examples from Valcamonica (Italy) at Paspardo (rock 4), Naquane (rock 32) and Campanine. Another is at Valtellina on Rupe Magna. Gradoli (2014) reports a newly-found example from Sardinia of a rock-art carving of a figure with a cup-mark placed at the female opening.

At and near what is a second Neolithic shrine (in the form of a huge triangular megalith) three worked sarsen objects were found. One is a masked head (22 kg), its base rubbed smooth to flatten

it. Another, weighing 20 kg, resembles a female bosom. Third is a pubic triangle (weight 11 kg) with a cup-mark (diameter 40 mm, depth 15 mm) hollowed into the narrow end-tip of the apex. Together the parts form a tripartite representation of a female figure such as could be realistically mounted on a wooden framework as an intelligible tribute to the feminine divine (Meaden 2014a).

Sunlit action resulting from the careful pairing of positioned stones at Drombeg

A quite different and visually appealing expression of religiosity in Neolithic and Bronze Age cultures in Britain and Ireland is expressed through theatrical drama involving sunshine and stones. It is a newly-recognized variation of the principal of the *hieros gamos*, or the earth-sky sacred marriage.

The *hieros gamos* is one of the highest levels of intellectual spirituality to have been recognized as part of ritual and worship in prehistoric times. The megalithic examples identified here for the Irish and British Neolithic Age precede by two millennia the staged theatrical dramas of sacred marriage known for the era of the classical Greeks in south-eastern Europe, and which had begun in Asia up to two millennia earlier than in Greek literature, for example the agricultural Sumerians known through cuneiform writings. Among numerous scholars Kramer (1969: 49) has examined usefully the sacred marriage in ancient Sumer (see also Jacobsen 1976: 46 and Bowker 1997 for summaries and earlier references).

The principal idea in the megalithic world of the Neolithic and Bronze Ages is explained using examples deduced for the stone circles at Drombeg and Stonehenge. At Drombeg in County Cork (southern Ireland) there is a splendid example of deliberate pillar-and-lozenge megalith pairing. The chosen megaliths when seasonally united by the action of the rising sun provide communicative symbology via the unfolding of a spiritually visual drama. It is a play without words, a serene masterwork resulting from accurate planning.

The photograph in Fig. 6 shows 17 perimeter stones in a circle 9 m in diameter. The 6-tonne recumbent stone, 2.05 m long and 1.1 m high above ground level is impressive. Perimeter stones were carefully selected and positioned so that a momentous union between particular pairs would result. The axis of the monument bisects the supine stone and the gap between a pair of tall portal stones opposite. The recumbent stone is positioned to work with the rising sun at the summer solstice.



FIGURE 6. DROMBEG STONE CIRCLE. VIEW ACROSS THE RECUMBENT STONE TOWARDS THE POINT ON THE HILLSIDE WHERE THE SUN RISES ON MIDSUMMER MORNING. THE LOZENGE STONE AND THE PILLAR STONE ARE AMONG THE STONES ON THE LEFT, CF. FIG. 7.

The Winter Six months at Drombeg Stone Circle

One megalith is lozenge-shaped (Fig. 7, Fig. 8). Next to it, a pillar stone was set inwards from the circle's circumference such that at the equinoctial sunrises the light of the sun passes through an arranged gap between the next two perimeter stones, allowing the sun to cast a shadow of the pillar stone on to the middle of the lozenge stone (Fig. 7 and Fig. 8). This has never previously been noticed in modern times, although it has been happening year after year ever since the stones were raised thousands of years ago. Fig. 7 is a photograph taken on 21 September 2012.

The excavator E. Fahy (1958: 20-1) recorded that the lozenge stone 'seems to have been fashioned into its present shape in antiquity. Lozenge-shaped boulders associated with pillar stones have been recognized at Avebury and are taken to represent or to be symbolical of the male and female sexes and to be connected with a fertility cult (Keiller and Piggott 1936)'. Fahy quotes Gordon Childe (1952: 102): 'They are clearly male and female symbols.' Fahy concludes 'that at Drombeg we are



FIGURE 7. THE UNION BETWEEN A PILLAR STONE AND A LOZENGE STONE: DROMBEG STONE CIRCLE, 21 SEPTEMBER 2012, SHOWING HOW AT SUNRISE, AND FOR A FEW MINUTES AFTERWARDS, SUNLIGHT PASSES THROUGH A PREPARED GAP BETWEEN THE NEXT TWO PERIMETER STONES TO FALL UPON THE OFFSET PILLAR STONE AND CAST ITS SHADOW TO THE MIDDLE OF THE LOZENGE STONE.

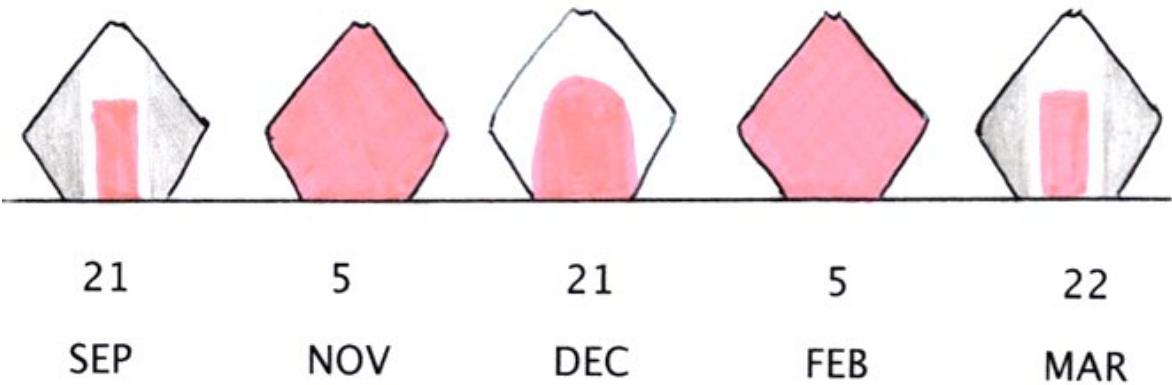


FIGURE 8. AT SUNRISE ON EACH INDICATED DATE OF THE YEAR A SHADOW FROM ONE OF THE MALE-TYPE STANDING STONES FALLS ON THE LOZENGE STONE. ALL THESE OCCASIONS HAVE BEEN PHOTOGRAPHED.

dealing with another instance of symbolism which by its nature ought to be connected with a fertility cult.'

The lozenge stone and pillar stone are 1.2 m apart measured centre to centre. At sunrise on 21 September 2012 the shadow from the narrow pillar stone fell centrally upon the broad lozenge megalith. The offset alignment of the pillar stone helped to make this possible (and, importantly, there is a similar situation at Stonehenge with its offset Stone 11, as explained in Meaden (2014b) and mentioned later in this paper).

Fig. 8 shows how at sunrise shadows are thrown from various stones on to the great lozenge stone for five of the eight ancient agricultural festival dates. Photographs for all five occasions, from equinox to equinox through the winter months, have been taken (Meaden 2014b).

Next to be considered is the run of months from equinox to equinox through the summer.

The Summer Six Months at Drombeg Stone Circle

For the stones of Drombeg in the summer half of the year there is solar action involving shadow play from another range of perimeter stones carefully arranged relative to the great recumbent stone, whose spacious horizontal surface was artificially flattened (Fig. 6). On this surface are pecked cup-marks and a more complex feature that recalls the numerous yoni female carvings at various rock art sites around the world. An ink-and-paper tracing is reproduced in Fig. 9.

On the occasion of the Drombeg midsummer sunrise the shadow of a tall phallic portal stone is thrown upon the female carving 9 m away. Then during subsequent minutes, as the sun rises and moves southwards, the carving is released from the phallic shade and receives the light and energy of the midsummer sun. Moreover, the portal stone that casts this shadow bears a geological feature suggestive of male anthropomorphism. The builders of the monument, having found the stone with this appropriate feature, then deliberately positioned it to be the key sunrise stone in this arguably male/female relationship involving sexual union.

Similar awe-inspiring shadow-and-light phenomena take place with respect to this recumbent stone at the two equinoxes and at the two intermediate quarter dates. All five sunrise events, from equinox to equinox through the summer half of the year, have been photographed. They are reported in the UISPP lecture (Meaden 2014b) and will be published in subsequent papers.

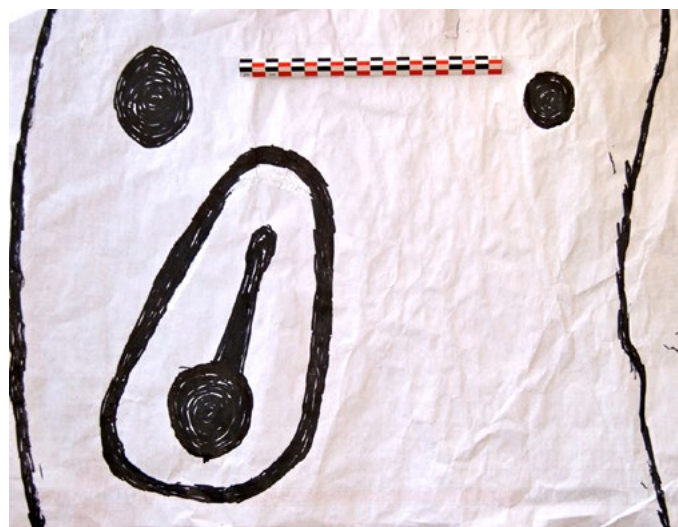


FIGURE 9. SYMBOLS ON THE HORIZONTAL FLAT SURFACE OF THE RECUMBENT STONE AT DROMBEG: A PHOTOGRAPH OF THE ORIGINAL, FULL-SIZE, INK-ON-PAPER TRACING (NOTE THE 20 CM RULER).

The axial orientation of the Drombeg recumbent stone is not exactly at right angles to the circle's axis as defined by the line of the summer-solstice sunrise to the middle of the recumbent stone. The stone is turned more southwards than this, such that it nearly aligns to the point of midwinter sunrise. This is peculiar, the more so because, unexpectedly, a similar curious arrangement is found at the altar stone at Stonehenge, as explained below.

Dramatic action at Stonehenge at the summer solstice

At Stonehenge in every midsummer week for the last 4,500 years, the sun on clear-sky mornings has cast a shadow through the middle arch to the centre of Stonehenge. The optimum situation happens on the day of the summer solstice, but there is little difference for the sunrises from three days before and up to three days after this date. The master plan depends chiefly on the placement of two principal stones, as at Drombeg:

1. the solitary megalith known as the heel stone that stands in the direction of summer-solstice sunrise beyond the ditch and bank encircling the monument, and
2. the focal stone, called the altar stone, set on the midsummer-sunrise axis that bisects the interior of the circular monument. This micaceous stone is reflective because of its myriads of tiny mica platelets. When freshly scraped and wetted, it sparkles in the reflected light of the rising sun.

At first, in midsummer week, the light of the rising sun shines past the heel stone (Fig. 10). Four minutes later on days when the atmosphere is clear the strong shadow of the phallic heel stone is seen entering the monument (Fig. 11). The photograph was taken with the author's back against the heel stone.

The shadow enters the medial arch of the outer sarsen ring and reaches part of the light-reflecting altar stone whether or not the latter was lying prone or standing upright. The former alternative is depicted in the reconstruction of Fig. 12.

The author knows of observers (among them, Simon Banton of English Heritage) who were inside the monument on such an occasion, and saw that it is so. An earlier account was published in the *Wiltshire Times*, and a sketch was drawn by the witness, Terry Snailum. He wrote in the newspaper dated 9 August 1985 that he had witnessed this happening on 21 June some 65 years earlier. The horizon was less affected by trees then.

Unluckily, occasions of a very clear atmosphere are not common. More often, the sun rises through haze and appears red and dimmed casting a faint shadow that is nonetheless sometimes visible to the



FIGURE 10. VIEW FROM THE INTERIOR OF THE STONES OF STONEHENGE ALONG THE MAJOR AXIS AS IT WOULD HAVE BEEN IN MIDSUMMER WEEK IN LATE NEOLITHIC TIMES. THE SUN THEN ROSE TO THE LEFT OF THE HEEL STONE WHOSE SHADOW A FEW MINUTES LATER PENETRATED TO THE CENTRE OF THE MONUMENT—AS IT STILL DOES.



FIGURE 11. IN MIDSUMMER WEEK ON A CLEAR-SKY MORNING THE SHADOW OF THE HEEL STONE PENETRATES THE MONUMENT SOON AFTER SUNRISE AND REACHES THE MICA-BEARING ALTAR STONE.



FIGURE 12. WHETHER THE ALTAR STONE WAS RECUMBENT (AS SHOWN HERE) OR STANDING, THE SHADOW OF THE EXTERNAL HEEL STONE REACHES IT AFTER SUNRISE ON MIDSUMMER MORNING.

eye. This is the primary point. Even a weak shadow can be seen by eye, which would have been good enough for the attentive spectators of the Neolithic and Bronze Ages.

After the entry of the shadow into the monument, withdrawal occurs as is the nature of phallic detumescence. Multiple photographs demonstrate this.

Slaughter Stone

The misnamed slaughter stone lying prone inside the circular ditch has no relevance to the final-phase Stonehenge monument. There is well-argued reason to believe that the stone dates from an earlier period of use in which it served its purpose in the drama until replaced by the present heel stone (Meaden 2014b). It was retained, although in a prone position, out of respect for its former ancestral importance.

Altar Stone

This recumbent stone at the focus of the monument lies across the Stonehenge summer-solstice axis. It is exactly bisected by this axis, and its own axial orientation is not perpendicular to the summer-solstice axis but precisely matches the direction of the winter-solstice sunrise. This suggests that the altar stone has not toppled from some earlier standing position but was deliberately laid flat this way. It further suggests, perhaps through an indication of sympathetic spirituality, that there is another inbuilt pairing of stones in the monument that features and promotes the direction of the midwinter sunrise. This pair has been found (Meaden 2014b).

Action at Stonehenge at the winter-solstice sunrise

In the outer sarsen ring there is a mysterious stone, 40% shorter than the others, round-topped and phallic shaped. It is Stone 11, which stands about 50 cm out from the line of the otherwise perfectly circular lithic perimeter. This deliberate adjustment, though minor, ensures that at sunrise on the winter solstice sunlight falls upon this stone and throws a phallic shadow on to the waiting Welsh bluestone number 40. The latter is damaged but its base survives in its original setting. The self-orientation of this bluestone is anomalous in not being tangential to the circumference of the true circle of bluestones but is instead angled to that of the summer-solstice sunrise. This attribute is not fortuitous because it complements the behaviour of the setting of the Altar Stone as a matter of symmetry. The explanation is that Stone 11 is likely to be a survivor, held in continuing respect, from an earlier epoch of the Stonehenge monument, here being re-used in a useful way.

In short, shadow-play at sunrise is another manifestation of the power of visual drama that articulates the people's expression of their celestial-terrestrial spiritual beliefs.

Action at Stonehenge at the winter-solstice sunset

The point of sunset at the winter solstice is in opposition to that of midsummer sunrise, when viewed past the heel stone. If the altar stone lay flat in prehistory, then celebrants approaching Stonehenge from along the Stonehenge avenue would see the sun setting through the monument into the horizon which is Normanton down. If the altar stone stood vertical, this view would be blocked. Again, the images brought into play by preplanning the stone emplacements relative to the setting sun attest to the architectural aptitude of the leaders of what was evidently a high culture.

Conclusions

The paper considers two fundamental expedients by which prehistoric tribal cultures in Britain and Ireland treated religious concepts using meaningful symbology. One made use of familiar well-loved shapes, the other drama.

The first explores the use of images, including symbolic outlines and engravings, to transmit meanings among devotional communities. The symbols discussed are lozenge shapes, isosceles triangular shapes and cup-marks when associated with either of the former. Instinctive demonstrations of the feminine result. Examples include the hollowed cup-mark and the stone circle where they delineate feminine sacred space. These studies help to introduce the ensuing explanations as regards interpreting the underlying design plans for the stone circles at Drombeg and Stonehenge.

Thus the second part of the study considers watchable drama in which solar movement at preselected optimal sunrises creates lithic shadows that cross the surfaces of carefully positioned standing stones and recumbent stones. Such action, possibly accompanied by spoken narrative, is another means by which non-literate societies may have expressed their spirituality. Examples begin with the highly-sophisticated stone circles of Drombeg in Ireland and Stonehenge in England, while other monuments that promise similar rationalization include Avebury (Wiltshire), Bryn Celli Dhu (Anglesey), Maeshowe (Orkney), and Newgrange and Knowth (Ireland), among many others in Britain and Ireland. Meaden (2014b) gives many more details.

At Drombeg enchantment sublime comes from the shadow motion produced by the light of the rising sun. This follows from the deliberately irregular yet positive positioning of the circumferential stones that allow a series of shadows at sunrise – cast by pillar-like stones – to fall upon one or other of two female stones. One of the waiting stones is lozenge-shaped, the other broad and recumbent. The occasions are the eight festival dates known to us from Celtic times, here demonstrated for the much earlier Neolithic and Bronze Ages. At Stonehenge similar effects are convincingly demonstrated for midsummer sunrise when the shadow of the externally-located heel stone encounters the altar stone waiting in the middle of the monument. Again at Stonehenge, another recent discovery is that a different lithic pair functions likewise at the midwinter sunrise (Meaden 2014b).

The story of moving sun and phallic shade unfolds like the drama of a silent movie expressed in wordless mime. By linking stones that represent the sexes, interpretation is viewed through the concept and desire for fertility, an understandable core feature of life for farming communities. The vision was unmistakable and heartening for the hardworking people who toiled the land and suffered the vicissitudes of changing fortune according to the times of arrival of seasonal and unseasonal weather.

Perceptions of a long-lost spirituality have been rediscovered in the art and religion of the British and Irish Neolithic. What had been intelligently built into monuments long ago using symbolic artistry and cosmic motion is being decoded and clarified by interdisciplinary analyses in the 21st century.

References

- BASSO, K. 1996. *Wisdom Sits in Places: Landscape and Language among the Western Apache*. University of New Mexico Press.
- BOWKER, John, ed. 1997. *The Oxford Dictionary of World Religions*. Oxford: Oxford University.
- CHILDE, G. 1952. *Prehistoric communities of the British Isles*. p. 102. London.
- COIMBRA, F. A. 2001 The cupmark in rock art in Western Europe: A contribution to its study and interpretation at www.artepreistorica.it *Proc. Congress 'Le incisione rupestri'* pp. 1-9, Fig. 5 on p. 4.
- DARVILL, T. 2008. Pathways to a panoramic past: a brief history of European landscape archaeology, in D. Bruno and J. Thomas (eds) *Handbook of Landscape Archaeology*. World Archaeological Congress Research Handbooks in Archaeology. Walnut Creek: Left Coast Press, pp. 60-76.
- DAS, S. 2014a. *Unknown Civilizations of Prehistoric India*. Kaveri Books, New Delhi.
- DAS, S. 2014b. Indian megalith culture since its dawn in prehistoric times and aspects of continuing megalith uses and belief systems. *UISPP Spain, Session A25c*.

- FAHY, E. 1959. A recumbent stone circle at Drombeg in County Cork. *J. Cork Historical and Archaeological Society*. Vol. 64, pp. 1-27.
- GRADOLI, M. G. and ANARDU, G. 2014. Reporting the major discovery of an extraordinary cult site with rock art engraved in calcite, unique to Sardinia. *UISPP Spain, Session A25c*.
- JACOBSEN, T. 1976. *The Treasures of Darkness: A History of Mesopotamian Religion*. New Haven, CT: Yale University Press.
- KEILLER, A. and PIGGOTT, S. 1936. The West Kennet Avenue, Avebury: Excavations 1934-1935. *Antiquity*, Vol. 10, pp. 417-27.
- KRAMER, Samuel N. 1969. *The Sacred Marriage: Aspects of Faith, Myth and Ritual in Ancient Sumer*. Bloomington, IN: Indiana University Press.
- MEADEN, G. T. 1991. *The Goddess of the Stones: The Language of the Megaliths*. London: Souvenir Press.
- MEADEN, G. T. (ed.) 2012. *The Archaeology of Earth Mother Sites and Sanctuaries in History and Prehistory*. BAR International Series S 2389. Oxford: Archaeopress.
- MEADEN, G. T. 2014a. The Avebury Hills in England: Analysis of a prehistoric landscape with positioned megaliths and settings supported by Neolithic and Early Bronze Age portable lithic finds. *UISPP, Spain. Session A25c*.
- MEADEN, G. T. 2014b. Stonehenge, Drombeg and Avebury: Analysing the rationality behind their stone-circle design plans when interpreted by *hieros gamos*, as confirmed by photographic sunrise evidence for the eight traditional agricultural festival dates. *UISPP Spain. Session A25c*.
- PRENDERGAST, K. 2012. The Neolithic monument of Newgrange in Ireland: A cosmic womb, in Meaden, G. T. *Archaeology of Mother Earth sites and sanctuaries through the Ages*. pp. 57-64. *BAR International Series 2389*. Archaeopress, Oxford.
- SMITH, I. F. 1965. *Windmill Hill and Avebury: Excavations by Alexander Keiller 1925-1939*. Oxford: Clarendon Press.
- SNAILUM, T. 1985. Shadow of the Heel Stone witnessed touching the Altar Stone. *Wiltshire Times*, 9 August 1985.

The Arroyo de las Flechas' Rock Art Engravings: Symbolic Associations in Sierra El Alamo (Caborca, Sonora, Mexico)

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Abstract

We present the first results from the Arroyo de las Flechas rock art set in Sierra El Alamo, Caborca, obtained as part of the 'Ocupación Humana durante el Cuaternario en el Noroeste de Sonora' (OHCNS) project (2013). The iconographic and symbolic richness of this place evidences the existence of a ceremonial site comprised mainly of rock art engravings of human, animal, geometrical and astronomic figures. The study focuses on the archeological contextualization and formal analysis of the rupestrian figures engraved at ritual sites in Caborca, where compositions and associated patterns suggest the presence of rituals related to the solar and lunar cycle, as well as fertility.

The site has been identified with the Trincheras tradition (Trincheras, Sonora) in connection with the rock art styles in northern Mexico and southwestern United States, whose similarities can be traced down to the Gila petroglyph style, closely related to the Hohokam culture (AD 800-1400) in northwest Sonora and southwest Arizona.

Key words: rock art, engravings, Arroyo de las Flechas, archeology, Trincheras tradition, Hohokam, Sonora, Mexico

Introduction

This paper shows the first results from the Arroyo de las Flechas rock art set in Sierra El Alamo (Caborca, Sonora) obtained during the 2013 season. The study is part of the 'Ocupación Humana durante el Cuaternario en el Noroeste de Sonora' (OHCNS) project led by the Instituto de Investigaciones Antropológicas of the Universidad Nacional Autónoma de México (IIA-UNAM) in collaboration with the Institut Català de Paleoecologia Humana i Evolució Social of Tarragona

(IPHES). The study focuses on the archeological, anthropological and paleontological records of the early population in America.

Our participation in the project consists mainly in the analysis of the rock art representations by establishing possible connections between the Arroyo de las Flechas rock art set, and the engravings in northern Sonora, as well as their chronocultural affiliation based on the typology, and the relation between figures and compositions.

The analysis has given us some insights into a solar lunar cycle related to fertility.

Site location and description

The Sonora region is located in northwestern Mexico and southwestern United States. The study area is part of the Sonoran desert physiographic province.

Sierra el Alamo constitutes a mountain system 40 km (24 miles) west of the city of Caborca. It has a strategic position in Sierra el Pinacate and the Great Altar Desert to the north, and El Desemboque and Puerto Lobos at the Gulf of California to the west. Sierra el Alamo has a surface area of 15 km (9 miles) in diameter, and a maximum elevation of 900 m (2,950 ft). The site known as Arroyo de las Flechas or Aguaje de las Palomas is located at its southeastern side, displaying a major set of rock art engravings.

Beside the hills of La Proveedora and La Calera, which concentrate the largest set of engravings in the region, the area also includes a place known as El Arenoso, north of Caborca. The rock art engravings are ascribed to the Trincheras culture, which occupied the region between 800 and 1300 AD (Figure 1).

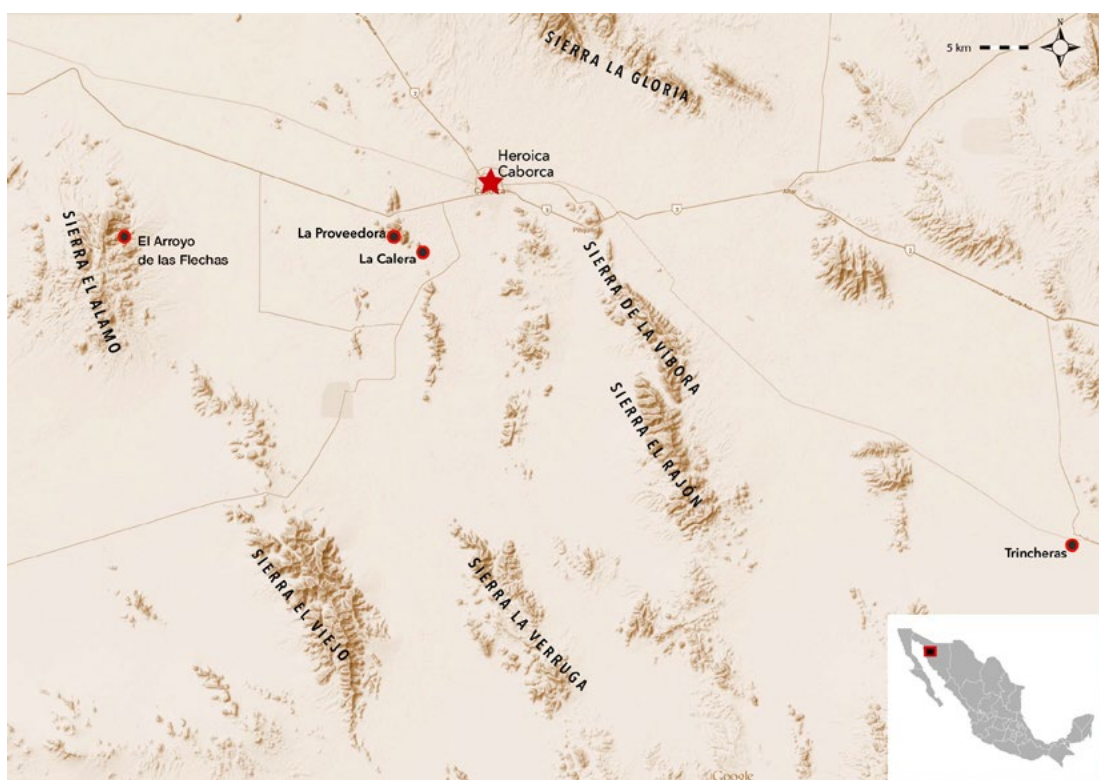


FIGURE 1. LOCATION OF ARROYO DE LAS FLECHAS WITH RESPECT TO LA PROVEEDORA AND LA CALERA HILLS AND THE TRINCHERAS SITE, WHERE MOST ROCK ART REPRESENTATIONS IN THE REGION ARE CONCENTRATED (MAP BY JUAN F. RUIZ).



FIGURE 2. SURFACE COVERED BY THE OHCNS PROJECT AT SIERRA EL ALAMO (MAP BY ALEJANDRO TERRAZAS).

The Arroyo de las Flechas rock art set is located on the dry course of a tributary of the river Asuncion. There are several areas with engravings along the stream up to Arroyo de las Flechas or Aguaje de las Palomas at coordinates 0350674E and 3393256N (WGS84), and an elevation of 443 m (1,452 ft) (Figure 2).

The only reference to this site comes from the French researcher D. Ballereau, who recorded 300 figures from the main panel in 1987 (Ballereau, 1991).

During the first season of the OHCNS project (2013), the main panel was recorded again. It is located on the right bank of the stream heading N-S on one of the basaltic rock exposures. The site presents a frontline 32 m long and 5 m high distributed in 55 sections or panels for a total of 766 graphic units. In order to facilitate the record-keeping process the set was divided into three sectors. The largest number of representations corresponds to Sector 2. The engravings were heavily damaged by thermal oscillations, while the surface of the rock panels shows several fractures used by the creators for the arrangement of figures. However, we have confirmed that a great number of engravings were done before the fractures occurred (Figure 3).

Methodology

The research process for the analysis of the rock art representations at Arroyo de las Flechas was divided in two stages: field work by surface-surveying the stream area (on-site documentation), and subsequent lab typological and associative analysis.

During the field work stage, the topography was made using a satellite positioning system (GPS), whose data were later processed by the *Surfer*TM software program to produce topographic maps (Figure 4). These maps were later georeferenced in a Geographic Information System (GIS) using the *Ogis*TM application to project the results on *Google Earth*TM 3D images.



FIGURE 3. MAIN PANEL IN ARROYO DE LAS FLECHAS (SECTOR 2), WHICH SHOWS THE SITE'S MOST CHARACTERISTIC FEATURES, INCLUDING ASTRONOMICAL MOTIFS ON TOP OF THE ROCK PANEL (PHOTO BY: BEATRIZ MENÉNDEZ).

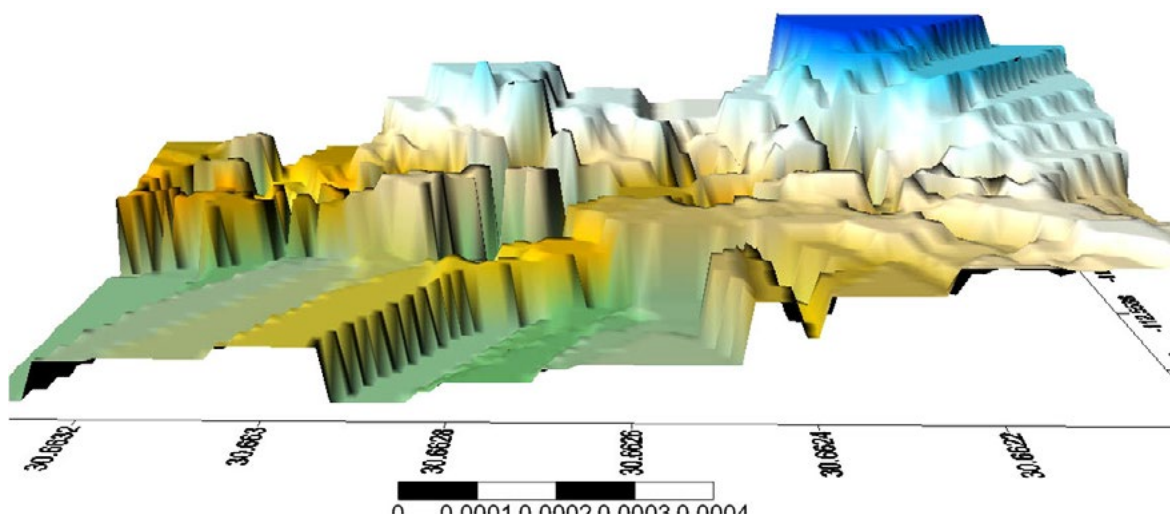


FIGURE 4. TOPOGRAPHIC SURVEY OF ARROYO DE LAS FLECHAS USING THE *SURFER*™ MAPPING PROGRAM TO GENERATE TOPOGRAPHIC MAPS (MAP BY ALEJANDRO TERRAZAS).

In addition, the engravings or petroglyphs were recorded in an inventory of panels, which included all the required data for their analysis: GPS coordinates of each rock or panel, dimensions, orientation, number of figures, typology, engraving techniques and patina. It was completed with a digital photographic register, which provides for the creation of digital tracings (Figure 5).

The lab analysis ordered and classified the records in a database according to their motifs, features and associated patterns.

The tracings from Arroyo de las Flechas are being processed from the digital photographs and the imaging software using the *DStretch* plug-in to *Image-J* (Harman, 2005) and *Adobe Photoshop CS 5.5*. The process consists of contrasting the images in *Adobe Photoshop* to clearly differentiate the



FIGURE 5. RECORDING THE ROCK ART REPRESENTATIONS IN THE ARROYO DE LAS FLECHAS (PHOTO BY BEATRIZ MENÉNDEZ).

figures from the surface of the rock, and then go through different filters with the *DStretch* plug-in to get a better contrast. Sometimes the filters provide not only an enhanced sharpness, but they also reveal figures that were almost lost due to erosion. Subsequently the images are further processed using *Adobe Photoshop* to produce a final digital tracing.

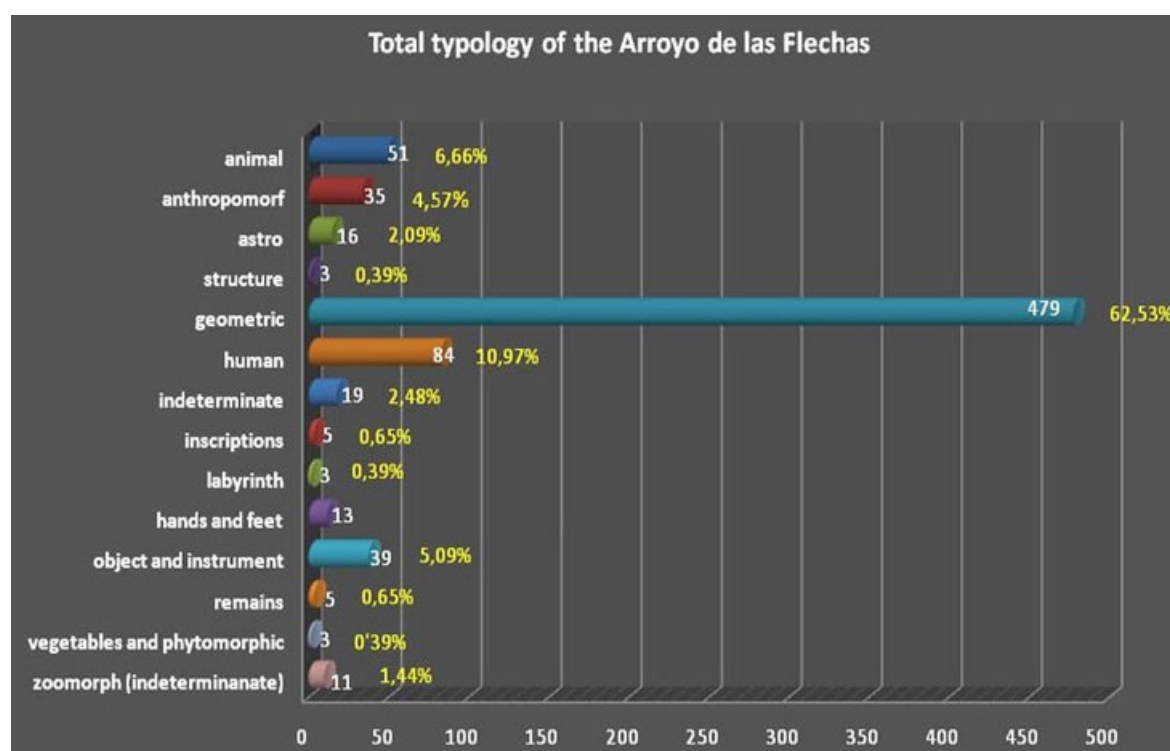
This imaging process is effective for 90 per cent of the rock art engravings, even though some of them must be finished in the traditional manual way. Only a few tracings have to be worked out manually, but always supported by digital photography, and projecting the figures for the final digital tracing.

The lab stage also includes entering the data from the inventory records into an *Excel* database to produce typological and thematic charts, and display data graphics.

Results

Together with the rock art remains at the nearby hills of La Proveedora and La Calera, the main panel forms a thematic and stylistic unit. However, up to date no other diagnostic archaeological and paleontological remains have been found which could provide more information about the culture that produced them, other than being characterized as part of the Trincheras tradition.

As for the typology, it has been divided into the following categories: animal, zoomorph (indeterminate), human, anthropomorph, hands and feet, object and instrument, vegetal or phytomorph, structure,



GRAPHIC 1. TYPOLOGY CHART SPECIFYING THE TOTAL NUMBER (WHITE COLOUR) AND PERCENTAGE (YELLOW COLOUR) FOR EACH CATEGORY (GRAPHIC BY BEATRIZ MENÉNDEZ).

geometric, labyrinth, astronomical, indeterminate, ‘historical’ inscriptions and remains (Graphic 1), for a total of 766 graphic units. This classification is based on D. Ballereau’s proposal for La Proveedora and La Calera, though with some modifications (Ballereau, 1987, 1988).

The most common motifs are the geometric elements, distributed in 50 out of 55 panels, while the less common motifs are the vegetal or phytomorphic and structure-type figures, as well as labyrinths identified in only two panels.

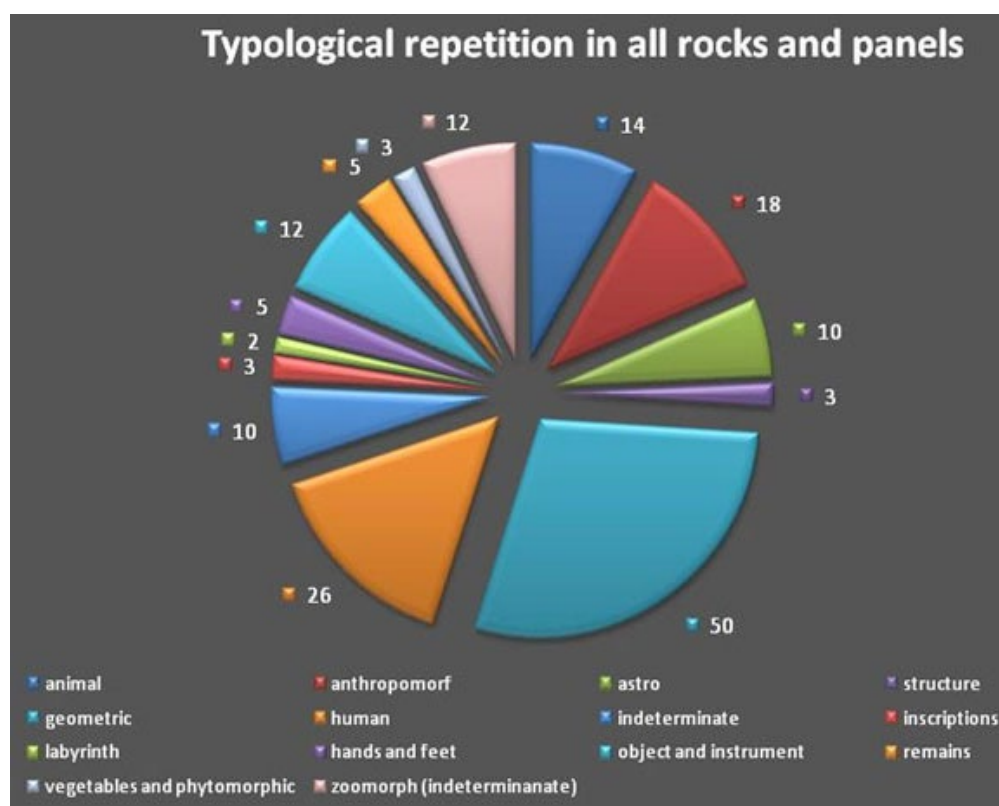
One outstanding category is human figures; all its variants are similar to those from La Proveedora and La Calera, as well as from other sites in northern Mexico and southwestern United States. Most remarkable are the male figures with their sexual attributes schematically represented. In addition, three female figures, two of them pregnant, have been recorded (Figure 6). Another outstanding motif is a turtle-like figure, which apparently represents a woman giving birth, as she holds a rectangle between the legs that could be a blanket or another object for the delivery of the child.

A composition made up of human figures 11, 25, 20, 26 and 31 on panel 32 displays an unusual arrangement, characterized by the lack of limbs and short extremities. In fact, one of the figures seems to have a fishtail, suggesting a sea creature, or it may just be kneeling down. These representations are not unique in their singularity. On the same panel a two-leg body comes out from a human figure, resembling a centaur. It represents a combination or superposition of two converging categories: human and animal, a concept that combines both mythological and supernatural beliefs.

The typological analysis provides a correlation among categories that could be reproduced on every panel to identify possible connections, graphic patterns and symbolic associations (Graphic 2).



FIGURE 6. SECTOR 2
ENGRAVINGS REPRESENTING
SEVERAL FEMALE FIGURES
AMONG A GREAT NUMBER OF
GEOMETRIC ELEMENTS (PHOTO
BY BEATRIZ MENÉNDEZ).

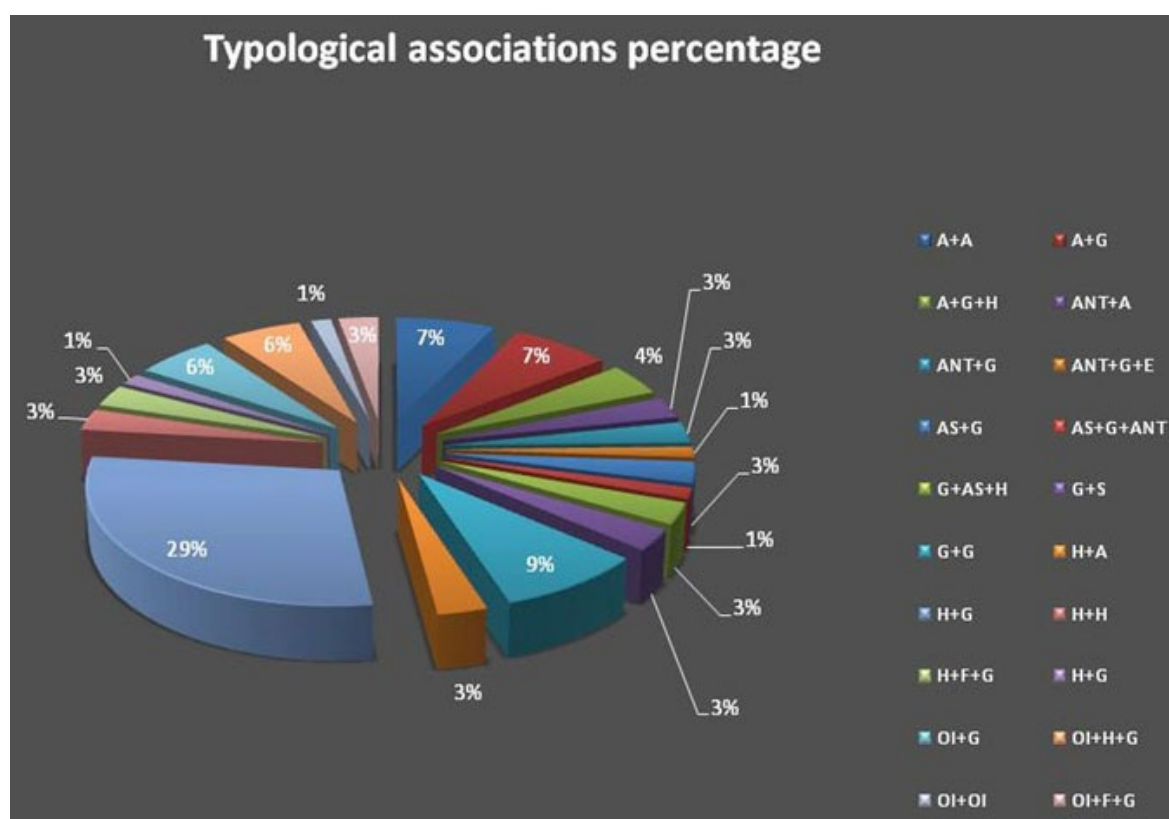


GRAPHIC 2. TYPOLOGICAL QUANTIFICATION OF THE ROCK ART SET ACCORDING TO THE NUMBER OF ROCKS AND PANELS (GRAPHIC BY BEATRIZ MENÉNDEZ).

The preliminary analysis has revealed the following combinations:

- The categories that display the largest number of combinations are two: human and geometric (H+G), for a total of 20 symbolic associations.

- Other associated categories, though in a lower proportion, are: geometric and geometric (G+G); animal and animal (A+A); animal and geometric (A+G); object-instrument and geometric (OI+G); object-instrument, human and geometric (OI+H+G); and animal, geometric and human (A+G+H).
- Less frequent typological associations are: anthropomorph and animal (ANT+A); anthropomorph and geometric (ANT+G); astronomical and geometric (AS+G); geometric, astronomical and human (G+AS+H); geometric and structure (G+S); human and animal (H+A); human and human (H+H); human, foot and geometric (H+F+G); object-instrument, foot and geometric (OI+F+G); anthropomorph, geometric and structure (ANT+G+S); astronomic, geometric and anthropomorph (AS+G+ANT); hand and geometric (H+G); and objects and/or instruments together (OI+OI).
- Two combinations stand out for their symbolic content: astronomical motifs, and projectile-like objects and instruments.
- Finally, there is a clear symbolic association on panel 26 that combines astronomical, geometric and anthropomorph motifs (AS+G+ANT). It is the only one in the whole set of Arroyo de las Flechas that suggests a composition related to rain petition ceremonies, and thus fertility, in a broader sense. This interpretation is based on the presence of certain symbols such as the so-called Mesoamerican cross which, according to some researchers, can be found in multiple sites in the American continent in connection with the planet Venus (Sanchez P., D., 2006). In addition, the presence of other astronomical motifs like an empty circle apparently representing the new or full moon, a solar form or soliforme, an anthropomorph and several geometric designs seem to make reference to rain symbols (Graphic 3).



GRAPHIC 3. TYPOLOGICAL ASSOCIATIONS PERCENTAGE IN THE ARROYO DE LAS FLECHAS SET
(GRAPHIC BY BEATRIZ MENÉNDEZ).



FIGURE 7. A SCENE WHERE A HUMAN FIGURE IS PLAYING A DRUM NEXT TO A LIZARD MAN AND A TURTLE WITH ITS HEAD FACING DOWNWARDS (PHOTO BY BEATRIZ MENÉNDEZ).

The set contains other two singular scenic combinations. The first one is located on panel 32, and it is represented by an association of animal, geometric and human (A+G+H) motifs. The scene is composed of an angled trace or rabbit stick, a halteriform or two circles joined by a line, a lizard man, an inverted turtle and a human figure playing a drum (Figure 7). The whole scene seems to indicate a ritual dance related to these animals, since the turtle was a sacred being among pre-Hispanic societies in ancient Mexico (Rentería Valencia, 2001). The second combination consists of three deer classified as (A+A). These motifs are located on panel 49 in Sector 3 (related to the main panel). The three animals form a circle near the remains of an apparently similar figure. At the bottom of the scene another deer lies in a horizontal position. The deer was a highly venerated creature due to its connection with the sun, renovation and fertility, and its presence is still alive among many indigenous groups in Sonora and Mexico. Its image can be seen in rites and ceremonial festivities of the Yaqui and Mayo groups where the deer dance is still performed (Moctezuma and Lopez, 2005; Castro, 2011).

With respect to the technique, the engravings were made by pecking, probably through indirect percussion using a hammerstone, incision and abrasion (or scratching for historical inscriptions). Emphasis should be made, however, on a single figure painted in red with a high degree of deterioration due to environmental erosion. It consists of a straight horizontal trace with short vertical traces,¹ which is a common motif in northwest Mexico and southwest United States (Grant, 1967). The

¹ It is what Breil defined as pectiform or comb-shaped, but in this case we would rather describe it as geometric traces.



FIGURE 8. ENGRAVING OF AN ARCHER, IN WHICH WE CAN OBSERVE THE PECKING TECHNIQUE AND THE DEGREE OF PATINA (PHOTO BY BEATRIZ MENÉNDEZ).

grooves of some engravings show varying degrees of patina (Figure 8), particularly among figures at the bottom of the panels, suggesting different moments for the execution of the engravings set.

Discussion

Like in all rock art, the main problematic is determined by the chronocultural affiliation, the symbolic content and the state of conservation. Prehistory in northwest Sonora is closely related to that of the southwest of the United States. Consequently, all research on the area should seek a global perspective (Cordell, 1997).

At the beginning of the 20th century, Carl Lumholtz (Lumholtz, 1990) lived with some members of the Tohono O'odham Nation (known as the Pápago), and rescued some of their traditions and legends, which he captured in some papers and ethnographic reports of great interest for research studies in the region. This group is considered to be a descendant of the former Hohokam people, who are also attributed with the authorship of the rock art representations in the Caborca region (Lumholtz and Dracopoli, 1912).

We know that around 10,000 years BP climate changes led to the archaic period, with groups of hunter-gatherers expanding throughout the region, where they left various evidence, particularly lithic remains. These groups lasted until 500 BC, when the first agricultural practices were introduced into many ecosystems in the region: inlets, lakes, mountains, caves, dunes and desert (Braniff, 1992; Montané, 1985). This change led to the development of what is currently known as the Trincheras tradition, characterized by stone buildings on the side of terraced hills, where the rock art engravings are located.

According to some authors, the Trincheras culture lived at the banks of the Magdalena, Altar and Asuncion rivers around A. 80. (Johnson, 1963). The best known sites are Cerro Trincheras, La Playa (the earliest settlement of the Trincheras tradition) and La Proveedora. These groups initiated their agricultural practices at around 200 BC, together with the introduction of ceramics. Subsequently, between the 14th and 15th centuries, these groups traded with Paquimé (Casas Grandes, Chihuahua),

where they exchanged shells and snails for colourful ceramic vases, used by the Trincheras groups for disposing of the ashes of their dead.

The trading relationship with Paquimé took the Trincheras products all the way down to New Mexico, but by the middle of the 15th century many villages were abandoned, and the Trincheras culture disappeared, shortly before the Spanish colonization. This event suggests the existence of close relations between northern Mexico and the southwest, which explains the similarities among the rock art motifs in the whole area.

Up to date, we do not have direct dates for the Arroyo de las Flechas engravings. Nevertheless, the analogy among the elements represented in various sites in Sonora (La Proveedora) and Arizona (Sears Point) (Billo, Mark and Weaver, 2013) let us identify Arroyo de las Flechas within the Gila petroglyph style (Schaafsma, 1980), which is characteristic of both the Hohokam influence area (northern Sonora and southwestern Arizona) and the Trincheras tradition.

Consequently, we consider that the Arroyo de las Flechas rock art set presents a former substrate, common to the Sonora and Arizona regions, which originated in the archaic period, and took hold in the early agricultural period, a rock art closely related to the Hohokam groups and the Trincheras tradition up to the 15th century.

Conclusions

Arroyo de las Flechas is located in a privileged landscape at the bed of a dry stream that fills with water during the rainstorm season.

The most remarkable content on its 55 panels consists of geometric, human and animal motifs. The rock art set stands out, however, for its scenic representations of objects and instruments, such as the human figure playing a drum, or the group of projectile-like figures, whose concentration makes of it an exceptional site in Sonora (Figure 9).

The shape of the projectile tips corresponds to the spearheads generally used in the region during the late archaic and early agricultural periods, up to the time of the Trincheras culture.



FIGURE 9. SYMBOLIC ASSOCIATIONS WITH PROJECTILE-LIKE REPRESENTATIONS (PHOTO BY BEATRIZ MENÉNDEZ).

As we have noted, the techniques for the execution of the engravings were pecking, abrasion, scratching and incision. The grooves left by these techniques show varying degrees of patina, which indicates a temporal process intensified by the accretion of motifs that, on some panels, produced a *horror vacui*, leaving no empty spaces among figures.

Following the analogy of the art styles, the representations resemble the Gila petroglyph style (Schaafsma, 1980), which is characteristic of the Hohokam area in northern Sonora and southwestern Arizona, and was developed by the Trincheras tradition (McGuire and Villalpando, 1993; Sanchez and Carpenter, 2003; Villalpando, 1997). Even if the origin of some figures may be dated back to a former substrate at the archaic period, most engravings were done during the early agricultural and Trincheras periods (Braniff, 1992).

Regarding the interpretation of the rock art set, we have already mentioned the existence of a symbolic association of human figures, animals and geometric motifs, which presumably represent a clear cosmogonical vision related to the sun and fertility rites. These contents are still present among some indigenous groups in Sonora and Mexico, such as the Yaqui and Mayo, who still perform the deer dance.

However, it is too early for archeological research in Northern Mexico to establish with greater accuracy both the cultural ascription of the rock art engravings and their symbolic content. Its iconography has been inherited to a great extent by current indigenous groups, such as the Papago, Opata, Pima, Seris, Mayo, Guarijio and Apache, who can provide a better understanding of the rock art representations within their archeological context.

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References

- AMADOR BECH, J. and MEDINA, A. 2013. *Espacios Rituales, Simbolismo del Paisaje y Arte Rupestre en los Cerros de Trincheras del Noroeste de Sonora. Estudio de Caso: el Cerro San José*. IFRAO 2013 Proceedings, American Indian Rock Art, Vol. 40. American Rock Art Research Association, 2013, 841-870.
- BALLEREAU, D. 1987. 'A complete Survey of Petroglyphs from Cerros La Proveedora and Calera, Sonora'. In: Ken Hedges, ed.; *Rock Art Papers* vol. 5, pp. 95-112; San Diego Museum Papers 23.
- BALLEREAU, D. 1988. *El arte rupestre en Sonora: petroglifos en Caborca*; Trace 14:5-72; Centro de estudios mexicanos y centroamericanos; México D. F.
- BALLEREAU, D. 1991. *Discovery of a Petroglyph Panel in a Valley of the Sierra El Alamo, Sonora, Mexico*, Rock Art Papers vol. 8; San Diego Museum Papers 27.
- BILLO, E., MARK, R. and WEAVER, D. E. 2013. *Sears Point rock art recording Project, Arizona, USA*; IFRAO 2013 Proceedings, American Indian Rock Art, Vol. 40. American Rock Art Research Association, 2013, 1283-1302.
- BRANIFF, B. 1992. *La Frontera Protohistórica Pima-Opata en Sonora, México: Propositiones Arqueológicas Preliminares*. Colección Científica No. 240. INAH, México. (Published version of Braniff 1975).
- CASTRO SILVA, T. 2011. *Etnias de Sonora*; Instituto Sonorense de Cultura; Conaculta; Hermosillo, Sonora.
- CORDELL, L. 1997. *Archaeology of the Southwest*. University Museum of Colorado, Academic Press, San Diego.
- GRANT, C. 1967. *Rock art of the American Indian*; Apollo editions.

- HARMAN, J. 2005. *Using Decorrelation Stretch to Enhance Rock Art Images*, Society for California Archaeology; Chico, California; at <http://www.dstretch.com/>
- INSTITUTO NACIONAL DE ESTADÍSTICA Y GEOGRAFÍA (INEGI) Topographic map 1:50000; Jesus García H12A65; INEGI; Mexico.
- JOHNSON, A.E. 1963. 'The Trincheras Culture of Northern Sonora', *American Antiquity*, vol. 29, pp. 174-85.
- LUMHOLTZ, C. 1990. *New trails in Mexico. A new edition of a Desert Classic. An account of one year's exploration in North-Western Sonora, Mexico, and South-Western Arizona 1909-1910*; University of Arizona Press; Tucson, 411 pp.
- LUMHOLTZ, C. and DRACOPOLI, I. N. 1912. 'The Sonora Desert', *The Geographical Journal*, Vol. 40, No. 5 (Nov., 1912); The Royal Geographical Society (with the Institute of British Geographers) pp. 503-518.
- MCGUIRE, R. and VILLALPANDO, E. 1993. *An archaeological survey of the Altar Valley, Sonora, México*; Arizona State Museum Archaeological Series 184; Arizona State Museum; University of Arizona Press, Tucson.
- MOCTEZUMA ZAMARRÓN, J. L. and LÓPEZ ACEBES, H. 2005. *Mayos*; Pueblos indígenas del México contemporáneo; Comisión Nacional para el Desarrollo de los pueblos indígenas; México D. F.
- MONTANÉ MARTÍ, J. C. 1985. *Desde los orígenes hasta 3000 años antes del presente*; Historia General de Sonora, Tomo 1. Período prehistórico y prehispánico; Gobierno del Estado de Sonora, Hermosillo, pp. 177-224.
- RENTERIA VALENCIA, R. F. 2007. *Seris*; Pueblos indígenas del México contemporáneo; Comisión Nacional para el Desarrollo de los pueblos indígenas; México D. F.
- SÁNCHEZ, G. and CARPENTER, J. 2003. *La Ocupación del Pleistoceno Terminal y el Holoceno Temprano en Sonora*; *Revista Noroeste de México* 14: 27-34; INAH-Sonora; pp. 27-34.
- SÁNCHEZ, P. D. 2006. *El símbolo de Venus en el arte rupestre de Perú, Chile y norte de Argentina*; II Simposio Nacional de Arte Rupestre; Trujillo, Perú; at <file://localhost/E:/Sonora%20textos%20i%20temas/Arte%20rupestre%20Venus%20Mesoamérica%20Perú%20y%20Chile%20Norte%20de%20Argentina.htm>
- SCHAAFSMA, P. 1980. *Indian Rock Art of the Southwest*, School of American Research, University of New Mexico, Santa Fe, Albuquerque.
- VILLALPANDO, E. 1997. *La tradición Trincheras y los grupos costeros del desierto Sonorense*; Prehistory of the Borderlands: Recent Research in the Archaeology of Northern Mexico and the Southern Southwest, John Carpenter and Guadalupe Sanchez, eds; pp. 95-112; Arizona State Museum Archaeological Series No. 186; University of Arizona, Tucson.

Colonisation of the Upper Miera and Asón Valleys (Cantabria, Spain) in the Late Pleistocene and the Early Holocene

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Introduction

This paper describes the colonisation of the upper parts of the Miera and Asón valleys in the centre of Cantabria in the Late Pleistocene and Holocene. These high valleys were glaciated in the Ice Age (with glaciers in the Upper Miera, Valdició and Bustalveinte). The terminal moraines are located at altitudes of 500 m in the Miera valley and 300 m in the Asón valley.

Here, the chronological sequence of the occupation at altitudes of 300-800 m is discussed. Although these are not especially high altitudes, the relief is characteristic of a high mountain area, owing to the geomorphology of the area, with its rugged peaks, steep slopes and karst landforms.

The settlement patterns are analysed by taking into account the variables of absolute altitude, distance from the coast and local topography. The settlement types, their relation with the landscape and the resources available in the different biotopes are also assessed.

The geographical setting

The heads of the Asón and Miera valleys are located in the centre and east of the region of Cantabria, in the north of the Iberian Peninsula. This region is characterized by a narrow coastal strip bounded to the south by the Cantabrian Mountains and divided by valleys generally orientated at right angles to the coast.

The Cantabrian Mountains form a range uplifted in the Alpine orogeny, and can be regarded as the continuation of the Pyrenees (Marquinez, 1992). In the area of the Miera and Asón rivers it is a very rugged area, although the highest peaks only reach moderate altitudes: Castro Valnera (1,718 m), Picón del Fraile (1,625 m) and Porracolina (1,414 m).

The mountain range is on an east-west orientation, as both the mountains and the pre-littoral hills generally run parallel to the coast, conditioned by 'the alpine tectonic movements that divided them into blocks' (Cearreta *et al.*, 1992).

On their northern side, the mountains form a massive barrier at over 1,200 m altitude, only 25 km from the coast. These geomorphologic conditions, differences in altitude and the proximity to the sea influence the local climate, which is an Atlantic mountain climate with heavy precipitation totalling over 2,500 mm/year. Some indicators of even higher rainfall on the summits include the

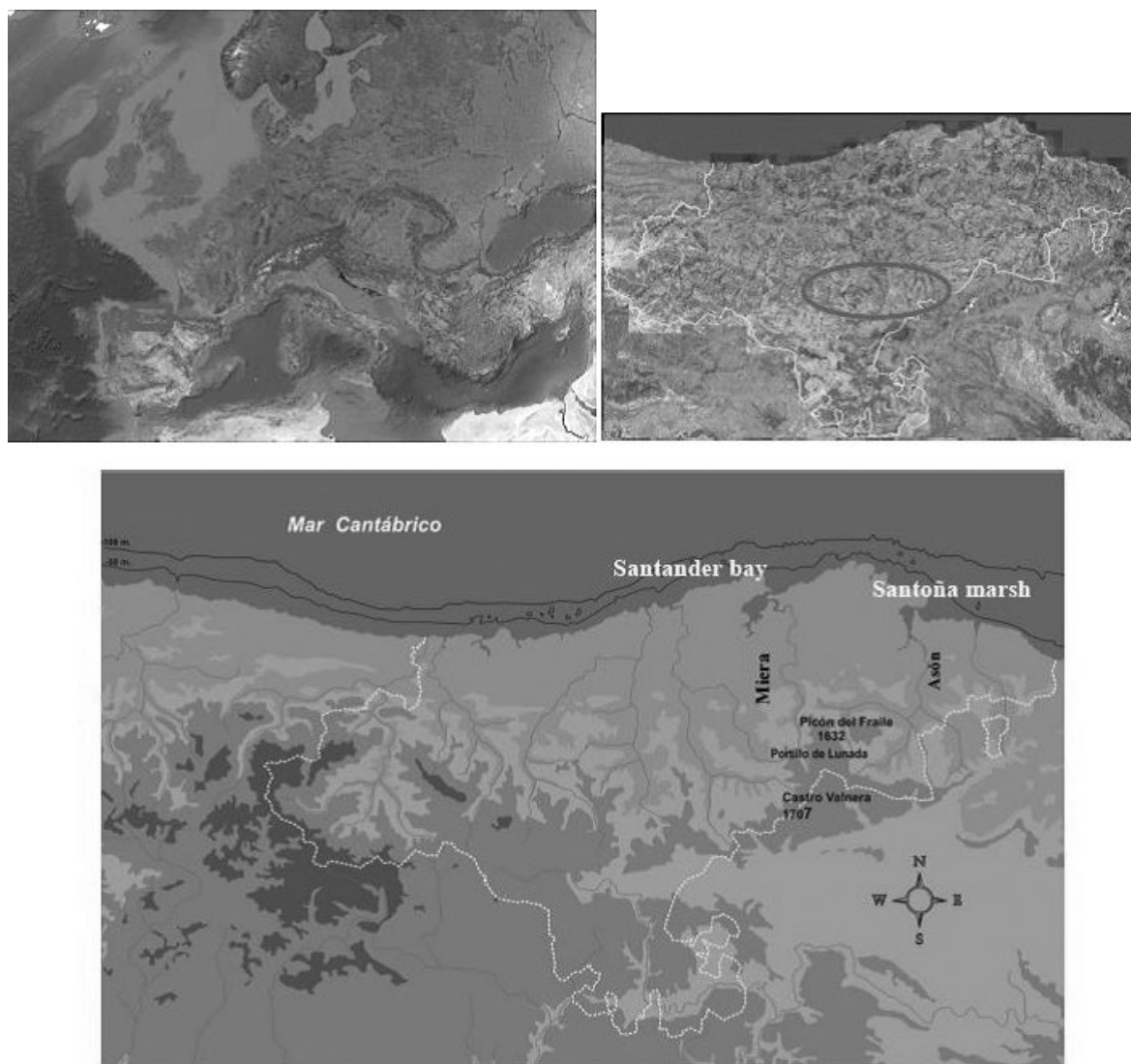


FIGURE 1. LOCATION OF THE UPPER MIERA AND ASÓN VALLEYS.

peat bogs (on slopes, summits and cols) which need precipitations of over 3,000 mm/year to develop (Martínez-Cortizas and García Rodeja, 2001). Horizontal precipitation is guaranteed by the frequency of low clouds. These conditions also existed in the Pleistocene, with intense cold due to the altitudes and extreme humidity owing to the effect of the mountain barrier near the sea (Serrano *et al.*, 2013).

The whole area is within the Aptian-Albian Urgonian structural region (Lower and Middle Cretaceous), with beds more than 1,000 m thick over the Wealden detritic series consisting of clays and sands, which act as the impermeable base to the karst landforms in the higher strata. The presence of limestone in the whole Urgonian series has resulted in karst development (dolines, poljes, extensive lapiaz, pot-holes and caves), together with outcrops of high limestone escarpments. The direction of the strata and faulting has caused the transfer of water from the Mediterranean basin to the Atlantic (Ruiz García, 2006).

On this substrate, glacial erosion has created very abrupt landforms, with steep slopes and narrow secondary valleys, shaping a mountain landscape, despite the moderate altitude.

2. Glacial morphology

In the geographical area of the present study, the largest glaciers were located in the massif forming the heads of the Miera and Asón rivers, culminating in the peak of Castro Valnera (1,718 m). They left the evidence of glaciation at the lowest altitudes in the whole Cantabrian Mountains.

The central sector consisted of a large icefield on a SW-NE axis (Figure 3) consisting of three coalescent sectors or domes (Valnera-Trueba, Picón del Fraile-Asón and Colina-Carrio-La Madera),

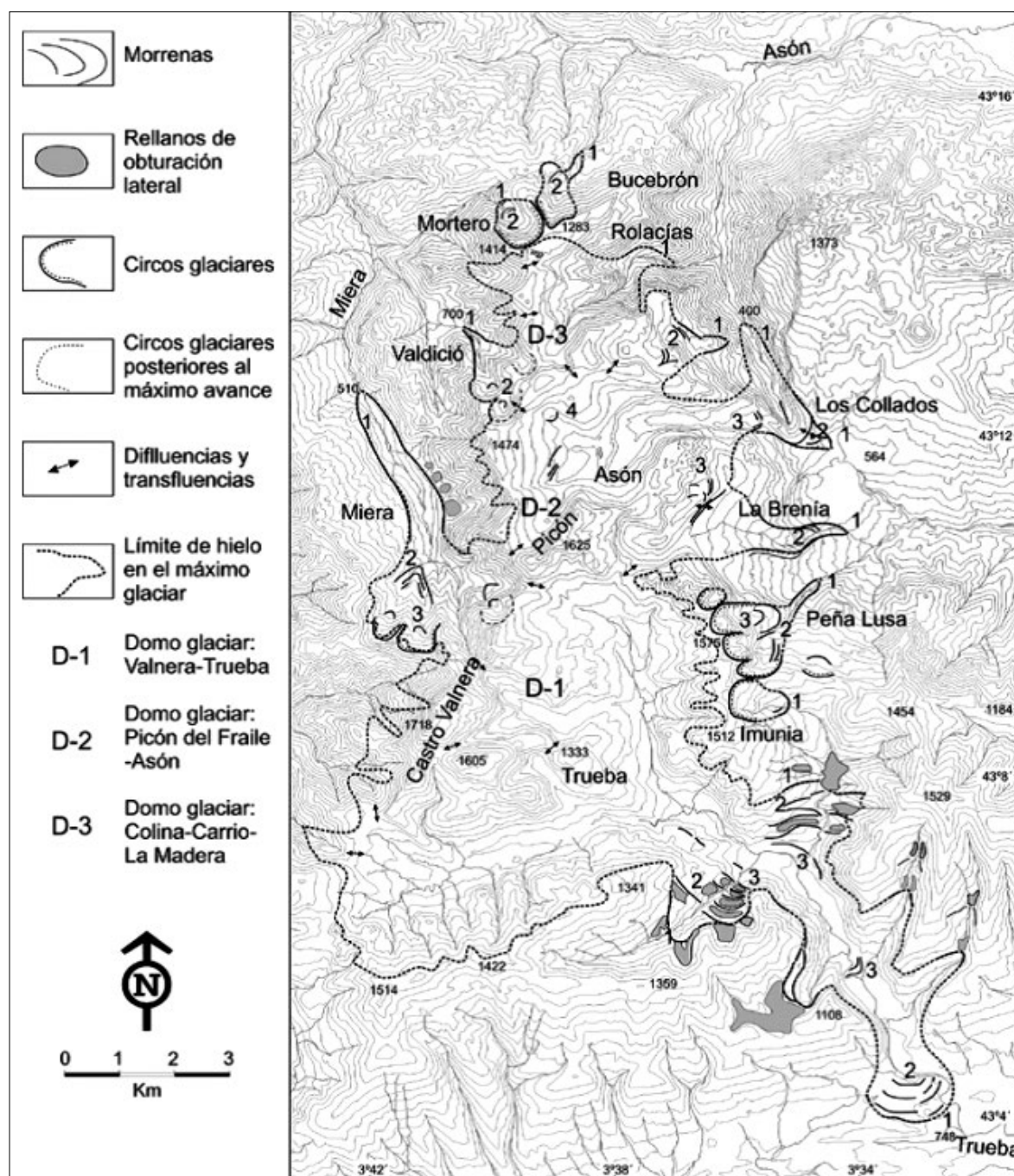


FIGURE 2. GLACIERS AND THE EXTENSION OF THE ICE, AFTER SERRANO *ET AL.*, 2103.

Glaciation	Valnera-Miera 1717 masl	Picón del Fraile- Asón 1625 masl	Colina-Carrio-La Madera 1414-1434 masl	Chronology
Local Last Glacial Maximum (LLGM) 76,5 km ²	Glacier Miera Length: 5 km Thickness: 70 m Altitud: 650 masl (El Toral) Glacier Valdició Altitude: 680 masl	Glaciers Asón Collados, Gándara Altitude: 300 m (Lower in P. Ibérica) Glacier de Brenia: Length: 5,3 km Altitude: 500 masl (Quintana) Bustalveinte. Length 9 km Altitude: 340 masl	Glacier Rolacías Thickness: 100 masl Altitude: 450 masl Glacier Hoyón de Saco	78.54 ± 7.1 ka to 40.42 ± 5.1 ka, Early Würm MIS5-MIS 4 (Frochoso, <i>et al</i> , 2013)
Isolated Glaciers	Mortero	Inmunia Lusa	Porracolina	Soba: 44,978 ± 2,365- 37.5 ka Heinrich IV event. MIS 3 (Frochoso, <i>et al</i> , 2013)
Tongue Disjunction Phase (TDP1)	Ice fields	Ice fields	Ice fields Carrio- La Madera Colina	27 ka- 25 ka (Frochoso, <i>et al</i> , 2013)
Tongue Disjunction Phase TDP2	Cirque glaciers Valdició	Cirque glaciers Rolacías	Cirque glaciers Asón	21 ka- 18 ka. (Frochoso, <i>et al</i> , 2013)
Late Glacial Phase (LGP)				14.5ka-10 ka. MIS 2 (Frochoso, <i>et al</i> , 2013)

FIGURE 3. GLACIATION PHASES IN CASTRO VALNERA: HEADS OF THE ASÓN AND MIERA VALLEYS.

out of which several glaciers developed (Trueba, Miera, Asón, Brenía, Saco, Rolacías and Valdició, among the largest). In addition to these three domes, four individual glaciers formed around the icefield, beneath certain sheltered crests, resulting in small glaciers of the alpine type (Peña Lusa) or in cirques (Mortero, Bucebrón and Imunia). The ice covered an approximate area of 76.5 km², one of the largest extensions in the Cantabrian Mountains (Serrano *et al.*, 2013).

The exceptional glaciation of Castro Valnera can be explained by the conjunction of particularly favourable climate and geomorphologic conditions. Its northern slope formed as many as seven glaciers of different sizes during the glacial maximum. Some of them were very simple, on summits below 1,500 m above sea level (Alto de la Mina, 1,414 m, Cerro de las Pizarras, 1,472 m, Alto de la Colina, 1,458 m) which did not develop glaciers longer than about 2 km. Others, formed at altitudes of over 1,500 m, formed glaciers in the valleys. Among these, the upper Miera valley was occupied by a simple glacier that descended to 580 m above sea level over a distance of a little less than 6 km. However, the development of the Bustalveinte glacier complex is even more surprising; turned clearly towards the east, its ice was joined by the glacier in La Canal, and after partially overflowing towards Soba, it fell into the Asón Gorge, with its terminus at a very low altitude (300 m), 9 km from its head (Frochoso Sánchez and Castañón Álvarez, 1998: 124).

2.1. Evolution and chronology of the glaciation

Four phases can be differentiated. The first and oldest of these took place in the glacial maximum, when a single glacier about 5 km long and 80 m thick would have existed, with its ablation or melting

zone at an altitude of about 620 m or 630 m above modern sea level. This is dated between 78.54 ± 7.1 and 40.42 ± 5.1 ka (Frochoso *et al.*, 2013). During the intermediate phase, the surface covered by the ice would have been limited to the heads of the valleys, the glacier would be reduced to a length of 1 km and the zone of ablation would be at about 850-900 m altitude. It is dated to between $44,978 \pm 2,365$ and 37.5 ka (Frochoso *et al.*, 2013). the lateral moraines visible at the head of the valley formed probably in the second phase. In the final, most recent phase (about 10,000 years ago), the ice was limited to the cirques that can still be seen at the head of the valley with their corresponding terminal moraines, the result of the last cold periods.

3. Settlement

The settlement at the heads of these valleys was undoubtedly influenced by the paleo-environment resulting from the glacial and peri-glacial conditions. The large icefield maintained low temperatures in the surrounding area. No Lower Paleolithic sites have been documented in the upper valleys. The earliest evidence of occupation to be found is in Avandijos rock shelter (Ramales de la Victoria) at 345 m above sea level in the Asón valley. It contains a Mousterian deposit with an abundant lithic assemblage displaying Levallois debitage. It is located near Cueva del Mirón, where a radiocarbon date of 41,280 BP has been obtained (Straus *et al.*, 2002), corresponding to the Hengelo Interstadial. Deposits in other sites have been considered Mousterian: at Cerizal (Arredondo, Asón valley) and at La Hazuca (425 m), Sotarraña (571 m) and Cueva Vieja rock shelter in the Miera valley. They display the characteristic industries and fauna (*Bos-Bisón*, *Capra pyrenaica* and *Equus caballus*).

3.1. Settlement in the Upper Paleolithic

Evidence of occupations of this age is concentrated in the Miera valley. Cueva de Salitre (Ajanedo) on the eastern side of the valley, at 480 m above sea level and 80 m above the river, was discovered

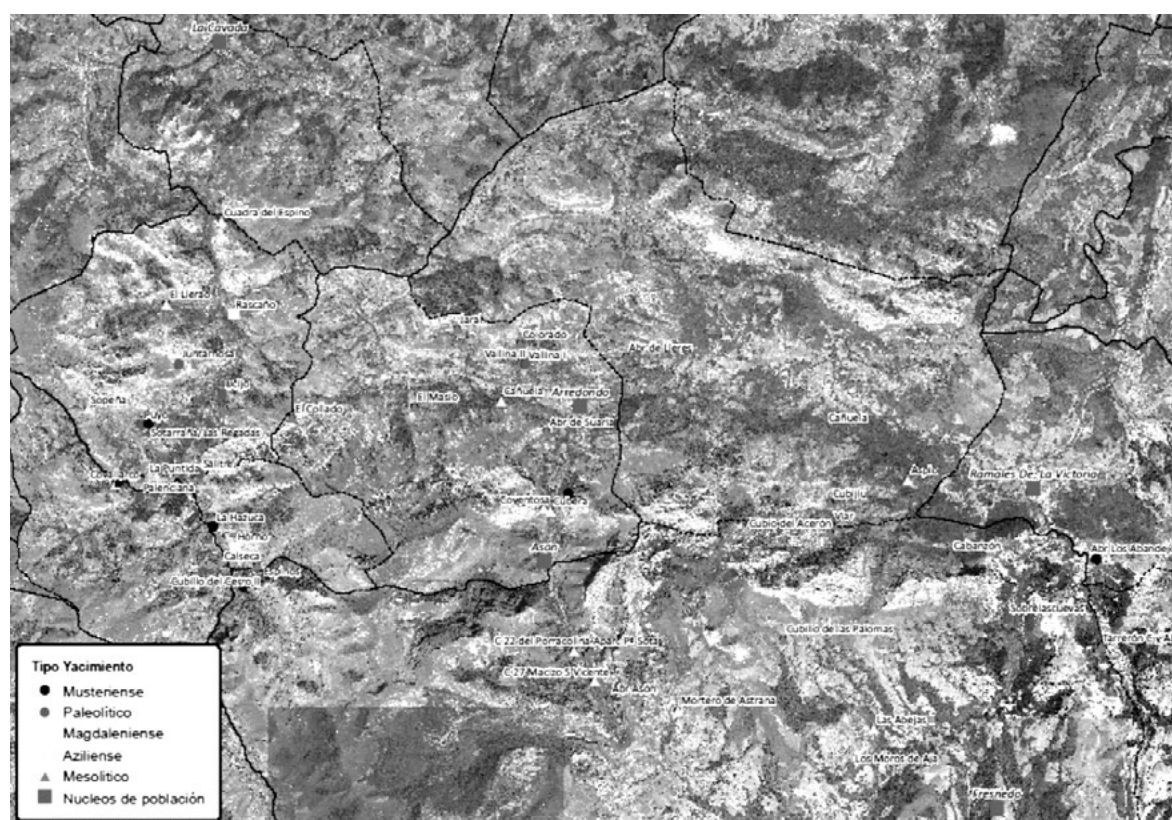


FIGURE 4. SPATIAL DISTRIBUTION OF SITES IN THE UPPER MIERA AND ASÓN VALLEYS.

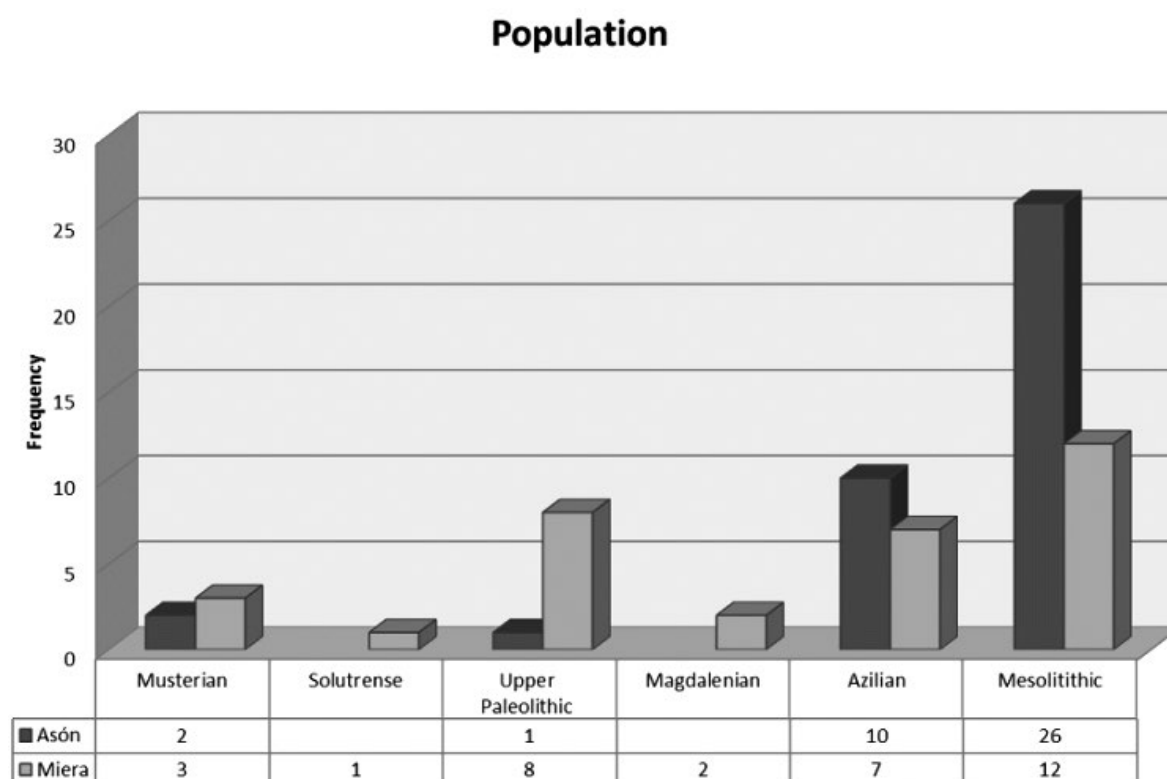


FIGURE 5. FREQUENCIES OF SETTLEMENT TYPES.

Levels	Dates BP	Climaticphases	Adscription	References
9-7	27.000/27.240 ± 950	ColdPfasebef. Interstadial Tursac ISO2	Aurignacian	González Echegaray y Barandiarán Maestu (1981)
6		Interstadial Lascaux: Temperate and humid	Sterile (10.000 años)	González Echegaray y Barandiarán Maestu (1981)
5	16.433 ± 131	Interstadial. Lascaux: Temperate and humid	Low Magdalenian Cantábrico	González Echegaray y Barandiarán Maestu (1981)
4	15.988 ± 193	Dryas I. Cold and dry	LowMagdalenian Cantábrico	González Echegaray y Barandiarán Maestu (1981)
3	15.173 ±160 y	Dryas I/Prebölling: Humid and cool	UpperMagdalenian	González Echegaray y Barandiarán Maestu (1981)
2.2	12.896 ± 137	InterstadialBölling: Cold and humid	UpperMagdalenian	González Echegaray y Barandiarán Maestu (1981)
2.1	12.282 ± 164	Dryas II: Cold and humid	MagdalenianEnd	González Echegaray y Barandiarán Maestu (1981)

FIGURE 6. UPPER PALEOLITHIC SETTLEMENT: CHRONOLOGY, CLIMATE AND CULTURAL ATTRIBUTION.

by L. Sierra in 1903, when the deposit and parietal art were found. Alcalde del Río, Breuil and Sierra (1911: 24) identified lithic implements belonging to the Solutrean and ‘other Upper Palaeolithic periods’. Obermaier (1925: 173) cites evidence for the Aurignacian, Solutrean, Magdalenian, Azilian

and ‘other Upper Palaeolithic periods’. In 1979, Bernaldo de Quirós and V. Cabrera performed a test excavation (unpublished), in which they revealed a thick stratigraphy with a Solutrean point and fauna (*Capra ibex* and *Equus caballus*).

In Cueva del Rascaño (Mirones, 275 m altitude), the scientific study of the stratigraphy, including palynological and sedimentological data and radiocarbon dating (Echegaray and Barandiarán, 1981), succeeded in determining the climate fluctuations during the Upper Paleolithic. Although located at a moderate altitude, the cave is on a very steep slope in an area of quite rugged relief. It was occupied in the Aurignacian about the Tursac interstadial, and in the Magdalenian, mainly in the Lascaux and Bølling interstadials.

Evidence of indeterminate Upper Paleolithic occupations has been found in the caves of Ucijo in the Miera valley (360 m altitude), and Sobrelascuevas (341 m) and Cerizal (420 m) in the Asón valley. Levels attributed to the late Magdalenian were excavated in El Puyo rock shelter (Miera, 575 m).

3.2. Azilian occupations

About 11,800 BP, climatic amelioration in the Allerød oscillation signalled the end of the Ice Age with milder and more humid conditions. The rise in temperature, following the cold dry phase of the Older Dryas, caused a rapid spread of tree cover. These changes in the paleo-environment had immediate consequences in human settlement. The highest areas and secondary valleys, remote from

	Altitude	Dates BP	Cal. BP	Estadio	Adscripc.	Bibliografía
Sopeña L. 3.2 Miera	684	11.730 ± 70	13.611 ± 140	Alleröd	Azilian	Pérez Bartolomé, M. (2011)
Sopeña L. 3.1 Miera	684	11.630 ± 70	13.521 ± 141	Alleröd	Azilian	Pérez Bartolomé, M. (2011)
Llerao L. 1 Miera	395	11.120 ± 60	13.020 ± 126	Alleröd	Azilian	Pérez Bartolomé, M. (2011)
Rascaño De L. 1.3 Miera	275	10.486 ± 90	12.399 ± 199	Dryas: Humid and cold	Azilian	González Echegaray; Barandiarán Maestu (1981)
Rascaño L. 1.2 Miera	275	10.558 ± 244	12.339 ± 346	Dryas III: Cold and dry	Azilian	González Echegaray; Barandiarán Maestu (1981)

FIGURE 7. AZILIAN SETTLEMENT: CHRONOLOGY AND CLIMATE.

the main valley, began to be colonized. A total of 17 sites have been documented with evidence of Azilian occupation, although only five radiocarbon dates are available, two from Cueva del Rascaño (Echegaray and Barandiarán, 1981) and three obtained in the Project ‘Radiocarbon dating in the Miera valley’ (Pérez Bartolomé, 2011).

3.3. Occupations in the early Holocene

The Holocene began around 10,200 BP, in the pre-boreal period, with a rapid rise in temperature, which produced major changes in the landscape, biotopes and sea level, which reached a height of -20 m in 8500 BP and a level higher than at the present time about 6800 BP. The modern estuaries began to form about 8900 cal BP. This meant that a strip of land about 2 km wide was lost along the coast. In contrast, land was gained as it became free of ice, as this disappeared about 10,000 BP,

	Altitude	Dates BP	Cal. BP	Estadio	Adscripc.	References
Cubera L. 1 Asón	175	9.190 ± 60	10.372 ± 86	Preboreal	Mesolithic	Pérez Bartolomé, M. (2006)
Sopeña L.2 Miera	684	8.460 ± 100	9.431 ± 94	Boreal	Mesolithic	Pérez Bartolomé, M. (2011)
Tarrerón L. 3	345	5.780 ± 120	6.590 ± 130	Atlántico	Mesolithic	Apellániz, 1971

FIGURE 8. MESOLITHIC OCCUPATIONS: CHRONOLOGY AND CLIMATE PHASES.

which explains the human expansion towards the upper valleys, attracted by the resources of hunting, fishing and gathering plants in the new biotopes.

Archaeological surveys in the Upper Asón and Miera (Ruiz Cobo *et al.*, 2007 and 2013) have located 26 sites in the Asón and nine in the Miera attributed to the Mesolithic. The criteria used have been the presence of levels with accumulations of terrestrial molluscs or Holocene marine molluscs, associated with fauna, charcoal and lithic artefacts, the stratigraphic position and sedimentology (Ruiz Cobo *et al.*, 2007).

Of these sites, the most precise data have been obtained for two deposits in the Asón valley: the excavation in Cueva de Tarrerón (Apellániz, 1971) documented a lithic assemblage and radiocarbon dates, while a further date was obtained at Cubera rock shelter (Pérez Bartolomé, 2006).

In the Miera, the only test excavation was carried out in Cueva de Sopeña (Pérez Bartolomé, 2011) when three AMS radiocarbon dates were obtained. The anthracological and malacological remains found have been studied by P. Uzquiano and J. Ruiz Cobo, respectively, while the fauna is in the process of being studied by A. Morales (UAM). No lithic artefacts were found in the stratigraphic levels, owing to the erosion suffered by the site, as the cave has acted as a sink-hole at certain times, causing the removal of sediment.

Cubera rock shelter (Arredondo, Asón valley), located above the Cubera resurgence next to the River Asón, is included despite its low altitude (175 m) because it is situated in a rugged area, where the river crosses a series of bluffs, and it is therefore an area of cliffs and escarpment. It has also yielded the only radiocarbon date near the Asón Col, the furthest point the glaciers reached. The site was identified by Chaline (1961). A review of the stratigraphy and sampling for the determination has been able to show the following levels:

- Upper level, about 15-20 cm thick formed by a calcited shell-midden layer with *Cepaea nemoralis* and faunal remains (*Capra pyrenaica* incisor). It has been dated to 9190 ± 60 , a more recent date than one obtained in Cueva del Mirón of 9550 ± 50 (Straus and González Morales, 2003) attributed to the Mesolithic.
- Lower level, the continuation of the previous level, about 20 cm thick, calcited but with no evidence of a shell-midden, with abundant osseous remains and rounded limestone scree.
- Base level, a fluvial terrace level, with limestone and sandstone cobbles in a sandy substrate.

Chaline identified two layers with molluscs. It is possible that the later erosion suffered by the rock shelter has removed part of the stratigraphy. This would be coherent with the Azilian objects found on the surface and deposited in the Museo de Prehistoria y Arqueología de Cantabria: a carenated endscraper in radiolarite, and a backed bladelet and Azilian point, both in flint.

The date obtained in Sopeña Level 2 (8460 ± 100) situates the occupation in the middle of the Mesolithic. The one for Tarrerón Level 3 (5780 ± 120) (Apellániz, 1971) corresponds to a very late phase.

4. Settlement: variables

The position of the sites is analysed by taking into account the variables of altitude, distance from the coast in connection with the use of resources, type of cave and orientation.

4.1. Absolute altitude

It can be seen that Paleolithic sites are located mostly at low and medium altitudes. In the Azilian, settlements reached higher altitudes in the Upper Asón valley, following the climate amelioration and melting of the glaciers. The highest areas with the most difficult access were colonized, such as the caves of Cubillo de las Palomas (770 m) and Mortero de Astrana (720 m). Also, in the more rugged areas, El Masío (485 m), Cueva 22 de Porracolina (484 m and scarcely inhabitable), Cueva 27 in San Vicente Massif (484 m) are considered temporary hunting sites because of their position and isolation.

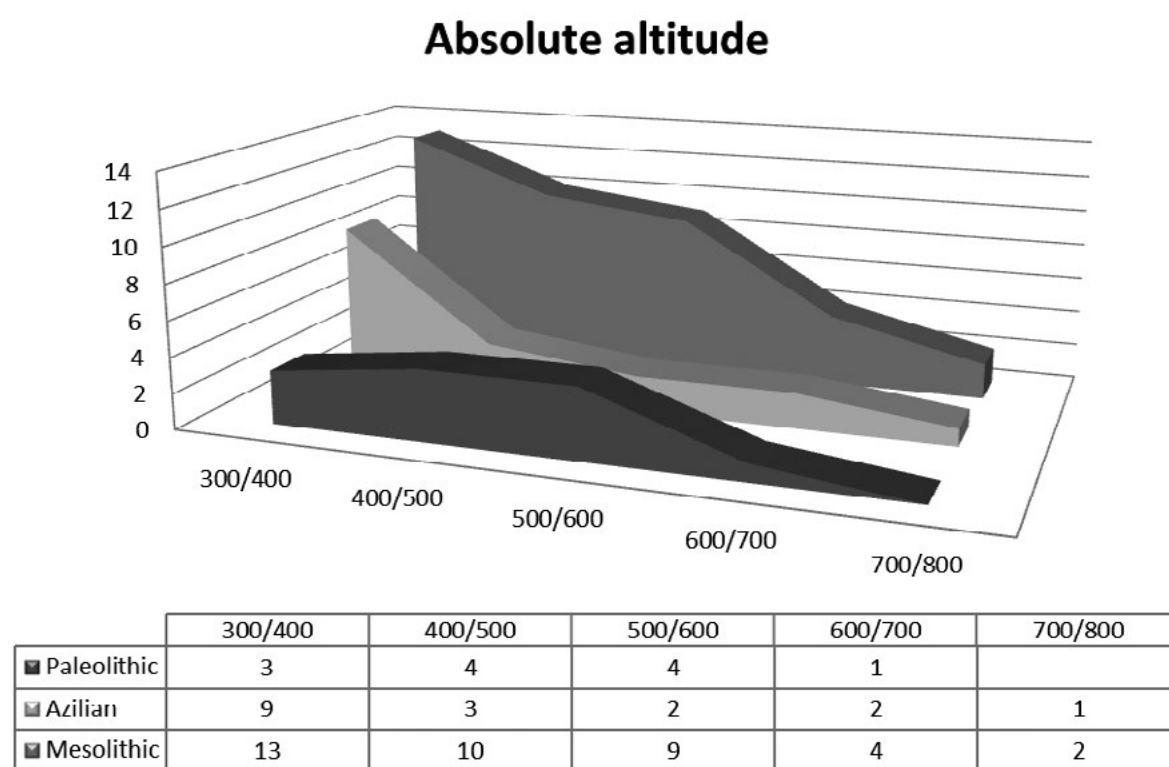


FIGURE 9. DISTRIBUTION OF THE SITES ACCORDING TO THEIR ALTITUDE.

Mesolithic deposits sometimes overlie Azilian occupations (Sopeña, Cubera, Cañuela), but a gradually advance is seen in the occupation of new habitats in all altitudes, more intensely at the head of the Asón valley, whereas in the Miera, the occupations spread to secondary valleys to the west of the main valley (Juntarnosa, La Veguilla, La Palenciana).

4.2. Distance from the coast

All the sites are over 20 km from the shoreline. Paleolithic sites are 21-28 km away, except for Vallina I (Asón valley, 30 km). Azilian and Mesolithic sites are concentrated in distances of between 26 km and 30 km. Only two Azilian and seven Mesolithic sites are further than 30 km away. It should be borne in mind that the mountain range is about 25 km from the coast, so the distances depend on the abruptness of the relief, which implies following the winding routes with the gentlest slopes. The scarcity of marine mollusc shells at the sites is undoubtedly a consequence of the distances and the rugged geomorphology. Transporting this resource would not be efficient if the energy cost is considered.

4.3. Types of caves

All types of caves were used, especially large caves and rock shelters located on hillsides with a good view over the terrain and a good orientation.

Mousterian sites are located particularly in large rock shelters (Abandijos, Asón valley; Hazuca, Miera valley). In the Upper Paleolithic, the most usual types of sites are medium-sized and large caves: Salitre and Rascaño (Miera) and Sobrelascuevas (Asón), and a large rock shelter, El Puyo (Miera). Their use seems to have been temporary but it has not been possible to determine whether it was seasonal, as in Rascaño hunting was carried out at all times of the year.

In the Azilian, there was continuity with the Paleolithic in the type of habitat, as medium-sized and large caves on steep slopes suitable for hunting ibex and chamois were still preferred.

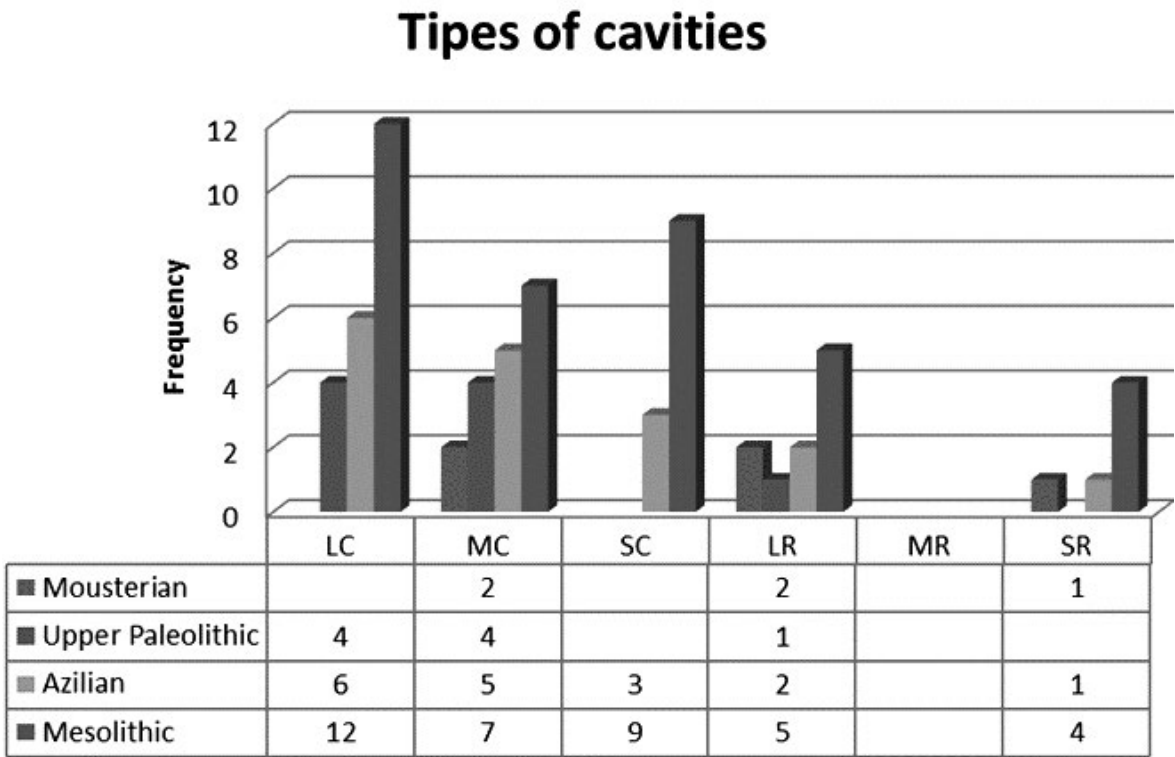


FIGURE 10. FREQUENCIES OF CAVE TYPOLOGY.

In the Mesolithic the type of habitat and site appears to have been the outer platform in the shelter of cave entrances, and in large entrance chambers with good living conditions: Sopeña and La Puntida in the Miera valley, and Cañuela and El Masío in the Asón.

5. Paleo-environment

Little information is available, owing to the paucity of archeological excavations. The only data come from palynological studies carried out in Rascaño (Boyer-Klien, 1981) and Salitre (López García, 1981).

The occupation in Rascaño, in the archaic Magdalenian III, began at the end of a quite mild and wet period, the Lascaux interstadial. The percentage of arboreal pollen was 17%, with a predominance of *Pinus sylvestris* in the whole sequence and *Juniperus* (juniper) and *Corylus* (hazel) in Level 5, with an absence of mixed oak forest.

Ferns reach their maximum percentage, accompanied by water plants and Cyperaceae. Gramineae represent 20%.

The climate began to change in Level 4, in Magdalenian III. Hazel disappears and the percentage of *Juniperus* decreases significantly, while *Pinus* survives for a time before disappearing, attesting very cold dry conditions. The herbaceous layer consists of Chicoriaceae accompanied by some Carduaceae and Caryophyllaceae.

In the late Magdalenian III, Level 3, a new climate amelioration began with the presence of *Corylus* and *Quercus* (oak), interrupted by a hiatus, which might correspond to the Bølling oscillation.

In the Azilian, Levels 1-2, humidity increased, in a time corresponding to the Allerød. Hazel dominated over *Pinus*. The herbaceous layer was represented by Anthemideae and Caryophyllaceae.

The pollen diagram for Salitre indicates a predominance of *Corylus* over *Pinus* in the Azilian level, as well as the presence of *Quercus* and *Alnus* (alder), suggesting the spread of deciduous forest.

For the Holocene, only the anthracological study carried out by Paloma Uzquiano of the Mesolithic Level 2 at Sopeña is available.

Tree cover was represented by *Quercus robur*, as at other Cantabrian sites in the early Holocene, and *Corylus*. Oak was used as fuel, as well as hazel, although the use of the latter may have been related more to gathering and consuming the nuts. The branches would have been thrown on the fire after the nuts had been picked off them.

6. Subsistence strategies

In the Late Pleistocene, in the Magdalenian at Rascaño, the economic resources were mainly the specialized hunting of ungulates throughout the year (Altuna, 1981) and to a lesser extent fishing, with the presence of salmon (Ortea Rato, 1981). Malacology only appears for utilitarian purposes, as adornments (Álvarez and Madariaga, 1981).

6.1. Hunting

The change in biotopes caused by climate amelioration resulted in two new environments:

- Open areas covered with shrubs, the habitat of red deer, roe deer and other smaller animals;
- The limestone massifs, whose rugged relief was occupied by ibex and chamois.

The Azilian hunters at Rascaño and Sopeña continued the hunting strategies established in the Magdalenian, based on the specialized hunting of ibex and red deer throughout the year, complemented

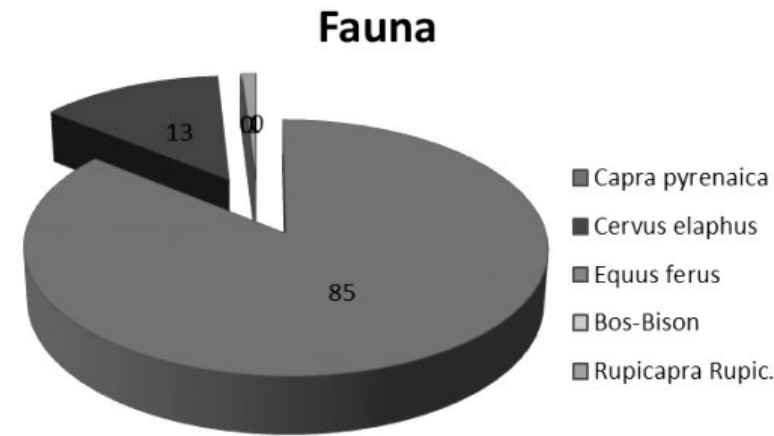


FIGURE 11. FREQUENCIES OF FAUNA.

by chamois and roe deer. In Sopeña, remains of horse have been found in the lower Azilian level (cold climate).

In the Mesolithic, the frequencies changed as, although ibex and red deer continued to be hunted, the proportions of roe deer and wild boar increased. A change in hunting strategies is also noted in that smaller animals were caught. This may suggest different techniques, with more indiscriminate hunting perhaps with traps, which is not coherent with a sustainable economy.

6.2. Malacology

The terrestrial snail, *Cepaea nemoralis*, is virtually the only species found at sites in the area. It would have been collected in the immediate surroundings of the caves, in areas of forest. Marine species are very rare at sites in the upper valleys. A few *Patella* and *Littorina littorea* specimens are found in the Magdalenian.

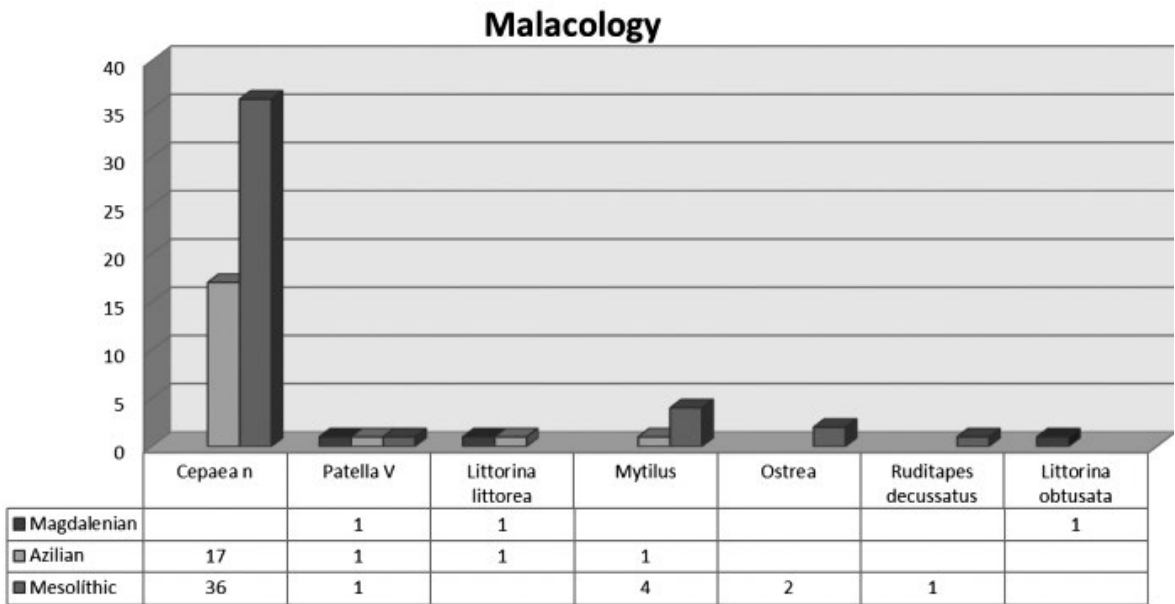


FIGURE 12. FREQUENCIES OF MALACOLOGICAL SPECIES.

In the Azilian, marine species have been found at the caves of Horno, Salitre and Rascaño (*Patella* and *Littorina littorea*).

At Mesolithic sites, marine malacology has been identified at sites in the Asón valley: Cubera and Sobrelascuevas (*Patella*) Cañuela and Suaria (*Patella* and *Ostrea*), Tarrerón, Asón rock shelter and Cubijiu (*Patella*) and Asón Rock-Shelter (*Mytilus*). In the Miera valley, remains have only been found at Sopeña: *Mytilus* fragments, a *Venerupis* fragment and an *Ostrea* shell.

All these sites are over 25 km from the shore. Marine shells are frequent as far as the middle courses of the rivers, about 20 km from the shore. The frequency of this resource drops drastically at greater distances, surely because it was not efficient to take such products to higher areas, because of the difficulty of transport in such abrupt relief, while hunting was much more effective as game was abundant in those areas and contributed more calories to the diet.

6.3. Material culture

Paleolithic industries were found in the excavation in Cueva del Rascaño, with information published in Echegaray and Barandiarán Maestu (1981). As the mountain areas were colonized in the Mesolithic, industries have also been found in the excavation at El Tarrerón (Apellániz, 1971). In the trial excavation at Sopeña, the Mesolithic level did not yield any industry, owing to the erosion the sediment has suffered, and only a few parts of the calcited level have been conserved.

The Mesolithic assemblage at El Tarrerón consists of 20 tools and some knapping waste. Blades dominate over flake blanks. The tools include sidescrapers, endscrapers, denticulates and notches. The most significant piece is a circle segment with semi-abrupt retouching. The raw material used is flint, with local flint of the coastal chalcedonite and the black Aptian types. This type of industry and the presence of geometric microliths display similarities with the assemblage at Cubío Redondo (230 m), a mountain hunting site, in Matienzo in the middle Asón valley. In the excavation performed by Ruiz Cobo and Smith (2001), a small assemblage consisting of 304 artefacts was recovered, mostly in flint (96.7%), especially the local variety (645). The retouched tools formed 9.5% of the assemblage, and they include an atypical trapezium with double-bevelled simple retouching.

The lithic remains noted on the surface of other sites in the area are of little significance, consisting mainly of flakes and knapping waste, with a predominance of the use of local flint types.

7. Conclusions

The colonization of the upper Miera and Asón valleys began in the Mousterian, with five sites known in the region, three in the Miera valley and two in Asón valley, at altitudes of 345-675 m above sea level.

Occupation continued in the Upper Paleolithic with eight sites documented in the Miera valley (66.66%) and four in the Asón valley (33.34%). The conditions were worse in the Asón, where glaciers reached lower altitudes (300 m). In the Miera, caves were occupied at higher altitudes (410-684 m) than in the Asón valley (341-475 m). Occupation increased significantly in the Pre-boreal, about 11,700 BP, in the Azilian, when 18 sites are known, reaching higher altitudes (720-770 m) in Mortero de Astrana and Cubillo de las Palomas, Asón). In the Miera valley, El Puyo and Sopeña were occupied (575-680 m).

With the rise in temperature in the Holocene, about 9,500 BP, populations moved upwards towards secondary valleys, occupying 36 new habitats: 24 of them in the Asón valley at altitudes of 345-709 m (Tarrerón and Cubillo del Acerón).

The colonization of the highlands, in valleys freed of the ice caps, compensated for the land lost on the coast because of marine transgression, also a consequence of Holocene climate change. After

11,000 cal BP, the sea level began to rise and reached a height of about -40 m. A large amount of land was lost and the coastline came to within about 2 km of the present shore. This surface area gradually decreased as the sea level continued to rise, until 8,500 cal BP, when some episodes of marine transgression took place and the estuaries began to form.

The occupation was based on the availability of resources resulting from the new mountain biotopes, with the specialized hunting of animals adapted to rocky environments (ibex, chamois), forests (red deer, roe deer and wild boar), and the gathering of plants and land snails.

The molluscs found at the shell-middens in the upper valleys are almost exclusively terrestrial (*Cepaea nemoralis*). Marine species have only been found at eight sites. All these sites are over 25 km from the coast and it seems that it was not worthwhile transporting the marine resource over this distance in such abrupt terrain.

Little can be said about the Mesolithic industries due to the small samples that have been documented. However, flint was the predominant raw material, especially the local varieties. This suggests an intensive use of the resources in the immediate surroundings of the sites, and possible sedentarization.

Insufficient information is available to establish the times of the occupations. In the highest zones, the sites are probably hunting or temporary camps in the Azilian and Mesolithic, whereas at Sopena (Miera) the type of Mesolithic shell-midden and the good living conditions in the cave attest more prolonged stays.

References

- APELLÁNIZ CASTROVIEJO, J. M. 1971. El Mesolítico de la Cueva del Tarrerón y su datación por el C14. *Munibe*, nº 1, 91-104. Sociedad de ciencias Aranzadi. San Sebastián.
- FROCHOSO, M.; GONZÁLEZ-PELLEJERO, R.; ALLENDE, F. 2013. Pleistocene glacial morphology and timing of Last Glacial Cycle in Cantabrian Mountains (Northern Spain): new chronological data from the Asón Area. *Central European Journal of Geosciences* 5 (1), 12-27.
- GONZÁLEZ ECHEGARAY, J.; BARANDIARÁN MAESTU, I. 1981. *El Paleolítico Superior de la Cueva del Rascaño (Santander)*. Monografías nº 3. Centro de Investigación y Museo de Altamira. Santander.
- PÉREZ BARTOLOMÉ, M. 2005. *El poblamiento Aziliense y Mesolítico en el Alto Miera*. Trabajo de Investigación de Tercer Ciclo de acceso al DEA inédito, UNED. Madrid.
- PÉREZ BARTOLOMÉ, M. 2006. Proyecto 'Toma de muestras para dataciones C14 AMS en los valles del Asón y Agüera'. *Actuaciones Arqueológicas en Cantabria 2004-2011. Arqueología de investigación*. Edt.: Ontañón Peredo, R.; Sanz Palomera, G. Gobierno de Cantabria. Consejería de Educación, Cultura y Deporte. (Imprenta).
- PÉREZ BARTOLOMÉ, M. 2011. Dataciones radiocarbónicas en el Valle del Miera. *Actuaciones Arqueológicas en Cantabria 2004-2011. Arqueología de investigación*. Edt.: Ontañón Peredo, R.; Sanz Palomera, G. Gobierno de Cantabria. Consejería de Educación, Cultura y Deporte. (Imprenta).
- RUIZ COBO, J. 2007. *Paisaje y arqueología en el Alto Asón (Cantabria, España). Resultados del proyecto de prospección arqueológica del Alto Asón*. BAR International Series, 1614. Archaeopress; Oxford.
- RUIZ COBO, J.; PÉREZ BARTOLOMÉ, M. 2006. Epipaleolítico y Mesolítico del Alto Asón. Acceso: 2007.
- RUIZ COBO, J.; SMITH, P. 2001. The Archeological site of Cubío Redondo (Matienzo, Ruesga): A mountain Mesolithic site in Cantabria. En *Munibe (Antropología-Arkeología)* nº 53, 31-55. Donostia / San Sebastián.
- SERRANO, E.; GÓMEZ LENDE, M.; GONZÁLEZ TRUEBA, J. J.; TURU, V.; ROS, X. 2014. Pleistocene glacial fluctuations and chronology in the Pas Mountains (Cantabria Mountains). *Cuaternario y Geomorfología*, 91-110. www.rediris.es/CuaternarioyGeomorfologia/.

The Special Characteristics of the Zhenfeng Rock Art in Guizhou

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Abstract

Guizhou province is located in the east of the Yunnan-Guizhou plateau, in the southwest of China, where there are many mountains and deep rivers. The wet and warm climate and good natural environment attracted the ancestors of the Guizhou people to settle there in the Paleolithic period.

Beipanjiang River is one of the main rivers in the southwest of Guizhou, which flows through Zhenfeng county. A range of rock art has been discovered around Beipangjiang, and Zhenfeng rock is one of them. Zhenfeng rock is situated mainly in the Red Rock Cliff of ShiZhu village of Shaping Township in Zhenfeng county, where Buyi and Miao people live.

Zhenfeng rock art faces south, and is located at 105°51'19" east longitude and 25°8'58" north latitude. Its altitude length and height are 548,400 and 180 metres respectively. The distance between the ground and the rock art is 1-100 metres. In addition, there are apparent overlying images.

The rock art of Zhenfeng and elsewhere in the southwest provinces are painted in red, but Zhenfeng rock art is unique. The contents are special. First of all, there are more than 1,000 fingerprints, which are drawn at 1-3 metres from the ground; others are at higher locations. Both left and right hands can be seen, which is unique in southwest China. Second, the figures of animals, like cattle, deer, peacocks, tapirs and wild boars, are quite large and outlined by lines. And that is also a rare phenomenon in southwest China.

The overlying images are very amazing and distinctive too. The result of dating these images was that we could judge the art took a long time to complete, for instance, the peacock painted with graceful lines overlying a cow with simple lines, handprints overlying animals and animals overlying animals.

The environment is very special and quite different from elsewhere. Many remains of ancient humans in the Paleolithic period as well as the relics of the Christian era have been discovered around the rock. Large animals seen in the Zhenfeng rock art were surmised to be Paleolithic by Chinese scholars. Most important, in the animal figures Zhenfeng art shares many similarities with European rock art of the same period.

Symbols as Persona in the Dawn of Food Production in the Alto Ribatejo, Portugal

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Abstract

The transition of post-glacial communities into new economic paradigms based on intensification and growing interaction, with lower mobility, was a long and unequal one. In southwest Iberia two main cultural traditions can be recognized from the archeological records: one occupying mainly the coastal areas and related limestone formations, indicating a faster shrinkage of territories; another evolving mainly across the peninsula, with a more diverse range of geomorphological contexts, keeping wider territories for a longer period.

Both traditions are convergent and did interact, but they were kept separate until the Chalcolithic, and this was clearly illustrated in the symbols they chose: graphic symbols on mobile art and brittle architecture dominating one tradition, compared with sub-naturalist symbols on rock art and megalithic architecture organizing the other. This paper will discuss the implications and possible reasons for such a dichotomy, also arguing that behind it a convergence of both is also to be found in a specific inversed role of one specific component of the zooecoenosis.

The Portrait in Prehistory

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Abstract

All allusions to the human figure constitute a metamorphosis between reality and artistic creation. These images are thus completely imbued with a certain idea that society has of itself. Yet the earliest images were first ambiguous (human-animal) and then emerge as masks, intermediate between the gods and humans. Finally, they break away from realistic and faithful representations which caused fear: from Lepenski Vir to Rembrandt, no “likeness” was sought, only the allusion, created by the artist but felt by all, is now the reality. The long history of prehistoric art clearly illustrates this slow process of change.

All portraits place a cultural filter between the model and the representation, including modern self-portraits in which the artist moves the soul and creates a spiritual reality rather than recreating a lost reality.

Portraits express the form of harmony between a society and the universe. But the human face is privileged in this metamorphosis because it holds all the meaning of the mind, reduced to the most powerful part of the body, the face, through which humans communicate via their eyes, smiles and expressions (Fig. 1).

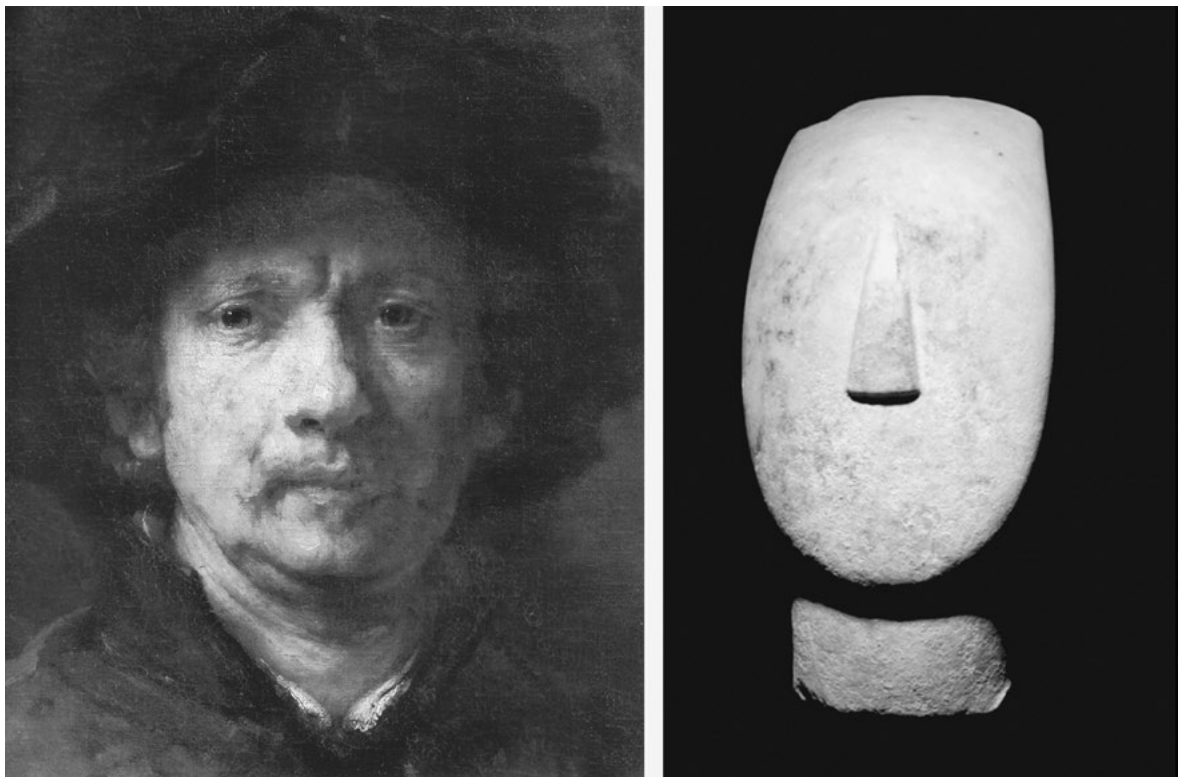


FIGURE 1. REMBRANDT, LARGE SELF-PORTRAIT (DETAIL), 1652; OIL ON CANVAS, 112.1 x 65.5 CM; KUNSTHISTORISCHES MUSEUM, VIENNA, AUSTRIA – HEAD OF A FIGURINE, 2800-2300 BC (EARLY CYCLADIC); MARBLE; MUSEUM OF CYCLADIC ART, SYROS, CYCLADES, GREECE.

Strength, directly borrowed from reality, is intensified by the artistic talent that gives an image a greater presence than reality, because it emerges from a world of mystery in which its presence alone brings out the unusual: here it is possessed by the hand of the human mind that exerts its indirect power via the representation of a reality that is thus overcome.

In contrast, at the same place during the same period, the human face is limited to a mask, barely outlined on a rocky protuberance by typical black lines.

Regardless of the magical relationship between the image and the animal, such a hold would fatally escape the allusion given by a human figure, with barely perceptible traits and a systematically restrained control

The human mask has a strength that must avoid the realistic animal representation even if this takes away from the representation (Fig. 2).

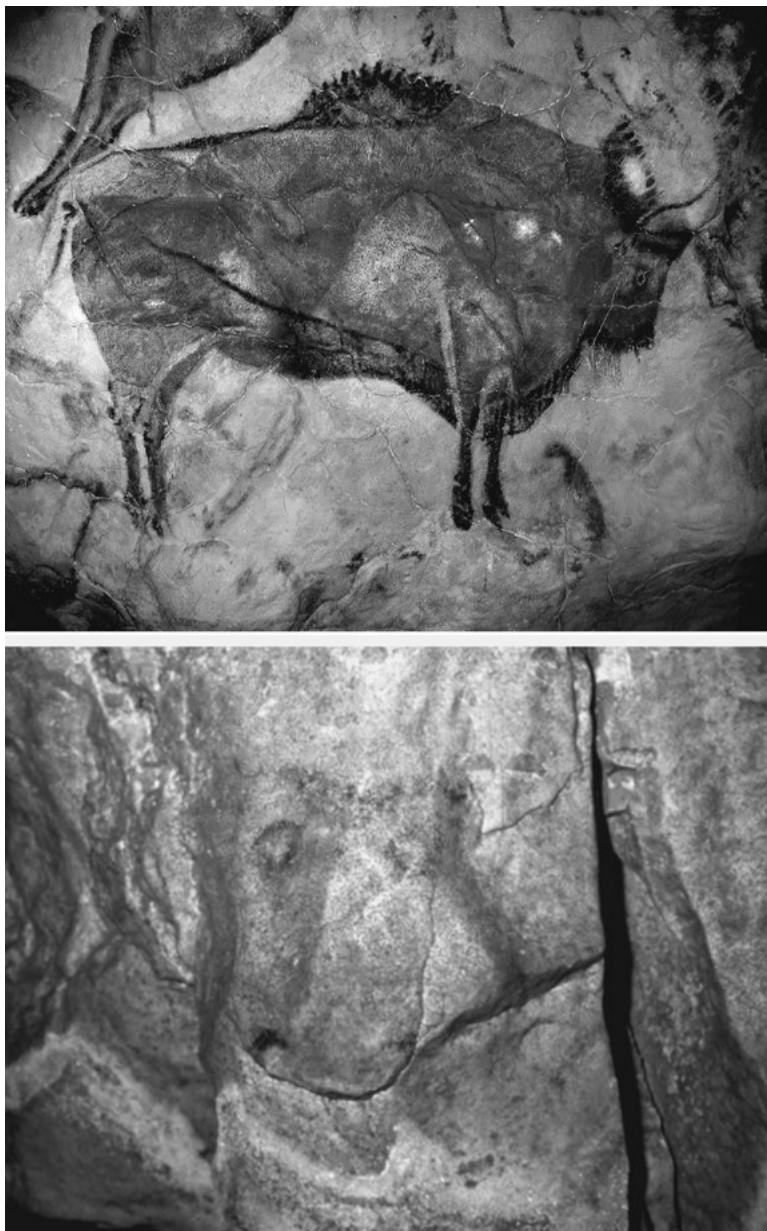


FIGURE 2. POLYCHROME BISON;
ALTAMIRA CAVE, CANTABRIA, SPAIN –
MASK; ALTAMIRA CAVE,
CANTABRIA, SPAIN.

The extraordinary realism of the lion prides, presented in cascade, supports the perspective, volume and anatomical details of the Aurignacian paintings at Chauvet.

Conversely, in the same cultural context, men and women are found concealed, specifically their faces, by the lions and the bison. The volumes themselves, extracted in three dimensions, escape from the flat surfaces on which the false reliefs of the animal images are found. Renderings in both cases form part of a radically opposed distancing from the cave wall to the artificial figures and the relief, similar to human silhouettes, that suggests rather than overly represents them (Fig. 3).

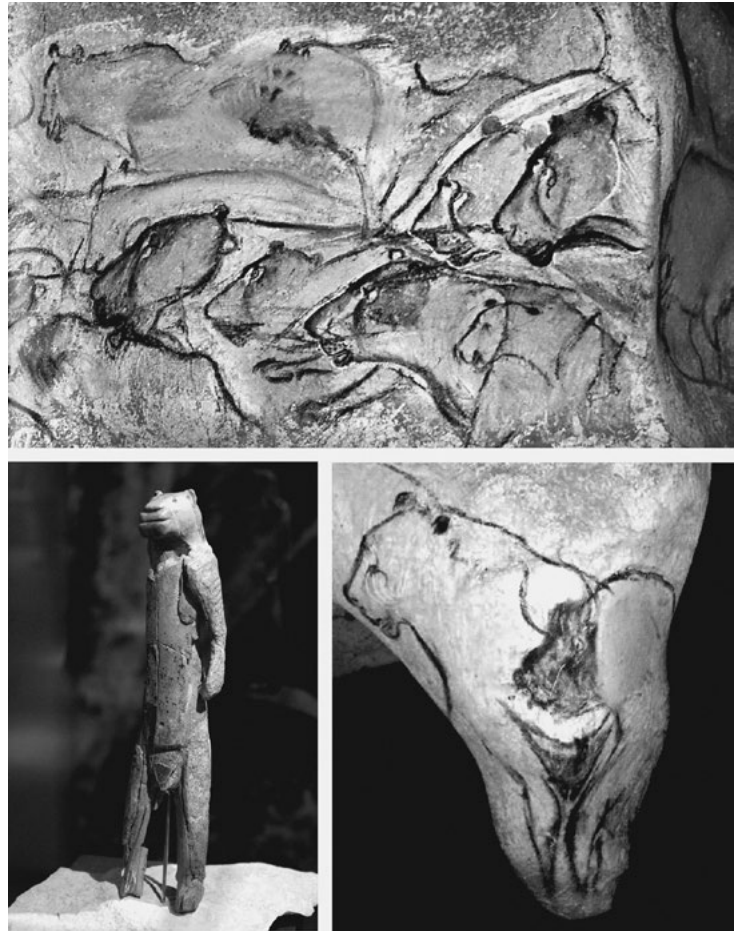


FIGURE 3. LIONS; GROTTES DE CHAUVET, FRANCE – LION-MAN; MAMMOTH IVORY, 26.6 CM; HOHLENSTEIN-STADEL, BADEN-WÜRTTEMBERG, GERMANY – WOMAN; GROTTES DE CHAUVET, FRANCE.

Hair styles, social situation

Among the highly ritualistic and social decorative elements, hair style is the most dominant, braided and coloured, a true intermediary between anatomy and culture. This is applied to the decoration of young girls of different ethnicities in East Africa. The red colour of the clay added to braids is a natural reflection of that created biologically during puberty, but immediately requires concealment of the anatomical traits represented, because puberty is a highly invested social period: the person comes among the individuals who can now pursue and revitalize the life itself of the ethnicity in which she is recognized and to which she belongs. The figured facial function thus takes on a vital collective value, further accentuated by the curves of the body, these clearly explicit. Once again, the function of the portrait is as much concealed as sacred (Fig. 4).

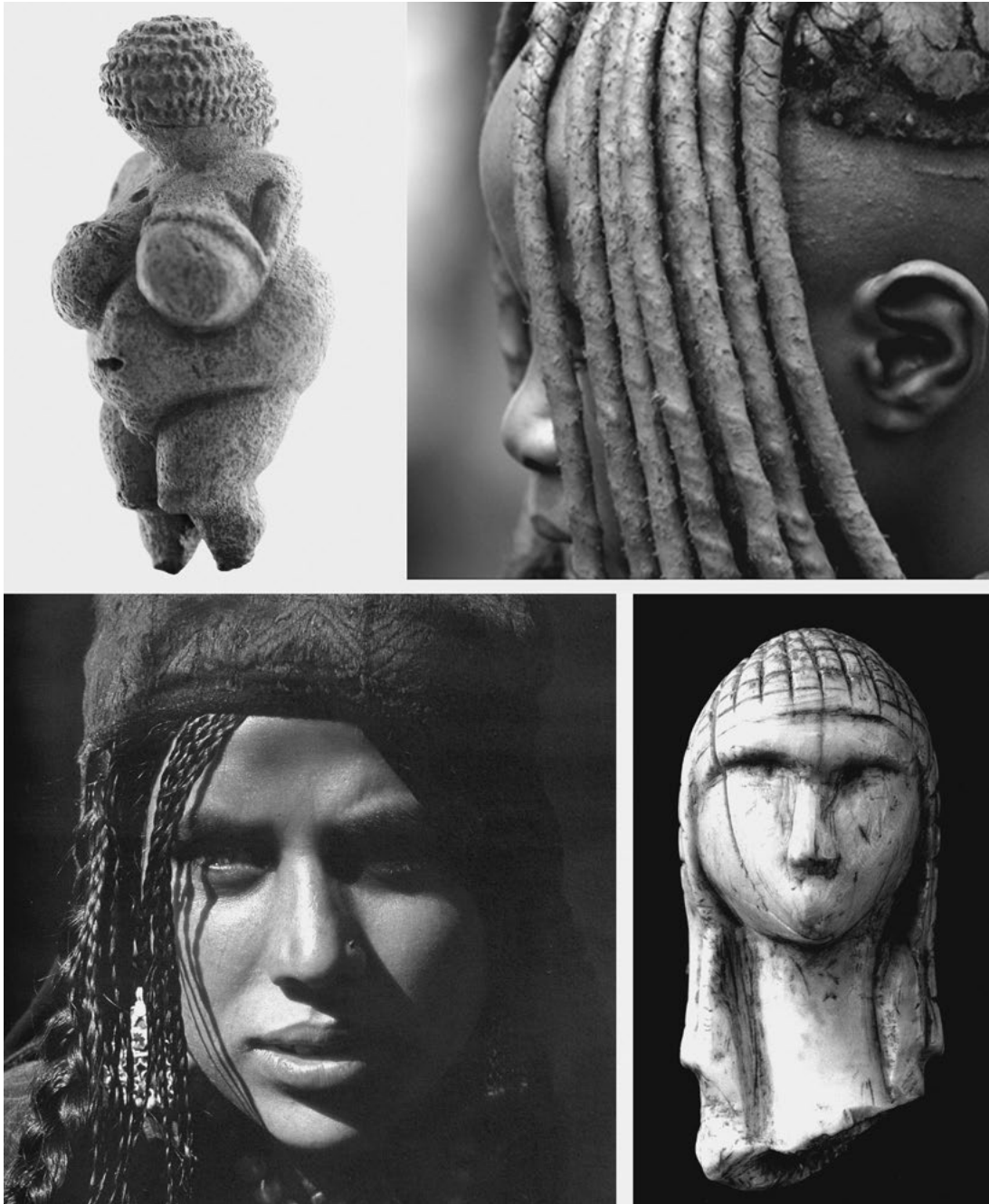


FIGURE 4. VÉNU DE WILLENDOFF; CALCAIRE, 11 CM; MUSÉE D'HISTOIRE NATURELLE, VIENNE, AUTRICHE – JEUNE FILLE HIMBAS – VÉNU DE BRASSEPOUY (DAME À LA CAPUCHE); IVORY, 3.65 CM; MUSÉE DES ANTIQUITÉ NATIONALES, SAINT-GERMAIN-EN-LAYE, FRANCE.

Toward abstraction

A plastic derivative imbues all prehistoric images, proceeding from analogical representation and then losing its plastic substance to shift to a schema beyond the force of a real sign, while retaining the same meaning, not unlike our alphabetic signs. So, the figurative, the first support for the relationship between reality and image, moves slowly toward an abstraction with a single phonetic (Western writing) or semiotic value (Eastern writing), losing nothing during this process of the plastic combinations that give writing its beauty (Fig. 5).

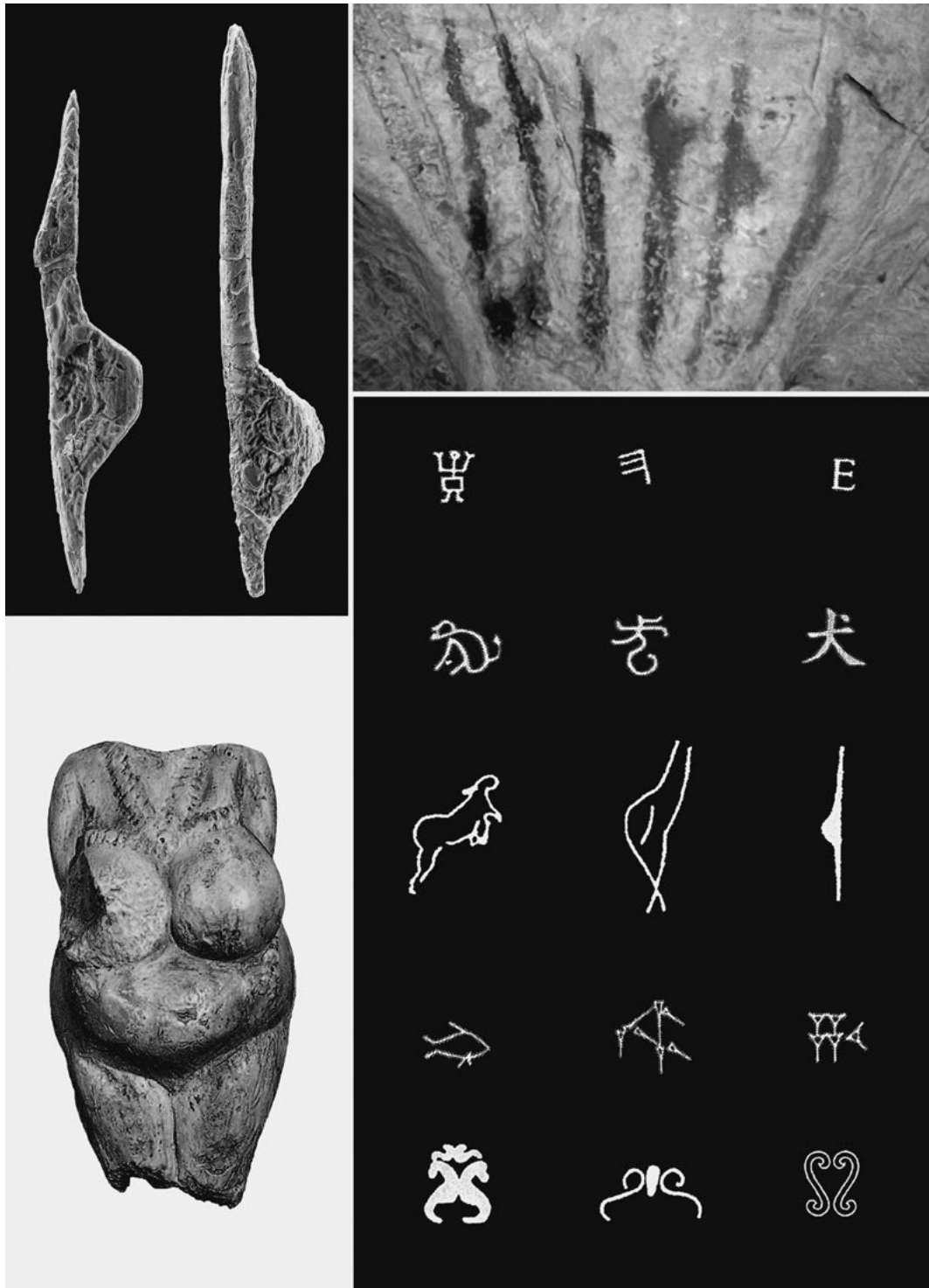


FIGURE 5. VENUS FROM KOSTENKI XIV – CLAVIFORM VENUS, NEBRA – VENUS, CUEVA DEL PINTAL, CANTABRIA, SPAIN – LINES 1 AND 2, CHINESE SIGNS; LINE 3, PALEOLITHIC; LINES 4 AND 5, CELTIC SIGNS.

Hyperrealism

Everything changes with the mythical mastery of humanity over nature, and is spectacularly embodied by the real human skulls on which the flesh was reconstructed using plaster or clay. The image of humans is thus imposed on ordinary natural reality, and it is this that reconstructs a fixed

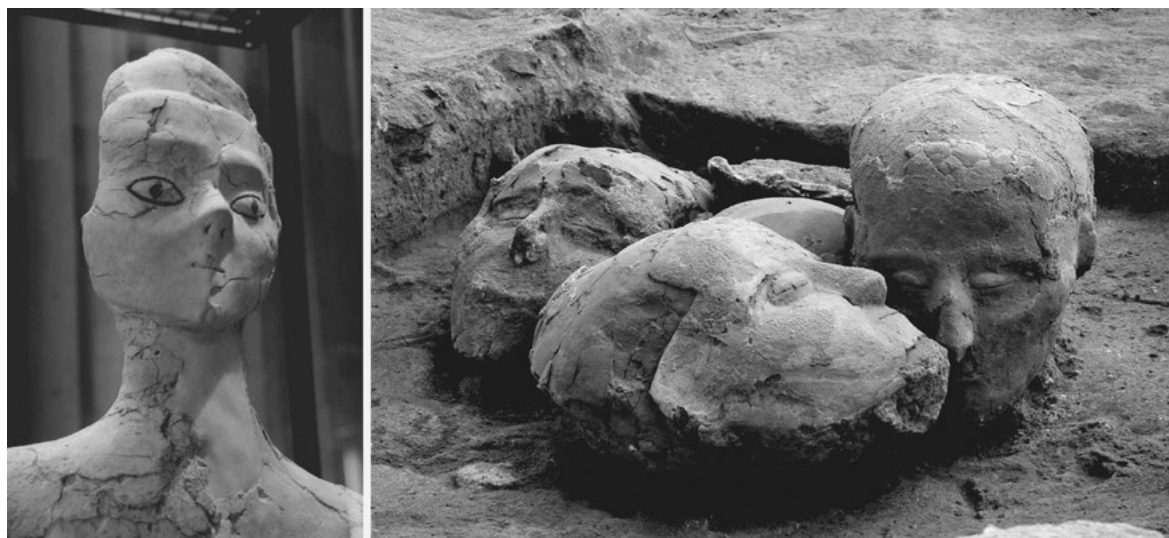


FIGURE 6. AÏN GHAZAL – PLASTERED SKULLS, JERICHO.

and mythical figure. Their representations, identical, demonstrate that these are not portraits in the analogical sense, but still a prototype, rigorously set, because the least deviation from the model would cause the image to lose its sacred force and its power. From now on, regardless of the forces guiding our destinies, they are similar to ourselves, if not identical (Fig. 6).

The importance of eyes

In so far as the human image is imposed as code, its different essential components open generations to different values. The eyes in particular, mirrors to the soul, are enlarged, embellished, distinguished and animated to give them an extremely powerful communicative capacity (Fig. 7).



FIGURE 7. STATUETTE FROM VINČA – YOUNG PAPUAN BOY.



FIGURE 8. VASE AND STATUETTE FROM CUCUTENI.

Transposition

During the Neolithic, the strength of the feminine image and its symbols (fecundity, maternity, personal decoration) is so powerful that it transposes all of its components into vases, at first view non-figurative, such as vases in which the contours suggest feminine components: face, stomach, skirt. Spiral decorations accentuate the value of the liquid contents carried by these combined elements (Fig. 8).

Styles

The most obvious demonstration of the relationships between materials and metaphysics is provided by portraits on stone, honoured and made sacred in all civilizations. The transformation of the most human facial expression changes, in the same material, to reach the perfection of plastic thought, where it is joined to the soul of a people and its model, first dreamed and then become reality. So, we can easily read and describe what was certainly not spoken before, or not even known by the peoples themselves, but which can be seen in their plastic expressions (Fig. 9).



FIGURE 9. JANUS, ROQUEPERTUSE, BOUCHES DU RHÔNE, FRANCE – LADY OF ELCHE.

Review of Guangxi Cliff Drawing Research

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Abstract

Guangxi is located on the southwest border of China and has abundant cliff drawings. On the miles-long cliffs along the Zuojiang River, there are over 80 sites discontinuously distributed there, forming a unique art corridor of cliff drawings.

From the 1950s, survey teams of ethnology, anthropology, history, archeology and art have been to the Zuojiang River for field investigations of cliff drawing. Serial studies on aspects like clansmanship, dating, themes and techniques have been carried out and have resulted in rich achievements.

Since 2012, based on the former researches, we have done in-depth and painstaking research work from aspects of ethnology, archeology, chronology, ontology and digitization. New fruit has been harvested. The following are the results the study of cliff drawings in Guangxi.

Key words: cliff drawings in Guangxi, research, review

As a global cultural phenomenon, cliff drawing is the general name of decorative paintings, line carvings and cameos on grottos, rocky cliffs and standing rocks. Chinese cliff drawing is an essential part of world cliff drawing. According to techniques, distribution scope and content themes, Chinese cliff drawing may be divided into three systems: the north, southwest and southeast (Figure 1). The



FIGURE 1. DISTRIBUTION MAP OF THE CHINESE CLIFF DRAWINGS.

cliff drawings of the north system are works of the hunters and nomads in the northern prairie region, dominated by chip carving, with large scope and great quantities, mainly animals and in a realistic style. The cliff drawings of the southwest system are mainly drawn with red pigment and the content covers human figures, animals and symbols. The cliff drawings in the southeast sea areas mainly show abstract pictures, most of which are carved. Guangxi cliff drawing is a typical representative of the southwest system.

Introduction to Guangxi cliff drawing

Guangxi is located in the southwest border of China (Figure 2). Its cliff drawings are generally painted with red colour. At present, there are 113 sites of cliff drawings, mainly distributed in the Zuojiang River of the southern Guangxi, Youjiang River of the western Guangxi and a few in the central and northern areas (Figure 3). The content, expressive forms and the ideas of the cliff drawing

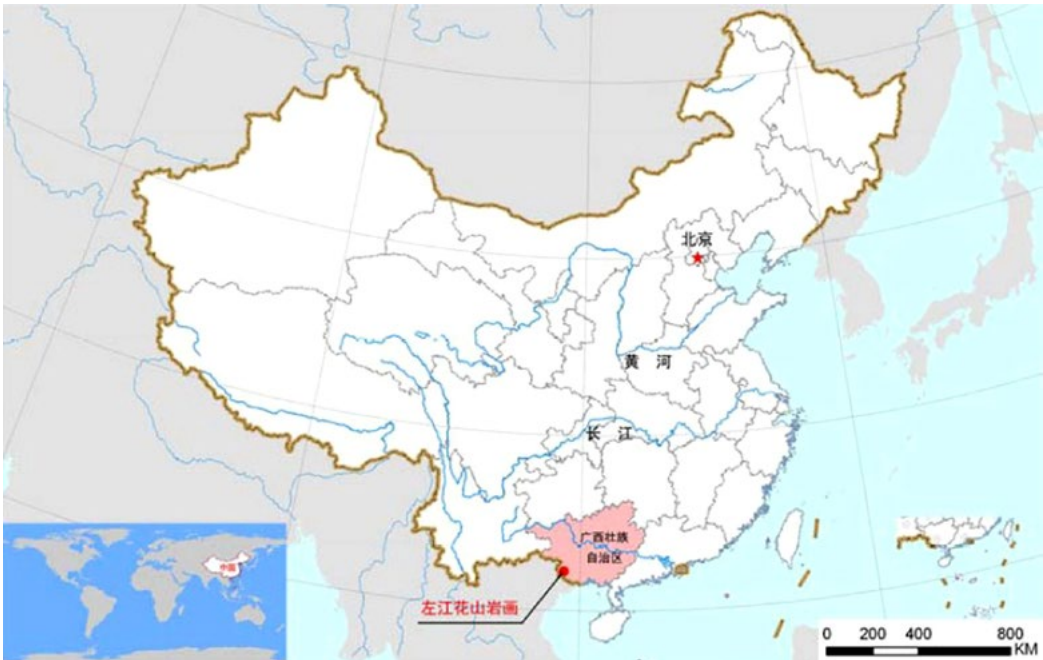


FIGURE 2. GEOGRAPHIC LOCATION OF GUANGXI.

Geographic Scope	Administrative Area	Number of Sites
85 sites in the southern Guangxi (Zuojiang Huashan cliff drawing)	Pingxiang City	3
	Longzhou County	21
	Ningming County	5
	Chongzuo City (Jiangzhou Area)	29
	Fusui County	27
26 sites in the southern and western Guangxi (including Zuojiang River and Youjiang River and their nearby areas)	Daxin County	6
	Tiandeng County	3
	Jingxi County	13
	Tiandong County	1
	Mashan County	1
	Yizhou City	2
1 site in the central Guangxi	Jinxiu Yao Autonomous County	1
1 site in the Northern Guangxi	Lingchuan County	1

TABLE 1. TABLE OF DISTRIBUTION OF GUANGXI CLIFF DRAWING.

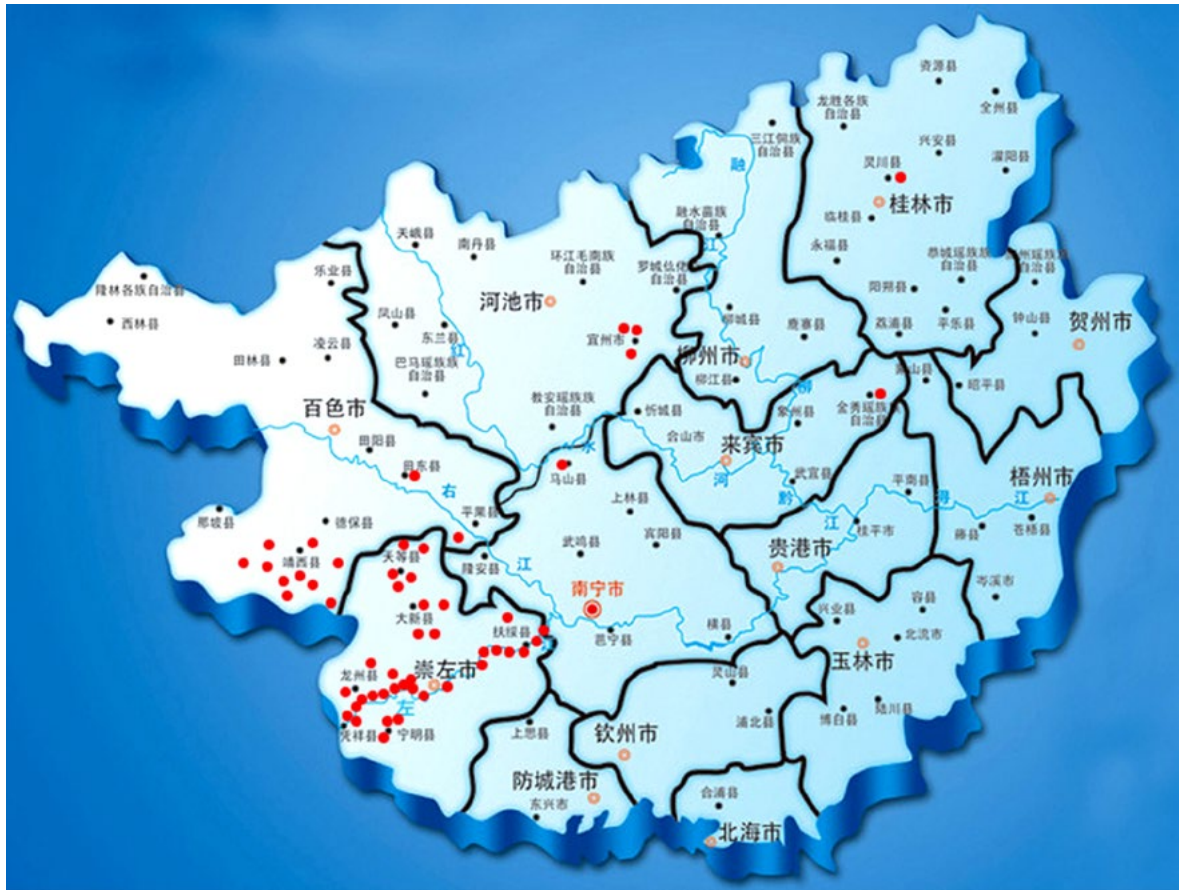


FIGURE 3. DISTRIBUTION MAP OF GUANGXI CLIFF DRAWING.

are closely connected with social development. The time sequence is formed into through three periods: Rentoushan cliff drawing, Zuojiang Huashan cliff drawing and western, central and northern Guangxi cliff drawing.

As the study focus of Guangxi cliff drawing is mainly in the Zuojiang Huashan, this paper will describe the research situation and relevant results.

The Study of Zuojiang Huashan Cliff Drawing

1. General Review of Zuojiang Huashan Cliff Drawing

Zuojiang River, also named Lishui River, is a river going through the southwest Guangxi. On the cliffs along the Zuojiang River and its branch Mingjiang River and Ping'er River and its nearby cliffs, there are lots of reddish-brown cliff drawings. The cliff drawings are dominated by human figures supplemented with animals, utensils and symbols. The themes are wishing for favourable weather, a bumper harvest, prosperous offspring and flourishing nationality, having primitive religious meanings and some group sacrifice scenes.

These cliff drawing sites are generally about 50-100 m above the river and mostly at the bends in the river. Over 80 sites have been found in the Zuojiang River, discontinuously distributed in the seven counties under the jurisdiction of Chongzuo city. They are miles long, forming a unique art corridor of cliff drawings, which is called Zuojiang Huashan cliff drawing or Zuojiang cliff drawing (Figure 4). Among them, Ningming Huashan cliff drawing is the most typical.

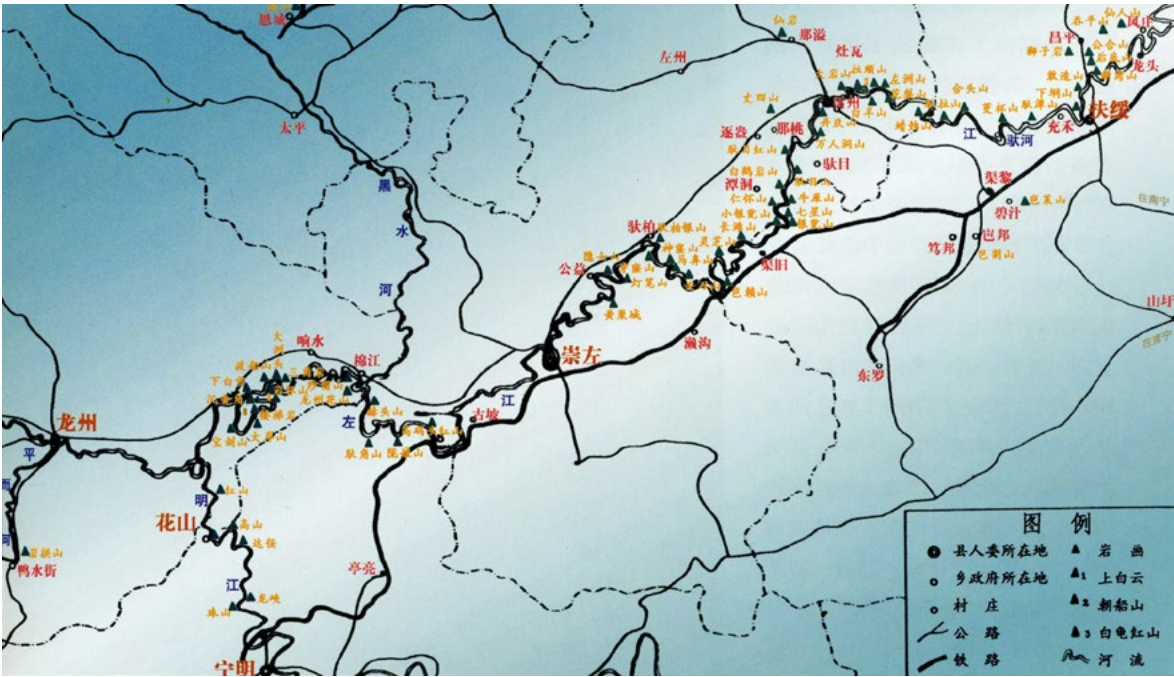


FIGURE 4. DISTRIBUTION MAP OF ZUOJIANG HUASHAN CLIFF DRAWING.

With a length of 172 m, a height of 50 m and a total area of over 8,000 square m, Ningming Huashan cliff drawing so far has the largest scope and the richest content and is the best preserved. There are more than 1,800 recognizable figures, mainly human figures. The largest figure is 3 m while the smallest is about 0.3 m. The whole cliff drawing is of great momentum and rich content (Figures 5, 6).



FIGURE 5. PANORAMA OF NINGMING HUASHAN CLIFF DRAWING.

2. Study and Results on Zuojiang Huashan Cliff Drawing

The historical records for Zuojiang Huashan cliff drawing are rare and late, making this historical art treasure unknown in the outside world for a long time. The systematic investigations started in the 1950s. The summary of its large-scale investigation study is below.



FIGURE 6. PART OF HUASHAN
CLIFF DRAWING.

In August 1956, the Guangxi Ethnic Minority Social History Survey Group and teachers and students from Minzu University of China did scientific investigations into Huashan cliff drawing. They found seven sites in the downstream of Mingjiang River and some relics like a bronze axe, net sinker, bone needle, stiff pottery sherds with coarse rope pattern.

In July 1962, the Guangxi Ethnic Affairs Commission organized a multidisciplinary experts survey group to do a comprehensive survey of Zuojiang Huashan cliff drawing and 43 new sites was found. After this survey, the book *Huashan cliff drawing Corpus* was edited and published.

In 1985, the Government of Guangxi Zhuang Autonomous Region invited seven experts and scholars within and outside Guangxi to do another survey of Zuojiang Huashan cliff drawing. After three months' work, the group wrote *Survey Report of Zuojiang Huashan cliff drawing* with the material. In November, more than 80 professors and experts inspected more than ten sites and held an academic conference (Figure 7).

In October 1986, the Bureau of Geology and Mineral Exploration of Guangxi and Institute of Geological Sciences formed a survey team and inspected 42 sites from aspects of stratum, rocks, paleontology, depositional faces, geological structure, topographic feature and geologic history.

In January 1991, the Guangxi Culture Department organized an expert team for cultural relic study, an integrated survey, remote sensing mapping and hydrogeology to do a detailed survey of the geology of Huashan cliff drawing. Suggestions for Zuojiang Huashan cliff drawing Geological Environment Disease and Prevention Countermeasures were proposed. About 1:500 and 1:50 engineering geological map, 1:10000 Huashan geology map, 1:500 geologic section map of Huashan standing cliff rock conditions were mapped and the rock mineral component was appraised.

In November 2004, the Institute of Aerial Remote Sensing Surveying and Mapping of Guangxi Surveying and Mapping Bureau did close-range Figuregrammetry of Huashan cliff drawing and completed 50 joint images of 1:20DOM.

In January 2005, the Institute of Aerial Remote Sensing Surveying and Mapping of Guangxi Surveying and Mapping Bureau spent more than one month mapping the geology map of Ningming Huashan conservation drawing topographical map of 1:500 and 1:2000 over 2 sq m.

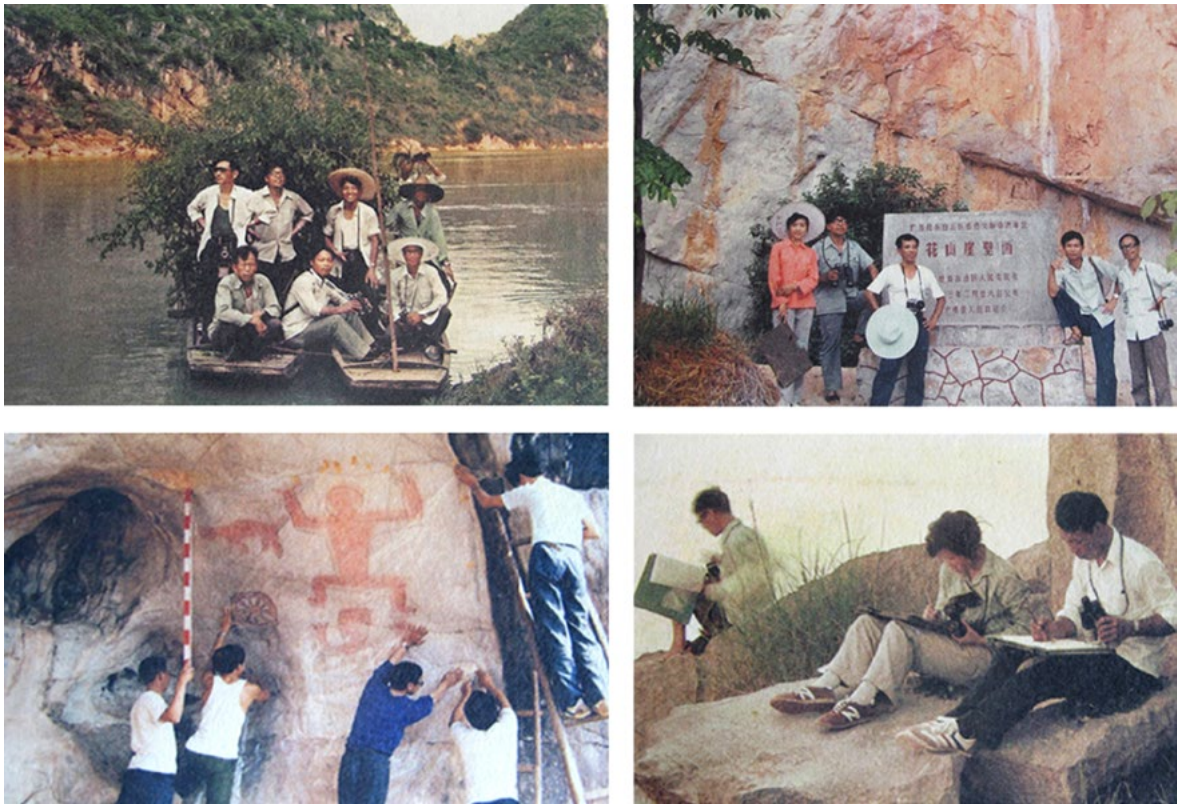


FIGURE 7. GROUP FIGURES OF FORMER RESEARCH.

From 2007 to 2011, in the third national cultural relic general survey, the counties did another comprehensive survey of Zuojiang Huashan cliff drawing, recording the sites and finding out the current preservation situation and archeological site distribution in the surrounding areas.

In December 2009, the Guangxi Cultural Relic Bureau organized an exploration team to survey Zuojiang cultural relics and one Han site was discovered in the crossing points of Mingjiang, Lijiang and Zuojiang Rivers.

In September 2010, the Guangxi Cultural Relic Bureau applied to be put on the world heritage list, and the Guangxi Institute of Archaeology, Nanning Museum and four counties (Ningming,

Research Aspect	Conclusion
Clansmanship	Zuojiang Huashan cliff drawing was painted by Luoyue clans or clans living along the Zuojiang River.
Dating	From the Zhou to Han dynasty, i.e. From the Late Bronze Age to the Early Iron Age, from 5th century BC to 2nd century AD.
Tools and Material	The paintbrush is soft brush. The colour is iron-based natural mineral pigments dominated by Fe_2O_3 , which is hematite, fresh plant sap as adhesive, and then the two are mixed together in appropriate proportions.
Content	Dominated by human figures with animals, utensils and symbols. True recording of group sacrifice scene in expression of themes as praying for favourable weather, bumper harvests, prosperous offspring and flourishing nationality.
Forms of Approach to the Cliff	Climbing from down to up, direct staging, suspending from up to down, ship-floating at high-water level

TABLE 2. RESEARCH AND CONCLUSIONS ON ZUOJIANG HUASHAN CLIFF DRAWING.



FIGURE 8. PARTS OF FORMER RESEARCH RESULTS.

Longzhou, Jiangzhou and Fusui) surveyed Zuojiang cliff drawing for about three months. And one ancient tomb of the late Neolithic period was found, along with a batch of stoneware with important research value. Ningming Huashan Beiqiu site was confirmed as one of the exploration sites.

For years our survey and research work on Zuojiang Huashan cliff drawing never stopped. The obtained research results have been the richest in domestic cliff drawing study and have caught attention in world cliff drawing academic circles. Through systematic survey research, issues like clansmanship, date, tools and materials, content and artistic style have become clear, uncovering the mysterious veil of Zuojiang Huashan cliff drawing. (Figure 8).

3. New Research Results of Zuojiang Huashan Cliff Drawing

Based on the former studies, since 201, we have carried out in-depth research work on aspects of ethnology, archeology, chronology, ontology and digitization and a new series of research results have been obtained.

i. Village Investigation in cliff drawing Areas

Since 2012, the Guangxi Museum of Nationalities has been setting up survey groups on cliff drawing and inspected the whole cliff drawing group along the Zuojiang River area. Trying to survey the villagers in the typical villages, the group searched for human information connected with cliff drawing. Through the survey, relevant information has been found and survey reports of the villages around the cliff drawing have been written. These is the relevant information.

- In the Guanyin Temple of Laijiangtun, the paper-cutting pattern of the Xianpo, the upside down 八 head ornament in the 'people-riding-horse' is similar to those of cliff drawing.
- The survey area still has the tradition of water burial, with the site in water bends, which is correspondent to the chosen sites of cliff drawing.

- c. At the Dragon-boat Festival, the local people have a dragon boat race. Its images are similar to the feather-decorated people rowing a boat in cliff drawing.
- d. The tableland in the river bends is rushed and the river course is changed. The residents on the table land therefore move to higher place to live. The residents have the tradition of moving.
- e. From the circulating folk songs, the local residents and the river have a relationship of mutual dependence and mutual struggle.
- f. From the area and output of rice-planting by the local people, the number of population in that area could be analysed.

The emergence of culture in one place has an inevitable connection with the dominating economic activity and social model. The acquisition of the information explains that the production of Zuojiang cliff drawing culture must have an interdependent relationship with the culture of the local residents.

ii. Digital Recording and Application in Cliff Drawing

With the constant update of research technology, means and forms in cliff drawing, digital technology has been widely applied in fields like recording, monitoring, protecting, studying and exploiting. In order to boost the development of the Guangxi cliff drawing undertaking, in October 2012 the Guangxi Museum of Nationalities cooperated with the Science and Technology Research Institute of Hubei Haida Cultural Heritage Protection. Based on the GIS system, they adopted technologies like the 3D laser scanner, UAV aerial, right sight image and 360-degree tour shooting to collect accurate digital information of the 25 sites of cliff drawing in the Zuojiang River area. They obtained their original data, making up, correcting and completing the former recordings of cliff drawing ontology.

The implementation of this project obtained a batch of digital achievements of Zuojiang cliff drawing like 3D GIS display system, digital rubbings of 25 sites, aerial Figures, right sight images, 360-degree tour shooting image and 3D animation display of three sites.

These digital achievements provided accurate image data and digital support for interdisciplinary research, cliff drawing protection and restoration, establishment of a cliff drawing basic database, application for the list of world heritage and museum exhibitions; and help for the establishment of a digital system of cliff drawing (recording, monitoring, protecting and exploiting).

iii. Drawing Skills of Cliff Drawing

Before 2012, due to the inability to closely observe the cliff drawing, the former people put up four kinds of approaching forms (shown in Table 2). To the knee-tuck figures drawn with the method of projection monochrome flat daubing empty inside skeleton display, the descriptions were generally very simple and brief in lack of convincing evidence. The studies on drawing skills and procedures in cliff drawing were rarely involved.

The government has invested a lot in setting up scaffolds in front of the cliff drawing sites for rescue conservation, which provides condition for researchers to approach it at close range. From the perspective of art and adopting the method of plastic arts in systematic classification of the drawing figures, the researchers have systematically summarized four drawing methods (Figure 9): freehand brushwork (Figure 9-1), outline filling (Figure 9-2), repeated drawing (Figure 9-3) and spot positioning (Figure 9-4), which are breakthroughs in drawing methods.

4. Argument of U Dating Chronology

In 2013, invited by the local government, scholars from the University of Western Australia and the University of Wollongong collected 12 pieces of calcium carbonate samples directly connected with the cliff drawings in Ningming Huashan cliff drawing (some are covered on the surface while some are overlaid by the cliff drawing). Calcium carbonate will have a small amount of soluble U (238U

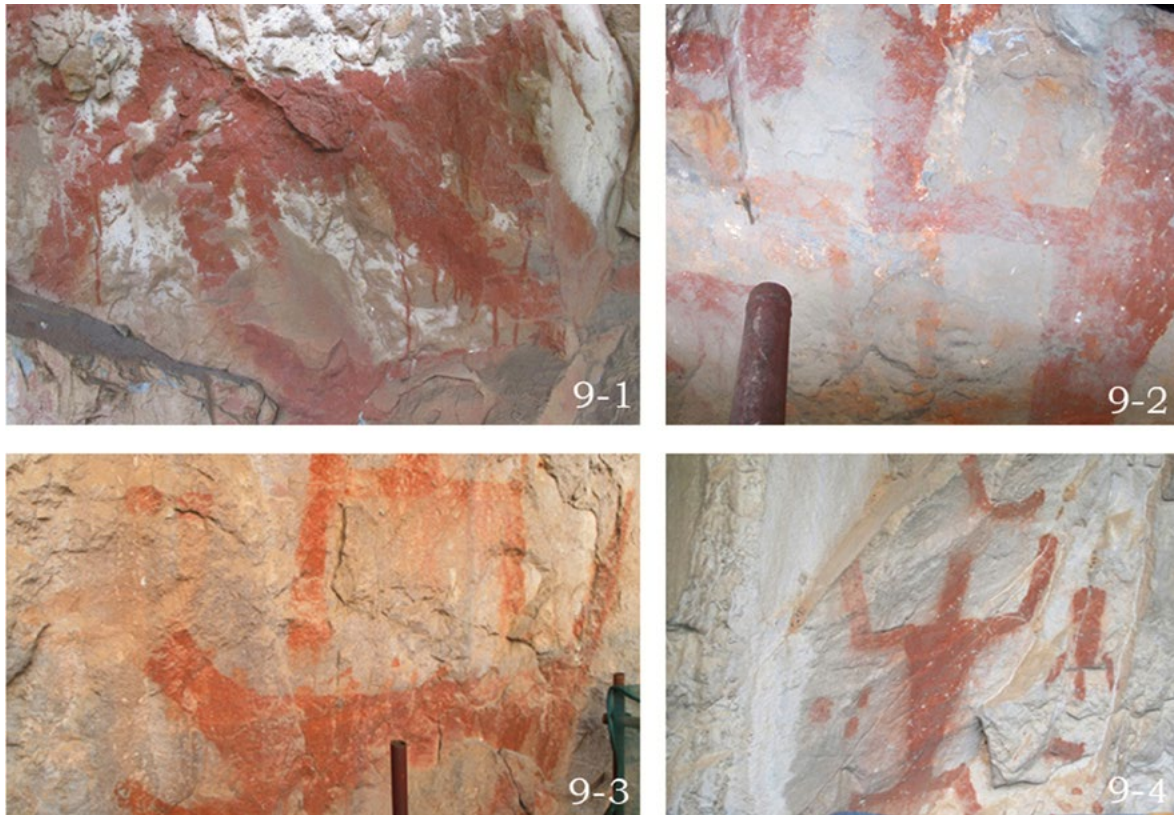


FIGURE 9. FOUR DRAWING METHODS.

and ^{234}U) when it precipitates in the saturated solution, and will decay into ^{230}Th , which in nature is insoluble in water nor will precipitate with calcium carbonate. This will result in an imbalance in the decay chain. The systematic isotopes will not decay at the same rate. Then ^{238}U and ^{234}U decay into ^{230}Th till the long-term radioactive equilibrium is formed. As the decay rate is already known, the age of carbonate layer maybe calculated through exact isotope measurement.

According to observations, the cliff drawing of one sample was between two layers of calcites, thus providing an excellent sample for dating. From analysis, this site of cliff drawing was drawn between 2,070 years ago (dating pluses 2σ) and 940 years ago (dating deducts 2σ) (c. 55 BC to 1075 AD). Among the collected samples, two samples had the highest purity. From the dating, its connected cliff drawings were drawn between 1,920 years ago (dating pluses 2σ) and 940 years ago (dating deducts 2σ) (c. 95-1075 AD).

5. Archaeological Excavation around Cliff Drawing Sites

From August to December 2013, the Guangxi Institute of Cultural Relics Protection and Archeology, associated with units like the Institute of Archeology of China Academy of Social Science (CASS), and made up an archeological survey and trial excavation group of more than 20 people. The group had done archeological survey and trial excavation in Longzhou, Ningming, Jiangzhou and Fusui along Zuojiang River for over four months (Figure 10).

Through this archeological survey, trial excavation and research, the ancient culture distribution around Zuojiang River, especially the cliff drawings, had become clearer. The types of cliff drawings and archeological culture had been enriched. The local cultural context had been roughly outlined.



FIGURE 10. ARCHAEOLOGICAL EXCAVATION AND SOME UNEARTHED RELICS.

Physical evidence had been provided for studying the origin of Zuojiang cliff drawing. The systematic study on cliff drawing was more deep and detailed. The connections between cliff drawing and the sites to a certain extent were established. In addition, the abundant unearthed cultural relics would be beneficial to setting the order of prehistoric culture development in Zuojiang River areas.

6. Other Thematic Studies

Centring on Zuojiang Huashan cliff drawing, the researchers have done a series of projects such as cultural value study, disease analysis and protective study. The development of these projects and the results will make the protection, exploitation and use of cliff drawing more scientific and reasonable; the arguments about the cliff drawing will be clearer as the true face of it emerges.

Study of Cliff Drawing in Southern, Western, Central and Northern Guangxi

Note that except Zuojiang Huashan cliff drawing in the southern Guangxi, according to the age and feature of cliff drawing, the cliff drawing of Zuojiang River, Youjiang River and its nearby areas coming after that of Zuojiang is named as Southern Guangxi and Western Guangxi type.

At present, a total of 28 sites of cliff drawing have been found in southern, western, central and northern Guangxi.

The survey work on cliff drawings includes taking pictures, Figuregraphing, word descriptions, relevant anthropological and ethnological survey and surrounding site survey. We have classified

Serial No.	Project Name
1	Artistic Value Study on Ethnic Culture in Guangxi Chongzuo Huashan Cliff Drawing
2	Study of Social Environment of Formation of Guangxi Huashan Cliff Drawing Culture
3	Study of Cultural Connotation and Uniqueness in Guangxi Zuojiang Cliff Drawing
4	Study of Cultural Connotation and Uniqueness in Guangxi Huashan Cliff Drawing's Music and Dance
5	Thermal Infrared Imaging Detection and Its Mechanism Study on Water Penetration Disease in Cliff Drawing
6	Study of Pigment Shedding and Depigmentation Protective Restoration Technology in Guangxi Huashan Cliff Drawing
7	Study of Grouting Material and Craft in Limestone Relics
8	Study of Environment Monitoring Method and Index in Huashan Cliff Drawing
9	Application Research of Natural Hard Lime in Consolidation Repair of Rock Relics and Sites
10	Natural Environment Situation in Guangxi Zuojiang Cliff Drawing Area

TABLE 3. RELEVANT RESEARCH PROJECTS.



FIGURE 11. COPYING AND MEASURING THE DATA OF CLIFF DRAWING.

and set up archives for the collected original data, in the convenience of providing data and material support for subsequent studies (Figure 11).

1. Southern Guangxi cliff drawing

The introductions to southern and western Guangxi cliff drawing in the academic world are very rare, nor do they describe their dates. Its scale and figures are small. The contents have human figures, heads, hand shapes, footprints, people riding horse, warriors, sedans, weapons, bronze drums, animals, unicorns, star cloud, flying apsaras, sun patterns, dots, rings and geometrical symbols. The most frequent patterns are the human figure, horses and people riding horses.

The age of cliff drawings in western and central Guangxi is different. Seen from the drawing skills and traces, the lower limit of its age is before the Qing Dynasty. The figure of Gupo cliff drawing in Yizhou is dominated by horse patterns, of which there are more than 200 in various poses. The large one reaches over 30 cm while the small about 7 cm. There are also a few human figures and knights. The inscription '5th of Ming Dynasty (1577AD)' has been left on the cliff. Thus it may be thought that this site has the great possibility of being drawn in the Ming Dynasty. The cliff drawings in



FIGURE 12. 1. NAYANGSHAN CLIFF DRAWING, 2. YIZHOU HORSE ROCK CLIFF DRAWING, 3. MAOHESHAN CLIFF DRAWING, 4. MAOERSHAN CLIFF DRAWING.

Houshan, Bajiaoshan, Nayangshan of Tiandeng, Banongshan of Jingxi have similar horse or horse-riding figures; their age should be very close (Figure 12-1 and 2).

2. Central Guangxi cliff drawing

There is only one site discovered in the central Guangxi, Maoheshan cliff drawing in Jinxiu Yao Autonomous Region. With a width of 8.7 m and a height of 2.2 m, this site is located on the cliff of the middle mountains. It was drawn in red pigment. The drawing content is dominated by human figures, with accessories of horse, dragon, star, bird, beast, cloud, round ring and word-like symbols. According to the analysis of figure decoration and the plate-shape head, this cliff drawing might be drawn by the local Yao ethnic group. The content is relevant to religion and totems. Its date is probably the Ming Dynasty, according to the academic world. (Figure 12-3).

3. Northern Guangxi cliff drawing

Mao'ershan cliff drawing is one site of cliff drawing which has been found in Lingchuan, the northern Guangxi. Its major patterns are birds and flowers, expressing the wishes for a peaceful world (Figure 12-4).

Conclusion

As the essential component and typical representative of the southwest system, Guangxi cliff drawing is the precious cultural heritage left by the ancestors living on the land, witnessing their outstanding

wisdom and brilliant creativity. Through the unremitting efforts of researchers, the survey record, archive establishment according to types and systematic study have been completed and the issues like distribution area, original date, period development, content theme, styles and features have become no more obscure.

However, the comparative studies of cliff drawing between Guangxi and the southwest system, Guangxi and other continents are not yet sufficient. The study of Guangxi cliff drawing needs more depth and width.

References

- KERONG, Wang; ZHONGLUN, Qiu; YUANZHANG, Chen; ZUOJIANG 1988. *Cliff Drawing Study*, Cultural Relics Press.
- SHANGWEN, Qin; GUOQING, Chen 2003. *Science Civilizations of Zhuang*, Guangxi Science and Technology Press.
- SHENGMIN, Qin; CAILUAN, Qin; MINFEI, Lu; ZHENGYU, Yu 1987. *Survey and Study of Cliff Drawing in Zuojiang of Guangxi*, Guangxi Nationalities Publishing House.
- YUANZHANG, Chen 2008. *Heaven of Rock Art – Discovering Guangxi Zuojiang Cliff Drawing*, Chinese Cultural Heritage, 2008(5).
- ZHAOFU, Chen; LIAN, Xing 1998. *Ancient Art*, Shanghai People's Publishing House.

Research on File Construction System of Rock Art

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Abstract

Rock art is a kind of product characterized by non-renewability, and it will be weathered or destroyed, and will then disappear in the end. Through more than ten years of in situ investigation, the author was able to construct a thorough, scientific and accurate record, or file, of both weathered and well-preserved rock art.

On the basis of this work, the author created a rock art file system, which constitutes a foundation for the construction of a database, for the research and protection of rock art, as well as the future advancement of the discipline.

The Dynamics of Mental Movements as a Base for the Intellectual and Spiritual Expressions of Non-Literate People and the Origin of Development of the Human Being

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Abstract

The intellectual and spiritual expressions of non-literate people are based on the capacity of the human being to move his interior life to an exterior level. This dynamic competence of the mind allows the displacement of needs, emotions and memory. This mechanism, which psychoanalysis defines as 'transfer', is the main characteristic that distinguishes the human being from other species. The ability to externalize one's own feelings in a psychoanalysis session allows the patient to overcome the symptoms of psychopathology. Similarly, starting with the creation of rock art man, discovering new forms of expression, had access to a more evolved form of adaptation to the environment and the deployment of his creative potential.

I would like to thank Professor Anati for his kind invitation to this conference. The more our friendship grows, the deeper my knowledge of humankind becomes, the more elements I find which are both invariant and common to all disciplines, regardless of the matter at hand.

To him goes the merit of promoting a transaction well-known to Greek philosophers aimed at ontological and non-specialist studies as the ones present in this civilization, among the many which have preceded ours, thus leading us to specialize more and more in a specific area, with the risk of losing sight of the whole of which each element is part of.

For this reason, the study of prehistoric archeology can help us learn about the prehistory of mental life which has always been present in the mind of modern man. Furthermore, I believe that prehistoric studies cannot avoid dealing with the psychological and subjective elements involved.

Such elements open scenarios of great interest to us psychologists as well as other professionals, such as doctors, who can make an appropriate diagnosis by just looking at the images of MRIs or ultrasounds. We therefore believe that the knowledge and meaning of man's expressions can be found in the human and interpretative and non-interpretative factors, in the efficacy of the instrument, with increasingly advanced technological features.

Throughout the expeditions to Har Karkom I have taken part in, I have come to realize how key the psychological aspect is to each scientific discovery, due to the fact that man himself is the one to develop the data which he collects together with all the constraints resulting from the subjective experience.

Professor Emmanuel Anati captures distinctive elements together with relationships between them precisely where the artifacts seem to be both equal and uniform, in the Negev desert. The ability to observe details and recognize associations that link the significant elements together leads to discovery.

The most important news that Freud introduced was not the interpretation of dreams, which the ancient Egyptians already were well aware of, but the method of free association, under which there is no element of communication that is not connected with interpretable elements, from which derives the fact that the human being finds it impossible not to communicate. Thus, if there are subjective elements interfering with the researcher, the said researcher will find meanings, connections and

sense among the elements in combination with each other. The rule that we observe during the sessions, in which we invite the patient to describe with total neutrality and absence of judgement all that comes to his mind without changing the content, also applies in other research fields such as prehistoric science.

Despite the fact that Mount Sinai is a real place and not an imaginary one and the fact that in Har Karkom you will find a very high concentration of rock art, representing what we call removal in psychology. This psychological mechanism is defined as an attempt to repel or keep the known information unconscious but whose existence we refuse to admit.

It comes as no surprise that because of this defensive phenomenon hidden in the Negev desert, in all probability we can find the place from which all modern religions hail, considered to be sacred well before the passage of Moses.

Even the sites, as happens for the bad memories of our patients, do not exist if you do not want to see them. Har Karkom acts on the rules of collective removal in the same manner in which the study of prehistory does not rise the public attention appropriately, except of course for the fact that general opinion is shocked by contemporary man's primitive instincts, which are not supposed to be repeated but are, however, not promptly processed and are dramatically shown in crimes committed today. Those who reveal our origins remind us of our limitations and modern man does not like having to cope with his own limitations. A person will discover as many things as he is willing to observe. Thus, doing research means helping modern humans understand how the ego, which is identified as only a small part of his memory, is not as far from prehistoric man as we may think. The unconscious in fact, that most archaic part of the mind, is both spaceless and timeless and makes Neanderthal man no different from a modern New Yorker.

As interesting as the scientific method can be, we are not here to discuss it further. To conclude this introduction, I would like to point out that not only in prehistoric sciences but also in each discipline, the value of discovery has not only to do with the mere retrieval of information, but also with the researcher's ability to relate with what is present but from a different level of representation. To use a metaphor, a finding gives the sand that covers it a specific shape but it is up to us to recognize it. From a psychological point of view the possibility of gathering or finding new information is functional to the ability not to oppose what is on the inside to what is perceived on the outside.

Therefore, scientific discovery depends on the transference that occurs with an external element. The researcher is a medium that, like the analyst, contacts the unconscious content of a patient with the outside world through his own unconscious. If the researcher is studying the intentions, needs and psychology of ancestors who spontaneously left traces, the researcher effectively interprets the found data. It is unthinkable for psychology not to deal with the prehistoric elements of a symptom, in the same way as I think it is impossible to deal with prehistoric science without considering the psychological and subjective elements.

Transfer is decisive in humans not only for psychoanalysis but also because it can be considered to be the original mechanism of human development.

During psychoanalytical sessions, transfer is defined as the special feeling that is created between patient and psychoanalyst at the time of the session and it entails moving emotions and feelings stemming from the past. At a session, we can observe how the mental content of a subject is transformed into the interaction with the analyst.

In more general terms, transfer can be considered as moving elements from the inside of the psyche towards the outside, through art or other means of expression. The mechanism of transference demonstrates the primacy of the relationship between people and shows how life is originated and can only be maintained if there is this relationship.

The birth and evolution of man were possible thanks to his adaptation to the environment and the improvement of communication between peers. This process has established itself due to man's ability to transfer parts of himself to the outside and the assimilation of external stimuli from the outside world. Language and art have increased the degrees of freedom of expression of man through the shift mechanism of transference, which is precisely the *sine qua non* condition for the emancipation of man from his origins and for the creation of his own destiny.

And it is precisely the ability to narrate the description of his experiences which has allowed humans to master them, to free themselves from the forces of nature amidst which they find themselves.

When an artist creates, he loses the part of himself expressed in his work. But it is no longer in the work itself which in turn becomes a transfer object, thus partially freeing the artist from the initial emotional contents.

The ability to transfer in the human race is the most important of its genetic heritage, which differs only slightly from that of primates. Chimpanzees, despite being provided with a similar biological structure, are incapable of mental processes like humans through culture, which makes them able to transmit memory from one generation to another.

The refinement of communication was therefore essential to the creation of a community that was able to improve the conditions of life and adaptation in the course of history.

The evolution of man thus comes from the recognition of emotions and the creation of codes of expression through art and language. Art throughout history has been a window on the origin and destiny of man. In particular, rock art is the materialization of the first attempt to control, shape, learn and deepen man's emotional world. The ability to represent in the human being has propelled its differentiation from nature. The first manifestations that arise from differentiation are particularly important because they are able to explain the originating mechanisms at the base of phenomenological manifestations.

The evolution of man can be seen as the ability to depict and represent the core of his experiences in ever more appropriate ways. The various forms of artistic expression throughout history and even more evidently in prehistory are the stages of cognitive evolution of man as we know it today.

Representation and narrative mark the transition from the undifferentiated to the differentiated, in the same way in which the fetus develops the differentiation of its tissues in nine months.

With the ability to represent the world around him, man has been able to differentiate himself from his needs related to biological survival via food, sex and land.

Differentiation was possible because of the ability to transfer images, which over the course of evolution have progressively become differentiated from their driving source.

The origin of intellectual expressions comes from the ability to produce new concepts moving from its internal system of needs to that of external representations.

The prerogative of human beings is thus being able to perform not only a mental shift, but also a physical one. The peculiarity of man appears to be, therefore, the ability to move, to transfer.

Since the beginning of time human beings perish if left without the possibility of moving. Take for example certain dramatic cases of psychic diseases like anorexia. The presence of these cases of suffering right in the middle of the most affluent society to have ever existed is explained as a fixation at an earlier stage, a kind of mental paralysis at a primitive stage of development which has abnormally reactivated the memory of being a fetus when nutrition was done automatically.

It is of interest to note that the fixations in early childhood can form different personalities. We can distinguish characters as oral, anal and phallic, without further dwelling on this issue, which could lead us even to recognize social organizations based on the respective stages of endopsychic collective fixations.

The psychic manifestation of movement is pictures. Images are nothing more than information stored in the memory of movement. The unconscious manifests itself through the free energy in the attempts and the entities that inhabit the unconscious which convey the energy that is exchanged, continuously moving through iconic information packets. Visual perception is much more essential in humans than in any other species and it is enhanced by mental processes that go beyond the visual function. Visual images available to man only in part correspond to those of visual stimuli. Think of what happens in dreams in which visual perception is carried out regardless of the actual vision. In the illustrative material the micro details of individual life or character of ontogeny and phylogeny are thus fixated. Image therefore has the ability to crystallize emotion and both the individual and the collective experiences. The stored visual images transfer information between generations. Through the dream, current information is amalgamated with that of the past and man is immersed overnight in its origins. The ability to produce images has a main role in the evolution of the human species and it is also a precondition for the transmission of memory.

Experiences are moved through images from one generation to another in an infinite ratio that exceeds the limits of time and space.

Freud says in this regard:

It seems at first that the experiences of the ego may be lost to inheritors. When, however, they are repeated with sufficient frequency and intensity for many individuals of successive generations, they transform themselves, so to speak, in the experiences of the id, whose expressions are consolidated through inheritance.

‘This way, the id, which has become depositary of the legacy, contains within itself the residue of countless existences of the ego and it may be that when the ego creates your own super ego from the said id, does no more than draw back to surface, thus resurrecting the settings of the ego with the oldest date.’

Freud always said: ‘Dreams are the result of things seen in the prehistoric period’ and this applies not only to one’s own childhood but also to the lives of the generations which have preceded us.

Images are to psychic life what genetic material is to biology.

The wealth of images is that of conveying the identity of the human race between generations.

Primitive men were well aware of the secret image and therefore undertook to engrave on stone in the form of symbols and signs of expression, not only for members of their own community but for others who would live a thousand years away in a different time dimension from the one we use today, limited to the present.

When we look at the images of rock art we feel we belong to them and we feel that these images belong to us. The images of rock art are recognizable by anyone and they express meaning even to a child who has yet to learn the use of language. In these images we find the unconscious grammar at the base of all verbal and non-verbal expression.

The work of psychoanalysts is very similar to that of paleontologists through artifacts such as dreams, thoughts and feelings to search for man’s identity and its origins. In the same way, though it may seem difficult to interpret them and what happens when we are not in transferral resonance with them, the evidence of rock art is full of expressive cues. It just takes a hair to get a person’s DNA and

just a scratch on a stone to be able to recover the intention of our ancestors who are far away, yet so close to us so as to be able to recognize in them our internal memory.

Memory, whose unconscious characteristic is timeless, informs us not only of what happened in the lives of our ancestors but also of what may happen in the future of the upcoming generations.

The Rock Art of Saracachi River Basin: The El Arco and Blanca de la Pulsera Caves, Sonora (Mexico)

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Abstract

This work is part of the project Biodiversidad y Sociedades Cazadoras recolectoras del Cuaternario de México led by the Institut Català de Paleoecologia Humana i Evolució Social (Tarragona, Spain) and the Instituto Nacional de Antropología e Historia de México.

The project began in 2007 with the study of shelters with rock paintings and Blanca Arch Strap, at around the Saracachi River (Cucurpe, Sonora).

Documentation of the murals was performed and support microsamples and pigments were extracted for study by the Department of Chemistry at the UNED (Universidad Nacional de Educación a Distancia).

The thematic content of picture sets and a variety of types of possible aspects related to puberty rites for girls (Cueva Blanca de la Pulsera) and linked to fertility aspects (Cueva de El Arco) were noted.

Keywords: *Ritual spaces, fertility rituals, rock art, archeology, Sonora, México*

To Armando Quijada Hernández, for his pioneering work in the study of the Sonoran rock art.

Introduction

Cucurpe is located at the beginning of the San Miguel River basin, in central Sonora (Mexico). In this region ravines and cliffs with shelters and caves abound, that were used since prehistoric times by the inhabitants to execute panels of petroglyphs (or engravings) and painted murals. Among these sets are the El Arco and Blanca de la Pulsera caves.

In the late 1920s, the North American researchers Carl Sauer and Donald Brand toured different parts of upstate and first reported some archeological sites in Cucurpe (Sauer and Brand 1932: 83).

Later, between 1973 and 1974, Professor Armando Quijada Hernández recorded and compiled new sets with engravings and paintings in the Cupurpe area, which were presented at the XLI Congreso

Internacional Americanista, held in Ciudad de Mexico (1974) and later in the Primer Simposio de Historia de la Universidad de Sonora (1975).

This author noted that one of the largest concentrations of rock art in Sonora – paintings and engravings – is in this territory, containing mainly geometric elements, human figures (including printing of hands in positive) and animals, among which the deer stands out.

Additionally, he said that the most used colour was red and the figures were in an acceptable condition. He stressed the importance of these representations and the need for a detailed record being made. Quijada recorded the following sites: La Higueritas, Las Caleritas, Los Potreritos, San Javier, El Potrero Tápielo, El Carrizo, La Pulsera, Las Manos Pintas, El Jumbo, El Match, El Cajón de los Borregos, El Cajón del Baisimaco, El Caracol, La Tijera, El Pintor, La Cueva Pintada, El Tápiro and El Potrerito y Los Nogales (Quijada 1976: 443-4).

In the late 1970s the archeologist Beatriz Braniff began a research project in the basin of the San Miguel River and highlighted the Cucurpe region due to the richness of its representations. In her project, Braniff studied 32 archeological sites that were included in her doctoral thesis, including the caves of El Arco and Blanca de la Pulsera, which makes a first description of the painted mural and points to the absence of archeological material on its surface (Braniff 1992: 799).

Soon after, in 1990 and 1993, in the area known as Los pies del viejo, César Quijada discovered the first rock art engravings in the region of Cucurpe (López Quijada 1996). There are various geometric representations in two ridges, one horizontal and one vertical, composing lines that form right angles. Also in 1993, were located the first engravings with various geometric shapes in Blanca de la Pulsera cave, and became the only known site in Cucurpe area with paintings and engravings (Quijada 1996). This author performed the record of paintings and engravings in Cueva de la Pulsera, in collaboration with the researchers Jane Kolber, Daniel Frey and some students of Arte Rupestre Indígena Americano of the Cochise College. The results of this work were presented at the congress of the American Rock Art Research Association. In them the main features of the cavity and the rock art were described (Frey, Quijada and Kolber 2005).

In 2007, members of the project Biodiversidad y Sociedades cazadoras recolectoras del Cuaternario de México, directed by Ramon Viñas, visited some of the rock art areas of Sonora, led by César Quijada and, a year later, the rock art of Cucurpe was included with the study of the El Arco and Blanca de la Pulsera caves in the overall project Investigaciones prehistóricas en el Noroeste de México: Baja California y Sonora (2008-2009), directed by Ramon Viñas and involving Cesar Quijada, Albert Rubio, Juan F. Ruiz and Beatriz Menéndez.

The study area is located in the western foothills of the Sierra Madre Occidental. It is a semi-arid region with a terrain marked by abundant cliffs, through which flows the Saracachi River, which together with the Dolores, creates the San Miguel River (Fig. 1).

The El Arco cave is in volcanic tuffs about 8 km from Cucurpe town, on the left bank of the glen Guaysimaco or Baysimaco. It is registered by the INAH with the code SON: G: 10:31 and the UTM coordinates are Zone 12R 530300 E, 3361125 N, at an altitude of 928 m asl (H12B71 INEGI topographic map, scale 1:50,000).

The Blanca de la Pulsera cave, also formed in volcanic sedimentary materials, is located 1.7 km from the La Pulsera ranch, on the Saracachi River entrance. It is registered by the INAH with the code SON: G 10:10 and their UTM coordinates are Zone 12 R 529100 E, 3356550 N at an altitude of 880 m asl (H12B71 INEGI topographic map, scale 1:50,000).

The work in progress consists of the record of both caves to establish a database for further investigation. The objective is focused on the identification, comparison and interpretation of the



FIGURE 1. CUCURPE AREA INDICATING THE CAVES EL ARCO AND BLANCA DE LA PULSERA.

theme of the two sets that show ceremonial aspects related to specific practices or female fertility ritual. Moreover, an approach to the chrono-cultural framework of these panels was made by the researchers.

Materials And Methods

The documentation process involved the survey of the two cavities, the photographic record for individual figures and panels, material inventories and the collection of support pigment microsamples for non-destructive analysis by physicochemical techniques, which maintains the original state of these samples for further studies and possible tThermoluminescence microstratigraphy AMS 14C, among others.

With the collection of this material has begun the development of a database that contains the characteristics of the rock art of this region and the digital reproduction of the murals.

The analysis of microsamples was performed in the chemistry laboratory of the UNED (Universidad Nacional de Educación a Distancia) by micro-Raman spectroscopy using a Jobin Yvon Raman confocal microscope Labram IR HR 800, exciting at 632 nm. Registration conditions for most of the samples were 8 seconds integration time and 36 averaged spectra.

Results

The painted murals of El Arco and Blanca de la Pulsera are being studied. Here we present the first preliminary results pending confirmation, in order to advance the analysis of the documentation and study of analytical samples.

The painted mural of El Arco

The El Arco cave is a dug shelter or a hollow in the same bed of the stream, about 17 m long, 1.65 m deep and 1.40 m tall (Fig. 2). It contains a heavily painted panel with over 1,000 representations and some cupmarks in the floor of the assemblage (Fig. 3).

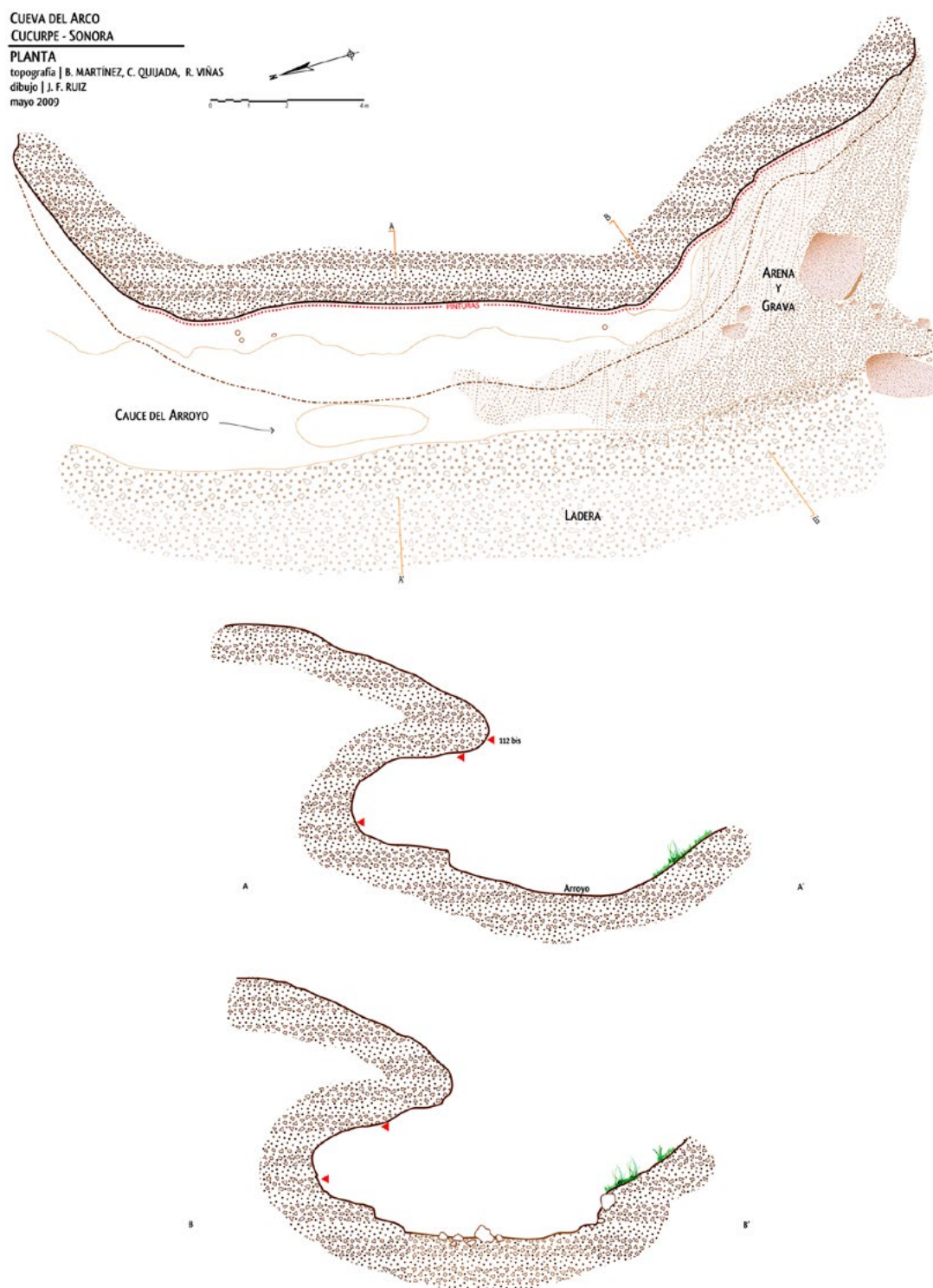


FIGURE 2. TOPOGRAPHIC SKETCHES OF EL ARCO CAVE, CUCURPE, WITH DISTRIBUTION OF THE PAINTINGS AND INDICATION OF THE CUPMARKS.



FIGURE 3. VIEW OF EL ARCO CAVE, CUCURPE (PHOTOGRAPH, BEATRIZ MENÉNDEZ).

The average size of the pictographs is around 20 cm and they occupy the ceiling and wall to the floor. They are mostly painted in shades of red, some dark brown and a few figures are white or very light cream that, judging by the overlappings, would be the oldest stages of the mural. All this rock art iconography is in a schematic abstract style.

The first record of the El Arco cave stands at 1.021 painted motifs. Overall, the condition of the paintings is correct and most of the figures are identifiable, although 10.38% of the motifs are damaged and cannot be recognized, and 36 motifs have a design that we have not identified (Fig. 4).

The thematic represented in the wall is formed by a predominant core of human representations and animals in fewer numbers, that are linked with a wide iconography of geometrical and abstract elements (Fig. 5).

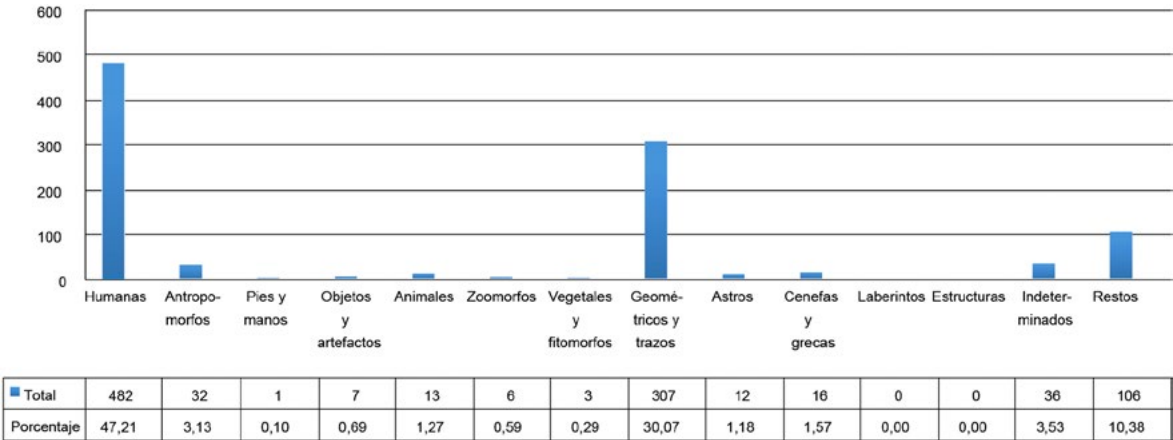


FIGURE 4. GRAPHIC AND TABLE OF THE REPRESENTED MOTIFS IN EL ARCO CAVE.



FIGURE 5. DIGITAL REPRODUCTION OF THE NORTHERN WALL OF EL ARCO (DRAWING, ALBERT RUBIO).

The human representations are in frontal position, with arms raised or angled down and generally with open legs. Usually they show neither feet nor hands and sometimes only this part of the body is indicated by the design of their fingers. We have also identified the figure of a small hand. Most bodies have an elongated shape made from a trait, though some have anatomical variations with a triangular or rounded head and trunk. Several human figures have head ornaments with straight appendages (like a plume), bent into a hook or with a double-curved downward appendix. Representation of facial features or internal decorations on the bodies is rare, but sometimes a few points on the faces indicate the eyes, nose or mouth, and in other cases, similar points surround part of the images. All these designs give to the figures a unique element that characterizes them.

All these figures appear isolated or combined in repeating groups of pairs, trios or groups of figures holding hands, making 17 individuals. These associations can be horizontal or vertical alignments.

The human figures are usually represented without sexual attributes, so 79.46% of the cases have been called indeterminate human figures. However, ten cases show the male member (representing 2% of the human representations). In other cases, the design of rounded belly and leg position (wide open or squatting) suggests the representation of pregnant women (36 figures representing 7.47% of all human figures) and 12 of them seem to represent childbirth.



FIGURE 6. FIGURE IN BIRTHING POSITION ON A TEXTILE ITEM (PHOTOGRAPH, ALBERT RUBIO).

This idea is reinforced by an appendix that protrudes from between the legs of the figures and the case of one of which appears to be associated with a textile element with a decoration of triangular motifs and fringes (Fig. 6). Only occasionally the design of the breasts is seen.

We classified other figures as young children in relation to the size of the accompanying figures (53 figures that represent 11% of all humans). These child figures appear in clusters and are often joined by a series of characters' hands.

These human characters are associated with geometric shapes and abstract elements that form the other main group of representations on the frieze. They consist of clusters of points, sun-shaped elements, undulating and angular shapes, crosses, concentric crosses, circles, sets of rhomboid-shaped elements, zigzags, the 'X' or cross of San Andrés, axles with appendages in trait or triangles and squares formats. Among the fauna the representations of dogs, lizards and possible batrachians stand out. All these are related to human representations or schematic and abstract elements. In terms of plant elements, we can distinguish circular shapes with lobed profiles that are interpreted as possible cacti, viewed as a section.

From the formal point of view, the mural may be framed within a canon, style or schematic abstract tradition. The compositions comprise association patterns that reveal an ideographic and symbolic language.

The techniques used to perform this mural were the simple trace, flat ink and the point or fingering, and the range of colours were red, brown or coffee and white or light cream. The mural stretches across the frieze and offers a uniform appearance with a small number of overlays documenting the process of production. We have found that white and light cream colours with which some anthropomorphic and fingering figures were painted correspond to an earliest phase of the paintings on the mural, perhaps the initial phases.

The pigment samples analyzed by Raman spectrometry found evidence of α -quartz (SiO_2), hematite ($\alpha\text{-Fe}_2\text{O}_3$), amorphous carbon, calcium sulfate anhydrite type (CaSO_4) and gypsum ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$). The rocky support is characterized by calcium oxalate presence, as whewellite ($\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$) and weddellita [$\text{CaC}_2\text{O}_4 (2 + x) \text{H}_2\text{O}$, $x 0.5$], which indicates the possibility of dating these surfaces by radiocarbon (AMS 14C).

Paintings and engravings from the Cave at Blanca de la Pulsera

The cave is known by the names of Blanca de la Pulsera cave or Los Figurines. The cavity is about 40 m long, 12 m deep and about 12 m in height (Fig. 7). Much of the entrance is occupied by huge blocks that have generated an inner space where the largest amount of rock art is concentrated (Fig. 8).

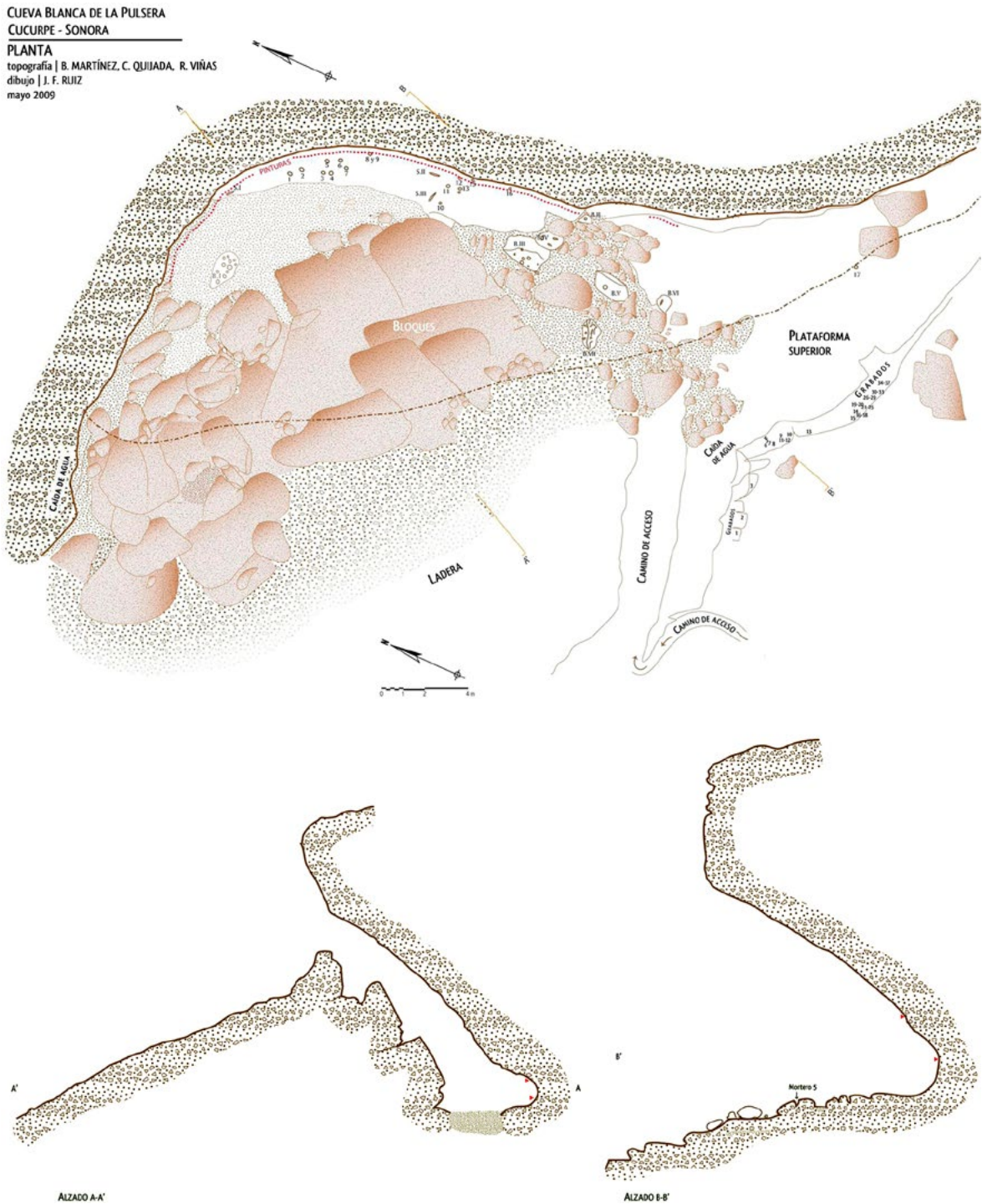


FIGURE 7. TOPOGRAPHIC SKETCHES OF BLANCA DE LA PULSERA CAVE, CUCURPE, WITH DISTRIBUTION OF THE PAINTINGS, ENGRAVINGS AND CUPMARKS.

FIGURE 8. VIEW OF THE BLANCA DE LA PULSERA CAVE, CUCURPE, AND THE OUTER WALL WITH ENGRAVINGS (PHOTOGRAPH, ALBERT RUBIO).

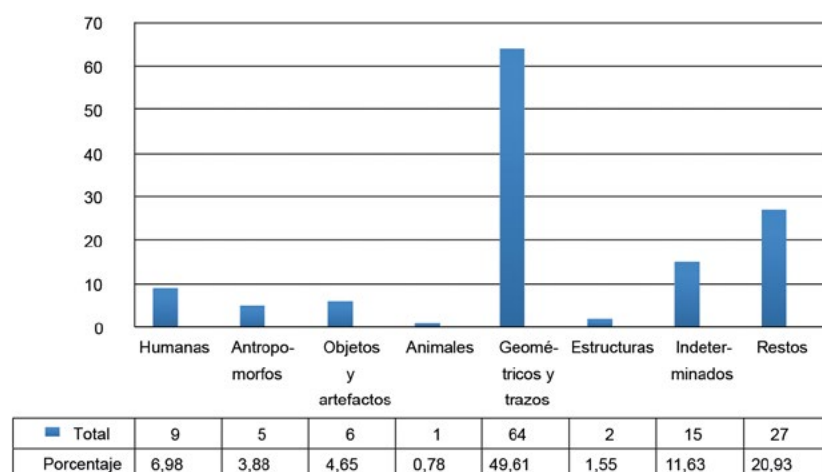


FIGURE 9. GRAPHIC AND TABLE OF THE MOTIFS REPRESENTED IN BLANCA DE LA PULSERA CAVE.

The set consists of rock paintings and engravings. The provisional registration of the painted cave Blanca de la Pulsera sums 129 motifs on two panels inside the cavity (Fig. 9). Different kinds of white, black and red pigments were used to make them. The figures occupy the inner wall of the cavity, from the darkest area to practically outside. The stylistic pattern is schematic and abstract with figures of just 20 cm and others exceeding 50 cm in height. The theme focuses on symbolic compositions related to human figures, structures and possible textile elements.

The conservation status of the pigments is acceptable; however, lately there have been acts of vandalism in graffiti and modern paintings over the archeological figures, sometimes in white plaster, which can be confused with the original drawings.

This is due to uncontrolled visits to the site and lack of public education about how we all have to respect this cultural heritage. Another problem that threatens the conservation of the mural is the path of water inside the cave during seasonal rains.

To this painted mural we must add five engravings recorded on the same wall, corresponding to four human figures and a trace, and nine circular perforations, ranging between 2 cm in diameter and 1 cm depth to 13 cm in diameter and 9.5 cm deep.

Also, inside the cave are seven blocks with different cupmarks that might have been used for processing materials used in ritual events held there, and traces; one of these blocks is a stone of 155 x 73 cm having a plurality of engraved grooves that form possibly an anthropomorphic figure. Most of the engravings are located on the outside of the cavity, in the base of a wall of about 4m, showing curvilinear shapes, concentric circles, a group of three vertical rectangles, each around a vertical line, a spiral and a double cross (Fig. 10).

Panel I, or main panel, a strip extending from the wall about 15 m long and between 50 cm and 2 m in height. In this panel are three main figures painted in white colour and classified as females. These three figures hold, in their heads, headdress-shaped antennae with spiral endings or *espiritrompas de mariposas*. Between the legs, and at the height of the genitals, is a small semirectangular red motif (perhaps indicating blood). These characters are associated with four rectangular shapes, possibly fringed textiles or blankets and with internal drawings based on intersecting lines divided into four sections, and other drawings, possibly ceremonial tents as *tipis*, in which it is possible to find, inside or adjacent to them, some small anthropomorphic figures (Fig. 11). This panel is complete with serpents, dots, concentric circles, radiating circles and crosses.

Panel II corresponds to the outermost images of the cavity. They were painted in the vault, about 5 m in height, apparently made with a tool like a paintbrush strapped to a stick, forming curved traces and intertwined and tangled lines.

Also, they are surrounded by small patches of red paint that probably correspond to splashes made from the base of the cavity.

In the pigment samples analyzed by Raman spectroscopy we found evidence of hematite, gypsum and anhydrite, quartz, anatase (TiO₂) and amorphous carbon. There is also the presence of calcium oxalate as whewellite and weddellita which indicates the possibility of dating these surfaces by radiocarbon (AMS 14C). It is expected to get more details about the composition of the samples with complementary analyses and additional studies of the obtained spectra.



FIGURE 10. ON THE LEFT, ENGRAVINGS ON THE EXTERIOR ZONE OF THE CAVITY; RIGHT, HUMAN FIGURE ENGRAVED ON PANEL I, ALONG WITH THE PAINTINGS (PHOTOGRAPH, ALBERT RUBIO).



FIGURE 11. PANEL I, HUMAN FIGURES WITH HEADDRESS AND TEXTILES, WITH A STRUCTURE LIKE A HUT (PHOTOGRAPH, ALBERT RUBIO).

Discussion

Among the rock art sets of northern Mexico and southwestern United States, an ancient and rich cultural substrate that has survived over time is perceived. This substrate was generated in the desert regions of Sonora, Chihuahua, Arizona, New Mexico, Texas and Utah, and in the areas of the rivers Grande, Colorado, Gila and Pecos, with various rock art styles: Great Basin abstract, Chihuahua polychrome, Glen Canyon linear, Calendaria painted, Gila petroglyph, Mogollon, Jornada, Anasazi rock art, and the latest Apache rock art and historic Navajo rock art, among others (Schaafsma 1986).

The art was made by groups of hunter-fisher-gatherers (some of them reaching the historical period), and by the first farming semi-nomadic and sedentary groups that continued their rock art practice until about a century ago, including the Papago, the Ute, the Pima and the Seri (Messmacher 1981).

At the moment, for lack of a more precise chronocultural distinction, the rock art of the Cucurpe shelters can be framed within the styles of Great Basin abstract and Gila petroglyph, developed between the first millennium BC and about the 14th century AD; although we can not exclude that the rock art tradition had been able to reach more recent times with past practices by known indigenous groups.

The rock art of Cucurpe shows formal similarities with other sets of rock art engravings, or petroglyphs, of Sonora, like La Proveedora (Ballereau 1988), located near the Trinceras site. This archeological site shows several phases with a first pre-ceramic period and other fully agricultural stages, known as Cultura Trincheras (Schaafsma 1986, Villalpando and McGuire 2009).

From the record of the painted motifs present in El Arco and Blanca de la Pulsera caves, we hypothesized that both caves are linked to female rites.

In the case of El Arco, the iconography gives us a topic related to pregnant women and with the same childbirth. Bulging bellies, open legs or squatting positions and dashing out of the wombs indicate that. Moreover, some additional items like a blanket under one of these open-legged figures, or elements that we have identified as possible cacti viewed in sectional cut, are consistent with this interpretation. Also games are made with these cactus slices that Griffen documented in connection with puberty ceremonies of Seri girls (quoted in Apocada, 2001).

The use of cactus pieces is complemented by the use of tilled stones, namely, jagged circles that sometimes have a central hole, both among the Seri and the Pima (Apocada 2001). It is remarkable that among the Seri, in the Sonoran coast of the Gulf of California, the ritual use of a cactus-type column has been documented, like the *cardones* or *sahuaros*, that are thrown sliced into the fire with the intention of appeasing the wind and rain.

Moreover, we have the information that Apache women usually wore belts when giving birth, through which they invoked an easy and less painful childbirth.

On one of these belts, reported by E. S. Curtis, may be seen figures that show similarity to the representations of El Arco cave, some with triangular heads with eyes and mouth indicated, with similar leg positions and also linked by zigzag lines identified as lightning (Curtis 1993). These elements are not sufficient to establish a chronocultural link between the painted mural and Apache groups, whose incursions into northern Sonora date from the 16th century, but they show an intercultural environment in the area.

Regarding the Blanca de la Pulsera cave, the mural consists of a main subject in which the central figures of Panel I, with special headgear and legs open, the red lines in the pubic area and the presentation interspersed with textile items (blankets or rugs) show the relationship with cabin-style structures commonly used among Pima and other southwest groups during puberty rites for girls (Weaver 1992).

Also in the ethnographic context, Apache girls celebrate their puberty ritual for four days, when they are dressed in white robes, lying on a carpet and wearing a white head-dress with a stone and a shell in their hair. All these elements link the composition with female puberty rituals in relation to the menarche.

On the other hand, we also suggest the physical characteristics of the site chosen for the implementation of this mural. We considered why the closed site was chosen to develop the mural, next to a few concrete engravings, and its relationship with the outside petroglyphs: the themes in the frieze linking it with the physical characteristics of the cave, specifically the upwelling and water circulation at the feet of the mural to its outlet in the outer petroglyphs.

This relation has been established in Red Woman Tank, an enclosed space containing rock art engravings in Arizona, attributed to the Hohokam culture, which refers to thematic elements of sexuality and fertility, and possibly linked to puberty rituals. According to researchers who have documented the site, in this enclosed space water circulation occurs intermittently depending on the time of year, that is, there was a landscape element in the choice of location (Will *et al.* 2009).

Conclusion

The archaeological and ethnographic context places the rock art of El Arco and Blanca de la Pulsera caves in a recent prehistoric environment, linked to female rituals.

This hypothesis should be deepened and diagnostic elements of the chronocultural framework in which to place the murals should be identified, enhancing also its meaning. To this end it is necessary first to establish the links between the figures in each frieze and its relations with other rock art

sites in the southwest United States and northwest Mexico, and also improve the physico-chemical analysis of pigments and surfaces to help us answer the history questions.

Bibliography

- APOCADA, Paul 2001. 'Cactus Stones: Symbolism and Representation in Southern California and Seri Indigenous Folk Art and Artifacts'. *Journal of California and Great Basin Anthropology* 23, No. 2, pp. 215-28.
- BRANIFF CORNEJO, Beatriz 1992. *La Frontera Protohistórica Pima-Opata en Sonora, México. Propositiones Arqueológicas Preliminares. Colección Científica No. 241, Tomo III, Instituto Nacional de Antropología e Historia México.*
- CURTIS, E. S. 1993. *Los beduinos de America*. El indio norteamericano vol. I, Mallorca: J. J. de Olañeta Editor, 165 pp. [original 1907].
- FREY, Dan; QUIJADA, César and KOLBER, Jane 2005. 'Los Petrograbados y las Pinturas Rupestres de La Pulsera, Cucurpe, Sonora' (The Petroglyphs and Pictographs of La Pulsera, Cucurpe, Sonora) (in English and Spanish). *American Indian Rock Art*, Volume 31, Marilyn Sklar, Editor, American Rock Art Research Association, Tucson, Arizona, pp. 136-54.
- MESSMACHER, Miguel 1981. *Las Pinturas Rupestres de La Pintada, Sonora. Un enfoque metodológico.* Departamento de Prehistoria, Instituto Nacional de Antropología e Historia, México.
- QUIJADA HERNÁNDEZ, Armando 1976. 'El Arte Rupestre en Sonora', *Primer Simposio de Historia de Sonora*. Instituto de Investigaciones Históricas, Universidad de Sonora, Hermosillo, Sonora. México.
- QUIJADA LÓPEZ, César Armando 1996. 'Los grabados de Cucurpe, Sonora', en *Crónica y Microhistoria en el noroeste de México*. Instituto Sonorense de Cultura y Sociedad Sonorense de Historia. Hermosillo, Sonora, México.
- RUSSELL, Will G.; WRIGHT, Aaron M.; CARPENTER, Tina and GUTHRIE, Caitlin 2009. 'Stained Rocks and Storied Walls: Fertility, Sexuality, and Rock Art in the Hohokam Landscape'. *American Indian Rock Art*, Volume 35, American Rock Art Research Association, pp. 27-42.
- SAUER, Carl and BRAND, Donald 1932. 'Aztlán: Prehistoric Mexican frontier on the Pacific Coast'. *Ibero Americana*, Vol. 1, University of California Press, Berkeley.
- SCHAAFSMA, Polly 1980. *Indian Rock Art of the Southwest*. University of New Mexico, Albuquerque.
- VILLALPANDO, María E., and MCGUIRE, Randall 2009. *Entre muros de piedra: La arqueología del Cerro de Trincheras*. Proyecto INAH Trincheras, Instituto Sonorense de Cultura, Programa Institucional Trincheras, INAH, Centro INAH Sonora, México, Sonora, Hermosillo.
- VIÑAS, R., and ARROYO, J. 2007. *Informe: Visita a Conjuntos Arqueológicos en los Estados de Sonora y Baja California* (proyecto: Biodiversidad y Sociedades cazadoras recolectoras del Cuaternario de México). 55 pp.
- WEAVER, Thomas 1992. *Los Indios del Gran Suroeste de los Estados Unidos*. Mapfre, Madrid, p. 383.

A Ritual Space with Paintings and Engravings in the La Calera Rock Art Set, Caborca, Sonora, Mexico

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Abstract

This paper presents the discovery of a ceremonial rocky enclosure with rock art paintings, engravings, mortar bowls and cup marks, in the important area with rock art engravings located in the hills of La Proveedora and La Calera, in the Sonora Desert (Caborca, Mexico).

The thematic content focuses on human associations, animals, and geometric and astronomical elements, which have been studied by Ballereau (1985, 1988), Braniff (1985) and Villalobos (2003).

The finding of this rocky enclosure, currently under study, was made in 2007, during a Visita arqueológica a los Estados de Sonora y Baja California by some members of the Biodiversidad y Sociedades Cazadoras Recolectoras del Cuaternario de México project, led by the Institut Català de Paleoecologia Humana i Evolució Social (Tarragona, Spain) and the Instituto Nacional de Antropología e Historia de México.

Researchers believe that the engravings of La Calera and La Proveedora correspond to the Trincheras tradition which occupied the region between 200 AD and 1450 AD.

However, the existence of other archeological evidence, like the projectile points of the Archaic period, suggests the possibility of other chronological and cultural affiliations for these rock art representations.

Keywords: Space ritual, archaeoastronomy, fertility, rock art, archeology, Trincheras tradition, Sonora, Mexico

Introduction

This paper aims to present the first observations on the symbolic elements of a ceremonial space located among large rocks that form a small enclosure with rock art (paintings and engravings) in the hill of La Calera or San José, an archeological site that is part of the area with rock art engravings and ritual spaces of Caborca region (Sonora, Mexico).

Caborca contains important assemblages of rock art engravings, like the hills of La Proveedora, La Calera, El Mójoqui, Cerrito Gastelum, San Fernando, El Mono Colgado, Potrero de Balderrama and Las Flechas, in Sierra El Álamo, which have been studied by different researchers (Hinton 1955; A. Quijada 1976, 1977; C. Quijada 1993, 2006; Carrico 1982; Ballereau 1985, 1987, 1988a, 1988b, 1991a, 1991b; Braniff 1985, Contreras and Quijada 1999; Villalobos 2003; Viñas and Arroyo 2008; Amador 2010; Amador and Medina 2013). This is a significant region for the knowledge about the rock art of Northwest Mexico.

The discovery of this new enclave was made during a *Visita arqueológica a los Estados de Sonora y Baja California*, in May 2007, organized by some members of the *Biodiversidad y sociedades cazadoras recolectoras del Cuaternario de México* project, led by the Institut Català de Paleoecologia Humana i Evolució Social (IPHES, Tarragona, España) and the Instituto Nacional de Antropología e Historia (INAH, México). The purpose of the tour was to find out about some of the rock art complexes located in La Proveedora, consisting of numerous rocks with engravings of human figures, animals, and geometric and astronomical elements.

Regarding the chronocultural affiliation of these rock art sets, the archeological record indicates that the region was occupied by the Trincheras tradition, which developed between 200 and 1450 AD (Braniff 1985; Villalpando and McGuire 2009). However, the different degrees of patina on the engravings and the evidence of re-engraved figures suggest an uncertain origin and, therefore, the possibility of different cultural authorship in the development of that graphical process.

The movements and relations with other groups in northwestern Mexico and southwestern United States, hunter-gatherer societies and societies with an early agriculture, like Cochise (pre-ceramic) Mogollon (600 BC–1400 AD), Anasazi (100 BC–1450 AD) Hohokam (800 AD–1400 AD), represent a complex mosaic of possibilities that will be analysed, as the archeological research progresses. The finding of projectile points from the Archaic period in La Calera (Villalobos 2003) should be noted.

Background

In 1890, Carl Lumholtz toured the basins of the rivers Magdalena, Altar, Concepción and Sonoyta and the region of El Pinacate and cited the presence of some sets of engravings in Papaguería (Lumholtz 1986). However, the first date on the rock art of La Calera corresponds to Thomas Hinton, who indicated the presence of engravings of human figures, animals, mazes and geometric elements and various terraces and different kinds of stone structures (Hinton 1955). Subsequently, Armando Quijada Hernandez addressed the issue and established the following areas: Proovedora I, II, III, Calera Norte, Potrero Balderrama and Puerto Blanco (A. Quijada 1976).

In 1974, A. Quijada systematized and described some of the rock art sets in the regions of El Pinacate, Tubutama, Trincheras, Cucurpe, Sonora river, Cumpas, Moctezuma, Bavispe river and Hermosillo, and conducted the first description of the petroglyphs in the Caborca region: La Proveedora and La Calera (Quijada Hernández 1976, 1977).

Years later, Richard Carrico explored part of the La Calera hill and recorded numerous engravings in the eastern and southern areas. The researcher noted the presence of the Trincheras tradition and linked the archeological sites with the rock art iconography of the Hohokam of Arizona (Carrico 1982).

Soon after, between 1981 and 1984, Dominique Ballereu conducted an inventory of the engravings identified in La Proveedora and La Calera. For the classification, two broad categories were proposed: biomorphic and geometric, among which were astral elements, like moons, stars and suns (Ballereau, 1988, 1991). In La Calera, there was noted the existence of terraces, stone structures, residential areas, and among the engravings, there stood out a possible atlatl, sticks, bows, arrows and *palos conejeros* (Ballereau *et al.* 1989).

Beatriz Braniff developed in 1985 the first systematic archeological work on the La Proveedora hill, designed to investigate the livelihoods of the last pre-Hispanic communities in the region. In her study, she presented a new typological classification for the engravings, separating realistic and figurative motifs from the abstract ones, with the following categories: anthropomorphic; hands and feet; zoomorphic; stars; frets; mazes; Phrygian caps; isolated elements and doodles. The researcher excavated in La Calera and linked the development of the Trincheras tradition to the rock art representations (Braniff 1992).

In early 2003, César Villalobos developed the *Manifestaciones Rupestres en la Proveedora*, Sonora project and his objectives focused on the development of 10 digital maps where were recorded archeological materials (petroglyphs, architectural structures, terraces, ceramic, shell, lithic artefacts and mortar bowls) with UTM coordinates. The record included: 1,331 rocks where there were 5,873 engravings, 152 terraces and four architectural structures (Villalobos 2003).

In 2010, Julio Amador published his work about constructive strategies, the symbolism of the landscape and the rock art in the hills of Trincheras. For this researcher ‘Los rasgos más destacados ... en el noroeste de Sonora son los asentamientos complejos asociados a las cuencas fluviales y a los cerros volcánicos’. On its slopes were recognized: ‘terrazas, senderos, grabados rupestres; en las cimas: observatorios con visibilidad a las llanuras y cerros aledaños, estructuras de muros con probable función ritual’ and in the adjacent plains metates and mortar bowls, rock art engravings and ‘grandes rocas alineadas, espacios colectivos de reunión, casas en foso, restos de herramientas líticas, artefactos de concha y algunas cerámicas diagnósticas’ (Amador 2010: 159).

According to Amador, the structure of the settlement fulfils the criteria of practice functionality, cosmological concepts expressed in cosmogonic schemes and a ritual logic. He considered the rituals of request for rain and the ritual hunt of deer, aspects that can be inferred on the basis of archeology, archaeoastronomy, rock art, ethnography and ethnohistory (Amador 2010).

Archeologists Elisa Villalpando and Randall McGuire studied the area of Cerro de Trincheras and set the frequency of the different phases and the characteristics of this northwest tradition, a complex built by terraces to locate households in the slopes of these reliefs and develop all kinds of activities. The authors noted that it was occupied during the period Prehistorico Tardío. It was a place where corn, beans, squash, cotton and agave were grown and that ended due to climatic changes or internal problems, or perhaps both factors. Its inhabitants returned to the initial stage of small farming communities scattered throughout the watershed. According to Villalpando and McGuire, in Cerro de Trincheras some 300 stone structures were recorded, rectangular and circular, attached to the walls of the terraces, and two architectural elements stood out, one at the base of the hill, known as La Cancha, and the other located at the top, called El Caracol, both with characteristics of a ritual type. The work of these researchers has permitted the profiling and classification of the major features of the Trincheras tradition, like the diagnostic ceramic, smooth, purple on red, purple on brown, polychrome altar (Villalpando and McGuire 2009). These cultural elements extend along the northwestern part of the Sonoran territory and gives rise to the name of the Trincheras tradition.

The *Visita arqueológica a la zona de Sonora* (2007) was the basis of our *Investigaciones prehistóricas en el Noroeste de México: Baja California Sur y Sonora* project. Among the initial comments, delivered in the technical report to the Consejo de Arqueología del INAH, were emphasized: ‘el descubrimiento de un conjunto de grabados y pinturas entre unos grandes bloques rocosos que forman un resguardo natural’ (Viñas and Arroyo, report INAH 2008 and Viñas 2007, report AECI).¹

More recently, Julio Amador and Adriana Medina published a paper about the ritual spaces, the symbolism of the landscape and the rock art of Cerro La Calera, which emphasize the concepts targeted in the work of Trincheras (Amador 2007). On the set of La Proveedora, wall structures over the tops and alignments of large rocks with engravings on the plains that have a fundamental ritual function stand out. As proposed, the authors believe that the human figures engraved represent ritual specialists in ceremonies associated with the request for rain and abundance, one aspect that

¹ The discovery of this site, subject of this paper, was held on 7 May 2007, by Ramon Viñas, César Quijada and Albert Rubio. The finding was discussed with the archeologist César Villalobos, who confirmed that the site with paintings and engravings was unknown. Shortly after a conversation with Adriana Medina, who was preparing an archeological project in the area, the situation of the site was indicated. Years later, the technical report of the project submitted to the Consejo de Arqueología del INAH said: ‘Cabe destacar que en nuestro recorrido de la ladera oeste descubrimos una covacha en las coordenadas UTM 381878 Este y 3392364 Norte a una altura de 255.6 msnm’ (Medina 2012: 52). The author noted the existence of 165 rock art representations inside the cave (Medina, 2012: 51).

is corroborated by the attributes, masks, headdresses and the cane prayer, elements that seem to be related to ritual practices (Amador and Medina 2013).

Image analysis and typological record

In the archeological visit to La Calera a series of photographs were taken and general aspects of the site were noted. However, due to a pending permission from INAH for a thorough site survey, we analysed the photographs obtained (Viñas and Arroyo 2007), using the Photoshop program to perform some digital tracings. We have also made image processing for the analysis of the paintings with ImageJ and DStretch plugin.

The information was classified on Excel tables with the description of each unit and in the following categories: humans, anthropomorphic figures, feet and hands, adornments, objects and artifacts, animals, undefined zoomorphs, vegetables or 'fitomorfos', astronomical elements, 'Cenefas y Grecas', mazes, structures, undetermined and remains.

Cerro de La Calera and the new ceremonial space

Cerro de La Calera is located in the Sonoran desert, about 10 km SW of the town of Caborca, a region bounded by the Sierra Madre Occidental and the Gulf of California, located southeast of the Reserva de la Biosfera del Pinacate y el Desierto de Altar (Fig. 1).

It is a small massif that rises above the plain of the Asunción river basin (267 m). The hill, elongated and oriented NW–SE, with dimensions of about 2 km long and 600 m wide, is part of the rock art core of La Proveedora, La Calera and many hills to the west (Villalobos 2003).

The hill of La Calera is composed of granite outcrops of volcanic origin. These rocks, which present blackish patina, accumulate on the slopes and at the base of the hills where there are thousands of engraved figures, divided into four sectors, the west, north, east and south slopes. Undoubtedly these constitute the testimony of a worldview linked to the archeological evidence found in the area: stone structures, residential and ceremonial, fixed metates, cup marks, terraces and an esplanade called La Plaza, of ritual character associated with the Trincheras tradition (Fig. 2).

According to Amador and Medina (2013), La Calera responds to an 'arquitectura de espacios colectivos'. About the cited plain, Amador said: 'la distribución de los grabados está en función de la estructura de plaza elipsoidal que parece haber sido construida ex profeso para fines rituales y de eventos comunitarios' (Amador 2010: 134). In his description, he emphasizes an alignment of large engraved rocks that form a spiral that borders the plain of 50 x 60 m and that forms a sounding box that facilitates hearing in the area.

Amador believes that the sites show a long occupation since the Archaic period and indicates dates between 200 AD and 1450 AD, for seasonal camps associated with the harvest and groups for temporary agriculture (Amador 2010: 149).

The enclosure and the panels

The new cave-shaped ceremonial space (273 m) is located among the large rounded blocks of the western slope, more specifically between 'La Plaza' and the most significant engraved rocks of this strand, about 200 m of the plain (Fig. 3).

The interior of the enclosure projects an irregular plan of a roughly square shape of about 3 m x 4 m. According to the log, the representations are divided into four areas with five panels that occupy different points. Panel I occupies the bottom of the enclosure, where the paintings are. Panels II, III and IV cover the side blocks that form the walls of the cavity, and Panel V is on the floor, leaving free

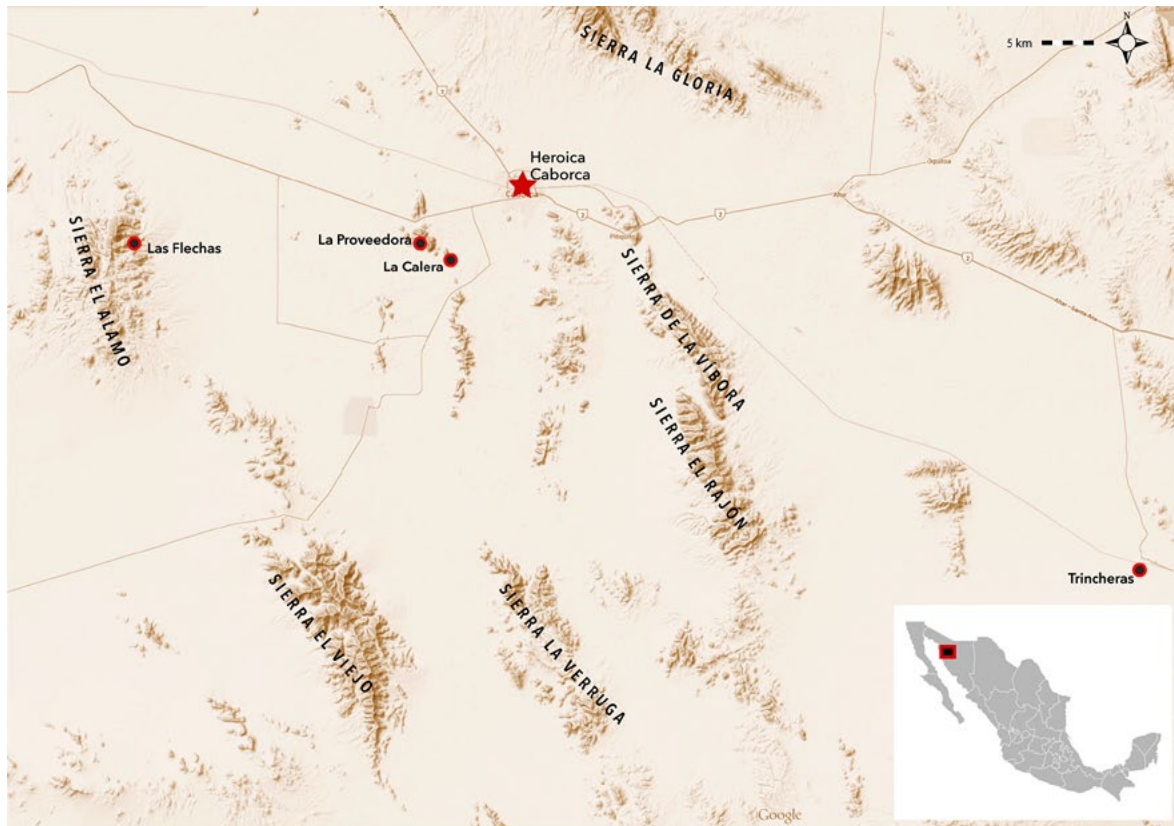


FIGURE 1. SITUATION MAP AND VIEW OF THE HILL OF LA CALERA, NEXT TO LA PROVEEDORA (PHOTOGRAPH, CÉSAR QUIJADA).

the western zone, from where is possible to access the area (Fig. 4). Besides these murals, there were recorded three blocks with engravings, three other with cup marks and mortar bowls, one rock with remains of pigment and one group of engravings on the outside. In total, the ceremonial enclosure has 177 elements and 13 engravings on the outside.



FIGURE 2. BLOCK WITH HUMAN FIGURES, ANIMALS AND GEOMETRIC ELEMENTS OF THE LA CALERA ROCK ART SET (PHOTOGRAPH, ALBERT RUBIO).



FIGURE 3. WEST SLOPE OF THE HILL OF LA CALERA, WHERE IS LOCATED THE CEREMONIAL ENCLOSURE (PHOTOGRAPH, CÉSAR QUIJADA).

The provisional inventory is as follows.

Panel	Technique	No. of elements	Block	Techniques and representations	No. of elements
I	Paintings	32	I	Engravings	6
II	Engravings	33	II	Mortars, cupmarks and groove	8
III	Engravings	8	III	Cupmarks	12
IV	Engravings	42	IV	Engravings	4
V	Engravings (on the floor)	26	V	Engravings	1
Total		141	VI	Mortars and cupmarks	4
				Pigment remains	1
			Total		36

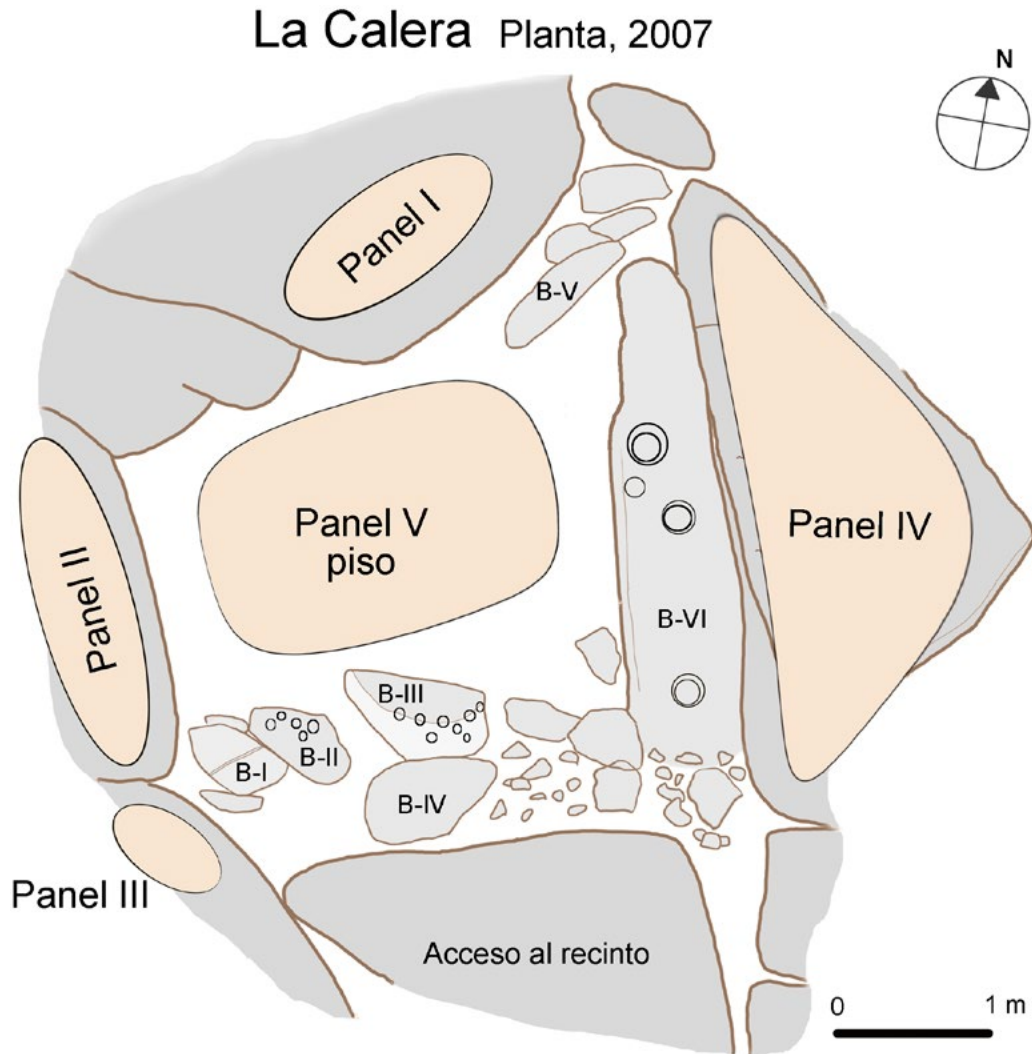


FIGURE 4. PROVISIONAL SKETCH OF THE LA CALERA CEREMONIAL ENCLOSURE.

Results

From the field notes and photographic analysis, we conducted an initial assessment of the material and created a database where we have classified: 32 units painted in red colour, half being just a few remains; 109 engravings on the sidewalls; 11 engravings on blocks; 3 mortar bowls on blocks; 18 cup marks and one groove on block. In total, the enclosure shows a minimum of 177 units, in which the painted panel stands out (Fig. 5).

The general features of the enclosure include: the location of paintings and engravings inside a cavity, between 'La Plaza' and the engraved blocks; the orientation of the enclosure to the SW; and the spatial characteristics, quadrangular aspects, suggesting a link with cardinal directions and astronomical aspects.

The engravings

The engravings, distributed in the side blocks (Panels II, III and IV) and the enclosure floor (Panel V) correspond to the same style of the outer rocks. Among the human figures, three examples of the round head and outer circle prototype stand out, in a position of bent and raised left arm, and the

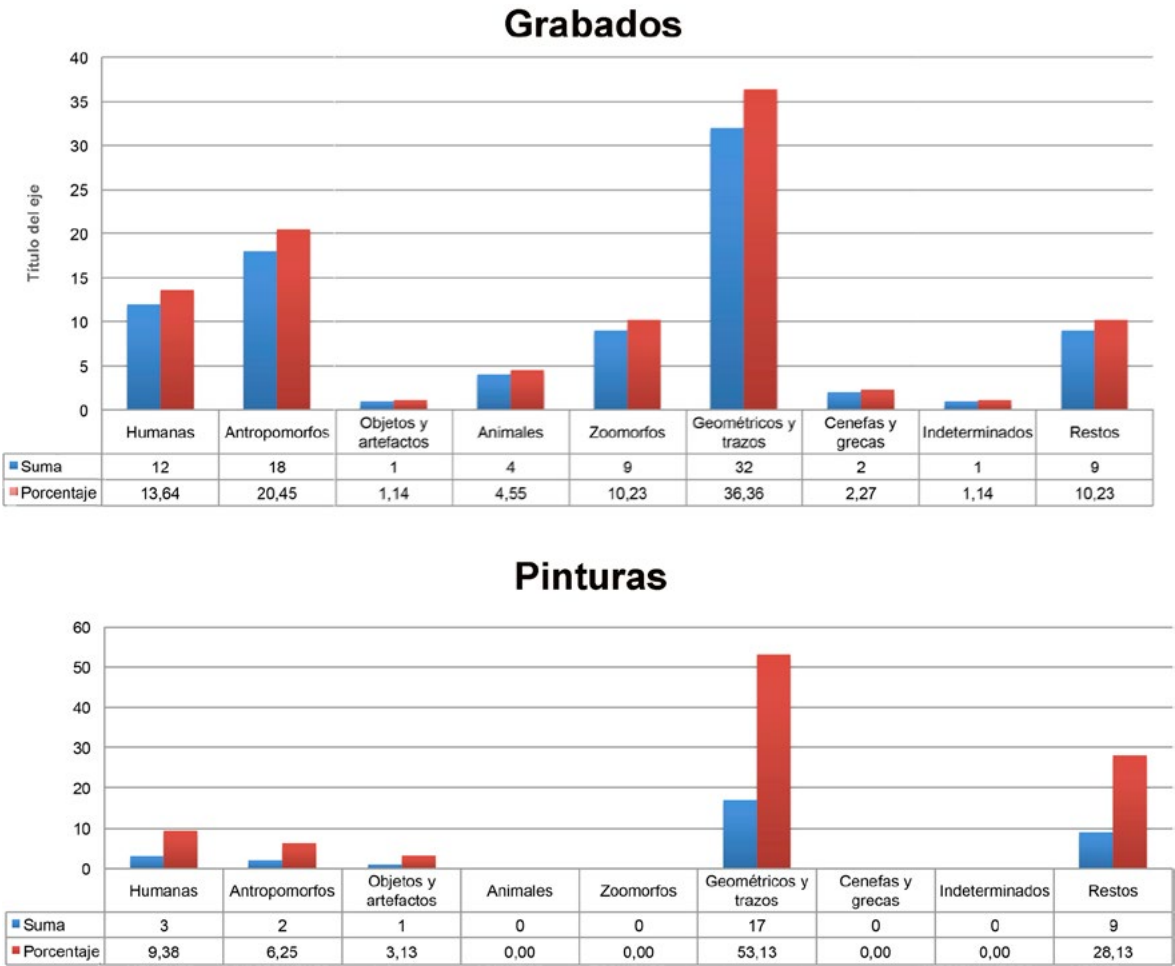


FIGURE 5. COMPARISON AMONG CATEGORIES OF PAINTINGS AND ENGRAVINGS OF THE CEREMONIAL ENCLOSURE. CAN BE NOTICED THE PREDOMINANCE OF THE GEOMETRIC ELEMENTS.

right on the hip. One of these figures, perhaps a ritual specialist, shows curved spokes on the circle of his head; holding two tools, including a possible ceremonial rod (Fig. 6). Moreover, a female representation with two circles as an ear, and a child with her in Block IV were located. Beyond these figures are several anthropomorphs and a human-lizard.

Among the animals, we documented a dog, various quadrupeds and a couple of deer, with belly indicated but not bulky, and, within the geometric elements: concentric circles, vertical zigzags, ‘S’, the C or double caudate imbricated, borders with triangles or concentric diamond shapes and undulating traces. In general, symbols related to water to propitiate the rain were evoked (Figs. 7 and 8).

Note that the engravings located on the concave and rocky part of the floor (Panel V) are partially covered by stripes of ochre colour that hinder the vision. This tone seems to come from some liquid spilled during rituals, or caused by leaks that would permeate and go over the drawings during the rainy season (Fig. 8).

We identified two techniques in the engraved figures: percussion or ‘piqueado’ (indirect and direct) and abrasion. The former provides sharper images while the latter are poorly defined and have a vague outline.



FIGURE 6. POSSIBLE CEREMONIAL RITUAL SPECIALIST WITH A ROD AND FEMALE FIGURE WITH HEADDRESS AND WITH A CHILD (PHOTOGRAPHY, ALBERT RUBIO).



FIGURE 7. REPRESENTATIONS OF THE PANEL IV, ON WHICH STANDS OUT HUMAN FIGURES AND GEOMETRIC ELEMENTS (PHOTOGRAPH, ALBERT RUBIO).



FIGURE 8.
REPRESENTATIONS OF
DEER AND GEOMETRIC
ELEMENTS, ENGRAVED
INSIDE THE ENCLOSURE
(PHOTOGRAPH,
ALBERT RUBIO).

The paintings

Regarding the pictorial representations located in Panel I, provisional analysis indicates that, prior to or synchronously, three geometric units were engraved: a circle, a concentric circle and a vertical zigzag. Around them, 32 figures were painted in red colour, currently covered by a thin clay layer, similar to Panel V. The photographic analysis indicates that inside the grooves of the concentric circle there are traces of red pigment, an observation that should be confirmed in future studies.

This panel is chaired by three particular figures. The third is eroded and imprecise. The first is an anthropomorph form of double line, with concentric circles. The second, on the right of the engravings, shows a mythical or supernatural character, with a semicircular head showing horns and a schematic body formed by a shaft and a zigzag or maybe a diamond shape. Beside it, is possible to distinguish the third one, made by double trace, slightly triangular head, headdress forming two protrusions like horns, straight and stylized body, and hands and feet inverted, V-shaped. Under the hands we see a vertical zigzag line and a pair of curved lines. On the head, consecutive small lines are noted (Fig. 9).

The panel is completed by a number of simple and schematic anthropomorphs, various vertical lines, a serie of circles, a double line with traces ascending to the left side, undetermined elements, various remains and a vertical trace with a circle on the upper end thereof, similar to that displayed on the heads of the three main characters of the outer block, and described by Ballereau (1988) as an 'elemento horizontal puntiagudo, provisto de una masa', apparently a ceremonial rod. In all these figures the technique is the profiling and the flat colour.

The blocks

Nos. III and VI stand out among the six blocks, the first located at the entrance of the enclosure with a series of small cup marks on the top edge and adjacent areas. In our opinion, these small perforations should exercise the function of markers or solar indicators for determining specific dates (Fig. 10). The second, attached to the right end of the enclosure, has elongated and narrow morphology, containing several fixed mortar bowls. It seems that this block was worked, levelled and installed with the support of other rocks (Fig. 11).



FIGURE 9. CHARACTERS OF THE PANEL I. DIGITAL PHOTOGRAPH AND IMAGE TREATMENT BY DSTRECH (PHOTOGRAPH, ALBERT RUBIO).



FIGURE 10. BLOCK III. SMALL CUPMARKS ARE OBSERVED IN THE UPPER EDGE OF THE BLOCK AND THE PROJECTION OF SUNLIGHT (PHOTOGRAPH, ALBERT RUBIO).



FIGURE 11. BLOCK VI, WITH PRESENCE OF FIXED MORTAR BOWLS (PHOTOGRAPH, RAMON VIÑAS). ANOTHER BLOCK WITH TRACES OF PIGMENT, POSSIBLY USED FOR MAKING PAINT, WAS ALSO RECORDED.

Discussion

Most researchers agree in granting a ritual character to the La Calera rock art. Amador (2010) proposed that the manifestations are related to the request for rain and the ritual hunt of deers. While we agree with this interpretation, we would insist on other aspects, that assume the deer as an entity linked to the sun among North American groups. In the enclosure, we have noted the presence of two deer facing west, which could represent the subject of ritual hunting and also the intermediary or solar personification that would be consumed to commune with the deity and seek abundance of goods (Viñas and Saucedo 2000; Viñas and Rosell 2009; Viñas 2013).

On other hand, Block III marks an interest in the path of sunlight, though inside we did not observe any clear representation of the sun, except for the presence of other linked geometric signs, or the presence of two marked deer.

Conclusions

Observations on the rocky enclosure point to a complex ceremonial site that reinforces the symbolic content of the site and of the hill itself, which we interpret as an abode of supernatural forces; a space for congregation and cohesion, intended to carry out requests, festivals and ritual dances.

The content of the rock art evokes the symbolism of the wind, clouds and water, which are associated with the expression of spirits conducive to rain, like the lightning snake, and which are assistants of the ritual specialists (vertical zigzags, diamond-shape elements, wavy lines, 'S', human-lizard, etc) (Underhill 1948; Schaafsma 1980; Wittley 2000; Amador 2010; Viñas 2010).

In our opinion, the enclosure was an excellent location for astronomical observation, as Block III indicates, that probably allowed the annual screening of the sun. Moreover, the view from the site, facing west, is broad and with the hills presents an interesting celestial horizon for the start of the summer solstice, which heralds the rainy season, and is useful for recoring the positions of certain constellations overnight.

In conclusion, it is a cavity that served as a centre for the request for rain, broadly linked to fertility and other ritual celebrations, and inhabited by supernatural forces. However, there are still many

issues to be resolved in the archeological research on La Proveedora and La Calera, due to the vastness of the territory and the collection of rock art and to the different types of ceremonial evidence and archeological sites, with which shall be established the periodization of the occupations and affiliations of the prehistoric authors, complex issues that require lengthy projects with interdisciplinary teams and extensive resources.

Bibliography

- AMADOR, Julio 2010. 'Estrategias constructivas, simbolismo del paisaje y arte rupestre en los cerros de trincheras del noroeste de Sonora', *Anales de Antropología* Vol. 44, Instituto de Investigaciones Antropológicas, UNAM, México, 159-193.
- AMADOR, Julio y MEDINA, Adriana 2013. '*Espacios Rituales, Simbolismo del Paisaje y Arte Rupestre en los Cerros de Trincheras del Noroeste de Sonora. Estudio de Caso: el Cerro San José*'. IFRAO 2013 Proceedings, American Indian Rock Art, Vol. 40. American Rock Art Research Association, 2013, 841-870.
- BALLEREAU, Dominique 1987. A complete survey of petroglyphs from cerros La Proveedora and Calera, Sonora. *San Diego Museum Papers* 5 (23), 95-112.
- BALLEREAU, Dominique 1988. 'El arte rupestre en Sonora: petroglifos en Caborca', *TRACE*, No. 14, Centro de Estudios Mexicanos y Centro Americanos, México.
- BALLEREAU, Dominique 1989. 'Discovery of a Petroglyphs Panel in a Valley of the Sierra El Alamo, Sonora, Mexico', *L'Anthropologie*, Vol. 93, No. 2, 605-613.
- BALLEREAU, Dominique 1988a. Les représentations anthropomorphes du cerro Calera (Sonora, Mexique). *L'Anthropologie*, Vol. 92 (1), 317-360.
- BALLEREAU, Dominique 1988b. 'El arte rupestre en Sonora: petroglifos en Caborca', *Trace*, Decembre, No. 14, Centre d'études mexicains et centroaméricaines, México.
- BALLEREAU, Dominique 1991. 'Lunas crecientes, soles y estrellas en los grabados rupestres de los cerros La Proveedora y Calera (Sonora, México)', *Arqueoastronomía y etnoastronomía en Mesoamérica*, UNAM, México.
- BRANIFF, Beatriz 1985. *La Frontera Protohistórica pima-ópata en Sonora, México. Propositiones arqueológicas preliminares*. Universidad Nacional Autónoma de México, UNAM (tesis doctoral).
- CARRICO, Richard 1983. A preliminary report on the petroglyphs of cerro Calera, Caborca, Sonora. *Rock Art Papers* 1 (16), 81-93.
- HINTON, Thomas 1955. 'A survey of archeological sites in the Altar Valley, Sonora', *The Kiva*, vol. 21, Nos. 3-4: 1-12.
- LUMHOLTZ, Carl 1990. *New Trails in Mexico*, Southwest Center Series, University of Arizona Press, Tucson.
- MEDINA, Adriana 2012. Informe Técnico del Proyecto Arqueológico: Los grabados rupestres en el complejo cultural 'La Proveedora' el cerro San José o la Calera, August 2012, México DF. 97.
- MESSMACHER, Miguel 1981. *Las Pinturas Rupestres de La Pintada, Sonora. Un enfoque metodológico*. Departamento de Prehistoria, Instituto Nacional de Antropología e Historia, México.
- ORELLANA, Rafael 1953. 'Petroglifos y pinturas rupestres de Sonora' *YAN* (Organo del Centro de Investigaciones Antropológicas), No. 1, 29-33.
- QUIJADA, César 1993. 'Petroglifos, pictografías y geoglifos de Sonora', *XVI Simposio de Historia y Antropología de Sonora*, Vol. I, Instituto de Investigaciones Históricas, Universidad de Sonora, Hermosillo, Sonora, México, 1-27.
- QUIJADA, César 2006. 'Los petroglifos del noroeste sonorense', *Los petroglifos del norte de México*, Instituto Nacional de Antropología e Historia y Dirección de Investigación y Fomento de Cultura Regional, México, 105-114.
- QUIJADA, H. Armando 1976. 'Arte Rupestre en Sonora'. *Primer Simposio de Historia de Sonora*, Instituto de Investigaciones Históricas, Universidad de Sonora, México, Sonora, Hermosillo. 433-455.
- QUIJADA, H. Armando 1977. 'El camino de los petroglifos'. *Segundo Simposio de Historia de Sonora*, Instituto de Investigaciones Históricas, Universidad de Sonora, México, Sonora, Hermosillo.

- SCHAAF SMA, Polly 1980. *Indian Rock Art of the Southwest*, University of New Mexico, Albuquerque.
- UNDERHILL, Ruth 1948. *Ceremonial Patterns in the Greater Southwest*, Monographs of the American Ethnological Society, J.J. Augustine, New York.
- VILLALOBOS, César 2003. Informe proyecto arqueológico de grabados rupestres en la Proveedora, Sonora, March–April 2003, Centro INAH Sonora.
- VILLALPANDO, María E., and MCGUIRE, Randall 2009. *Entre muros de piedra: La arqueología del Cerro de Trincheras*. Proyecto INAH Trincheras, Instituto Sonorense de Cultura, Programa Institucional Trincheras, INAH, Centro INAH Sonora, México, Sonora, Hermosillo.
- VIÑAS, Ramon y ARROYO, Joaquín 2008. Informe: Visita a conjuntos arqueológicos en los Estados de Sonora y Baja California Sur, México 2008.
- VIÑAS, R. 2010. 'Cueva de los Músicos, Sierra de San Francisco, B.C.S., México: An interpretative proposal/La grotte de los Músicos, Sierra de San Francisco, BCS, México: Une proposition d'interprétation'. *INORA International Newsletter on Rock Art*, No. 57 Foix, France, 23-30.
- VIÑAS, Ramon 2013. *La Cueva Pintada. Proceso evolutivo de un centro ceremonial, Sierra de San Francisco, Baja California Sur, México* (tesis doctoral), Monografies 9, SERP, Seminari d'Estudis i Recerques Prehistòriques, Universitat de Barcelona, 481.
- VIÑAS, R., and ROSELL, J. 2009. 'Las representaciones rupestre de fauna de Cueva Pintada: los cérvidos (Baja California Sur, México)'. *ARQUEOBIO*S, Centro de Investigaciones Arqueobiológicas y Paleoecológicas Andinas, No. 3, Trujillo, Perú, 88-103.
- VIÑAS, R. and SAUCEDO, E. R. 2000. 'Los cérvidos en el Arte Rupestre postpaleolítico'. *Cuaderns de Prehistòria i Arqueologia Castellonense*, Servei d'Investigacions Arqueològiques i Prehistòriques, No. 21, Castellón, 53-68.
- WHITLEY, David S. 1998. *The Art of the Shaman*, University of Utah, Salt Lake City.

The Rock Art of Indo-European Cultures: Concordances, Logics and Possible Common Values

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Abstract

After more than two centuries of debate on Indo-Europeans, today we are more or less at a stationary point: the updated intersection of linguistic, genetic, mythographic and especially archeological data have recently erased any remaining doubt about the source in the North Pontic steppes of the original ethnic and cultural nucleus of the Indo-Europeans. It is therefore possible to link the gradual thematic and symbolic evolution of rock art and draw a parallel with the Indo-Europeanization of the different areas involved. The Euro-Asian contexts, from the third to the early second millennium BC, in fact, show undeniable convergences, with the growing focus on weapons and warriors, circular shapes, some zoomorphic figures and carts, tools and structures. With all necessary caution, these thematic characteristics seem to compose an extensive ideological set which occurs throughout the same time-stages and in the same areas of the great Indo-European expansion, a set with deep regional developments that converges with what is revealed by the ritual, essentially funeral, customs of the corresponding archeological cultures. This paper exemplifies this premise, taking into consideration the symbolic value of some major rock art themes in alpine, Nordic and Caucasian-Central Asian areas during the Bronze and Iron Ages.

After more than two centuries of debate on the existence, origin and history of Indo-Europeans, today we are more or less stationary: the updated intersection of linguistic, genetic, mythographic and especially archeological data has erased any remaining doubt about the origin of the ethnic and cultural nucleus of the Indo-Europeans in the steppes. Most specialists consider this thesis to be ascertained. Among others, the recent, rigorous *status quaestionis* of Lebedynsky (2011) and Haudry (2001), the genetic analysis of the Cavalli-Sforza group (Cavalli-Sforza *et al.* 2001, on the R1a haplogroup of the Y chromosome), and the progress in archeology and comparative linguistics (Haudry 2001, Martinet 1987, Villar 1997) disprove Renfrew's (1988) Balkan-Anatolian thesis and the more fanciful Middle Eastern, Northern, Paleolithic and Indian ideas.

Basically the main lines traced by Gimbutas (1980) and by Mallory (1989, 1997) and Dexter *et al.* (1997) are confirmed, as well as at least some of those drawn by Dumézil: their work, too quickly and ideologically blacklisted, now looks like more than pioneering in view of the current data. The result is the historical presence of a culture, or better a unitary cultural sequence, which holds the Indo-European key features, a matrix which, with varying degrees of development, replicates in a three-millennial process.

Rock art, has been little considered so far even by its own researchers, since they are on hold on the whole Indo-European (IE) *quaestio*. Recognition should, however, be given to Anati for his early intuitions about the Indo-Europeanism of the stelae phenomenon (Anati 1986) and to central Asian colleagues for a constant natural tendency to link the prehistoric rock art of the area to Indo-Europeanization, including interesting parallels with what is testified by the oldest sources (especially Veda and Avesta) and the local shamanic traditions (Samašev 1992, Martinov *et al.* 1992, Rozwadowsky 2004). I think it is time to fill this gap with a wide synthesis of assessments on Euro-Asian contexts, which show indubitable thematic and symbolic convergences starting at the beginning of the third and the early second millennia BC.

In fact, prehistoric rock art from the Chalcolithic to the Iron Age shows a progressive and changing focus on weapons and warriors, circular shapes, some zoomorphic figures and carts, tools and

structures, proceeding towards a proportional, realistic representation, with an individualistic and personalizing tone becoming more and more evident.

And while man (often ithyphallic) and his role are widespread, the female figure, when recognizable, is progressively marginalized, confined to a few areas, such as the scenes of coupling (*topos* of the importance of a male role) or worship and the feminine itself seems transposed into symbolic elements. The disarmed male figures, especially of orant type, have at the same time a strong ritual emphasis.

This imperfect summary, deliberately beyond the regional peculiarities and the related continuation or addition of traditional lines, gives us the picture of a very different world from what we see in the Neolithic iconography. Here is a world ideologically ruled by masculine values in all their aspects: we see the warrior, the hunter, the driver of carts and ships, the ploughman, the shepherd, the craftsman in the products of his art, the procreator in the act of fertilizing, the orant, the priest or the god that connects every aspect of creation.

Alongside, we see wild animals in the mythical world of the hunter, with a widespread emphasis on male deer, and among the domestics the purely male horse, then birds (typical of the western regions) that are related to the celestial and probably funerary symbolic dimension. At the top of stelae we can find rounded, pointed or cruciate discs in close connection to male figures. Furthermore, the scenes show the typically Chalcolithic frontal, vertical, ascending view of the stelae, which also possibly possesses a phallic symbology. And these themes seem to make up an extensive ideological set which occurs throughout the same time-frames and in the same areas of the great Indo-European expansion, a set that converges with what is revealed by the ritual, essentially funeral, customs of the corresponding archaeological cultures.

It follows a logical parallel with the linguistic, symbolic-religious and paleogenetic research, including first and foremost the macroscopic phenomenon of hybridization and regional particularization in the dynamics of the phases, which occur in all the considered areas. And it happens so clearly that we may miss the phylogenetic dynamic that joins them all.

The linguistic studies, despite the large, complex, open-ended problems, now appear more mature and relevant. They have identified so far a phonology, a lexicon and a clearly Indo-European inflectional morphology of a branched development along four stages (Lebedynsky 2011, Haudry 2001): first, the original, undivided version of indefinable, but at least Chalcolithic date (between the fourth and the early third millennium BC); second, the previous version, based on the bifurcation of the Anatolian languages (and perhaps the Tocharian, from the early second millennium BC or earlier); third, the “mature Indo-European” (West 2007); fourth, the classic version reconstructed on the basis of historical languages.

The archeological structure directs this vision. Rock art gives similar results: if, borrowing the language method, we try to identify radicals (themes), suffixes (declination of the themes) and basic morphology, we find well-known similarities which are normally attributed to simple dialectic intercultural and multifaceted exchanges. Reticular dialectic, certainly true, but if the Indo-Europeanization is a reality – and it is – these concordances should be read as an ideological source centre of Chalcolithic age, which won the entire European continent and Central Asia in waves over a period of at least three millennia. The problem is to understand which are the authentic radicals and which the morphology, a complex operation that requires data from parallel disciplines and the courage of a broad vision, extremely difficult in nowadays’ general sectorial analytical trend.

According to Meillet (1922), a term can be considered of IE origin if it appears in at least three distinct branches of the IE languages, which have to be non-contiguous and isolated, i.e. without the possibility of horizontal transmission. Applying this approach to rock art would certainly gain valuable information, but also considerable reliability problems, given the very selective (limited)

number of rock art themes, the logic of symbolic language and the sharing of various ideograms over multiple cycles. On the other hand, in certain cases the same phenomenon for which the Chinese ideogram *hanyu* can be understood may be found in an identical way, but read differently in each of the ten Chinese linguistic cultural groups. In rock and associated iconography, a broader response is needed. The research should not be limited to the individual subject, but must include the morphologic set and the organic overall ensemble of different contexts. Tracking down the lowest common denominator can be a solid foundation in reconstructing the original ideological matrix.

The primary phenomena are the stelae/engraved boulders dating to the Chalcolithic (third millennium BC), typical of the territory from the Alps to the Ukrainian steppes, which shows a greater adherence to the symbolism of weapons. This topic is too complex to be fully discussed here, so I will just mention the rupestrian locations of the late fourth millennium BC (Valcamonica, Mount Bego, French Midi, Wartbergkultur area) and the strong presence of an different tradition in the Western Atlantic context (from the late fourth millennium until the Bell-beaker culture), albeit with special enclaves (Galicia).

The first engravings of this type appear in the Caucasus-Kazakh area at least at the end of the fourth and the beginning of the third millennium BC, but the phenomenon of rock art is paramount during the Bronze Age. On the heels of the Bell-beaker culture, with a peak around the middle of the second millennium BC, all the major European regions were involved in this change (with greater resistance in west Rhine regions and the British islands).

Between the end of the Early Bronze and the beginning of the Middle Bronze Age (or EBA2–MBA1, in central European terminology around the 12th to the 15th centuries BC) we see the first peak of expansion, with significant rupestrian evidence in South Scandinavia, the Iberian Peninsula, the Alps and Central Asia, with likely influences as far as the central Sahara (early phase of the Garamantes, with carts and horses in flying gallop). Some of the subjects become dominant and grow continuously, with progressive regional changes, up to the second peak, around the Late Bronze Age (from the 12th century BC) to the beginning of the Iron Age (from the ninth century BC) and throughout the following period until historical times. The conference in Tanum in 2012 highlighted the common themes and common cultural basis between the central Alps and Scandinavia; there was a particularly interesting prevalence in both the considered areas of the representation of weapons and discs in the early stages of the Nordic Bronze Age and the coeval EBA2–MBA1 of the central Alpine area. Moreover, a parallel emphasis on armed men and a related iconographic set have also been identified: two- and four-wheeled carts, ploughing, footprints, orants and big-handed figures, scenes of coupling, schematic signs and so on.

The Iberian Peninsula has clear evidence of a Chalcolithic development starting from the lines emerging during the megalithic tradition of the local Neolithic, with a strong localized intrusion of new concepts, especially in the eastern area. The Galician weapons (daggers, halberds, axes) engraved in a context that places great emphasis on circular shapes (concentric disks, spirals), idols, deer/stags and perhaps the first squares (topographic?) are specially interesting. Later, during Bronze Age 1 and 2, circular forms, weapons and deer continue, with additions in Bronze Age 3 and the Iron Age of horses, horsemen, chariots, mazes, paddles, footprints and swastikas, with initially absent and therefore very rare anthropomorphic representations (Peña Santos, Rey Garcia 2001).

Expanding the dialogue with the fourth largest rock art area of the Bronze Age and early Iron Age, i.e. the Central Asian region, we notice even in a brief overview (considering the diversity of contexts, from the North Caucasian to the Altai) the emergence of the same main subjects: two- and (rarer) four-wheeled carts, discs with radial or other type of interior decoration, warriors, orants with raised or orthogonal arms, including many ithyphallic men and big-handed figures, scenes of coupling, schematic signs; huge prominence is given to animal figures, especially deer, horse and the wild goat with long, curved horns. Among the warriors there is an absolute prevalence of archers, mostly

in hunting scenes, but there are also figures with swords, maces and spears; shields and unheld weapons are rare, while duellists and raiders are well represented and very significant. As in Alpine and Scandinavian areas, choral scenes are frequent and tend to be associated in standard modules.

These four rupestrian contexts are very clearly characterized, being the result of different histories and environments, but the background and the ideological root are similar; this original seed provides the Uranic and warrior hero clichés that the archeological record and the historical religious data remind us are the fundamental IE characteristics. This is a cultural root that, in line with the most recent acquisitions, coincides very little with the ethnic factor and even with the language: the area of Valcamonica and Valtellina expresses, for example, non-IE languages and the same can presumably be said for of the first inscriptions the central Sahara.

Epistemological conclusion

Following Meillet's rule, even with the above limitations, may open up new research frontiers, which will be variously extendable to other smaller continental contexts. These are the few, simple rupestrian radicals, which can find countless parallels outside the IE space and time when taken in isolation but which, if morphologically considered as a whole, as a set of context, certainly offer new insights on the theme.

There is no place here to give other significant details (work in progress), only to initialize the problem, so I am already taking for granted the severe criticism of many colleagues. On such a broad topic the call is to open up wide-ranging research, not with a single disciplinary perspective, but in a fleet with all the parallel and convergent others. It is in praise of synthesis, the result of myriad analyses, which we must have the courage to embrace: this is not an optional but a primary task of the historical and human sciences.

This text integrates and revises what has already been presented in the article: Reflection on European and Central Asian rock art in the Indo-European framework. XXV Valcamonica Symposium 2013, Capodiponte, Italy.

Bibliography

- ACTES Valcamonica Symposium XXI-XXIV 2004-2011. Capodiponte: Edizioni del Centro.
- BCSP Bollettino del Centro Camuno di Studi Preistorici, collana 1-36 (1964-2010). Capodiponte: Edizioni del Centro.
- ABELIN, D. 2000. Tidsräkning och myter i bronsålderns hällbilder, Hällristningsrapport 4. Dals Långed: Ask & Embla hb.
- ANATI, E. 1968. Arte Rupestre nelle regioni occidentali della Penisola Iberica. Archivi di Arte Preistorica, 2. Capo di Ponte: Edizioni del Centro.
- ANATI, E. 1982. I Camuni: alle radici della civiltà europea. Milano: Jaca Book.
- ANATI, E. 1990. The alpine menhir-statues and the Indo-European problem. In BCSP 25-26, Capodiponte: Edizioni del Centro.
- BAIPAKOV, K. M.; MARIYASHEV, A. N.; POTAPOV, S. A.; GORYACHEV, A. A. 2005. The Eshkiolmes Rocks' petroglyphs: Academia Almathy.
- BAIPAKOV, K. M.; MARIYASHEV, A. N. 2008. Petroglyphs of Bayan Zhurek: Academia Almathy.
- BAPTISTA, A. M. 1981. A Rocha F-155 e a origem da arte do Vale do Tejo, Porto: GEAP.
- BATATA, C. E.; GASPAR, F. 2011. Trabalhos arqueológicos desenvolvidos na mamoa VI de vilares e nos painéis de arte rupestre de Bregada, Unhais-o-Velho, Pampilhosa da Serra, Portugal. Açafa On-line, 4. Associação de Estudos do Alto Tejo, Vila velha de Ródão.
- BÉCARES PÉREZ, J. 1994. Las representaciones de carros de Los Buitres (Capilla, Badajoz) en la cronología del Arte Esquemático típico. Salamanca: Zephyrus.
- BENGTTSSON, L. 1995-2009. Arkeologisk rapport från Vitlycke Museum n. 1, 2, 3, 4, 6, 7. Tanum: Vitlycke Museum.

- BENGTTSSON, L. 2004. Cup marks of the common people, images of the elite. In Milstreu, G., PRØL, H. (eds) Prehistoric pictures as archaeological source. Varde: Gothenburg University. pp. 167-177.
- BENGTTSSON, N. 2001. Att leva på hoppet. Om viltgöror, kvinnliga kultutövare och den röda tråden. In Adoranten 2001, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- BERGMANN, J. 1971. Urgeschichte Frühgeschichte. Kassel: Hessischen Landesmuseum.
- BERTILSSON, U. 2004. Rock Art of the Northern Hemisphere – Scandinavia, Finland and Russia – Cultural Context, Chronological Implications and Major Traditions, in The Future of Rock Art-a Word Review, Stockholm Rapport från Riksantikvarieämbetet 2004:7. pp. 66-88.
- BERTILSSON, U.; MCDERMOTT, L. 2004. The Future of Rock Art-a Word Review, Stockholm Rapport från Riksantikvarieämbetet 2004:7.
- BETTENCOURT (*et al.*) 2004. The rock engravings of Penedo do Matrimónio in Campo de Caparinho, Vilar de Perdizes, Montalegre (Northern Portugal). ADECAP.
- BOYER, R. 1991. L'uomo indoeuropeo e il sacro, in Ries, J. (cur.) Trattato di Antropologia del Sacro. Milano: Jaca Book.
- BURENHULT, G. 1980. Götalands Hällristningar, Del 1 Theses and papers in North European Archaeology 10. Stockholm.
- CARANCINI, G. L.; PERONI, R. 1999. L'età del Bronzo in Italia: per una cronologia della produzione metallurgica. Perugia.
- CASINI, S. 1994. (cur.). Le pietre degli dei. Menhir e stele dell'età del Rame in Valcamonica e Valtellina. Bergamo: Comune di Bergamo, Civico Museo Archeologico. Catalogo.
- CAVALLI-SFORZA, L.; EDWARDS, A.; AMMERMAN, A. J.; MENOZZI, P. (*et al.*) 2001. Le radici prime dell'Europa. Gli intrecci genetici, linguistici, storici. Milano: Bruno Mondadori editori.
- CELESTINO PÉREZ, S. 1990. Las estelas decoradas del S.W. Peninsular. Cuadernos Emeritenses, n. 2. MNAR, Mérida.
- CHIODI, C.; MASNATA, E. 2004. Incisioni rupestri tra età del Rame ed età del Bronzo sulle rocce 4 e 22 di Foppe di Nadro. In Notizie Archeologiche Bergomensi, NAB 12. Bergamo: Comune di Bergamo, Museo Archeologico.
- COIMBRA, F. A. 1999. A suástica do Castro de Guifões e alguns paralelos europeus, in Matesinus 3. Gabinete de Arqueologia e História de Matosinhos.
- COIMBRA, F. A. 2004. As gravuras rupestres do concelho de Barcelos (Portugal). Subsídios para o seu estudo. Anuário Brigantino 27. Arquivo e Biblioteca Municipais de Betanzos.
- COIMBRA, F. A. 2013. RUPTEJO: Arqueologia Rupestre da Bacia do Tejo. Arte Rupestre da Idade do Bronze e da Idade do Ferro na Bacia Hidrográfica do Médio/Alto Tejo Português. Síntese descritiva. Arkeos 35. CEIPHAR, Tomar: 163 pp.
- COLES, J. 1990. Images of the past. A guide to the rock carvings and other ancient monuments of Northern Bohuslän. Uddevalla: Bohusläns museum.
- COSTAS GOBERNA, F.J. 1985. Petroglifos del litoral sur de la Ria de Vigo. Castrelos, 8. Museo Municipal "Quiñones de Leon", Vigo.
- COSTAS GOBERNA, F. J.; NOVOA ÁLVAREZ, P. 1993. Los Grabados Rupestres de Galicia. Monografías, 6. Museu Arqueológico e Histórico de A Coruña.
- DEVLET, M. 1982. Petroglify verchniego Yenisieia. Moskva: Academia Nauka.
- DEVLET, M.; DEVLET, E. 2004. Russian Rock Art: the Current State of Research, in The Future of Rock Art-a Word Review, Stockholm Rapport från Riksantikvarieämbetet 2004:7. pp. 132-143.
- DEXTER, R. M. and JONES-BLEY, K. 1997. The Kurgan culture and the Indo-Europeanization of Europe, Selected articles from 1952 to 1993 by M. Gimbutas, Journal of Indo-European Studies monograph 18. Washington: Institute for the Study of Man.
- DUFRENNE, R. 1997. La vallée des merveilles et les mythologies indo-européennes. Capo di Ponte: Edizioni del Centro.
- DUMEZIL, G. 1990. Le sorti del guerriero: aspetti della funzione guerriera presso gli indoeuropei. Milano: Adelphi.
- EVERS, D. 2001. Mythische Bedeutung nordischer Tiere. In Adoranten 2001, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.

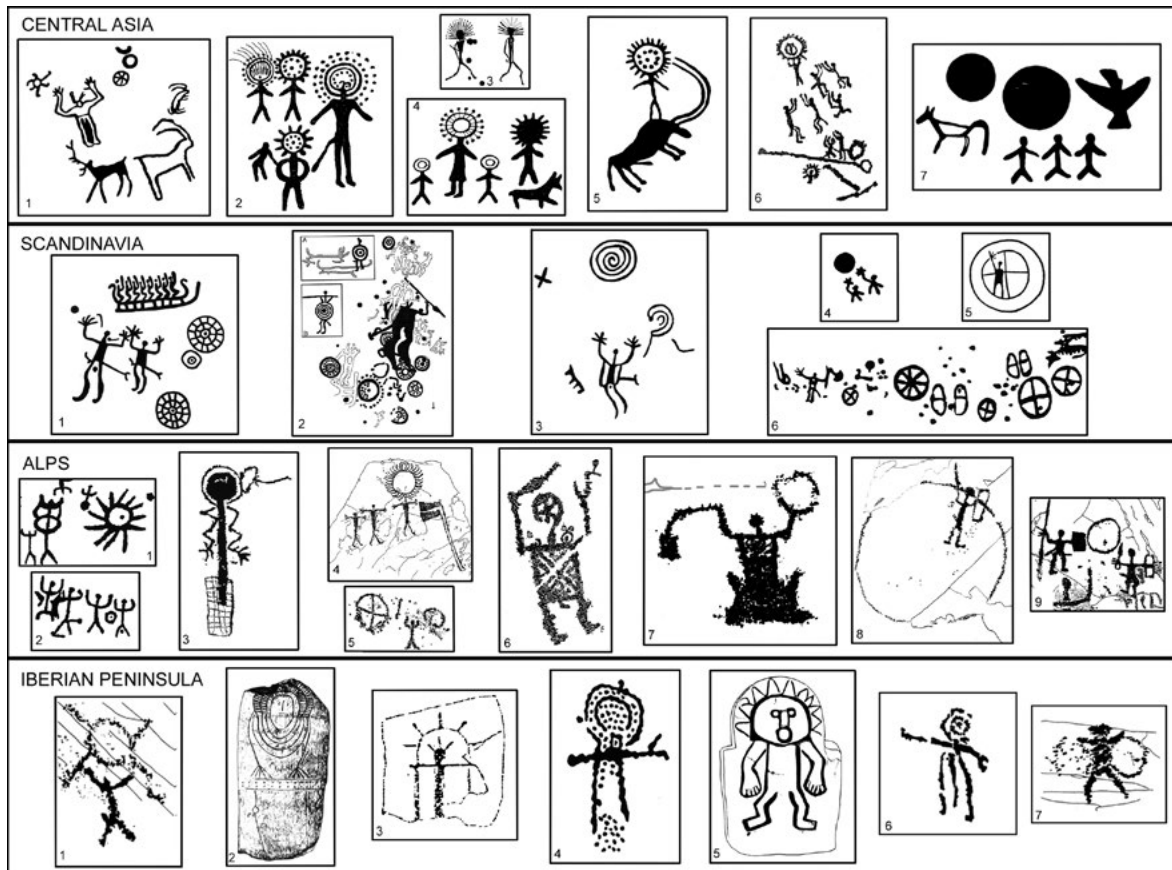
- FARINA, P. 1998. La rosa camuna nell'arte rupestre della Valcamonica, In *Notizie Archeologiche Bergomensi*, NAB 6. Bergamo: Comune di Bergamo, Museo Archeologico.
- FOSSATI, A.; FRONTINI, P. 2001. Archeologia e arte rupestre. L'Europa-le Alpi-la Valcamonica. Milano: Atti del II Convegno Internazionale di Archeologia Rupestre.
- GARCÍA ALÉN, A.; PEÑA SANTOS, A. 1981. Grabados Rupestres de la Provincia de Pontevedra. A Coruña: Fundación "Pedro Barrié de la Maza, Conde de Fenosa".
- GIMBUTAS, M. 1980. The Kurgan wave #2 (c. 3400-3200 BC) into Europe and the following transformation of culture, *Journal of Indo-European Studies* 8: pp. 273-315.
- GOLDHAHN, J. 2005. Från Sagaholm till Bredarör- hållbildsstudier 2000-2004. Göteborg: Gotarc Serie C. Arkeologiska Skrifter 64.
- GOMES, M. V. 2011. Representações de armas na arte rupestre do vale do Tejo-Importância sócio-económica, cronológica e cognitiva. In Bueno Ramirez, P., Cerrillo Cuenca, E., Gonzales Cordero, A., Eds. *Lits. – From the Origins: the Prehistory of the Inner Tagus Region*. Oxford: Archaeopress (BAR International Series; 2219).
- GOMES, M. V. 1989. Arte Rupestre do Vale do Tejo – um santuário pré-histórico. In *Encontro sobre el Tajo: El Agua y los asentamientos humanos*. Cuadrenos de San Benito, 2. Fundación San Benito de Alcantara.
- GOMES, M. V. 2000. A rocha 175 de Fratel - Iconografia e interpretação. *Estudos Pré-Históricos*, 8. Centro de Estudos Pré-históricos da Beira Alta, Viseu.
- JOHANSEN, J. W. 2011. Carts and wagons on Scandinavian rock carving sites. In *Adoranten 2011*, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- HAUDRY, J. 2001. Gli Indoeuropei. Padova: Edizioni di Ar.
- HYGEN, A.; BENGTSSON, L. 2000. Rock Carvings in the Borderlands, Bohuslän and Østfold. Warne Förlag, Sävedalen.
- HEYD, V.; HARRISON, R. 2007. Sion, Aosta e le trasformazioni nell'Europa del III millennio a.C. In *Notizie Archeologiche Bergomensi*, NAB 12. Bergamo: Comune di Bergamo, Museo Archeologico.
- HVASS, S.; WENZEL, J.; CACHIN, F.; DIGNE, J.; TZEDAKIS, Y. 1998. Gods and Heroes of the Bronze Age, Europe at the Time of Ulysses. Copenhagen: National Museum of Denmark.
- JACOBSON, E. 1993. The Deer Goddess of Ancient Siberia. Leiden: E. J. Brill.
- KAUL, F. 1998. Ships on Bronzes. A study in Bronze Age Religion and Iconography. Copenhagen: National Museum of Denmark.
- KRISTIANSEN, K.; LARSSON, T. B. 2005. The rise of Bronze Age society: travels, transmissions and transformation. Cambridge: Cambridge University Press.
- KRISTIANSEN, K. 2012. Rock Art and Religion. The sun journey in Indo-European mythology and Bronze Age rock art. In *Adoranten 2012*. Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- KUBAREV, D.V.; JACOBSON, E. 1996. Répertoire des Pétroglyphes d'Asie Centrale, Fascicule N° 3, Sibérie du Sud 3 : Kalbak-Tash I (République de l'Altai), Paris: Diffusion de Boccard.
- LEBEDYNSSKY, I. 2011. Gli Indoeuropei. Fatti, dibattiti, soluzioni. Milano: Jaca Book.
- LING, J. 2008. Elevated rock art: towards a maritime understanding of Bronze Age rock art in northern Bohuslan, Sweden. Gothenburg: Gothenburg Archeological Theses.
- LOMBARDO RADICE, L. 1981. Parliamo indoeuropeo: tante lingue, una sola famiglia. Le parentele linguistiche in Europa. Firenze: Giunti Marzocco.
- MALLORY, J. P. 1989. In Search of the Indo-Europeans: Language, Archaeology and Myth: Thames & Hudson.
- MAKSIMOVA, A. G. 1958. Naskal'nye izobrazheniya ushel'ya tamgaly, *Vestnik* N.9.
- MARIKOVSKII, Z.; IVKO, O. 2001. Rirunki na valunah. Almaty: Otziecaiano v tizografii.
- MAR'JASEV, A. N.; GORJACEV, A. A.; POTAPOV, S. A. 1998. Repertoire des petroglyphes d'Asie Centrale. Fascicule 5. Paris: Diffusion de Boccard.
- MARRETTA, A. 2005. Foppe di Nadro sconosciuta. Dalla cartografia GPS alle analisi più recenti. Monza: Morphosis.
- MARTINET, A. 1987. L'indoeuropeo: lingue, popoli e cultura. Roma: Laterza.

- MARTYNOV, A. J.; MARIACHEV, A. N.; ABETEKOV, A. K. 1992. Gravures rupestres de Saimaly-Tach. Alma-Ata: Ministere de l'Instruction Publique de la Republique du Kazakhstan.
- MELLER, H. 2004. Der geschmiedete Himmel. Die weite Welt im Herzen Europas vor 3600 Jahren. Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt-Landesmuseum für Vorgeschichte.
- MELLER, H.; LIPTAK, J. 2001. Schönheit, Macht und Tod. 120 Funde aus 120 Jahren. Landesmuseum für Vorgeschichte Halle, Landesamt für Archäologie Sachsen-Anhalt-Landesmuseum für Vorgeschichte.
- MILSTREU, G. 1996. Nyt fra museets arbejdsmark. In Adoranten 1996, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- MILSTREU, G.; PRØL, H. 2004. Prehistoric pictures as archaeological source. Varde: Gothenburg University.
- MILSTREU, G.; PRØL, H. 1996-2008. Documentation and registration of Rock Art in Tanum n. 1, 2, 3. Tanumshede: Tanums Hällristingsmuseum.
- NOVOZHENOV, V. A. 1994. Naskal'nye izobrazheniya povozok sredney i tsentral'noy azii. Almaty: AiF Kazakhstan.
- NOWGORODOWA, E. 1980. Alte Kunst der Mongolei. Leipzig: E.A. Seemann Verlag.
- OKLADNIKOV, A. P. 1974. Petroglify Bajkala: Pamjatniki drevnej kul'tury narodov Sibiri. Novosibirsk: Academia Nauka.
- OKLADNIKOV, A. P. 1977. Petroglify Verkhnei Leny. Leningrad: Academia Nauka.
- OKLADNIKOV, A. P. 1980. Petroglify TSentralnoi Azii, Leningrad: Academia Nauka.
- OKLADNIKOV, A. P. 1981. Petroglify Mongolii. Leningrad: Academia Nauka.
- OKLADNIKOVA, E. A. 1995. Model' Vselennoj v sisteme obrazov naskal'nogo iskusstva Tichookeanskogo poberež'ja Severnoj Ameriki. Sankt Peterburg.
- OKLADNIKOV, A. P.; OKLADNIKOVA, Y. A.; ZAPOROZHSKAYA, V. D.; SKORYNINA, E. A. 1981. Petroglify Chanyr-Kelya. Leningrad: Academia Nauka.
- PEÑA SANTOS, A.; REY GARCÍA, J. M. 2001. Petroglifos de Galicia. A Coruña: Vía Láctea Editorial.
- PEÑA SANTOS, A.; VÁRELA, J. M. 1979. Los petrogifos gallegos. Grabados rupestres prehistoricós al aire libre en Galicia. A Coruña: Edicions Do Castro.
- RAETZEL-FABIAN, D. 2000. Die ersten Bauernkulturen. Jungsteinzeit in Nordhessen: Staatliche Museen Kassel.
- RANDBORG, K. 1996. The Kivik grave" in Adoranten 1996, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- RENDICH, F. 2010. Dizionario etimologico comparato delle lingue classiche indoeuropee. Dizionario Indoeuropeo (sanscrito, greco, latino). Roma: Palombi.
- RENFREW, C. 1988. Archeologia e linguaggio. Bari: Manuali Laterza. (Translation).
- RIBEIRO, N. 2008. Open Air Rock Art in the Ceira and Alva River valleys: some symbols. In Coimbra, F., Dubal, L. (eds), Symbolism in Rock Art. Proceedings of the XV IUPPS Congress. Archaeopress, Oxford, pp. 43-49.
- ROZWADOWSKI, A.; KOSKO, M. M. 2002. Spirits and Stones Shamanism and Rock Art in Central Asia and Siberia. Poznań: Instytut Wschodni UAM.
- ROZWADOWSKI, A. 2004. Symbols through Time. Interpreting the Rock Art of Central Asia. Poznań: Instytut Wschodni.
- SAMASHEV, Z. S. 1992. Naskalnye izobrazheniia Verkhnego Priirtyshia. Alma-Ata: Gylm.
- SANDLAND, A. 1997. – Abstrakte symboler fra helleristningsfelt I Norden. In Adoranten 1997, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- SANSONI, U. 2004. Arature e ierogamie: culti agrari e riti di fondazione nell'arte rupestre. In Arte preistorica e tribale nuove scoperte, nuove interpretazioni e nuovi metodi di ricerca, Valcamonica Symposium, 8-14 settembre 2004, Capodiponte: Edizioni del Centro, pp. 387-402.
- SANSONI, U. 2013. The Alpine and Scandinavian Rock Art in the Bronze Age: a Common Cultural Matrix in a Web of Continental Influences. In Atti del Convegno: Picturing the Bronze Age, Tanum 4-6 Ottobre 2012 (in print).

- ANSONI, U.; GAVALDO, S. 1995. L'arte rupestre del Pià d'Ort. La vicenda di un santuario preistorico alpino, Archivi vol. 10. Capodiponte: Edizioni del Centro.
- SANSONI, U.; GAVALDO, S. 2009. Lucus Rupestris. Sei millenni d'arte rupestre a Campanine di Cimbergo. Capodiponte: Edizioni del Centro.
- SANSONI, U.; GAVALDO, S.; GASTALDI, C. 1999. Simboli sulla roccia. L'arte rupestre della Valtellina centrale dalle armi del Bronzo ai segni cristiani. Capodiponte: Edizioni del Centro.
- SAUSSURRE, F. 1978. Saggio sul vocalismo indoeuropeo. Bologna: Clueb.
- SEGLIE, D. 2000. (cur.). De petroglyphis gallaeciae, Catalogo della Mostra Internazionale "Armi e cavalieri sulle rocce della Galizia. Arte Rupestre, Archeologia e Paesaggio da Vigo a Santiago de Compostela, Spagna". Pinerolo: CeSMAP.
- SEIDEL, U. 1995. Bronzezeit. Stuttgart: Württembergisches Landesmuseum.
- SCHUNKE, T. 2001. Tausend töpfe. Bronzezeitliche Grabfunde aus Coswing. In Schönheit: Macht und Tod.
- TELEGIN, D.; MALLORY J. P. 1994. The anthropomorphic stelae of the Ukraine. Washington, DC: Institute for the Study of Man.
- VAN HOEK, M. 1998. Instances of respect and disregard in European rock art in Adoranten 1998, Scandinavian Society for Prehistoric Art. Tanum: Tanums Hällristingsmuseum.
- VILLAR, F. 1997. Gli indoeuropei e le origini dell'Europa: lingua e storia. Bologna: Il Mulino.
- WEBER, G. 1992. Händler, Krieger, Bronzegießer. Bronzezeit in Nordhessen: Staatliche Museen Kassel.
- VV.AA. 1966. Rock carvings at Fiskeby. Stockholm: Esselte AB.

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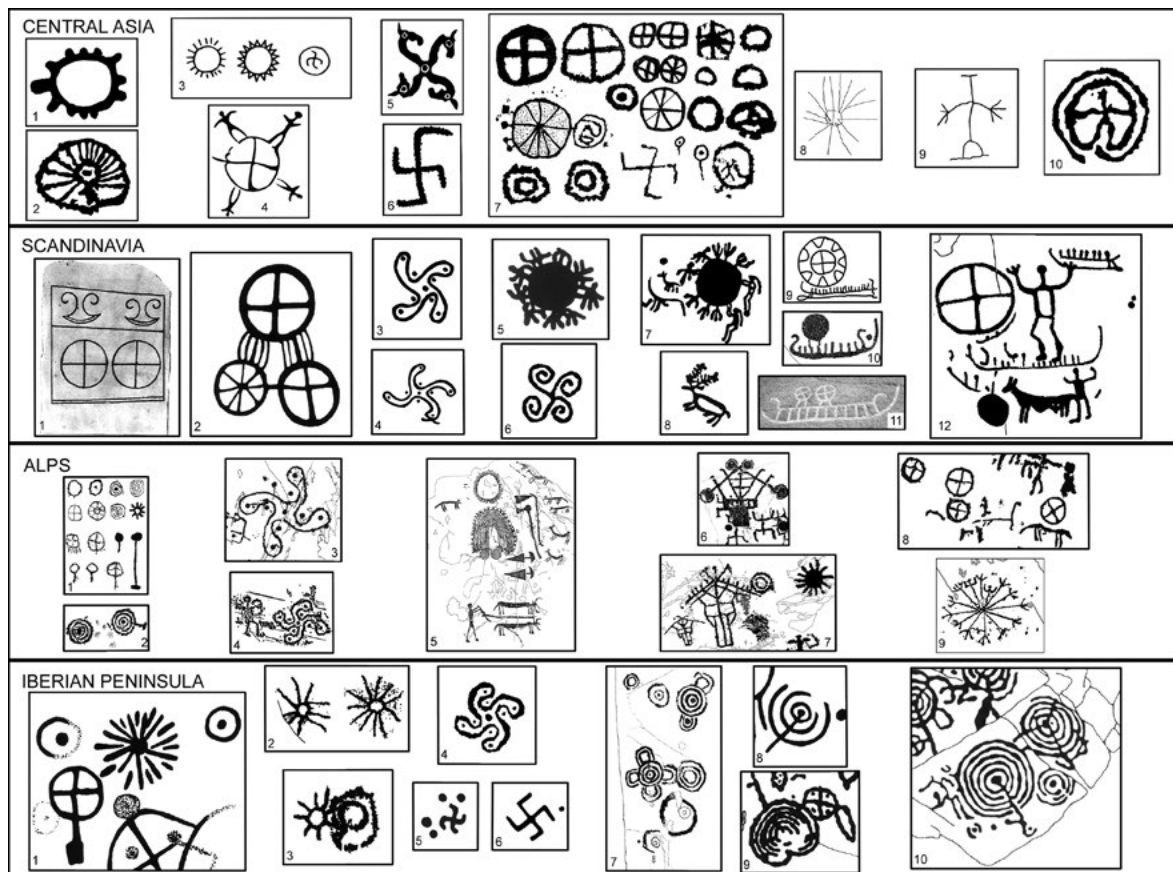
TAV. 1

CENTRAL ASIA: 1 – YAZYLY, AZERBAIJAN (DZHAFARZADE 1973) 2 – VARIOUS LOCALITIES OF KAZAKHSTAN (MARIKOVSKII 1999) 3 – KARAKOL, ALTAY, RUSSIA (OKLADNIKOVA 1995) 4 – VARIOUS LOCALITIES OF KAZAKHSTAN (MARIKOVSKII 1999) 5 – TAMGALY, KAZAKHSTAN (JACOBSON 1993) 6 – SAIMALY-TACH, KAZAKHSTAN (MARTYNOV, MARIACHEV, ABETEKOV 1992) 7- DOOD-CHULGAN, MONGOLIA (NOWGODOROWA 1980)

SCANDINAVIA: 1 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1998) 2 – VARIOUS LOCALITIES OF BOHUSLÄN, SWEDEN (VAN HOEK 1998) 3 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTSOON ED. 2002) 4 – TANUM NO. 193, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 5 – BACKA BRASTAD, BOHUSLÄN, SWEDEN (ABELIN 2000) 6 – FLYHOV, BOHUSLÄN, SWEDEN (BERTILSSON ED. 1989)

ALPS: 1 – COREN DEL VALENTI, VALCAMONICA, ITALY (ANATI 1982A) 2 – COREN DEL VALENTI, VALCAMONICA, ITALY (ANATI 1982A) 3 – MONT BEGO, FRANCE (DE LUMLEY 1996) 4 – OSSIMO IX STELAE, VALCAMONICA, ITALY (CASINI ED.1994) 5 – LUINE, VALCAMONICA, ITALY (ANATI 1982B) 6 – PASPARDO, VALCAMONICA, ITALY (TRACING BY LE ORME DELL'UOMO) 7 – CAMPANINE, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 8 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 9 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)

IBERIAN PENINSULA: 1 – FICALHO, PORTUGAL (BAPTISTA 1981) 2 – BADAJOZ, SPAIN (ANATI 1968) 3 – EXTREMADURA STELE, SPAIN (CELESTINO PÉREZ 1990) 4 – OUTEIRO DE MINA, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – SANTA EULALIA STELE, GALICIA, SPAIN (ANATI 1968) 6 – SÃO SIMÃO, PORTUGAL (COIMBRA 2013) 7 – GARDETE, PORTUGAL (BAPTISTA 1981).



TAV. 2

- CENTRAL ASIA:** 1 – DŽUNGARSKI ALATAU, KAZKHSTAN (MAROKOVSKII, IVKO 2001) 2 – SAIMALY-TACH, KAZAKHSTAN (MARTYNOV, MARIACHEV, ABETEKOV 1992) 3 – UNKNOWN LOCALITIES, MONGOLIA (NOWGODOROWA 1980) 4 – GUEGHAMIAN MOUNTAINS, ARMENIA (MARTIROSYAN, ISRAELIAN 1971) 5 – AIMAG OF ZAVKHAN, MONGOLIA (NOWGODOROWA 1980) 6 – GUEGHAMIAN MOUNTAINS, ARMENIA (MARTIROSYAN ISRAELIAN 1971) 7 – VARIOUS LOCALITIES OF KAZAKHSTAN (SAMASHEV 1992) 8 – TALMA, UPPER LENA BASIN, RUSSIA (OKLADNIKOV 1977) 9 – TALMA, UPPER LENA BASIN, RUSSIA (OKLADNIKOV 1977) 10 – MOYNAK, KAZAKHSTAN (SAMASHEV 1992)
- SCANDINAVIA:** 1 – KIVIK GRAVE, SCANIA, SWEDEN (GOLDHAHN 2005) 2 – BACKA BRASTAD, BOHUSLÄN, SWEDEN (BENGSSON ED. 2009) 3 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGSSON ED. 2002) 4 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGSSON ED. 2002) 5 – FOSSUM, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999) 6 – TOSSENE, BOHUSLÄN, SWEDEN (BENGSSON ED. 2009) 7 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1996) 8 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1996) 9 – ULLENSVANG, HORDALAND, NORGE (SANDLAND 1997) 10 – TOSSENE, BOHUSLÄN, SWEDEN (BENGSSON ED. 2009) 11 – EGELY, BORNHOLM, DENMARK (KAUL 1998) 12 – TOSSENE, BOHUSLÄN, SWEDEN (BENGSSON ED. 2009)
- ALPS:** 1 – MONT BEGO, FRANCE (DE LUMLEY 1996 DUFRENNE 1997) 2 – LUINE, VALCAMONICA, ITALY (ANATI 1982B) 3 – CARPENE, VALCAMONICA, ITALY (SANSONI 1987) 4 – PIÀ D'ORT, VALCAMONICA, ITALY (FARINA 1998) 5 – BAGNOLO IL STELAE, VALCAMONICA, ITALY (CASINI ED. 1994) 6 – CAMPANINE, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 7 – DOS DEL PATER, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 8 – SERADINA, VALCAMONICA, ITALY (ANATI 1982A) 9 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)
- IBERIAN PENINSULA:** 1 – PORTELA DA LAXE, VIASCON, SPAIN (ANATI 1968) 2 – VALE DO TEJO, PORTUGAL (GOMES 1989) 3 – FRATEL, PORTUGAL (GOMES 2000) 4 – CASTRO GUIFÕES, PORTUGAL (COIMBRA 1999) 5 – OS COVELOS, VIGO, SPAIN (COSTAS GOBERNA 1985) 6 – PORTELA DA LAXE, VIASCON, SPAIN (ANATI 1968) 7 – LAJE DO SINAIS, BARCELOS, PORTUGAL (COIMBRA 2004) 8 – VALGA, GALICIA, SPAIN (GARCIA ALÉN PEÑA SANTOS 1980) 9 – CAMPO LAMEIRO, GALICIA, SPAIN (GARCIA ALÉN PEÑA SANTOS 1980) 10 – PONTEVEDRA, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001).



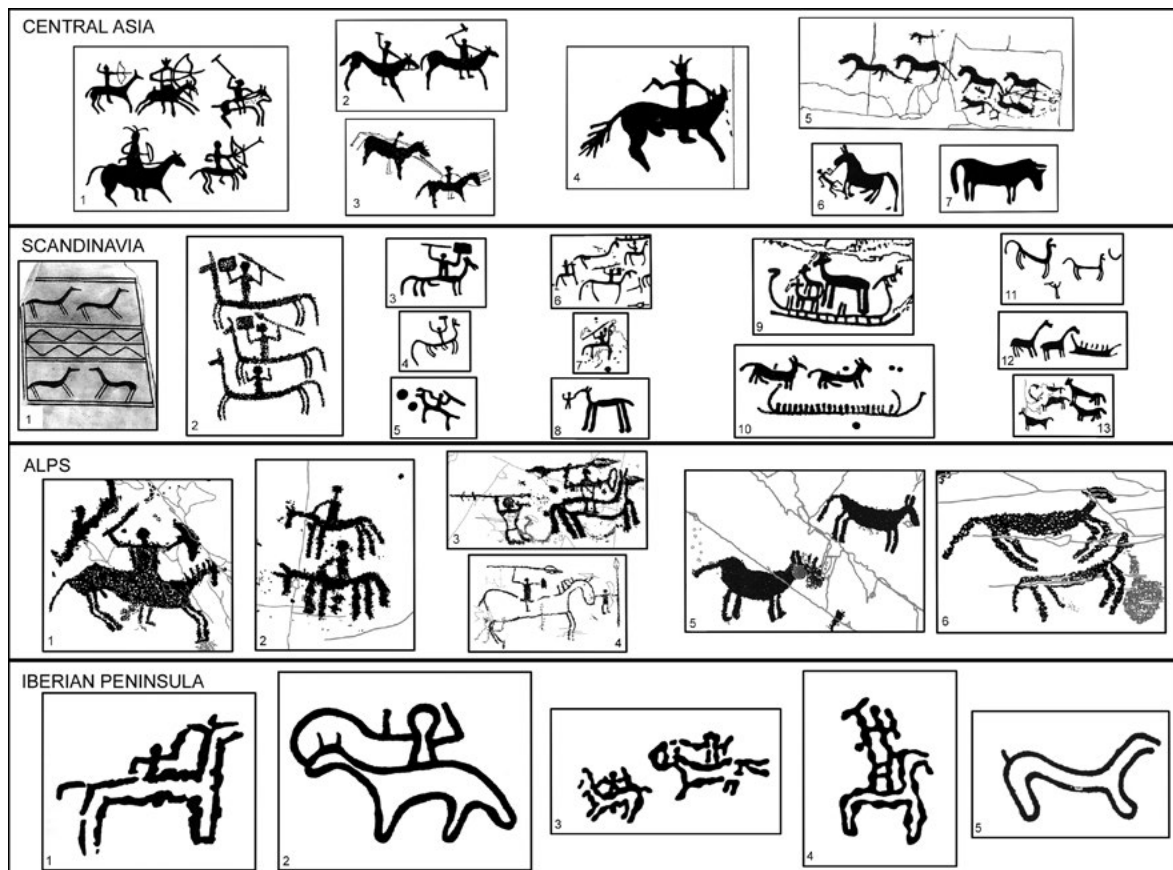
TAV. 3

CENTRAL ASIA: 1 – EŠKIOĻ'MES, KAZAKHSTAN (MAR'JASEV, GORJACEV, POTAPOV 1998) 2 – EŠKIOĻ'MES, KAZAKHSTAN (MAR'JASEV, GORJACEV, POTAPOV 1998) 3 – SAGYR, KAZAKHSTAN (SAMASHEV 1992) 4 – TAMGALY, KAZAKHSTAN (SAMASHEV 1992) 5 – SAIMALY-TACH, KAZAKHSTAN (SAMASHEV 1992) 6 – TAMGALY, KAZAKHSTAN (SAMASHEV 1992) 7 – TAMGALY, KAZAKHSTAN (SAMASHEV 1992) 8 – MOJNAK, KAZAKHSTAN (SAMASHEV 1992) 9 – VARIOUS LOCALITIES OF SIBERIAN FEDERAL DISTRICT, RUSSIA (VASILEVSKII 1992) 10 – VARIOUS LOCALITIES OF SIBERIAN FEDERAL DISTRICT, RUSSIA (VASILEVSKII 1992) 11 – ORTAA-SARGOL, RUSSIA (DEVLET 1982) 12 – VARIOUS LOCALITIES OF MONGOLIA (OKLADNIKOV 1981B)

SCANDINAVIA: 1 – TANUM, BOHUSLÄN, SWEDEN (MILSTREU 1996) 2 – FOSSUM, BOHUSLÄN, SWEDEN (COLES 1990) 3 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED.1996) 4 – TANUM, BOHUSLÄN, SWEDEN (BENGTSOON OLSSON ED. 2000) 5 – ASPERBERGET, BOHUSLÄN, SWEDEN (COLES 1990) 6 – TANUM, BOHUSLÄN, SWEDEN (BENGTSOON OLSSON ED. 2000) 7 – TANUM, BOHUSLÄN, SWEDEN (ABELIN 2000) 8 – LITSLEBY, BOHUSLÄN, SWEDEN (ABELIN 2000) 9 – VARLÖS, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999)

ALPS: 1 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 2 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 3 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO ED. 2009) 4 – I VERDI, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 5 – PASPARDO, VALCAMONICA, ITALY (TRACING BY LE ORME DELL'UOMO) 6 – RONCHI DI ZIR, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 7 – DOS DEL PATER, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 8 – RONCHI DI ZIR, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 9 – TIRANO-LOVERO STELAE, VALTELLINA, ITALY (CASINI ED. 1994)

IBERIAN PENINSULA: 1 – FENTANS, GALICIA, SPAIN (ANATI 1968) 2 – CUENCA DEL GUADIANA, EXTREMADURA, SPAIN (CELESTINO PÉREZ 1990) 3 – PEDRA DA BOULLOSA, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 4 – PONTECALDELAS, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – PONTECALDELAS, GALICIA, SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996) 6 – TORRÉJON EL RUBIO, EXTREMADURA, SPAIN (ANATI 1968) 7 – S. MARTINHO II STELE, EXTREMADURA, SPAIN (CELESTINO PÉREZ 1990).



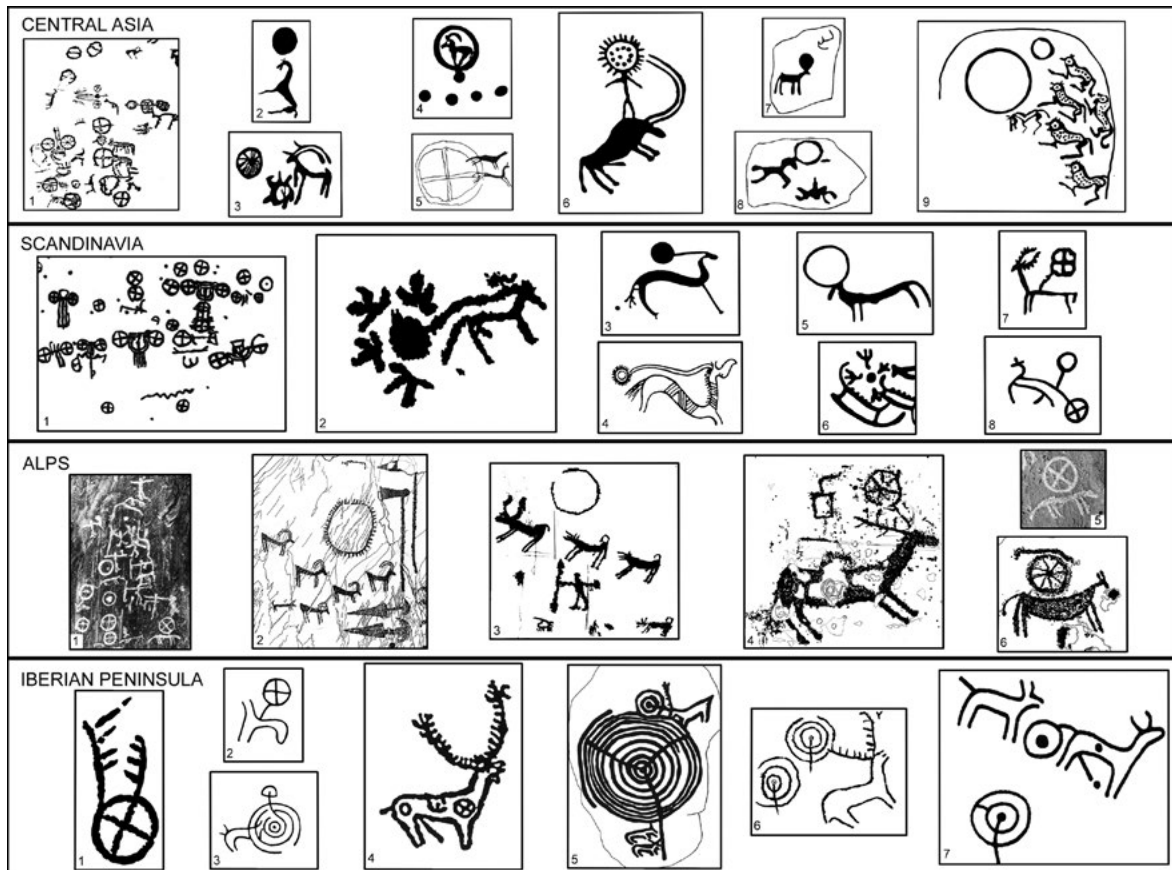
TAV. 4

CENTRAL ASIA: 1 – VARIOUS LOCALITIES OF SIBERIAN FEDERAL DISTRICT, RUSSIA (VASILEVSKII 1992) 2 – TURAN, SIBERIAN FEDERAL DISTRICT, RUSSIA (VASILEVSKII 1992) 3 – KAMYSTY, KAZAKHSTAN (SAMASHEV 1992) 4 – AIMAG OF BAYANKHONGOR, MONGOLIA (VASILEVSKII 1992) 5 – MOJNAK, KAZAKHSTAN (SAMASHEV 1992) 6 – KHOBD-SOMON, MONGOLIA (OKLADNIKOV 1980) 7 – KHOBD-SOMON, MONGOLIA (OKLADNIKOV 1980)

SCANDINAVIA: 1 – KIVIK GRAVE, SCANIA, SWEDEN (GOLDHAHN 2005) 2 – TEGNEBY, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 2004) 3 – TANUM, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 4 – TANUM, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 5 – TEGNEBY, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 6 – TEGNEBY, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 7 – TEGNEBY, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 8 – TOSSENE, BOHUSLÄN, SWEDEN (BENGTSOON ED. 2009) 9 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1996) 10 – TOSSENE, BOHUSLÄN, SWEDEN (BENGTSOON ED. 2009) 11 – LITSLEBY, BOHUSLÄN, SWEDEN (BENGTSOON ED. 1995) 12 – FISKEBY, BOHUSLÄN, SWEDEN (VV.AA. 1966) 13 – TOSSENE, BOHUSLÄN, SWEDEN (BENGTSOON ED. 2009)

ALPS: 1 – RONCHI DI ZIR, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 2 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO ED. 2009) 3 – RONCHI DI ZIR, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 4 – FOPPE DI NADRO, VALCAMONICA, ITALY (ANATI 1982A) 5 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 6 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)

IBERIAN PENINSULA: 1 – VILAGARCIA DE AROUSA, GALICIA, SPAIN (ANATI 1968) 2 – CAMPO LAMEIRO, GALICIA, SPAIN (GARCIA ALÉN PEÑA SANTOS 1980) 3 – CHAN DE LAGOA II, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 4 – LAXE DE SARTAÑA, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – CAMPO LAMEIRO, GALICIA, SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996).



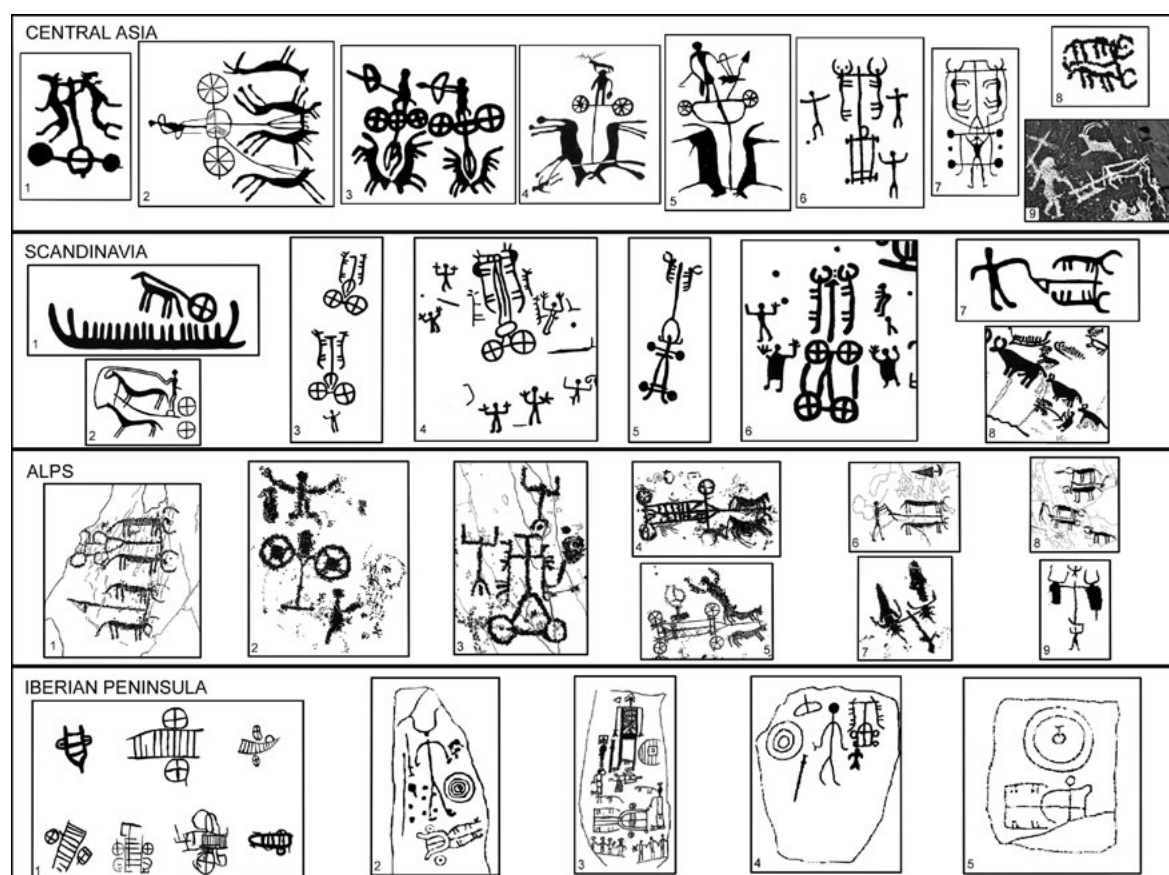
Tav. 5

CENTRAL ASIA: 1 – ZHALTYRAKTASH, KAZAKHSTAN (PJAKTIN, MARTYNOV 1985) 2 – AIMAG OF GOVI ALTAI, MONGOLIA (NOWGODOROWA 1980) 3 – KHOBD-SOMON, MONGOLIA (OKLADNIKOV 1980) 4 – TERKHIIN TSGAAN LAKE, MONGOLIA (NOWGODOROWA 1980) 5 – KULENGA, UPPER LENA BASIN, RUSSIA (OKLADNIKOV 1977) 6 – TAMGALY, KAZAKHSTAN (JACOBSON 1993) 7 – CHANKYR-KELIA, ELANGASH, RUSSIA (OKLADNIKOV 1981) 8 – CHANKYR-KELIA, ELANGASH, RUSSIA (OKLADNIKOV 1981) 9 – UUSHIGIIN UVER, MONGOLIA (NOWGODOROWA 1980)

SCANDINAVIA: 1 – FRÄNNARP, SCANIA, SWEDEN (MILSTREU PRØHL ED. 2009) 2 – KALLEBY, BOHUSLÄN, SWEDEN (SANSONI GAVALDO GASTALDI 1999) 3 – BALKEN, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999) 4 – RAZOR FROM NEDER HVOLRIS, VIBORG, DENMARK (MILSTREU PRØHL ED. 1999) 5 – KVILLE, BOHUSLÄN, SWEDEN (ABELIN 2000) 6 – TANUM, BOHUSLÄN, SWEDEN (BENGTSSEN ED. 1995) 7 – KALLEBY, BOHUSLÄN, SWEDEN (SANSONI GAVALDO GASTALDI 1999) 8 – TOSSENE, BOHUSLÄN, SWEDEN (BENGTSSEN ED. 2009)

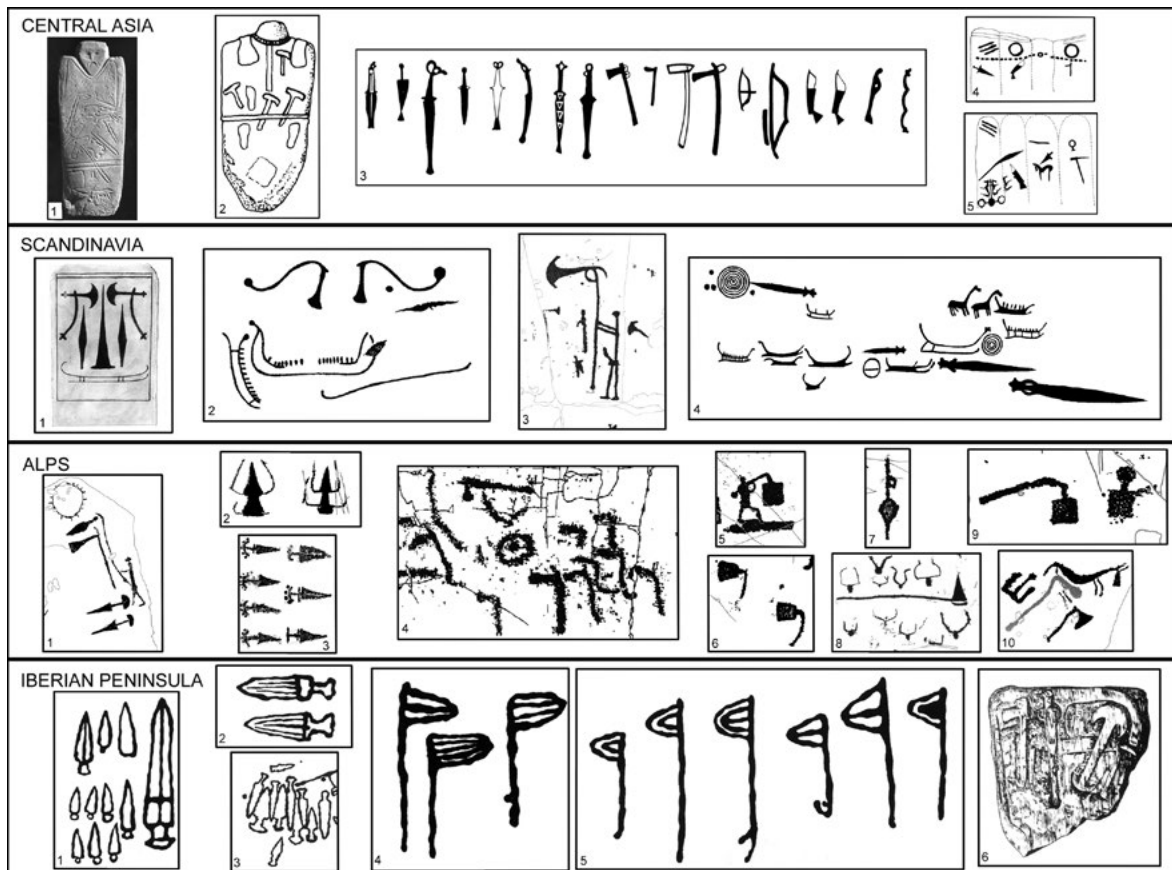
ALPS: 1 – SERADINA, VALCAMONICA, ITALY (ANATI 1982A) 2 – CEMMO I STELAE, VALCAMONICA, ITALY (CASINI ED. 1994) 3 – SERADINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 4 – RONCHI DI ZIR, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 5 – SERADINA, VALCAMONICA, ITALY (PHOTO BY CCSP) 6 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)

IBERIAN PENINSULA: 1 – CAMPO LAMEIRO, GALICIA, SPAIN (ANATI 1968) 2 – A ESCADA IV, GALICIA, SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996) 3 – PEDRA DE BEILLOSA, GALICIA, SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996) 4 – CAMPO LAMEIRO, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – COTOBADE, GALICIA, SPAIN (GARCIA ALÉN PEÑA SANTOS 1980) 6 – CAMPO LAMEIRO, GALICIA, SPAIN (SEGLIE ED. 2000) 7 – COTOBADE, GALICIA, SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996).



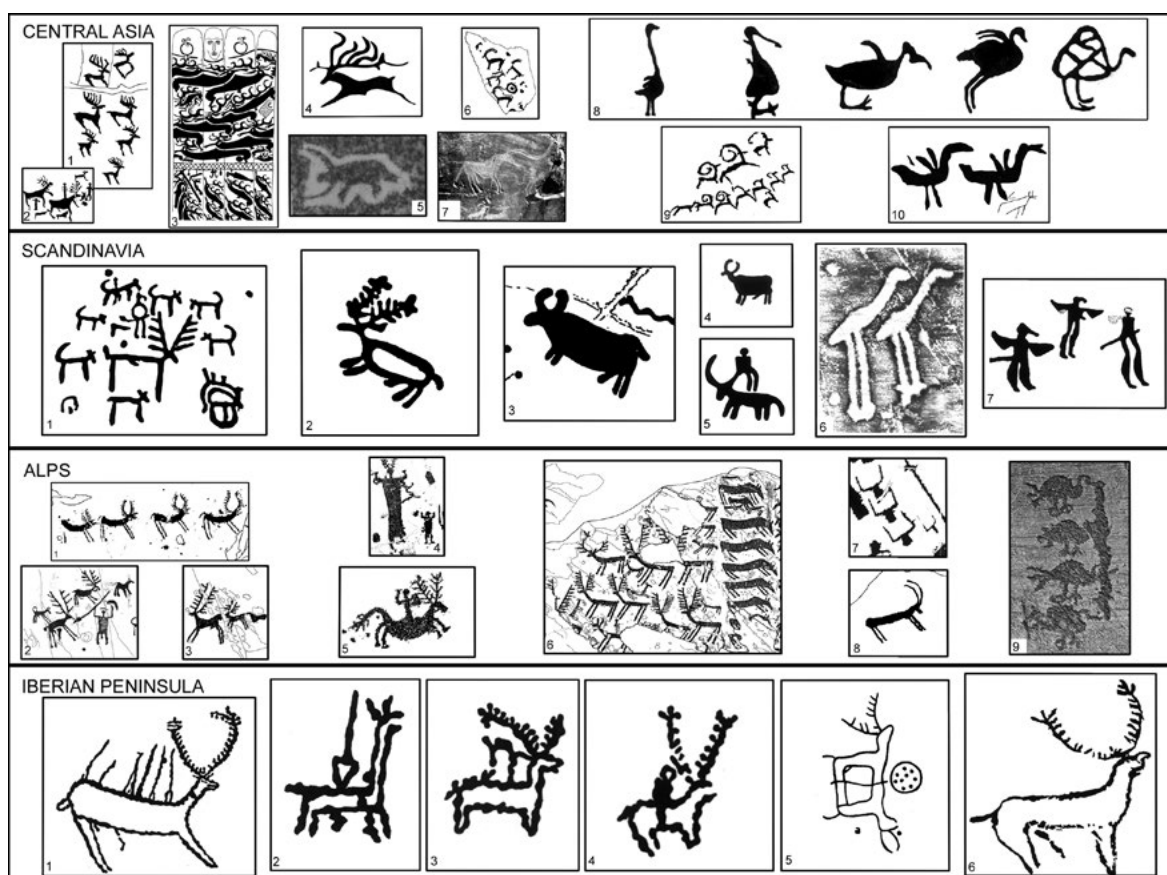
TAV. 6

- CENTRAL ASIA:** 1 – CULUUT, MONGOLIA (NOWGODOROWA 1980) 2 – CHANYN CHAD, MONGOLIA (NOWGODOROWA 1980) 3 – ARPAUZEN, KAZAKHSTAN (MEDOEV 1979) 4 – ELANGASH, RUSSIA (VASILEVSKII 1986) 5 – ELANGASH, RUSSIA (VASILEVSKII 1986) 6 – SYUNIK, ARMENIA (NOVOZHENOV 1994) 7 – SYUNIK, ARMENIA (NOVOZHENOV 1994) 8 – MT. ARAGATS, ARMENIA (TRACING BY DIP-VALCAMONICA CCSP FROM A PHOTO BY KHECHOYAN 2007) 9 – BIČIGTYN CHAD, MONGOLIA (NOWGODOROWA 1980)
- SCANDINAVIA:** 1 – KALLEBY, BOHUSLÄN, SWEDEN (ABELIN 2000) 2 – KIVIK GRAVE, SCANIA, SWEDEN (JOHANNSSEN 2011) 3 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTTSSON ED. 2002) 4 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTTSSON ED. 2002) 5 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTTSSON ED. 1998) 6 – ASKUM RAÄ, BOHUSLÄN, SWEDEN (BENGTTSSON ED. 2002) 7 – FINNTORP, BOHUSLÄN, SWEDEN (TRACING BY BENGTTSSON) 8 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1996)
- ALPS:** 1 – CEMMO I STELAE, VALCAMONICA, ITALY (CASINI ED. 1994) 2 – NAQUANE, VALCAMONICA, ITALY (VAN BERG-OSTERRIETH 1972) 3 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO 2009) 4 – NAQUANE, VALCAMONICA, ITALY (VAN BERG-OSTERRIETH 1972) 5 – COREN DEL VALENTI, VALCAMONICA, ITALY (VAN BERG-OSTERRIETH 1972) 6 – BAGNOLO II STELAE, VALCAMONICA, ITALY (CASINI ED. 2004) 7 – MONT BEGO, FRANCE (DE LUMLEY 1996) 8 – FOPPE DI NADRO, VALCAMONICA, ITALY (SANSONI 2007) 9 – MONT BEGO, FRANCE (DE LUMLEY 1996)
- IBERIAN PENINSULA:** 1 – BADAJOZ, EXTREMADURA, SPAIN (BÉCARES PÉREZ 1994) 2 – CUENCA DEL GUADIANA, EXTREMADURA, SPAIN (CELESTINO PÉREZ 1990) 3 – ATEGUA, CORDOBA, SPAIN (CELESTINO PÉREZ 1990) 4 – CARMONA, SPAIN (CELESTINO PÉREZ 1990) 5 – CUENCA DEL GUADIANA, EXTREMADURA, SPAIN (CELESTINO PÉREZ 1990).



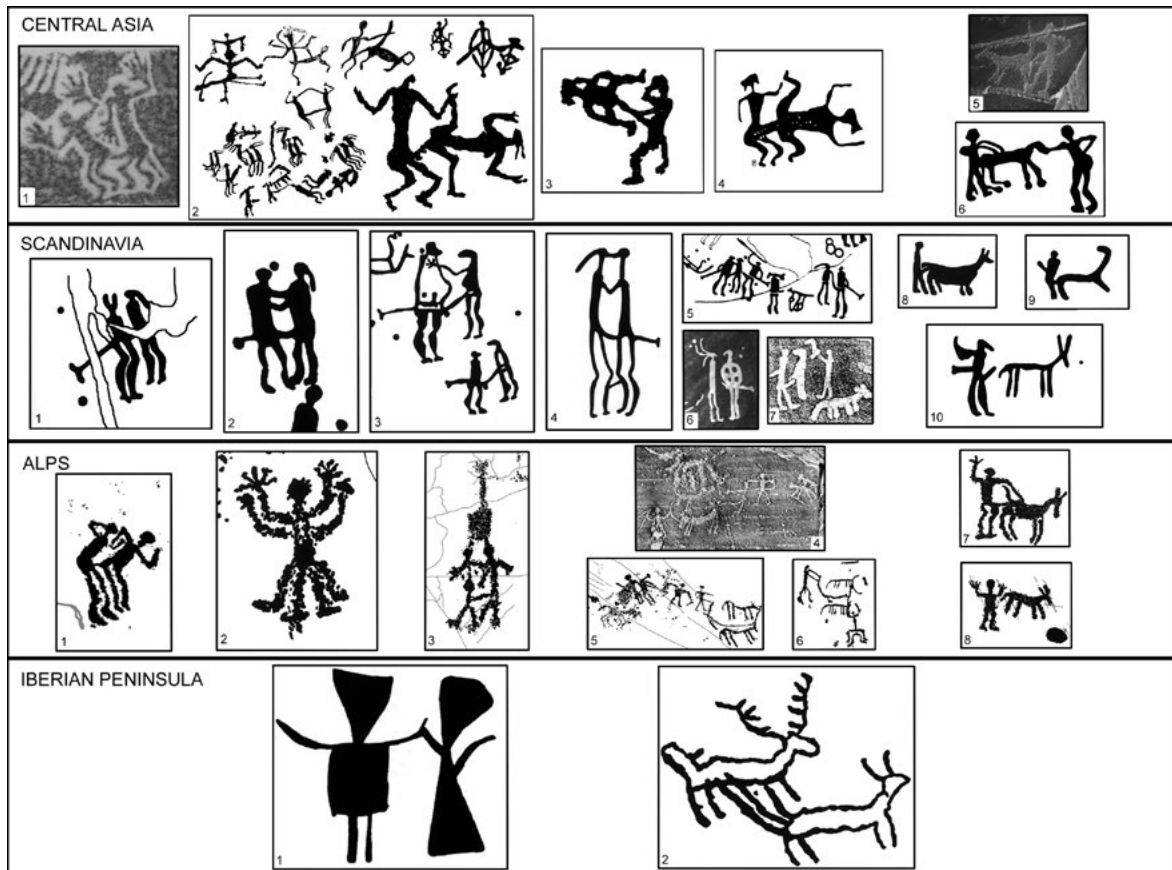
Tav. 7

- CENTRAL ASIA:** 1 – KERNOSIVKA, UKRAINE (TELEGIN, MALLORY 1994) 2 – HAMANGIA, ROMANIA (TELEGIN 1987) 3 – VARIOUS LOCALITIES OF MONGOLIA (NOWGODOROWA 1980) 4 – UNKNOWN LOCALITY, MONGOLIA (NOWGODOROWA 1980) 5 – SOMON-DARIV, MONGOLIA (NOWGODOROWA 1980)
- SCANDINAVIA:** 1 – KIVIK GRAVE, SCANIA, SWEDEN (GOLDHAHN 2005) 2 – SIMRISHAMN, SCANIA, SWEDEN (KRISTIANSEN 2012) 3 – SIMRISHAMN, SCANIA, SWEDEN (TRACING BY DIP-VALCAMONICA CCSP) 4 – FISKEBY, BOHUSLÄN, SWEDEN (VV.AA. 1966)
- ALPS:** 1 – CAVEN II STELAE, VALTELLINA, ITALY (CASINI ED. 1994) 2 – MONT BEGO, FRANCE (DE LUMLEY 1996) 3 – FOPPE DI NADRO, VALCAMONICA, ITALY (CHIODI MASNATA 2004) 4 – TRESIVIO, VALTELLINA, ITALY (SANSONI GAVALDO GASTALDI 1999) 5 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 6 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO 2009) 7 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO 2009) 8 – MONT BEGO, FRANCE (DE LUMLEY 1996) 9 – CAMPANINE, VALCAMONICA, ITALY (SANSONI GAVALDO 2009) 10 – BOSCATELLE, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)
- IBERIAN PENINSULA:** 1 – AUGA DE LAXE, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 2 – CASTRIÑO DE CONXO, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 3 – CAMPO LAMEIRO, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 4 – PEDRA ANCHA, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – AUGA DE LAXE, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 6 – SANTA VITORIA, BEJA, SPAIN (ANATI 1968).



TAV. 8

- CENTRAL ASIA:** 1 – NIKITINKA, KAZAKHSTAN (SAMASHEV 1992) 2 – ELGAZUR, RUSSIA (OKLADNIKOV 1974)
 3 – UUSHIGIIN UVER, MONGOLIA (NOWGODOROWA 1980) 4 – KHOB-D-SOMON, MONGOLIA (OKLADNIKOV 1980)
 5 – STELAE OF KERNOSIVKA, UKRAINE 6 – NARBOTA, KAZAKHSTAN (SAMASHEV 1992) 7 – TAMGALY, KAZAKHSTAN
 (MAR'JASEV, GORJACEV, POTAPOV 1998) 8 – GUEGHAMIAN MOUNTAINS, ARMENIA (MARTIROSYAN 1981) 9 – OKEJ,
 KAZAKHSTAN (SAMASHEV 1992) 10 – KULENGA, UPPER LENA BASIN, RUSSIA (OKLADNIKOV 1977)
- SCANDINAVIA:** 1 – MASSLEBERG, BOHUSLÄN, SWEDEN (COLES 1990) 2 – ASPERBERGET, BOHUSLÄN, SWEDEN
 (MILSTREU PRØHL ED. 1996) 3 – ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999)
 4 – FOSSUM, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999) 5 – TORSBO, BOHUSLÄN,
 SWEDEN (BENGTTSSON 2001) 6 – BACKA BRASTAD, BOHUSLÄN, SWEDEN (EVERS 2001)
 7 – KALLSÄNGEN IN BOTTNÄ, BOHUSLÄN, SWEDEN (HYGEN BENGTTSSON 2000)
- ALPS:** 1 – SERADINA, VALCAMONICA, ITALY (TRACING BY CCSP) 2 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY
 DIP-VALCAMONICA CCSP) 3 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 4 – NAQUANE,
 VALCAMONICA, ITALY (ANATI 1982A) 5 – NAQUANE, VALCAMONICA, ITALY (TRACING BY LE ORME DELL'UOMO)
 6 – CEMMO II STELAE, VALCAMONICA, ITALY (CASINI ED. 1994) 7 – MONT BEGO, FRANCE (DE LUMLEY 1996)
 8 – TIRANO-LOVERO, VALTELLINA, ITALY (CASINI ED. 1994) 9 – NAQUANE, VALCAMONICA, ITALY (PHOTO BY CCSP)
- IBERIAN PENINSULA:** 1 – OS CARBALLOS, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 2 – OUTEIRO GORDO,
 GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 3 – NABAL DE MARTIÑO, GALICIA, SPAIN (PEÑA SANTOS REY
 GARCIA 2001) 4 – AS MARTIZAS, GALICIA, SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – LAXE DAS LEBRES, GALICIA,
 SPAIN (PEÑA SANTOS VAZQUEZ VARELA 1996) 6 – CAMPO LAMEIRO, GALICIA, SPAIN (ANATI 1968).



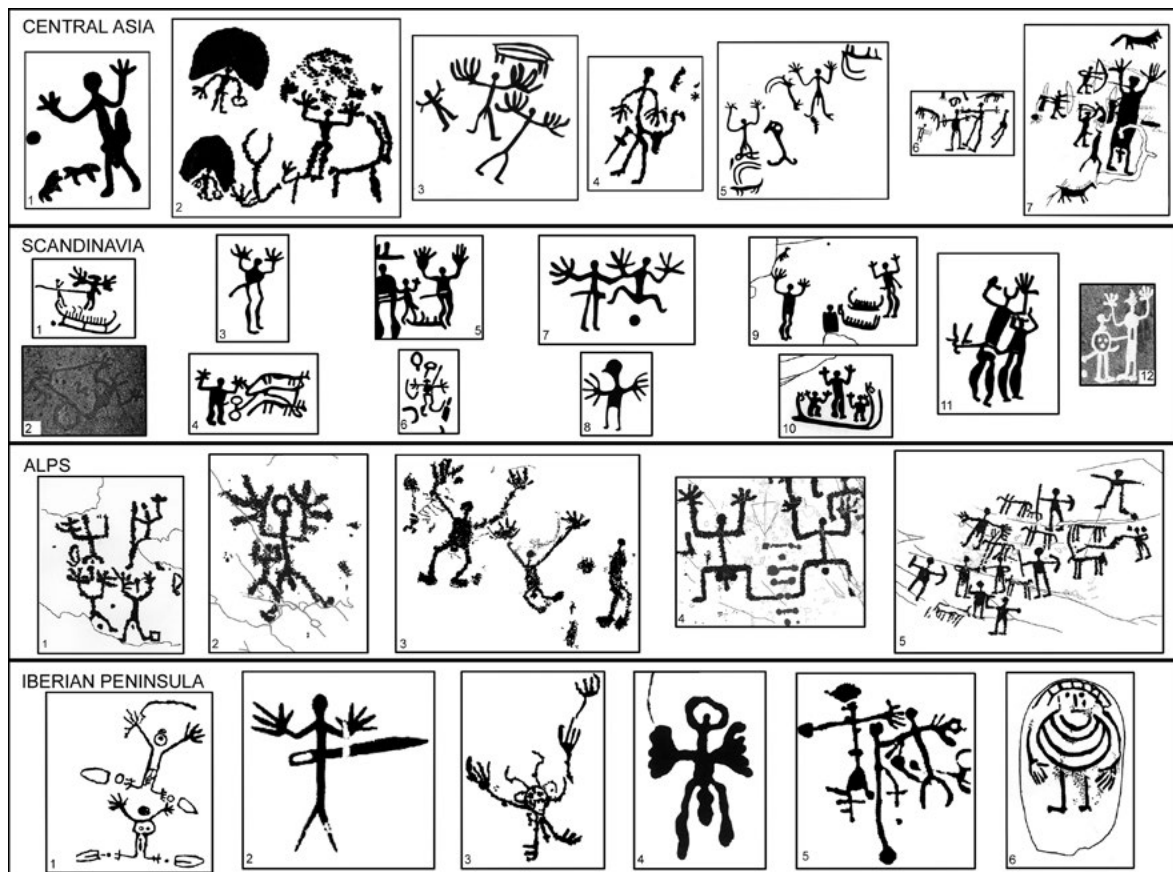
Tav. 9

CENTRAL ASIA: 1 – STELAE OF KERNOSIVKA, UKRAINE 2 – VARIOUS LOCALITIES OF KAZAKHSTAN (SAMASHEV 1992) 3 – KURCHUM, KAZAKHSTAN (SAMASHEV 1992) 4 – KHAVTSGAYT, MONGOLIA (JACOBSON 1993) 5 – SAIMALY-TACH, KAZAKHSTAN (MARTYNOV, MARIACHEV, ABETEKOV 1992) 6 – TEREKTY, KAZAKHSTAN (MEDOEV 1979)

SCANDINAVIA: 1 – TANUM, BOHUSLÄN, SWEDEN (BENGTTSSON OLSSON ED. 2000) 2 – TANUM, BOHUSLÄN, SWEDEN (BENGTTSSON ED. 1995) 3 – VARLÖS, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999) 4 – VITLYCKE, BOHUSLÄN, SWEDEN (COLES 1990) 5 – KVILLE, BOHUSLÄN, SWEDEN (LING 2008) 6 – SLÄNGE, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 1999) 7 – TANUM, BOHUSLÄN, SWEDEN (EVERS 2001) 8 – KVILLE, BOHUSLÄN, SWEDEN (TRACING BY MILSTREU) 9 – SAGAHOLM MOUND, JÖNKÖPING, SWEDEN (RANDSBORG 1996) 10 – KALLSÄNGEN, BOHUSLÄN, SWEDEN (COLES 1990)

ALPS: 1 – ZURLA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 2 – FOPPE DI NADRO, VALCAMONICA, ITALY (ANATI 1982A) 3 – FOPPE DI NADRO, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 4 – SERADINA, VALCAMONICA, ITALY (PHOTO BY CCSP) 5 – SERADINA, VALCAMONICA, ITALY (ANATI 1982A) 6 – DOS CUI, VALCAMONICA, ITALY (ANATI 1982A) 7 – COREN DEL VALENTO, VALCAMONICA, ITALY (ANATI 1982A) 8 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)

IBERIAN PENINSULA: 1 – LAS VIÑAS, ANDALUSIA, SPAIN (ANATI 1968) 2 – PAZOS DE BORBÉN, GALICIA, SPAIN (GARCIA ALÉN PEÑA SANTOS 1980).



TAV. 10

- CENTRAL ASIA:** 1 – UNKNOWN LOCALITY, KAZAKHSTAN (MARIKOVSKII 1999) 2 – SAIMALY-TACH, KAZAKHSTAN
3 – GUEGHAMIAN MOUNTAINS, ARMENIA (MARTIROSYAN 1981) 4 – ZEVAKINO, KAZAKHSTAN (SAMASHEV 1992)
5 – GUEGHAMIAN MOUNTAINS, ARMENIA (MARTIROSYAN, ISRAELYAN 1971) 6 – ZEVAKINO,
KAZAKHSTAN (SAMASHEV 1992) 7 – EŠKIOŁ'MES, KAZAKHSTAN (MAR'JACEV, GORJACEV, POTAPOV 1998)
- SCANDINAVIA:** 1 - ASPERBERGET, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED. 2004) 2 - VITLICHE, BOHUSLÄN,
SWEDEN (HYGEN BENGTTSSON 2000) 3 – KVILLE, BOHUSLÄN, SWEDEN (ABELIN 2000) 4 – KVILLE, BOHUSLÄN,
SWEDEN (ABELIN 2000) 5 – BRÄCKE AT RIXÖ, BOHUSLÄN, SWEDEN (COLES 1990) 6 – ASKUM RAÄ, BOHUSLÄN,
SWEDEN (BENGTTSSON ED. 1998) 7 – ASKUM, BOHUSLÄN, SWEDEN (ABELIN 2000) 8 – KVILLE, BOHUSLÄN, SWEDEN
(ABELIN 2000) 9 – TEGNEBY, BOHUSLÄN, SWEDEN (BENGTTSSON ED.1995) 10 - TANUM, BOHUSLÄN, SWEDEN
(BENGTTSSON OLSSON ED.2000) 11 – TOSSENE, BOHUSLÄN, SWEDEN (BENGTTSSON ED.2009)
12 – SLÄNGE, BOHUSLÄN, SWEDEN (MILSTREU PRØHL ED.1999)
- ALPS:** 1 – NAQUANE, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP) 2 – CAMPANINE, VALCAMONICA,
ITALY (SANSONI GAVALDO 2009) 3 – CERETO, VALCAMONICA, ITALY (TRACING BY CCSP)
4 – PAGHERINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)
5 – SERADINA, VALCAMONICA, ITALY (TRACING BY DIP-VALCAMONICA CCSP)
- IBERIAN PENINSULA:** 1 – MONTALEGRE, PORTUGAL (BETTENCOURT 2004) 2 – MONTE BLANCO STELE, BADAJOZ,
SPAIN (GOMES 2011) 3 – PAMPILHOSA DA SERRA, PORTUGAL (BATATA GASPAR 2011) 4 – PONTECALDELAS, GALICIA,
SPAIN (PEÑA SANTOS REY GARCIA 2001) 5 – SEIA, PORTUGAL (RIBEIRO 2008)
6 – CIUDAD RODRIGO IDOL, SPAIN (ANATI 1968).

A Natufian Mask-Face Figurine: An Insight into the Nature of the Supernatural Being

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Abstract

The Natufian artistic manifestations were recognized as unique phenomena in the archaeological record of the Levant. The sudden rise in the scope and number of these manifestations was ascribed to the particular nature of the Natufian culture (ca. 15-11,500 years ago) representing the last hunter-gatherers, heralding the era of succeeding full-fledged agricultural communities.

A cross-disciplinary approach adjusting methods inherent in the discipline of art-history with traditional archaeological research shed a new light on the Natufian art. This approach implies inductive analysis beginning with a formal description of one work of art. Then, style analysis and investigation of the content are conducted by grouping other works of art according to observed artistic qualities. These bodies of comparisons generate new questions for exploration. Thus, an analysis of one piece of art enables us to contend with both more works of art and greater issues.

We will present the case of an anthropomorphic figurine from the Natufian site of Eynan, Israel. Following its formal description, it will be compared to other art pieces; these bodies of comparison are hierarchically ordered from the closest to the most general, i.e. comprising works of art from the same site (Eynan), the Natufian art corpus at large, the European Upper Paleolithic art corpus and the universal artistic qualities of masks.

The initial result of this case analysis is identification of Natufian visual languages, i.e. shared artistic qualities and visual conventions across various media and sites. The identification of the subject as a double image composed of two categories: human and animal, entailed assembling another body of comparison, and a discussion of the different ways in which a similar subject is represented. These steered the discourse on representation of the supernatural and related socio-religious institutions. Finally, the identification of generic qualities of a specific category of art the masks, opens yet another venue for a higher level of interpretation, based on universal attributes of masks creation.

The various lines of evidence suggest an interpretation of the Eynan figurine as a mask-like representation of a spirit. Thus the components of the image divulged through this study can contribute greatly to our comprehensive understanding of the image and its function. These conclusions may provide new insights on topics pertaining to the material creation of a new spiritual being, as well as on the social structure and ritual systems that supported the 'creation' of such an image. We may also ask: what was the role of this image and related socio-cultural mechanisms in the transformations from Paleolithic to Neolithic lifeways?

Research on the Classification and Staging of Rock Art on Lusen Mountain in Qinghai

Zeming SHI and Yanqing JIN

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Abstract

This article is based on the examination of the research materials which came out of the workshop of the Rock Art Research Association of China in July 2013, and the summary and combination of the existing materials, according to the production methods and artistic expressions of rock art.

The rock art on Lusen Mountain may be divided into eight types and went through four stages: the formative period, the first pinnacle (yak period), the second pinnacle (deer period) and the decline period.

Investigation and Research into Dahongyan Rock Art in Zhengfeng County, Guizhou Province

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Abstract

This paper is a full display of information and data obtained by the team of the Rock Art Research Association of China, Minzu University of China, during the investigation of Dahongyan rock art in Zheng-Feng county in Guizhou province. As participants in the investigation, the authors have conducted an in-depth analysis of the rock art environment, and provide an explanation for the mystery of Dahongyan rock art, as well as some views and opinions on the handprint of Dahongyan rock art, which is rooted in the holy rituals of the ancients in the panic of the last crisis, and the handprint as a symbol of people. Furthermore, they point out the particularity and the importance of Dahongyan rock art compared with other rock art of Guizhou province.

Field Survey and Analysis of Mask Worship in the Xiliaohe River Basin

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Jiixin ZHANG

Rock Art Research Association of China, China

Abstract

Some scholars believe that the original concept of yin and yang becoming the yin-yang theory was the direct result of the belief in the sun god. As a systematic methodology, the yin-yang theory was formulated in the late Zhou dynasty, the Qin and the Han dynasty, but the sun god belief had been founded earlier. Therefore, rock art is rooted in ancient culture rather than isolated and the religious beliefs and philosophies had started very early. The investigation of eye mask worship not only can enrich the study of rock art and encourage the comparison with rock art in the Pacific Rim, but also has particular significance for the research of national migration, cultural evolution and the formation of the Chinese yin and yang concept.

The Use of Burial Space and Social Relations Between the Late Neolithic Age and the Copper Age in Sardinia

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Abstract

The art found inside the Domus de Janas, ascribable to the Ozieri culture (Late Neolithic Age, 4360-3480 BC) that carried on till the Copper Age, is a sign of a funerary ideology expressed by means of representing real animals in a symbolic architectural context, using different techniques (sculpture, painting, hammer incision, a martellina). It is found in 196 domus. Among the figurative motifs, those sculpted in bas-relief appear in great number and diversity: 262 motifs in 102 tombs, among which four morphological categories have been recognized (I, III, V, VI) out of the six so far identified in underground parietal art: I, bucrania; II, comb-shaped motifs; III, anthropomorphic motifs; IV, weapons and utensils; V, geometric figures; VI, architectural elements. Within the bucranium category, three types can be distinguished: bucranium 1 (forward horns), bucranium 2 (downward horns), bucranium 3 (horns sculpted on the ceiling, directed towards the entrance, forwards), with a clear prevalence of bucranium 1 (245 occurrences) over bucrania 2 and 3 (6 and 11, respectively).

Some themes concerning the spatial organization of the sculpted figurative signs are briefly dealt with here; some constant features and frequencies in distribution and location choice were observed in such signs, as expression of trends which, on the one hand, reflect economic and social changes occurring between the Late Neolithic and Copper Ages in Sardinia; and, on the other hand, they seem to be the result of a Neolithic funerary ideology evolution.

The data pertaining to number, placement and location of the motifs and of the figurative compositions were briefly explored. The number of occurrences of Types I-IV (curvilinear style) appears considerable, and so does the remarkable concentration (at least six motifs or figurative compositions) in 10 Domus de Janas, mostly having a complex or centripetal plant, all located in northwestern Sardinia. In almost all Domus de Janas, a T-shaped plant can be recognized: tombs which underwent several enlargements and refurbishing, perhaps to meet the need for a larger tomb on special occasions. In these rock-carved tombs, figurative types I-IV (79 out of 108, respectively 73% and 27%) prevail. It seems that only three tombs with T-shaped plant were not affected by such profound transformations and distortions. The presence of the bucranium and its high frequency in different rooms of the Domus de Janas could be a sign that the users needed, at different times, to sanctify (in a sort of foundation ritual) a new room or a new group of burial rooms. Regarding the high number of bucrania sculpted in the seven refurbished tombs, we cannot rule out the hypothesis of behavioural choices determined by the growth of population, wealth and especially by the stratification of the groups, which may have led to rituals aimed at displaying their wealth. The three T-shaped tombs, due to the limited space occupied and their less complex plants, can be explained if the groups that used them did not need to enlarge and/or reshape the tombs, and could be attributed to later periods. Furthermore, such attribution is suggested by the lack of types I-IV (as of today deemed to be the earliest) in two of the Domus de Janas. The analysis of the distribution of the bucranium representations inside rock-carved tombs was carried out strictly in association with architectural economy. The artistic phenomenon appears only in some rooms of the Domus de Janas, in the external court, in the forerom, in the main room, in a secondary room (always next to the main one), spaces that clearly attracted the attention of the tombs' artisan carvers, as more relevant from a funerary ideology perspective. Moreover, the frequency of location shows consistent patterns: outside (four tombs), in the forerom (36), and in the main room (36), in a secondary room. Importantly, some motifs in those rooms often mimic with symbolic purpose both the architectural modules of the huts for the living and their structural elements (pillars, columns, hearths, double-slope roofs, etc). In this perspective, one of the crucial points of funerary ideology can be recognized: the belief in the afterlife and the desire to recreate, for this dimension, the living environments or specific environments of which archeology has not so far been able to provide any evidence.

The location of the bucranium in the forerom or in the secondary room seems to suggest not only a figurative development through time, but also the need to adapt rituals to changing social dynamics.

Regarding the decoration in the foreroom, the wall opposite the entrance seems to be used mostly, possibly for its central position visible from the entrance. The representation of the bucranium above or next to the entrance door might be the mark of a sacred room, devoted to funerary rituals. The link between the door and the figurative motifs seems to be the expression of an ideological connection through figurative motifs. This reveals a process of attribution of symbolic value to the door, identified as the head of the sacred bucranium. The door equipped with horns or bull heads acquired a sacred value, and therefore the introduction of the deceased through it also acquired a magical and ritual value, connected perhaps to purification, initiation and propitiation. This physical introduction, along with the connected rituals, became a religious event open to the participation of the community, possibly from different social contexts. Thus, the need to provide a larger space that could meet the new requirements; for this reason, ceremonial activities would move to the next room, larger than the foreroom, and decorated with architectural decorative elements. the signs of devotion, such as the bull heads.

From this stage on, the changes that occurred were merely representational: the motif was progressively enlarged, up to one-third, two-thirds and then the entire wall. This process of attribution of a symbolic value possibly occurred at an advanced phase of the Ozieri culture (4360-3480).

In conclusion, the Domus de Janas art reflected the economic and social changes that took place between the Late Neolithic and Copper Ages in Sardinia among different social groups: some were more developed demographically, possibly holding control over the territory in a production-based economy, with basic knowledge of metallurgy; and later, smaller groups of people, including skilled blacksmiths, more prone to trade, in a production-based economy, between the end of the Late Neolithic and the beginning of the Copper Ages. In a nutshell, there were two demographic lines within which the art of rock-carved tombs developed: one characterized by larger groups of people (Late Neolithic) and one with smaller ones (Late/Final Neolithic Age–Copper Age). Similarly, the dimension of the rituals was different: individual, private, with mainly magical religious ideology in the Late Neolithic Age; collective, characterized by a public religious ideology and collective identity in the Late/Final Neolithic–Copper Ages.

Keywords: *Sardinia, Domus de Janas, recent Neolithic, Copper Age, space, function, funerary ideology, society*

The figurative models of the Middle Neolithic Age (5060-4050 BC) gave rise to the Domus de Janas art, and the culture of Ozieri (Late Neolithic Age, 4360-3480 BC), which provide evidence of a major funerary ideology expressed mainly by the representation of real animals in a symbolic architectural context. (Fig. 1.1: Distribution map).¹ It is an animal-centred art representing a portion of an animal with horns, implementing different techniques (sculpture, painting, engraving, punctuations of little dots or hollows), sometimes combined, focusing on the walls of 196 Domus de Janas (equal to 5% of the 3,500 funerary caves explored so far) (Fig. 1.1). Among the figurative motifs, there is a great number and variety of bas-reliefs (convex or flat section) or false-reliefs: 262 motifs in 102 graves, which include four of the morphological categories of the six hypogeic wall art discovered so far: I, bucrania; II, comb-shaped; III, anthropomorphic; IV, weapons and tools; V, geometric figures; VI, architectural elements. Among the bucrania, three typological groups are recognized: bucranium 1 (forward horns), bucranium 2 (horns down), bucranium 3 (horns carved on the ceiling and facing the entrance, forward), with a prevalence of bucranium 1 (245 motifs), bucranium 2 (6 motifs) and bucranium 3 (11 motifs) (Fig. 1.2).

Some issues relating to the spacial organization of figurative signs will be briefly explored, including two of the styles identified so far, that is, the curvilinear pattern (Subclass a) and the straight pattern (Subclass b) (already discussed in Tanda 1977 pp. 16-21; 2007, pp. 127-34; 2008, pp. 99-143). Based

¹ This 2011 contribution was sent to Dr Guillaume Robin, coordinator of the Colloque International “Fonctions, utilisations et représentations de l’espace dans les sépultures monumentales du Néolithique européen” (Aix-en-Provence, to be published), held at the Maison Méditerranéenne des Sciences de l’Homme, Aix-en-Provence, 8-10 June 2011. Despite a request for the update of the synoptical section of the publication in early 2012, on the request of D. Robin, no information on the publication of the records of the event is available. Therefore, I intend to publish the results in another journal. I pay tribute to Professor Emmanuel Anati for this opportunity. This work is a condensed version of a chapter included in the following monographic work: Giuseppa Tanda, *Le domus de janas con motivi scolpiti*, soon to be published (2015).

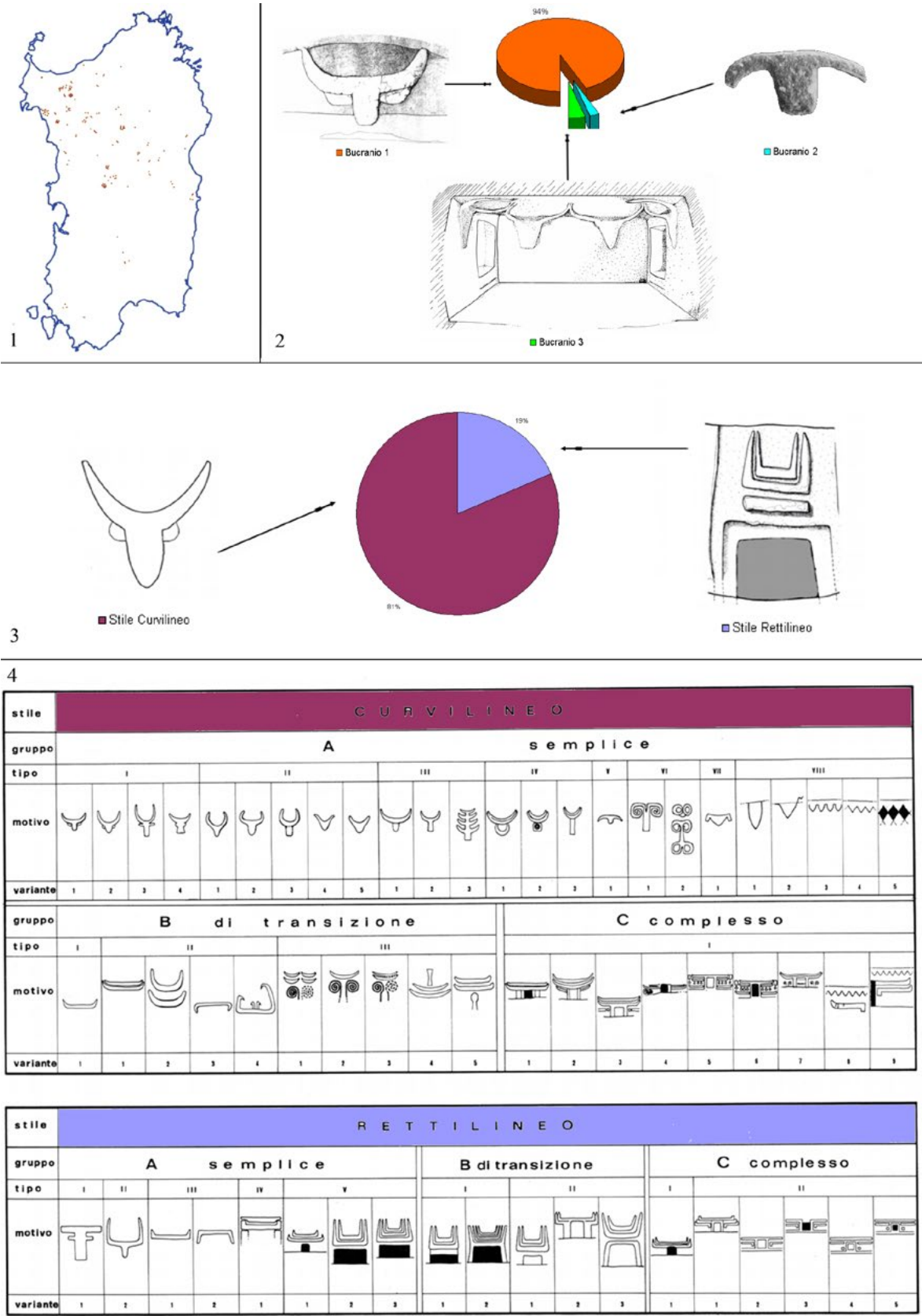


FIGURE 1. 1. DISTRIBUTION MAP OF DECORATED DOMUS DE JANAS; 2. DISTRIBUTION RATE OF THE THREE BUCRANIUM MODELS; 3. DISTRIBUTION RATE OF CURVILINEAR AND RECTILINEAR STYLES; 4. TYPE OF CARVED MOTIFS (TANDA, 1985).

on new available data, some common features may be identified in their distribution and position, which are, presumably, on the one hand a reflection of the economic and social changes that occurred between the Neolithic and Copper Ages in Sardinia; and, on the other hand, the result of the evolution of Neolithic burial ideology.

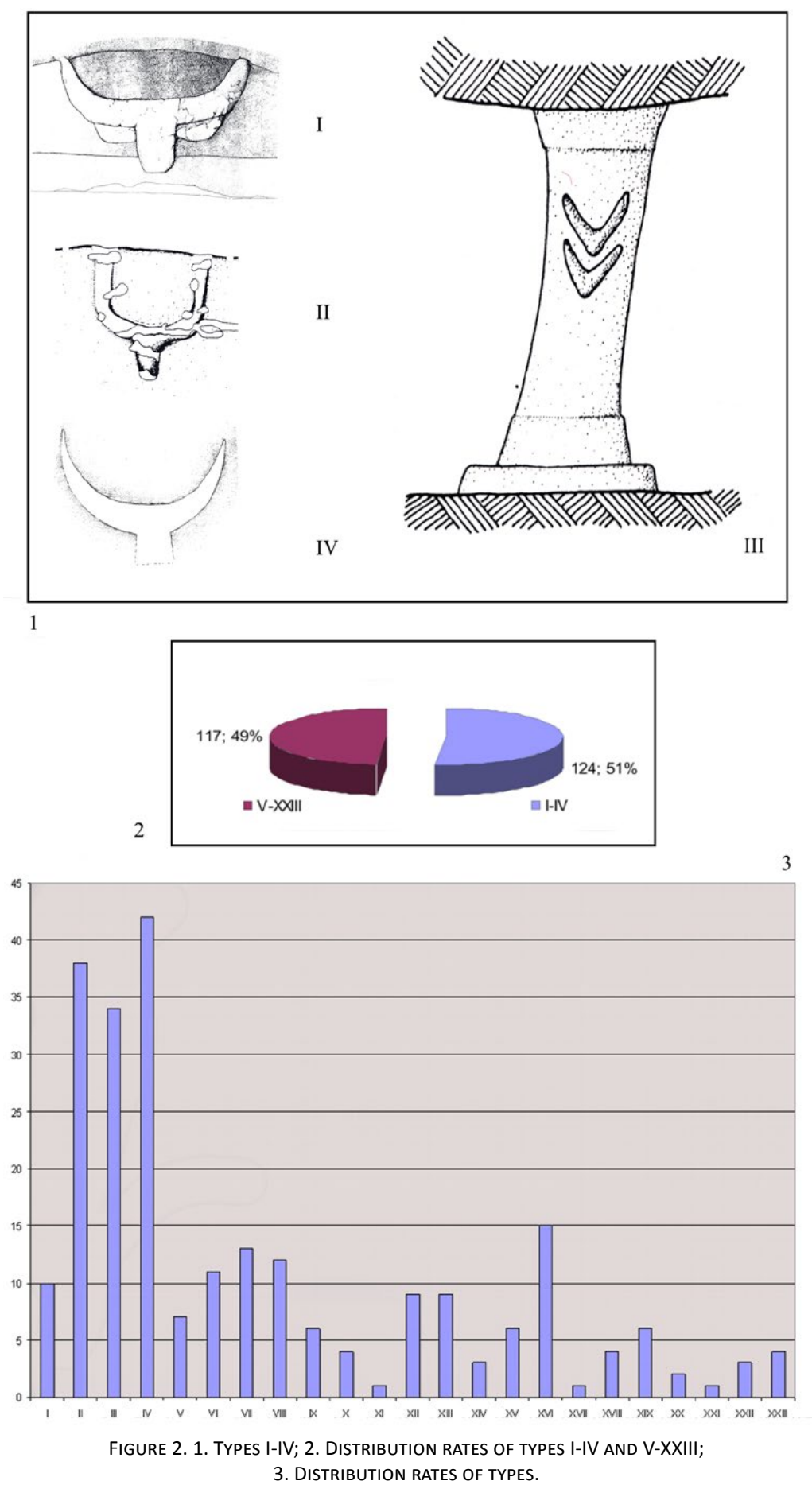
First, it is necessary to process the great amount of data concerning the number, the organization and position of the motifs and/or the figurative compositions. A significant number of Types I-IV signs (curvilinear pattern), both in absolute (Fig. 2.1) and relative terms in relation to each grave (Tanda 2007), may be registered. A significant concentration (at least six motifs or figurative compositions) may also be noted in 10 Domus de Janas, characterized by a complex plan or centripetal pattern, all located in the northwest of Sardinia, especially in Sassari (Fig. 3.3). These Domus de Janas are characterized by a high number of compartments (7-20) and a large surface. All of them display a T-shaped plant, with the exception of Tomb II of Pontesecco (Fig. 3.7), even those including clear evidence of renovations and expansions, and therefore may be regarded as refurbished. They are tombs which undergone expansions and renovations, made at different times and circumstances, such as, for example, the need to expand a basement, with the excavation of groups of cells, in particular junctions. In those hypogea, figurative types I-IV (79 of 108, 73% and 27% respectively) prevail; in Mesu 'e Montes II, eight types may be found (Table 1), testifying an intensive and long-lasting use of the hypogeum. Only three tombs (Enas de Cannua, M. Siseri and Puttu Codinu), characterized by a T-shaped plant, do not seem to be affected by major refurbishing and the resulting upheavals. The absence of Types I-IV in two of those Domus de Janas, M. Siseri 1 and Puttu Codinu VIII, is worth noticing.

Since the bucranium provides evidence of rites of passage (it was therefore defined an aesthetic ritual) (Tanda 2000, pp. 399-425), excluding apotropaic rites compatible with the funerary ideology, it seems very likely that its presence and abundance in different rooms of the Domus de Janas may be a sign of the need at different times to sanctify (a sort of rite of foundation) a new room or a new group of tomb chambers excavated to meet the above-mentioned purpose, and provide access to the otherworldly dimension by virtue of the execution of the symbolic motif. In this perspective, such a presence may be explained, it being uncommon in secondary cells, which are also the more recent ones, but most probably forming part of the group of compartments founded according to the ritual.

Based on the current state of the art in the field of research, the multiple-compound tomb does not seem to be conceived as the result of a complex planning purpose nor meet the need for a particularly high-rank tomb complex. However, it is most probably the sign of a long-lasting presence of large groups of people, devoted to various and intense activities deeply rooted and spread over the local territory and, possibly, connected to the upper classes. Those communities had been using the underground for a long time, between the Late Neolithic and the Copper Ages.

As far as the high number of bucrania carved inside the seven refurbished tombs is concerned, also the allegedly unfamiliar hypothesis connected to behavioural choices should be taken into account, the latter being determined by the large size of the population, its wealth and especially the social layers, which resulted in the rituals of the event and/or the material display of wealth, such as sacrifices of horned animals, as is still recorded in ethnographic contexts (Camaro Serrano, Spanedda 2001, pp. 373-94).

The three T-shaped tombs, in addition, characterized by their limited space and planning complexity (no secondary cells found), based on current research, do not seem to be conceived for the purpose of developing merely simple tombs, but rather, they seem to be dedicated to particularly high-rank individuals, socially relevant and, therefore, characterized by a higher number of motifs. Such hypothesis may be explained by assuming that the small reference groups in the area did not have the need to expand and/or renovate the tombs. However, this could be a sign of a later intervention carried out between the end of the Late Neolithic and Copper Ages, when a production-based economy



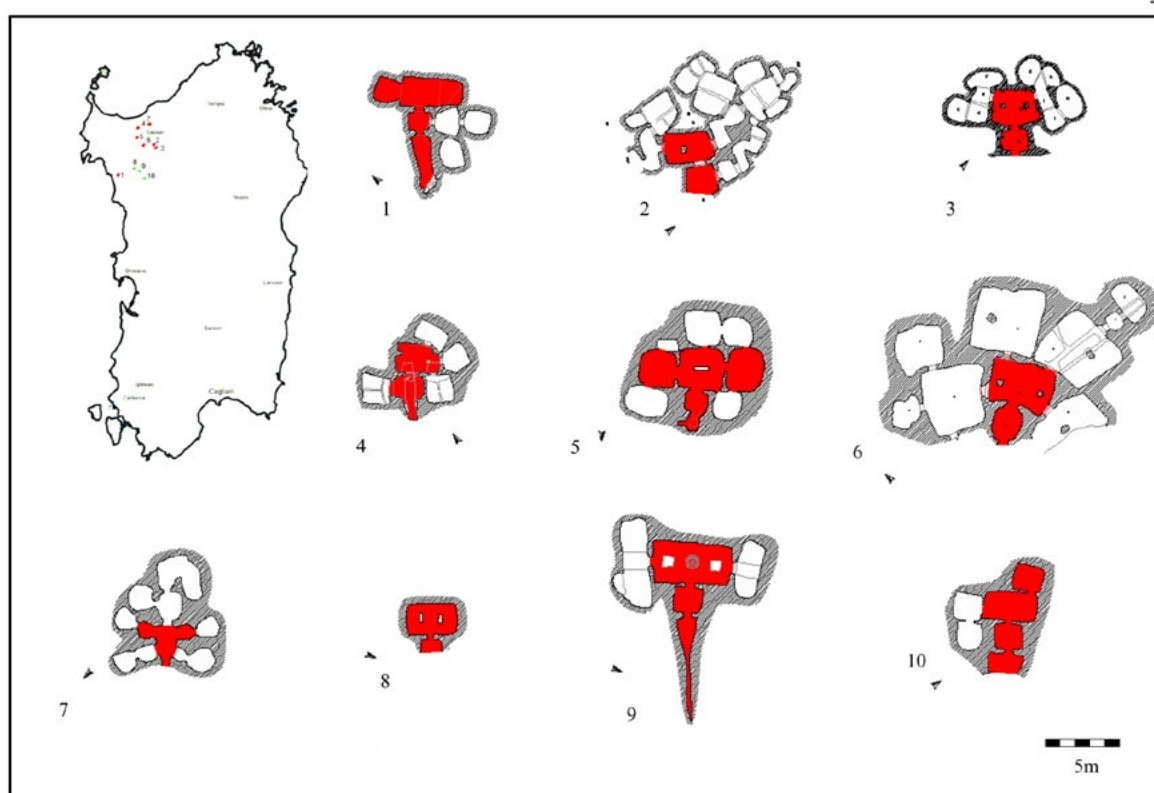


FIGURE 3. 1. A, DISTRIBUTION RATE OF THE DOMUS DE JANAS DISPLAYING A LARGE NUMBER OF PICTORIAL REPRESENTATIONS; 2. A, HYPOGEA AT ANGHELU RUJU Tomb A (A), LI CURUNEDDI VI (), MONTE D'ACCODDI 1 (), PONTESECCO IIA (); 3. HYPOGEUM AT TOMBA MAGGIORE (), MESU 'E MONTES II (), MONTALÈ (); 3. HYPOGEA AT M. SISERI (), PUTTU CODINU VIII (), ENAS DE CANNUIA (). THE NUMBERING CORRESPONDS TO THE DISTRIBUTION MAP.

developed, lasting until the learning of metallurgy (not in practical terms though). However, this is suggested by the absence of Types I-IV (so far believed to be the most ancient) in two of the Domus de Janas, as reported above. Possibly, innovative technologies, perhaps possessed by few, gave prestige and economic capability to those who possessed them, resulting in the production of art.

The expansion and refurbishing stopped because during the Copper Age another type of underground iconography developed, that is, a longitudinal Domus de Janas, with or without a *dromos*, typical of

No.	Denomination	Planimetrics	T-shaped core	No. of rooms	No. of motifs	Area sq m	Type	Type I-IV	Type V-XXIII
1	Alghero, Anghelu Ruju Tomb A	Restored, multiple-roomed	*	7	8	29.7	II	8	
2	Ossi, Tomba Maggiore	Restored, multiple-roomed	*	20	18	60.58	I, IV, V, VI	17	1
3	Ossi, Mesu 'e Montes II	Multicellular organism	*	12	18	33.15	II, III, IV, VI, IX, II, XIII, XXII	9	9
4	Sassari, Li Curuneddi VI	Restored, multiple-roomed	*	7	9	23.84	II	9	
5	Sassari, Montalè	Restored, multiple-roomed	*	10	7	51.81	IV-VII	6	1
6	Sassari, Monte d'Accoddi 1	Restored, multiple-roomed	*	11	10	125.50	III	10	
7	Sassari, Pontesecco Ila	Restored, multiple-roomed	*	14	12	32.76	II, III, IV	12	
					82			71	11

TABLE 1. REFURBISHED TOMBS, WITH T-SHAPED CORE.

No.	Denomination	Planimetrics	No. of rooms	Area sq m	No. of motifs	Type	Types I-IV	Types V-XXIII
8	Bessude, Enas de Cannuia	T-shaped	2	9.95	13	III, VIII, XII, XIII, XXII	10	3
9	Putifigari, M. Siseri	T-shaped	5	46.79	7	VI, XII-XIII		7
10	Villanova Monteleone, Puttu Codinu VIII	T-shaped	6	27.83	6	VIII, XII-XIII		6
					26		10	16

TABLE 2. TOMBS WITH T-SHAPED PLANT.

the culture of Filigosa (Copper Age: Tanda 1985, pp. 162-4) and, later on, another funerary model developed, the megalithic tomb (Fig. 4.1), that is, unless the builders just wanted to build a particular type of building, of which no archeological evidence remains.

The analysis of the distribution of bas-relief (either convex or flat) or pseudo-relief bucrania (Fig. 4.1) inside the tombs was carried out in close collaboration with the planimetric survey and led to some conclusions of great importance from the social and cultural point of view. Two levels of evaluation and assessment may be reported: the general level and the in-depth study of specific aspects, within the same research fields.

At the general level, it was assumed that the walls of the hypogeum on which the signs are carved were the material medium used to convey an ideological funerary message during the Late Neolithic and the Copper Ages. A suitable model to perform an empirical and experimental data processing was needed by measuring the impact of the signs in terms of the visitors' visual perception and, therefore, their symbolic value in the social structure for each Domus de Janas. The method involved the identification of spatial units to be measured, including the ceiling that often displayed the representation of the roofs of ancient Late Neolithic and Copper Age huts, with conical or semicircular double or single slope. Also the architectural elements, both in terms of patterns and details, fell within the category of funerary symbolism, assuming the value of material media for ideological communication.²

² The topic will be discussed in G. Tanda, *Visual culture in Sardinia.* "The Domus de Janas carved motifs" (forthcoming).

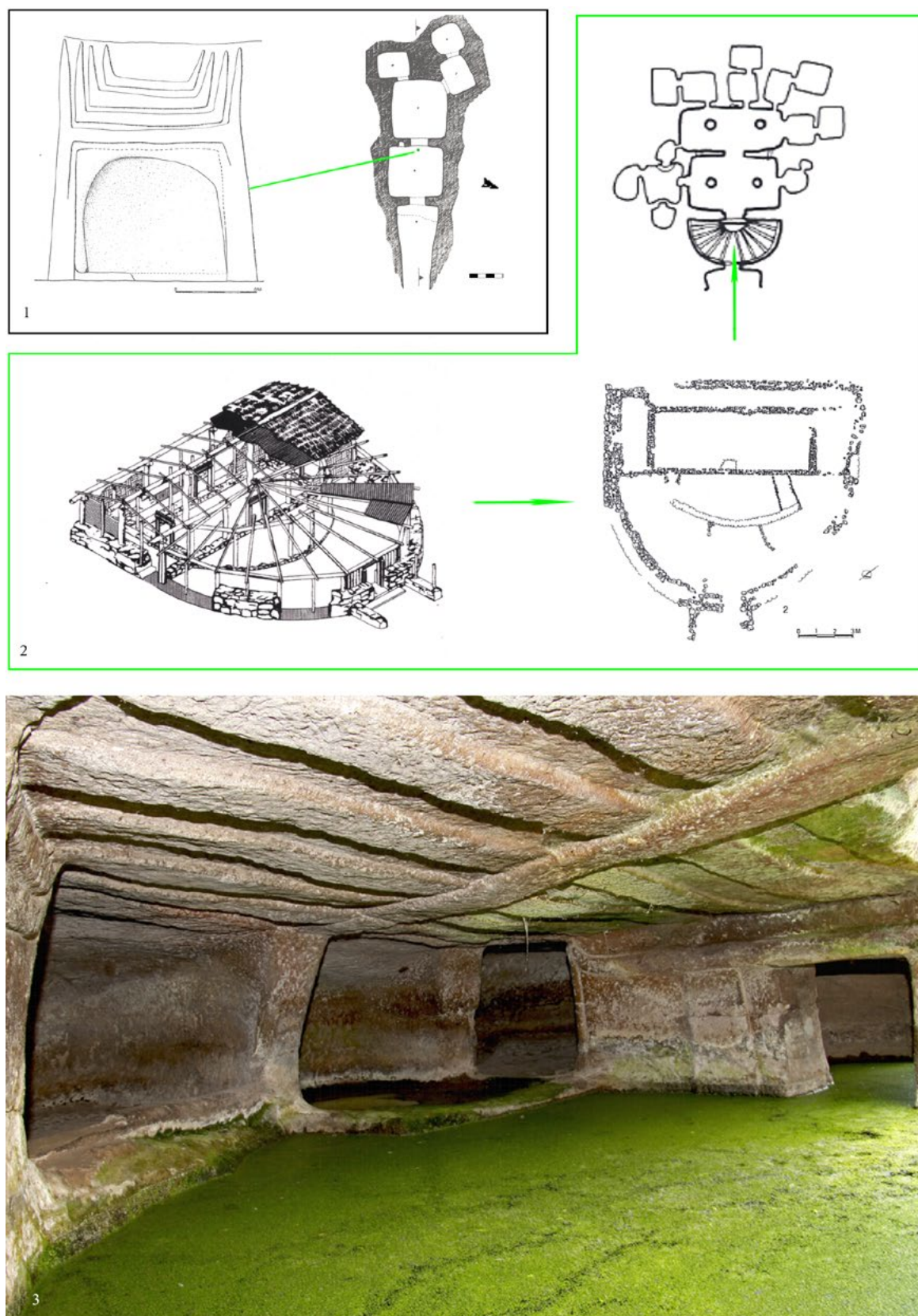


FIGURE 4. 1. THE BRODU DOMUS DE JANAS; 2. DISTRIBUTION OF SIGNS BASED OF THE PLANT; 3.

Outside	%	Fore-room	%	Main room	%	Secondary cell	%	A	%	B	%	C	%	D	%	E	%	F	%
4	4,4	36	39,35	36	39.35	1	1,2	2	2,2	1	1,2	6	6,6	3	3,3	1	1,2	1	1,2

TABLE 3. FREQUENCY RATE OF EACH LOCATION WHERE MOTIFS ARE SCULPTED.

In particular, some markers were studied, including the position of the signs on the walls in relation to the type and size of the motifs, their visibility from the entrance, the hypothesis of figurative evolution proposed in the past (Tanda 1985, 2008). The artistic evidence seems to be carved only in some rooms of the Domus de Janas, on the outside (in the pavilion), inside the forerom, in the main cell, in a secondary cell (always located next to the main cell), that is, in spaces that, obviously, attracted the interest of the artisans and visitors, since they were very interesting in ideological funerary terms. The main positions where motifs were carved are the outside of the tomb (four tombs), in the forerom (36), in the main cell (36) and in the secondary cell (1). The following combinations may also be found in lower concentrations: A, outside, forerom, main cell (2); B, outside and main cell (1); C, forerom and main cell (6); D, forerom, main cell and secondary cell (3); E, forerom and secondary cell (1); F, main cell and secondary cell (1) (Table 3; Fig. 4.).

Significantly, the carving of the motifs often reproduced both the architectural modules of the huts and the structural elements for symbolic purposes, as reported above (pillars, columns, fireplaces, gabled roof, with a single slope, conical in shape, with a semi-circular atrium, plinth walls, pilasters, etc) (Fig. 4, ...). In this regard the presence of figurative motifs should be noted, made sometimes also on the facets of the pillars supporting the ceiling of the main cell (e.g. at Anghelu Ruju XIX and XX bis-Alghero, Enas de Cannua IV-Bessude, Mesu 'e Montes II and Tomba Maggiore-Ossi, Monte Siseri I-Putifigari, etc: Tanda 2008) or a secondary cell (M. d'Accoddi 1: *as above*). On the other hand, the desire to imitate the huts inhabited by the living, even in the single plant, with the exception of architectural elements, has long been observed in the artificial caves (Tanda 1984, pp. 54-5). Nine architectural modules have so far been recognized and imitated inside the Domus de Janas. The most represented is the one rebuilt in 1984 and discovered in the settlement of Serra Linta in Sedilo (Fig. 5.1). As part of this trend, one of the cornerstones of funerary ideology of the Late Neolithic and Copper Ages in Sardinia is recognized, that is, the belief in the afterlife and the desire to recreate the otherworldly dimension of the living environments or particular environments, although archeology has not provided suitable evidence, as stated above.

The location of the bucranium inside the forerom or in the adjacent main cell may be regarded as the sign of a figurative diachronic development, being located inside the largest room connecting the rest of the space for worship purposes. But it also seems to suggest that rituals changed as society developed. The plurality of individual motifs and the uniqueness of the figurative compositions of the I-IV, XII-XIII and XVI-XXIII types respectively (Tanda 2008, Figs. 3-6, 14-16, 19-26), and the space occupied by them, seem to be the expression of different concepts connected to different periods of time and different ritual dimensions. The several I-IV type motifs carved next to one another are more ancient than the repeated representations carved above the door or merged with it on a wall, such as the XII-XIII/XVI-XXIII types, which are interpreted as figurative compositions (Fig. 5, 2-3).

As far as ritual is concerned, the concept of a plurality of individual actions and repetitive rituals, such as the execution of motifs, that is clear in the I-IV types, reported in 73% of the tombs decorated with curvilinear motifs, seems to be connected with the celebration of events (death/funeral, refurbishing of the hypogeum/foundation ritual, repetitive ceremonies/anniversaries, etc) performed by individuals or as part of funerary, religious and magical rites. The execution of the figurative composition or the pattern on the wall, the spread of the whole available space or on part of it, however, is a sign of universal and collective religiosity and serves to build the identity of a group and keep it united.

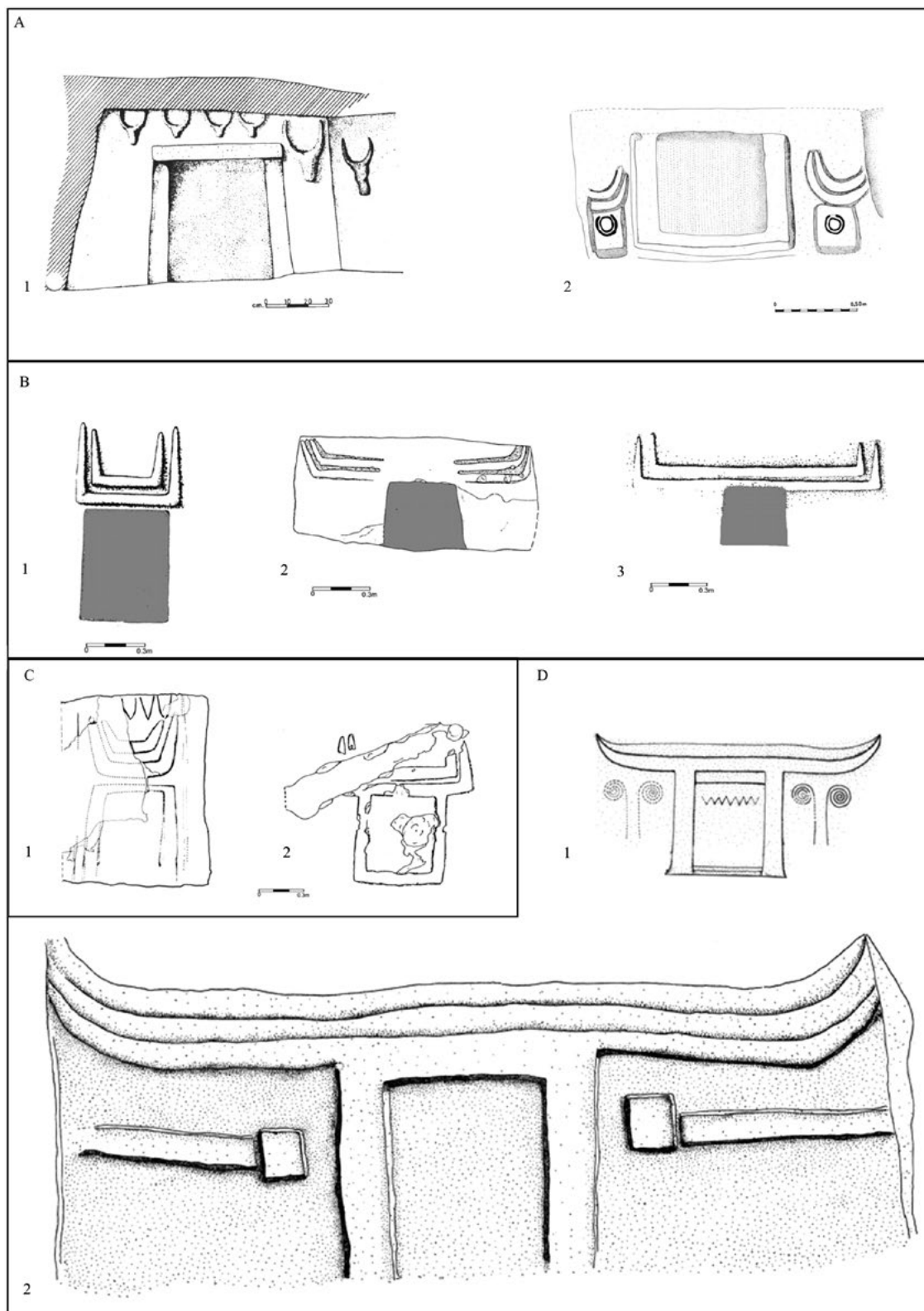


FIGURE 5. ARCHITECTURAL ELEMENTS: 1. CHIARAMONTI, SU MURRONE; 8 DISTRIBUTION MAP. CALARIGHES II (VILLANOVA MONTELEONE) OF CURVILINEAR STYLE SUBCLASS; TUVU 'CARRU (ANELA), LITTOSLONGOS AND THE TOMB OF FINESTRELLE (OSSI), MONTE SISERI 1 (PUTIFIGARI), LI ALGASA (SEDINI), BRODU IV (ONIFERI) AND SA PRANEDDA (SARULE) ANGHELU RUJU TOMB A (NO. 8, TYPE II), BESSUDE, ENAS DE CANNUIA (NO. 13), OSSI, TOMBA MAGGIORE (NO. 18, TYPES I, IV-VI) AND MESU 'E MONTES II (NO. 18), PUTIFIGARI, M. SISERI (NO. 6 TYPES VI, XII-XIII); SASSARI (NO. 17, TYPES I AND IV), TOMBA DEL CAPO OR MONTE D'ACCODDI 1 (NO. 10, TYPE III), PONTESECCO IIA (NO. 12, TYPES II-IV), LI CURUNEDDI VI (NO. 9, TYPE II), VILLANOVA MONTELEONE, PUTTU CODINU VIII (NO. 6, TYPES VIII, XII-XIII).

No.	Denomination	Outside	Forerom	Main cell	Secondary cell
1	Alghero, Anghelu Ruju, Tomb A		*		*
2	Ossi, Tomba Maggiore		*	*	*
3	Ossi, Mesu 'e Montes II		*	*	*
4	Sassari, Li Curuneddi VI	*	*	*	
5	Sassari, Monte d'Accoddi I			*	*
6	Sassari, Montalè		*	*	
7	Sassari, Pontesecco Ila			*	

TABLE 4. LOCATION OF THE MOTIFS BASED ON THE PLANIMETRIC ECONOMY OF REFURBISHED DOMUS DE JANAS WITH A HIGH NUMBER OF MOTIFS.

No.	Denomination	Outside	Forerom	Main cell	Secondary cell
1	Bessude, Enas de Cannua IV		*	*	
2	Putifigari, Monte Siseri I		*	*	
3	Villanova Monteleone, Puttu Codinu VIII		*	*	

TABLE 5. LOCATION OF THE MOTIFS INSIDE THE T-SHAPED DOMUS DE JANA.

The conceptual and diachronic discourse requires further study, emphasizing that the organization of space, such as the planimetric development of the hypogeum, is closely related to social organization.

The analysis of the values reported above (Table 3) underlines, first, the common use of the forerom and the main cell for ritual purposes, to be used at different times, with the exception of the 10 tombs, characterized mostly by a complex plant configuration, which have already been studied above regarding the high number of motifs. Six of them (Enas de Cannua IV, Li Curuneddi VI, Mesu 'e Montes II, Monte Siseri I, Puttu Codinu VIII, Tomba Maggiore) display figurative motifs inside the two rooms; one of them also on the outside (Li Curuneddi), two of them also inside secondary cells, and only one of them inside the main cell and in secondary cells (Monte d'Accoddi I). Secondly, the same analysis seems to suggest that the forerom did not serve for the sole purpose of granting access to the space where the corpse lied, but also as a kind of lobby of the home of the deceased; therefore, an area of physical separation but, at the same time, of spiritual connection. For these reasons, it is the place where magic and religious rituals are performed to propitiate the departed souls and their god. In the majority of the Domus de Janas, the forerom is smaller than the main cell. While confirming the secondary function of the forerom, in comparison with the rest of the cells where the actual burial was performed, its size seems to suggest a limited attendance of the place, if compared with the space where the magic and ritual ceremonies were performed. Therefore, given the close connection of the forerom space with the signs of the cult, the fact that such motifs were moved to the other spaces seems to suggest the decline of the forerom in terms of worship and funerary use.

As far as decoration is concerned, the bottom wall seems to be the most important one. Indeed, in 27 graves (75%), the front wall is decorated with one or more motifs carved above the door between the forerom and the next cell, or next to it; in nine only graves (25%), decorations appear on the side walls. The use of the front wall may be explained by its central position, easily visible from the entrance to those who entered the hypogeum for burial or ritual or maintenance purposes.

As for the bucrania carved above the door or next to it, such use was a way to sanctify the room dedicated to funerary rites. The door/motif connection is not of merely a spatial nature: it is an expression of an ideological connection that unfolds through the figurative motifs. Indeed, in nine

cases the bucrania are merged with the door through the implementation of architectural elements or the carving of patterns directly on the door, in the form of lintels. This reveals a more advanced level of sanctification, a significant and easily recognizable step in the process of figurative and ritual evolution of hypogeic arts: the symbolization of the door that becomes the head of the sacred bust. Since then, the door has been equipped with horns or busts, being imbued with a sacred value. Therefore the introduction of the deceased through it also assumes in itself, a magical ritual value, a kind of purification, and an initiatory and propitiatory act.

Eight Domus de Janas display this feature (Tanda 2007, pp. 127-34): Calarighes II (Villanova Monteleone) belonging to the curvilinear subclass; Tuvu 'Carru (Anela), Littoslongos and the Tomb of Finestrelle (Ossi), Monte Siseri 1 (Putifigari), Li Algasa (Sedini), Brodu IV (Oniferi) and Sa Pranedda (Sarule) (Fig. 5... Distribution map). The sacred entrance to the deity through the deity and to its world through a real entrance is to be interpreted as the characteristic manifestation of a type of worship open to the participation of the community, and possibly to changed social dynamics. As a result, the need to choose a wider space among those available was required to better meet the changing needs. Hence, rituals were performed in the adjacent cell, larger than the foreroom, connecting the foreroom to the rest of the cells, followed by the transfer of architectural and decorative elements – the signs of the cult, including busts – and refurbishing. In this representation, the real element (the door) seems to have been already replaced by the symbolic element (the false door). From this stage onwards, changes occurred in both nature and the figurative approach of the rites: the motifs were extended gradually to occupy one-third of the wall, two-thirds of it and then the entire wall (Fig. 5 ...).

When did the symbolization process of the door end and in which cultural context? At what chronological stage? The Sardinian hypogeic art chronology is based on the technical and typological analysis of the representations, on the overlapping of motifs, on the similarities of the motifs analysed by means of diagnostic findings related to other cultures, on the history of the artefacts found at the Domus de Janas, on the comparison with other European pictorial finds performed outdoors, on rocks, in gorges, caves, megalithic monuments (Valcamonica, Mount Bego, Iberian Peninsula, North Africa) (Tanda 2000, fig. 4). Some indications come from the history of the artifacts found at the Domus de Janas.³ Therefore, at present, the end of the process of symbolization of the door may be dated back to the late stage of the Ozieri culture (4360-3480).

In conclusion, the art of the Domus de Janas seems to reflect the economic and social changes that occurred between the Late Neolithic and Copper Ages in Sardinia within different groups of people:

- larger groups, concentrated and enclosed within the territory of reference and distributed over time, between the Late Neolithic and Copper Ages, perhaps ruling over the territory characterized by a production-based economy, acquainted with metallurgy;
- smaller groups, more prone to contacts and exchanges in a production-based economy, skilled blacksmiths, between the end of the Late Neolithic and the Early Copper Ages.

Therefore, two demographic lines seem to be connected with the development of hypogeic art:

- concentrated population (Late Neolithic);
- scattered population (Late Neolithic/Copper Age).

Two different ritual dimensions also seem to have developed:

- individual, household, mainly with magic religious appeaches (Late Neolithic);
- collective, public religiosity and group identity (Late Neolithic/Copper Age).

³ Only in two tombs, Littoslongos and Monte Siseri, regular excavation campaigns were performed, unearthing cultural elements. In Littoslongos, significant ceramic and lithic culture pieces were found in Ozieri (Moravetti 1989, pp. 87-91, Fig. 5-6.) and connected to the Filigosa culture. The fretworked plate statues may be referred to the latter (Moravetti 1989: Fig. 4, Tab. I, 2-3). In fact, the chronology is controversial; some scholars propose the Ozieri culture at its late stage. For a summary on the issue, see Moravetti 1989, p. 91. Pottery pieces connected to the Ozieri culture were found at the hypogeum of Monte Siseri (Demartis 1991, pp. 1-21.).

The hypothesis is reliable but it requires the confirmation of new and productive research, a sounder scientific strategy and, above all, fewer constraints than those imposed by the unreasonably strict bureaucracy. In this perspective, the exploration of the territory is crucial for the identification of settlements related to necropolises and their scientific exploration, for the reconstruction of prehistoric landscapes, for the identification of paleo-economies, for the identification of the internal articulations of societies, and ultimately to better understand the groups of people who built and used the decorated Domus de Janas.

Bibliography

- CAMARO SERRANO, J. A., SPANEDDA, L. 2001. Decoracion, representaciones figuradas y areas rituales en la preistoria reciente sarda: acumulacion, control del territorio y gerarchizacion. In: Waldren W. H., Ensenyat J. A. (Dir.), *World Islands in Prehistory. International Investigations*, V Deja International Conference of Prehistory, pp. 373-94.
- DEMARTIS, G. M. 1991. La Tomba dell'Architettura Dipinta. Un ipogeo neolitico di Putifigari, *Bollettino di Archeologia*, 7, pp. 1-21.
- MORAVETTI, A. 1989. La tomba ipogeica di Littoslongos-Ossi. In: AA. VV., *La cultura di Ozieri. Problematiche e nuove acquisizioni*, Atti del I Convegno (Ozieri, January 1986-April 1987), Ozieri, Il Torchietto, 1989, pp. 83-102.
- TANDA, G. 1977. Arte preistorica in Sardegna. Le figurazioni taurine scolpite dell'algherese nel quadro delle rappresentazioni figurate degli ipogei sardi a Domus de Janas, Sassari, Dessì, p. 86, *Quaderni della Soprintendenza di Sassari e Nuoro*, 5.
- TANDA, G. 1984. Arte e religione della Sardegna preistorica nella necropoli di Sos Furrighesos-Anela (SS), Sassari, Chiarella, vols. 1-2.
- TANDA, G. 1985. L'arte delle Domus de Janas nelle immagini di Ingeborg Mangold, Sassari, Chiarella, p. 199.
- TANDA, G. 2000. Hypogeism in Sardinia: Art, symbolism, religion. In: G. Tanda, M. G. Melis, P. Melis (Redazione), *L'ipogeismo nel Mediterraneo. Origini, sviluppo, quadri culturali*, Atti del Congresso Internazionale (Sassari-Oristano, 23-28 May 1994), Muros, Stampacolor Industria Grafica, pp. 399-425.
- TANDA, G. 2007. La simbolizzazione dei portelli d'ingresso nelle Domus de Janas. In Anati E. (Ed.), *Colloque U.I.S.P.P.-CISENP, Paris 22-23 October 2007*, Capo di Ponte (BS), pp. 127-34.
- TANDA, G. 2008. Il Segno e l'Idea. Le figurazioni scolpite di bucranio nella Preistoria della Sardegna. In: Tanda G., Lugliè C. (Ed.) *Il segno e l'Idea. Arte preistorica in Sardegna.*, Cagliari, CUEC, pp. 99-143, University Press. *Archeologia*, 3.

3D Reconstructions of Sculptured Emotions in the Copper Age Eastern Balkans

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Abstract

Recent anthropological studies compare Husserlian transcendental phenomenology with the Native Americans' reflections on their relationship between humans and nature. Native Americans tend to see the human body as entirely governed by, or as, a direct continuation of cosmic spirits. This omnipresent top-down hierarchy is radically opposed by the bottom-up structure found in Husserlian phenomenology. The latter sees the human body as a fertile ground upon which the diversity of personality, cultures and worldviews are erected.

These two reflective perspectives created two antagonistic conceptualizations of the human body. The first one views the body as a direct emanation of the spiritual world which puts it at equal with the entire living and non-living worlds. The Husserlian understanding of nature and human body in particular leaves space for the personal development of each creature and phenomenon, based on the rich canopy of nature.

This opposition seems quite different from the point of view of the modern understanding of mass consumerism. The spiritual world holds in firm limits mass consumption and thus controls the possibilities of social conflict. The world, characterized by the inexhaustible development of personalities and consumers' aspirations, grows fast and leaves space for sparking diverse kinds of social conflicts. This somewhat simplified interpretation of the two world-views is used here only to underline some aspects of the personal and emotional states of individuals from the Copper and early Bronze Age societies in the Eastern Balkans.

“Dame de Brassempouy”, ca. 29,000-22,000 BP, mammoth ivory, Aquitaine, France. Earliest known face.

Some features of the two wide worldviews meet at about the end of the Copper Age in the Eastern Balkans. The faceless presentation of the human body is more typical of Paleolithic and early Neolithic works of art. Traditionally and because of the 2D presentations (photos, drawings, pictures) of these figurines in books, journals and tourist cards, Copper/ early Bronze Age figurines are being considered as a mere continuation of this long established tradition. In the present study, the 3D reconstruction of some Copper Age figurines shows the completely different conceptual framework of the integrated presentation of the human body. It is based on the ability of new visualization technologies to show the rational viewpoint of the master of these works, made from detailed observation of fast body movements and fleeting emotions traced on human faces. For the first time the human face becomes the central area (logical convergent point) of these figurines. In the present study their integral 3D reconstruction and the information they convey become far more valuable because an exact moment can be viewed from different angles.

Furthermore, I explore the communicative power of these portraits by describing particular elements of the facial expressions, their potential public role and the gradual establishment of a proto-literary tradition based on the personalized experiences of the people from that time.

Key words: 3D imagery, Husserlian phenomenology, origins of art, body and soul

Philosophical Background

Recent anthropological studies compare Husserlian transcendental phenomenology with the Native Americans' reflections on their relationship between humans and nature. Native Americans see the human body as entirely governed or as a direct continuation of cosmic spirits. This omnipresent top-down hierarchy is radically opposed to the bottom-up structure found in the Husserlian phenomenology. The latter sees the human body as a fertile ground upon which the diversity of personality, cultures and worldviews is erected (Lerner 2013).

These two reflective perspectives created two antagonistic conceptualizations of the human body. The first one views the body as a direct emanation of the spiritual world which puts it at equal with

the entire living and non-living worlds. The Husserlian understanding of nature and the human body in particular leaves space for the personal development of each creature and phenomenon based on the rich canopy of nature.

This opposition seems quite different from the point of view of the modern understanding of mass consumerism. The spiritual world holds in firm limits mass consumption and thus controls the possibilities for social conflict. The world characterized by the inexhaustible development of personalities' and consumers' aspirations grows fast and leaves space for sparking diverse kinds of social conflicts. Consumption is an essential and ancient part of human politics, an inevitable consequence of the unique way our species has developed its relationship with the material world (Wilk 2001, 2010).

These theoretical premises outline a perspective that opens the door for exploration of the origin of religion through the accumulation of intuitive and rational knowledge. Furthermore, the same perspective may be used in a somewhat different direction that seeks out an explanation of the origin of artistic behaviour and the human relationship to fine arts. This viewpoint may be reformulated into the following one: why has archeology revolved around visual media since its early steps as a systematic discipline? Michael Shanks and Timothy Webmoor defined it as the immediacy of discovering the past through defining two relationships complementary to each other: the actuality of the juxtaposition of the present on to the past and the *kairos*, the time of connection between past and present (that key opportune moment when the past appears to us) (Shanks and Webmoor 2011: 88). The natural conclusion drawn from this conceptualization of the encounter between past and present is the importance of the moment when a viewer engages in intense observation with an object of art or architecture. This is a peculiar moment where the encounter of a person with the past may be interpreted in terms of modern social semiotic theory. It defines different semiotic resources other than language and analyzes their relations with each other, specified as interrelated semantic systems. These semantic systems are expected to fulfil four functions: to construe our experience of the world (experiential meaning); to create logical relations between experiential meanings (logical meaning), to enact social relations (interpersonal meaning); and to organize meanings into coherent messages (Halliday 1978). A relatively straightforward approach to such data may be the one that quantifies data coming from different semiotic resources such as camera angle, gaze and framing (O'Halloran 2012). From this point of view social semiotic theory makes an important contribution for better understanding of the effects of semiotic resources on public presentations on a TV screen. Their importance for the public's understanding is in that they represent pseudo-3D reality where the important elements are the camera angle, gaze and framing.

Thus the key opportune moment of personal encounter with the past (or with an interesting art object or monument) defined by M. Shanks and T. Webmoor (2011) involves three components: embodied experience (unconscious), logical meaning and enactment of social relations. Out of this series of human experiences the first one, the creation of embodied (experiential) meaning, seems to be the primary (in terms of an immediate intuitive reaction) one. It acts as a primary source of information that triggers the next stages of personal familiarization (the greater part of it involves rational experiences) with an unknown object, monument or phenomenon.

In addition to this mechanism M. Foucault (1994: 50-77) involved language, which plays an important role in an artist's creation of an art object and enhances the public's understanding of a particular artwork. In general, language and speech concern both the intuitive and rational parts of any personal familiarization with an unknown object. Thus the important element in the proper representation of an art object is the frame that unites the artist's and observer's standpoint. It consists of different forms of comparison of language similitudes that create a frontier situation, a marginal position and archaically profound silhouette. Considered as prototypes of typical human behaviour, this general definition outlines particular mechanics where the frame moves either around the object or the object rotates around the observer and makes possible the unique human ability to physically experience the constant interplay between the viewer's motion and emotion.

The Difference between 2D and 3D Representations of Human Emotions

The theoretical premises presented above make clear the existence of human necessity to either rotate or make moves around any object of interest. In practice, an observer establishes experiential meaning through the particular mechanics of rotation. A question arises as to how to describe in a concise way this mechanical process of rotation. A possible approach to answering this question is to borrow the qualitative description of the process of rotation of an object in a liquid environment from physics. The rotating movements (real or mental) of an object of interest may be defined in the following way: the actual movements per minute are proportional to the initial impulse for rotating the object. In turn this initial human impulse for manipulation is slowed down by a rapidly decaying function/relationship that directly depends on the observer's educational, cultural and religious background and the purpose with which he/she studies the object of interest. This is the well-known differential equation that describes in exact quantitative relations the number of rotations of an object in a liquid environment. This is of great practical use in engineering and natural sciences.

On the other hand, the above qualitative description helps to present in a concise way the human necessity to rotate or move around an object of intense interest. This cognitive reality has been established not only through theoretical enquiries such as those of M. Foucault (1994), but has been observed and described by anthropological research on traditional communities and by modern artists. For example, an Eskimo carver of a piece of unworked ivory would hold it in his hand and ask different questions: 'Who are you? Who hides there?' In most cases the carver works aimlessly until he sees the form emerging out of the ivory piece (Layton 1992: 32-3). In this case the rotation is mental (the carver unconsciously rotates the piece of ivory), that corresponds to tightly related (in terms of culture, tradition, craftsmanship) expressions through language. These cognitive resources complementary to one another become integrated in the moment of engagement with the unworked piece of ivory in order to help the carver realize a logically coherent tangible form that is related to his cultural background.

The above behaviour is related to the artisan that creates an object of art, but there is another human natural capability possessed by any observer when he/she focuses attention on this art object. The human eye is able to partially register movements that can nowadays be fully registered and documented with the aid of high-frame electronic-rate imaging. It was established that during the detection of biological motion humans assess both the facing direction and the motion direction, that have a different impact on their attention. Of particular interest is the difference in reaction times and accuracy ratings between passive and active viewing. The results show that the facing direction of a point-light walker (figure) directs attention to the side of the Gabor (specific side-marks on both sides of the figure) with the least amount of time when the cue and target are congruent (Chan 2011).

In terms of artistic behaviour the very moment the artisan catches the particular frame out of a series of frames that contain discrete movements and after he/she represents it in a tangible form, the observer is able to reconstruct this series of movements out of the artistic representation of a movement contained in one or a few frames. Both the artisan and the observer need to focus their attention by involving in this process all the possible cognitive resources, that is, visual and auditory in combination with language and speech. This combination occurs often in classrooms where some pupils repeat in a loud voice some parts of a difficult definition presented by the teacher. This is not a deviant behaviour but rather that some pupils need to involve language and speech in order to grasp better the incoming auditory and visual elements of a piece of abstract information.

In summary, nature provided humans with the necessity to physically and mentally manipulate an object of interest and in difficult cognitive situations combine it with words pronounced in a loud voice. A question arises as to how much culture influences this natural impulse. The answer to this question may be sought in the cultural origins of 2D and 3D imagery. The origins of both types of representation go back to the Upper Paleolithic. It will not be wrong to say that the contents of all the imagery from that period are a cultural product based entirely on appreciation of the

animal world. Perhaps human emotions were presented through the imagery of animals. There are excellent examples of representing the similarity between animal and human emotions. Although the perspective in 2D images has not been well elaborated the attempts to enlarge space may be viewed in the representation of series of animals. These series add volume and perhaps time. I have in mind the famous images of horses in the Chauvet cave, France (White 2003, photo on the back cover). Probably they represent one and the same horse taken from slightly different positions and coloured with slightly different colours. It seems as if the Paleolithic artisan was able to catch with his/her eyes a series of high-frame electronic-rate imaging of horse movement and through it represent the lifetime of a horse by adding space, time and emotions. The well-marked eyes and the position of the series of heads represent a state of sadness which is a typical feature of highly emotional animals such as horses and all the more typical of humans. The Paleolithic artisan had an eye not only for the physical movement of horses but also for the fleeting facial appearances of a state of emotion that is so typical both for horses and humans.

3D sculptures (figurines) follow similar patterns of the expression of human feelings through the movement of animals. For example, the sculptured headless bodies of two ibexes confronting each other on a Magdalenian propulsion arm made of antler represent the vigour and aggressiveness of both animals and humans (White 2003, photo on page 5). In this cultural background the absence of emotions in the presentation of the well-known Venuses and male figurines is not a surprise. Although they have heads, most of these figurines do not show any emotions or movement. There is one exception, the Venus from Galgenberg called 'Fanny', from the town of Krems, Austria. Probably it catches a moment of a dancing women (or man) but the whole body does not convey any emotion of the type seen in the fighting ibexes or the panel of horses. The explanation for this way of presentation may be sought in the sites where these artefacts were found. Most of them were found in year-round or semi-residential camps or in places of special importance for the travelling hunting Paleolithic groups who lived in the periglacial zones of Middle Eurasia. Although these figurines are ascribed to the class of mobiliary art they may be considered as signs of human presence and the territoriality of long-distance migrating human groups. This lifestyle cannot be compared with the semi-residential short-distance mobility of the human groups living in the temperate climates of the Balkans and the Near East where such figurines have not been found. However, the key knowledge these figurines bring with them is that although they are small, through their ability to be physically and mentally rotated and manipulated they allow humans to incorporate through focusing on them the surrounding landscapes in the form of an abstract 3D model of his or her existence. In its essence the entirety of human art is a transformation of 2D- into 3D-models of human existence that involves spatial orientation. Art is never alone; it has the ability to frame either the surrounding urban or natural landscapes.

Some works of modern artists come as a confirmation of this observation, as they are similar to what Paleolithic artisans did. They experiment with motion- and emotionless 3D sculptures of ancient Roman-style female figurines in combination with emotionally coloured panels. The overall representation aims to depict psychological moods triggered by the experience of living in an urban environment (representations on the board in the foyer of Hilton Hotel, Malta) (Lagana Academia.edu). In order to better understand how powerful the relation is between an object of art and its 3D environment one can think for a moment of placing the representations on the board in the foyer of the Hilton hotel in a cave, or the Venus of Willendorf II in a Hilton hotel foyer. Both directions of this replacement are impossible and perhaps this is the reason why the Venus of Willendorf II is exhibited in a special dark hub in the exhibition in the Naturhistorisches Museum, Vienna. The role of this hub is to protect the figurine from the surrounding urban environment and it conveys in a better way the spatial (and special) place this figurine has on the travelling routes of Paleolithic hunting groups along the Danube River.

All the above considerations give rise to the following opposition: while all types of artworks develop 2D sketches into 3D or pseudo-3D objects intimately related to the surrounding built or natural landscapes, the replication of artworks mostly done through printing on paper severs them from

the natural impulse of humans to physically and mentally manipulate them and from their original relationship with the appropriate surrounding settings. From this point of view the 3D monument erected at the Willendorf II site matters more for the local people and tourists than the original figurine housed in the Naturhistorisches Museum, Vienna. This is because the monument, no matter that as a replica it is far away from the original dimensions of the figurine, becomes a landmark located on a critical observation point along the Danube River. This also means that no matter how good the photos representing any artwork in a book, album, etc are, the two-dimensionality disables observers from properly registering the human motions and emotions that the artists meant to represent through their original work.

Thus from the point of view of traditional publishing techniques this is a serious problem. The solution of this drawback comes from the modern geospatial and 3D technologies that will increasingly play an important role in developing 3D representations not only of individual art objects but also situate them in digital elevation models of the natural and built environment. They provide two major advantages: the obvious one is the growing availability of a range of techniques at low cost that give satisfactory results and the second one is that these techniques allow observers to create and manipulate not only individual figures and representations but the entire landscape associated with these artworks.

Motion and Emotion Attached to Copper Age Figurines

Unless traditional focus on the role the economy plays in social change of Copper and Early Bronze Age societies alters, my understanding of the major social mechanisms that distinguish their lifestyle in contrast to the previous ones (Late Paleolithic and Early Neolithic) involves numerous domains of social behaviour. It is sufficient to point out some out of many drivers of social change in prehistoric societies are: the diversification of consumption practices; the diversification of settlement structure including mountaintops; the development of copper and tin mining and metallurgy (Vitov 2014); the diversification of craftsmanship, ritual practices, in-site settlement structure and their dynamics of evolution focused on settlements' periphery and on natural landscape features. All these diverse communities by the nature of their varied specializations were able to develop a series of risk avoidance strategies. They involved short- and long-distance exchange networks that joined different communities and improved knowledge and communication. The focus on risk avoidance practices created new circumstances that led to the development of rational knowledge about the natural and social phenomena: astronomical and weather observations, communication practices, direct community and individual accumulation of goods and resources, practices of distribution and the redistribution and aggregation of human and natural resources. Among these achievements the most important one seems to be the focus on humans as individual and social beings, which leads to increasing ability to communicate with neighbours and pass down stories based on individual and collective experiences. Perhaps this is the time of the beginning of the process of anthropomorphic transformation of the pantheon of gods. For example, the famous scene of figurines from the Ovcharovo tell site, northeast Bulgaria (Todorova *et al.* 1983), has been given an interpretation based on the representation of a cult scene which depicts humans and gods in human form. Generally, this may be true as a community's cults are represented by group dances and scenes. Behind these mass cult practices, however, there is a real story of individual and group experiences that remains hidden. The fact is that the Ovcharovo scene consists of free-standing figurines that resemble a theatrical scene or a game. If it were to represent religious cult then the place of each figurine (god) would have taken only one and the same position relative to the other figurines. As this scene is the only known one that involves a large number of figurines they, in turn, may be considered as mnemonic tokens that convey a popular scene(s) of a theatrical presentation, and even games could have been played, as the figurines allow their free manipulation.

As it was pointed out above when the 3D images become reduced (printed out on paper) to 2D ones, they lose their natural ability to influence the observer properly. Once published, the scene of

Ovcharovo remains memorized in the configuration it was originally set. As long as it is represented in 2D, the self-deception seems to have greater influence on humans, as it makes most of the observers believe in its reduced symbolic. For example, the Galilean intuition about the existence of colours, 'these tastes, odours, colours, on the side of the object they seem to exist, are nothing else than mere names, but hold their residence in the sensitive body ... as we impose names on them ... we induce ourselves to believe that they also exist' (Boghossian and Velleman 1989), reduces these qualities to secondary ones. This self-deceptive attitude has a scientific explanation. An individual does not give arbitrary names to coloured stains but both registers and names the matches between the incoming from outside information and his/her capabilities to sense it. Thus the spectrum of light reflected from a surface matches the visible spectrum sensors in human eyes and then the ranges of matches become named with terms specific for each match. For example, a healthy European will recognize green from red apples equally well in Europe and China although he/she does not speak any Chinese.

In opposition to the reduced 2D symbolic, the three-dimensionality enhances it. In order to underline how great the difference between the two ways of representation is, I will focus on the problem of expressing emotion through the means of representing motion. Paleolithic art offers good examples of this means of presentation of emotions and emotive links to the surrounding landscapes. Some Copper and Early Bronze Age figurines offer quite a different perspective. The difference lies in the fact that Paleolithic art puts greater accent on animals whose behaviour reminds us of that of humans. It entirely relies on rational observation. Copper and Early Bronze Age figurines add to it a cultural compensatory mechanism based on rational knowledge about the world and humans. Human representations and portraits reflect not only a single psychological state such as anger, melancholy, pleasure or satisfaction. They represent such emotions but always in relation to the person's rank in human society or through establishing specific emotional and rational links to observers. For example, the famous figurine called 'The Thinker' from the Chernavoda site, Romania, makes a unique impression of the state of relaxation and reflective thoughts, but within the frame of an ordinary person sitting next to his wife (spouse) (the second female figurine representing a similar mental state) (Figs. 1, 2). The artisan captured unique behaviour that is typical of humans. In creating these figurines the artistic approach is interesting because of the means of representation. Human faces are schematic but this is compensated for by the elongated bodies and limbs that weave around in the form of a pyramid (head at the top). The total effect of representation comes from the natural position of the head as the natural centre for the rotation of the figurine (when held in hand or represented in 3D). Thus the tensions and the body proportions give the best impression of the state of mind of the represented persons.



FIGURE 1. 'THE THINKER'. CERNAVODA SITE, ROMANIA. THE PHOTO IS TAKEN FROM A SOUVENIR FROM THE ARCHEOLOGICAL MUSEUM IN THE TOWN OF CERNAVODA, ROMANIA.



FIGURE 2. 'THE SPOUSE OF THE THINKER'. CERNAVODA SITE, ROMANIA. THE PHOTO IS TAKEN FROM A SOUVENIR FROM THE ARCHEOLOGICAL MUSEUM IN THE TOWN OF CERNAVODA, ROMANIA.

Copper Age figurines often represent human portraits with typical facial expressions. They show that the artisan had close relations with the represented person and made a kind of a photo in order to remember him. This interpretation is underlined by the fact that a certain amount of these figurines were found in the form of heads with pronounced necks while the rest of the body is missing. Perhaps this way of presenting a human being was a deliberate action of representing heads with portrait features that were arranged on shelves in the house. Thus these human faces signify the importance of the represented persons for the inhabitants of the house and the community as a whole. Another fact that supports this interpretation is that these human heads have not been found in the mortuary domain, they come exclusively from settlements. All this evidence and the representations of the facial expressions themselves suggest that there exists a wider cultural compensatory mechanism that is built over the human capability for detailed observation of personal behaviour. More than that, the experimentation with the human body as 'physical mechanics', healing injuries and broken limbs, led to the elaboration of social fashions of complex design such as body decorations, jewellery and details of particular facial features. This seems to be established as a permanent practice among the Late Copper Age communities in the Eastern Balkans, as can be seen from the ubiquitous presence of human portraits (Mitkova and Popov 2011). The same authors indicate that human facial expressions become visible in a better way if observed from different angles and under different light. This technical detail only shows the potential of 3D imagery. In my interpretation of a number of figurines I will use the potential of their 3D reconstruction or where not possible (at present I have no access to the originals or copies of the Smyadovo and Balbunar figurines) I will use photos taken from different angles. For this purpose I will confine my study to a presentation of three portraits from the tell site located near the town of Smyadovo (Mitkova and Popov 2011) and one from Tell Balbunar, near the town of Kubrat, northern Bulgaria (Mikov 1927).

The general understanding involved in my interpretation of these figurines is that they capture an authentic moment of human behaviour that is intimately linked with the artisan and the settlement and surrounding landscapes they lived in. The reason for these realistic presentations lies not so much in the ability for detailed observation which is typical also of the Paleolithic artisans but rather the already accumulated rational knowledge that clarifies the social position of each person in the human and natural world. This is based on the increasing rational understanding of the human body as a mechanic device that can be manipulated and cured when necessary. It is radically opposed to the immortal human soul that cannot be touched or repaired with ordinary tools. The only link between the body and soul in an everyday environment can be detected by closely examining the human face and eyes. Thus the essence of a human being is focused in his/her face and particularly in the eyes. This was well understood by the artisans who created these human portraits. The intensity of their feelings and memories can be viewed in the way they present the eyes and faces of real persons who were probably closely related to them. They are rendered individual features that differ from one another. Among them the most pronounced features are the eyes. In Fig. 3 the head of a person seemingly posing for a portrait is presented. The bulging, rounded eyes may be a real physical feature but they also represent the feeling of personal expectation while posing for a portrait or in some other public activity which the artisan managed to capture in his/her work. The artisan's mastery lies in his/her ability to capture a fleeting facial expression that otherwise can be recorded and documented only by using a modern high-speed camera. The next human portrait is quite opposite in terms of fleeting expressions. It is rather static except for the noticeable absence of one eye. This is a permanent human disability which might be related to a particular story that happened in a specific locality in the village's surroundings that continued to be significant to the inhabitants of the house (Fig. 4). The third human face also focuses on the eyes but they are presented by inverted right-angle triangles (Fig. 5). It has a careful hairstyle which covers the ears. These features make the head look more feminine and probably represents a portrait of a woman. The fourth head is the most interesting one as it represents a person with a wide-open mouth (Fig. 6). Also there are traces of white paint on the head. Contrary to the previous portraits the eyes are represented by simple lines as if the eyes are almost closed. The entire face represents a person reacting to extreme physical or mental pain. According to Mitkova and Popov (2011) this head represents a priest, shaman or a dying person. I am more inclined to think that this is an ordinary person who agonized over a long period of time



FIGURE 3. PORTRAIT OF A MAN WITH BULGING EYES. AFTER MITKOVA AND POPOV 2011, PHOTO 28.



FIGURE 4. PORTRAIT OF A MAN WITH ONE EYE. AFTER MITKOVA AND POPOV 2011, PHOTO 29.

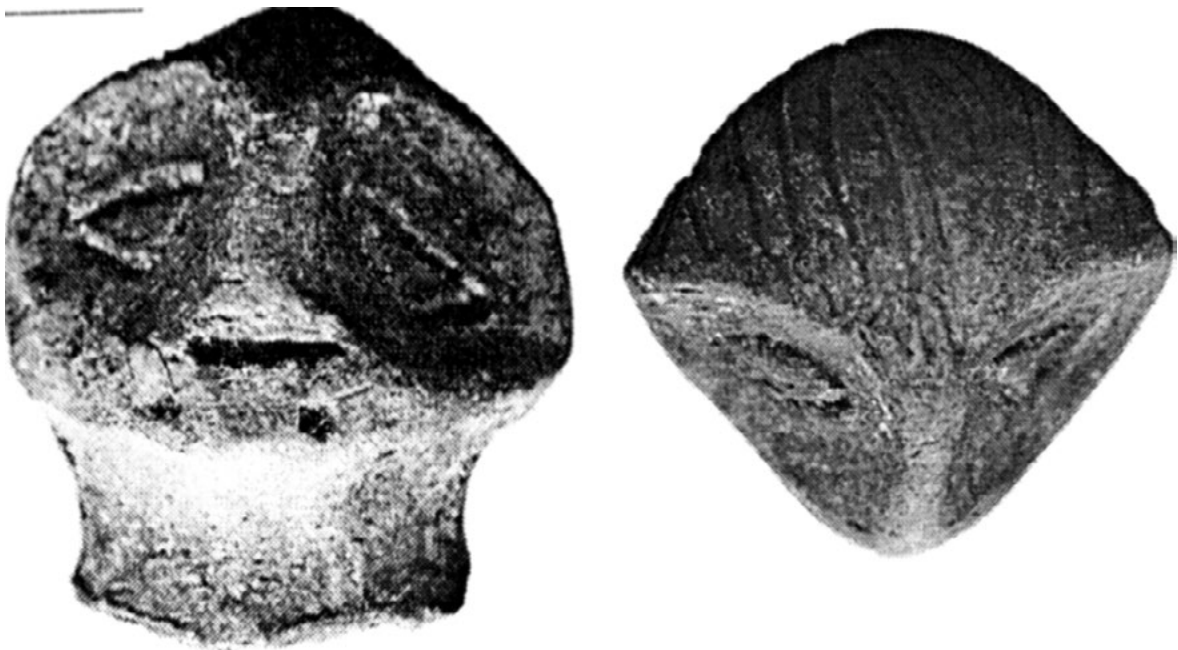


FIGURE 5. PORTRAIT OF A MAN (WOMAN) WITH INVERTED RIGHT-ANGLE TRIANGLES.
AFTER MITKOVA AND POPOV 2011, PHOTO 30.

and this also represents the side of the humanity of suffering people. A rational body of knowledge would require a meticulous representation of human suffering as a link between the mechanical body



FIGURE 6. PORTRAIT OF AN AGONIZING MAN. AFTER MITKOVA AND POPOV 2011, PHOTO 31.



FIGURE 7. PORTRAIT OF A WOMAN (MAN) IN A HIGH SOCIAL POSITION. PHOTO FROM WWW.NAIM-BAS.COM/ARCHE (PREHISTORIC PART).

and immortal soul as viewed in their common meeting ground, the human face. Quite opposite is the figurine from the Balbunar tell site near the town of Kubrat, northern Bulgaria (Fig. 7). The eyes are ellipsoid, the right one half-closed. The head has also a careful hairstyle that covers the ears and it has an elaborate and coloured necklace. This may also represent a portrait of a female who had an important public position that imbued her with feelings of self-content.

It should be noted that all these figurines are free-standing miniature portraits that can be manipulated by the inhabitants of the house as well as by the members of the community as a whole. Unless the figurines from the scene of Ovcharovo which may be considered as free-standing models that may equally well represent group rituals or various games, the free-standing portraits may be considered as miniatures (Bailey 2005). In terms of situated semiotics these miniatures can stimulate a number of analytical components in the observer's mind: the frequency with which they occur in a given settlement, the fidelity with which portraits resemble the original facial expressions, and the distances and direction (including social) of the spread of similarities (Knappett 2012). Thus the miniature portraits, through the involvement of all

possible cognitive resources, have the ability to stimulate not only shared experience and rational understanding but also form a spatially structured shared intentionality.

In two-mode inter-artefactual networks it is important to make a distinction between nodes and links (Knappett 2012). When the links (representing humans according to the cited scheme) are confronted with 3D artistic representations, the connections to the nodes (miniatures, portraits, etc.) behave in two distinct ways. A portrait of an ancestor is able to make a constant number of matches in the common memory of the inhabitants of a house or a village. At a personal level the number of the matches will vary enormously. This is governed by a cultural compensatory mechanism that depends on personal affiliations to the portrait and on his/her educational, social and religious status. The group and personal attachments to the nodes of the network (3D images) may create instant imaginative explanations: for example, a prehistoric figurine may be considered by a modern observer as an encoded message from extraterrestrials. On the other hand, these logically uncritical explanations may be radically reduced with growth and development in the educational, cultural, religious background of observers.

Conclusions

It has been shown here that the cognitive recognition of space between the 2D and 3D imagery is imbued with self-deceptive practices. The major difference between them lies in the fact that 2D images are being perceived by using only one cognitive resource, the visual one. Perhaps this fact was noticed at the dawn of humanity and Paleolithic artisans started to develop perspective and used the natural convex surfaces of the cave walls for their paintings in order to make their art more comprehensible to their observers. The development of perspective in 2D images and 3D imagery allowed artisans to exert greater influence on their audience. When confronted with a free-standing figurine an observer instinctively involves the entire range of cognitive resources: visual, auditory (knocking on the object and on surfaces close to it), language (confirming his/her thoughts about the object with words pronounced in a loud voice), and motor (moving the figurine around or moving themselves around it). This natural impulse designed by nature for better understanding of an object of interest is not enough. It is controlled by a cultural compensatory mechanism that allows of both imaginative (irrational in the common sense) and rational explanations. Historically the appearance of this cultural compensatory mechanism may be found in the times when there is a visible change in human art: the sharp division between representation of the human body and heads and the distinction between the human body and soul. Archeologically this can be detected in the societies that made the first human portraits. Their particularity is that they are able to reflect not only the physical reality but relate it to their human and natural environment. Thus human portraits and all the other objects of art from the Copper Age onwards bear the social position of the represented person, object, scene and their wider cultural environment, and they are able to establish a personal relationship between a long-gone artist and any modern observer. Artistic representations of human suffering as a result of conflicts, diseases and the stigmatization of human groups can be traced down also from the Copper Age. Conflicts and illness did exist before but their rational involvement in human culture (as means of increasing power, prestige and wealth) can be mostly identified with Copper/Bronze Age societies in the Balkans. This dividing timeline is not a universal one and may vary in different geographical regions depending on the local evolution of this cultural compensatory mechanism.

From the point of view of a modern observer a noticeable feature of this cultural compensatory mechanism is that it consists of two parts: the imaginative (uncritical acceptance of unreal explanations) and the rational (critical attitude to any explanation). It is not hard to assume that the uncritical explanations are rapidly reduced in magnitude and range with the increase of educational level and overall knowledge and awareness of audiences about the cultural and social significance of a given piece of art, or another object or phenomenon of interest. The mechanics of this interaction can be modelled formally in order to get insights on its complex workings, but further detailed research on the brain activities involved in this mechanism of acquiring knowledge and their correspondence with the cognitive behaviour of different audiences should be carried out.

References

- BAILEY, D. W. 2005. *Prehistoric Figurines: Representation and Corporeality in the Neolithic*. London: Routledge.
- BOGHOSSIAN, P. A. and VELLEMAN, J. D. 1989. Color as a Secondary Quality. *Mind, New Series*, 98 (389): 81-103.
- CHAN, A. 2011. Biological motion as a cue for attention. Honors Project (Term Paper), COGS 190 Thesis. Laboratory of Dr A. P. Saygin, University of California, San Diego.
- FOUCAULT, M. 1994. *The Order of Things. An Archaeology of Human Sciences*. New York: Random House.
- HALLIDAY, M. A. K. 1978. *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Edward Arnold.
- KNAPPETT, C. 2012. Meaning in Miniature: Semiotic networks in material culture. In N. Johannsen, M. D. Jessen and H. J. Jensen (eds). *Excavating the mind: cross-sections through culture, cognition and materiality*. Aarhus: Aarhus University Press.
- LAGANA, L. A colorful realm of images. At Academia.edu.
- LAYTON, R. 1992. *The Anthropology of Art*. Cambridge: Cambridge University Press (second edition).
- LERNER, R. R. P. 2013. Beyond the Clash between World-Views: Revisiting Husserl's Concept of the Life-World. *Advances in Anthropology*. V. 3, (3): 173-8. At SciRes, at <http://www.scirp.org/journal/aa> (August 2013).
- MIKOV, B. 1927. The tell-settlement near the village of Balbunar. Bulletin of the Bulgarian Archaeological Institute, IV: 251-84 (in Bulgarian).
- MITKOVA, R., POPOV, N. 2011. *The Late Chalcolithic Ceramic Anthropomorphic Sculptures of the Mound of 'Smyadovo'*. Project Report, СКИИ 1009.
- O'HALLORAN, K. 2012. Halliday and Multimodal Semiotics. *Semiotix XN-7* (2012).
- SHANKS, M., WEBMOOR, T. 2011. *A political economy of visual media in archaeology*. In S. Bonde and S. Houston (eds). *Re-presenting the Past*, Providence, RI: Joukowsky Institute, pp. 87-110.
- TODOROVA, H., VASILEV, V., JANUSEVIC, Z., KOVACEVA, M., VALEV, P. 1983. *Ovcharovo. Razkopki i Prouchvania*, Archaeological Institute and Museum, Sofia: Editing House of Bulgarian Academy of Sciences.
- TSONEV, Ts. 2012. Cognitive perspective on archaeological spatial data and GIS. In European SCCIS Conference with International Participation. Best practices: Application of GIS technologies for conservation of natural and cultural heritage sites May 21-23, Sofia, Bulgaria. *Proceedings of the First European SCGIS Conference, Space Research and Technology Institute – Bulgarian Academy of Sciences*, at <http://proc.scgis.scgisbg.org>.
- VITOV, O. 2014. A method for mineralogical predicting the mining and metallurgical centers of the Early Chalcolithic to the Bronze Age (Case study from the water-catchment basins of the rivers Struma and Mesta, SW Bulgaria). *Interdisciplinary Studies XXIV-XXV*, National Institute of Archaeology and Museum – BAS.
- WHITE, R. 2003. *L'Art préhistorique dans le monde*. Paris: Éditions de La Martinière.
- WILK, R. 2001. Consuming Morality. *Journal of Consumer Culture*, Vol 1(2): 269-84 [1469-5405] (200111) 1:2; 269-284; 019938], London, Thousand Oaks, CA and New Delhi: Sage Publications.
- WILK, R. 2010. Consumption embedded in culture and language: implications for finding sustainability. *Sustainability: Science, Practice, & Policy*, Fall 2010, V. 6 (2): 1-11, at <http://ejournal.nbii.org>.

The Beginnings of Natural Philosophy and Metaphysics in the Rock Art of Armenia

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Abstract

Ideas about the origins of natural philosophy and metaphysics have been reconstructed by the author in relation to Armenian rock arts (10000-5000 BC). The article presents the images that indicate the existence of prehistoric ideas about the four elements of nature. These ideas are described in various compositions a tree of life, a man, family, direct and winged crosses, swastikas, spirals, eight-pointed stars, circles and balls -the earthly and heavenly worlds, carts, tridents and the sun's rays, as well as natural phenomena such as volcanic eruptions and earthquakes.

Reconstructing ideas of natural philosophy and metaphysical subjects using the cognitive abilities demonstrated in rock art, the author relies on the context of systems engineering, which describes the genesis of knowledge (in particular, as it is based on the asymmetry of logical and visual thinking), as well as on the language of communication. Based on recurring elements of language, their frames, and audio information, the content of rock arts of the Araratian mountains, can be interpreted and compared with Anatolian, Indo-Iranian, European, Balkan and Italian (Alpine) rock art. Signs show that the basic philosophical study of nature and the universe as well as the intellectual and spiritual expressions of the knowledge of the basic causes and nature of things, were "documented" on Araratian mountains.

As a result of catastrophic earthquakes and volcanic eruptions, surviving archaic civilizations endured with knowledge, which had been transformed or implemented in the universal mythological motifs in Old Europe, in the river delta Tanais, Scandinavia, Sumer, Egypt, Phoenicia, East and Minor Asia.

The four elements in Greece

The ancient Greek belief in five basic elements, these being earth, water, air, fire and ether, dates from pre-Socratic times and persisted throughout the Middle Ages and into the Renaissance, deeply influencing European thought and culture. These five elements are sometimes associated with the five platonic solids.

It was Empedocles who established four ultimate elements which make all the structures in the world – fire, air, water, earth. Empedocles called these four elements “roots”, which he also identified with the mythical names of Zeus, Hera, Nestis, and Aidoneus (e.g., “Now hear the fourfold roots of everything: enlivening Hera, Hades, shining Zeus”). This theory of the four elements became the standard dogma for the next two thousand years. Many philosophies and world-views have a set of classical elements believed to reflect the simplest essential parts and principles of which anything can consist or upon which the constitution and fundamental powers of everything are based. In classical thought, the four elements earth, water, air, and fire frequently occur; sometimes including a fifth element or *quintessence* (after “quint” meaning “fifth”) called ether in ancient Greece and *akasha* in India. The concept of the five elements formed a basis of analysis in both Hinduism and Buddhism.

Cosmic elements in Babylonia

In Babylonian mythology, the cosmogony called *Enûma Eliš*, a text written between the 18th and 16th centuries BC, involves five gods that we might see as personified cosmic elements: sea, earth, sky, wind. In other Babylonian texts these phenomena are considered independent of their

association with deities, though they are not treated as the component elements of the universe, as later in Empedocles.

Araradian Mountains and the Caucasus

The action of four forces of nature partaking in volcanic activity is evident in Armenian rock art, as well as in the song about Vahagn where the hero – the thunder, *Dragon Reaper* releases water, earth, sun and fire from the dragons (serpents). The author has demonstrated that the Araradian Mountains preserve the origins of the cult of Zeus-Yahweh, ideas about the four forces of natural philosophy, which were transformed into the names of the gods Zeus (Zeus) and Yahweh (Yahwe), which has four letters. Biblical names, such as the first man Adam, also have four letters. Zeus imprisoned Prometheus in the Caucasus Mountains for telling people the secret of fire. Zeus kidnapped Europe (Cadmos sister). Cadmos was Armenian Hayk's grandson, who had returned from Babylon after the collapse of language on father's land – Askanaz's and Torgom's house. Precisely in Colchis (Caucasus) Greek Argonauts stole the "golden fleece".

Vahagn Vishapakagh and act of birthday

Vahagn Vishapakagh (*Vahagn the Dragon Reaper*) or Vahag(k)n was a first human, god of fire and war worshiped anciently and historically in Armenia. Vahagn was identified with the Greek Heracles. The priests of Vahévahian temple, who claimed Vahagn as their own ancestor, placed a statue of the Greek hero in their sanctuary. In the Armenian translation of the Bible, "Heracles, worshipped at Tyr" is renamed "Vahagn". Historian Khorenatsi's report of an ancient song gives a clue to his nature and ancient Armenian origin in Vahagn's birth song:

In travail were heaven and earth,
In travail, too, the purple sea!
The travail held in the sea the small red reed.
Through the hollow of the stalk came forth smoke,
Through the hollow of the stalk came forth flame,
And out of the flame a youth ran!
Fiery hair had he,
Ay, too, he had flaming beard,
And his eyes, they were as suns!

Other parts of the song, now lost, said that Vahagn fought and conquered dragons (snakes), hence his title Vishapakagh, "dragon reaper", where dragons in Armenian lore are identified as "Vishaps". The Vahagnian song was sung to the accompaniment of the lyre by the bards of Goghten (modern Akulis). The stalk or reed, key to the situation, is an important word in Indo-European mythology, in connection with *heaven, earth, sea, fire* in its forms (fire, air, water, earth).

The oldest myths and legends

Prometheus, in eternal punishment, is chained to a rock in the Caucasus, where his liver is eaten daily by an eagle, only to be regenerated by night, due to his immortality. The eagle is a symbol of Zeus Himself. Years later, the Greek hero Heracles (Hercules) slays the eagle and frees Prometheus from his chains.

The four most ancient sources for understanding the origin of the Prometheus myths and legends all rely on the images represented in the *Titanomachia*, or the cosmological climactic struggle between the Greek gods and their parents, the Titans. Prometheus himself was a titan who managed to avoid being in the direct confrontational cosmic battle between Zeus and his followers against Cronus, Uranus and their followers.

The first temple of knowledge

The first temple of Jerusalem was built during the 10th c. – 586 BC. As noted by M. Khorenatsy the first Temple of knowledge built Hayk, which passed by inheritance to his (his grandson) Cadmos. The whole galaxy of Armenian aristocratic families considers its overall direct primogenitor to be Hayk Nahapet, the patriarch of the Armenian people, whose epithet was “dyutsazn” that was “derived from ditsov”, “son of the deity” (meaning Vahagn).

The idea of the four elements in the alphabets

Ideas of four elements are embedded into the structure of the Armenian alphabet (the inventor of the alphabet M. Mashtots is M. Khorenatsy’s teacher). The Armenian alphabet is divided into 4 rows under the signs of 4 elements. The structure of four elements is also inherent to the Greek and Phoenician alphabet, as well as Daniels ancient Armenian signs for writing are implementing the system of four elements (S. Babayan, G. Pogosyan). Daniels old Armenian signs were used by M. Mashtots, but in a couple of years the teacher refused them, as the signs could not reflect all the sounds of the Armenian language any longer.

As per legend, the Greek alphabet was invented from Phoenician on the basis of Phoenician alphabet established by Cadmus nearly 1,000 years before the invention of the modern Armenian alphabet. However, some works of the Greek scholars of antiquity are preserved only in Armenian translations. During the creation of the Greek alphabet, Greeks were not familiar with the doctrine of the four forces. Greek Cadmus is the hellenized Armenian Cadmos (master of the temple of knowledge). The Armenian Cadmos initially invented for the Phoenician alphabet and then for the Greek alphabet, based on Daniel’s writing systems which embodied ideas about the four forces of nature.

It should be noted that, according to one ancient manuscript from Matenadaran (N 6962, 68 A), in the Armenian alphabet, written in four columns, each of them has the following names (left to right): fire, air, water and earth. S. Babayan showed that the line elements (9 x 4) correspond to the philosophical elements in this order, and if the line rotated 90 degrees clockwise, then these series get the reverse order, as evidenced by the said manuscript from Matenadaran (S. Babayan in “Ancient alphabets – graphical models, reflecting the philosophical concept of the soul” (www.iatp.am) provides additional information on this topic).

In the ancient tradition, the fifth element is typically the Armenian word “ban” or “logo” (Marr). The terms “Ban” and “Van” are interconnected as Water and Logos. N. Marr believed that all languages were composed of four elements within language (universal language frame elements).

Chronology

V. Sedov leads some studies in the field of ethnogenesis (Fig. 1), where the emphasis is on a multidisciplinary approach in addressing issues (*Proceedings of the Russian Academy of Sciences, Volume 73, No. 7, p. 594-605, 2003*, <http://slavya.ru/trad/history/genezis/sed.htm>).

Name of the first man Vahagn

The name of the first human (man) Vahagn is split into four elements – fire, air, water and earth. Before Aristotle, the rock art of the Araradian Mountains taught that the Earth is a sphere and the center of the universe (Figs. 2b and 2c).

Figures 3a and 3b are examples of rock art from the treasury of the history of natural philosophy and metaphysics, intellectual and spiritual knowledge. Man (3b) consists of four elements – earth, water, air and fire; it contains the same heat and cold, moisture and dryness, as well as his soul consist of three parts.

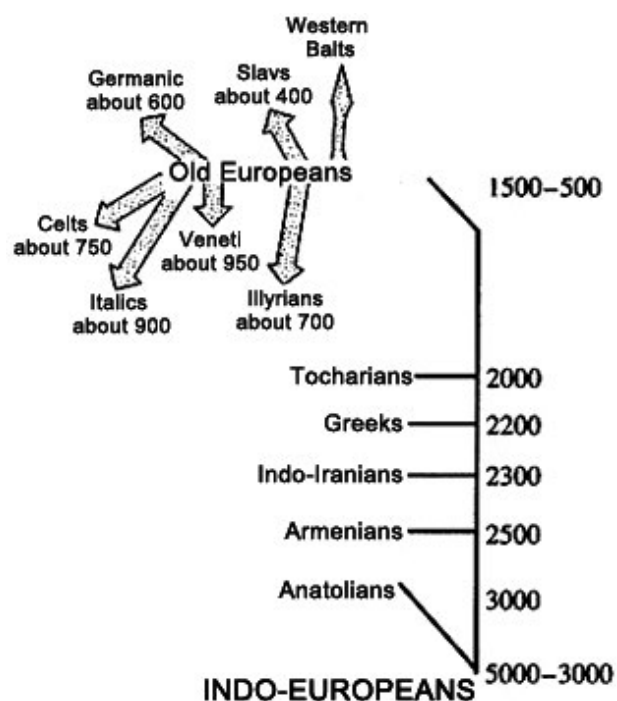


FIGURE 1. DIFFERENTIATION OF INDO-EUROPEAN (BY S. SEDOV), [HTTP://SLAVYA.RU/TRAD/HISTORY/GENE-ZIS/SED.HTM](http://slavya.ru/trad/history/gene-zis/sed.htm).

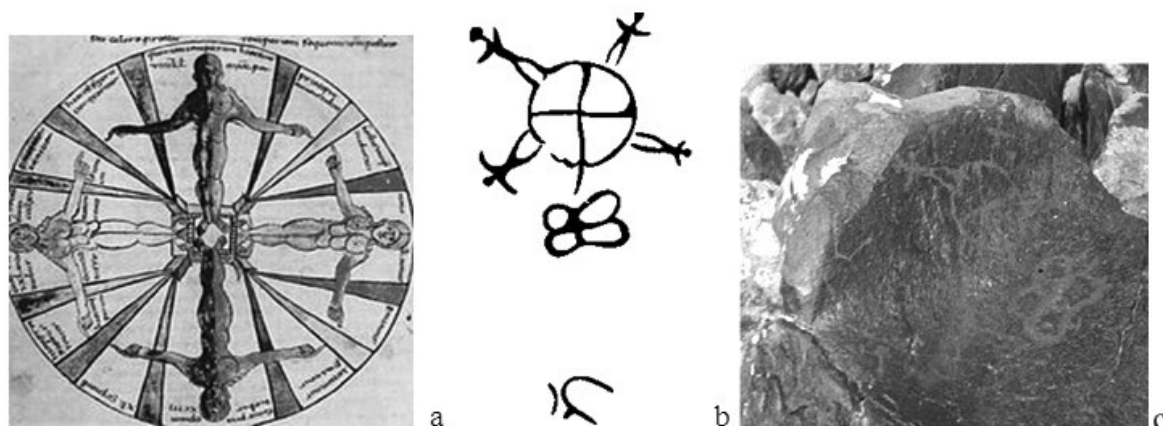


FIGURE 2. ALLEGORY OF THE FOUR ELEMENTS OF ANCIENT NATURAL PHILOSOPHY (THE MANUSCRIPT OF ISIDORE OF SEVILLE "ON THE NATURE OF THINGS": (A), [HTTP://COMMONS.WIKIMEDIA.ORG/WIKI/FILE:ISIDORE_OF_SEVILLE_FOUR_ELEMENTS_.JPG?uselang=ru](http://commons.wikimedia.org/wiki/File:Isidore_of_Seville_FOUR_ELEMENTS_.JPG?uselang=ru). ARMENIAN ROCK ART "HOLY CROSS "IN THE SPHERICAL SHAPE OF THE EARTH WITH FOUR ANTIPODES OR FOUR ENDS OF THE EARTH (B, C).

"Adam"

The name "Adam" is regarded as an abbreviation consisting of the names of the four cardinal directions, and it is believed that God took the dust for the creation of Adam, respectively, from all ends of the earth (Sibylline Oracles, 3:26): east, west, and north, south.

Cadmus

Cadmus (Ancient Greek: Κάδμος), in Greek mythology, was a Phoenician prince, the son of king Agenor and queen Telephassa of Tyre and the brother of Phoenix, Cilix and Europa. He was originally



FIGURE 3. CAVE DRAWING DEPICTING THE SOLAR DEITY IN THE FORM OF A SWASTIKA LEVOROTATORY (FOUR ELEMENTS – THUNDER, LIGHTNING, FIRE AND FLAMES). COSMIC BATTLE BETWEEN HAYK (SWASTIKA) WITH BULL (BEL) (A). IMAGE OF THE HUMAN SOUL, WHICH IS THE LIGHT OF THE FOUR ELEMENTS (B). KNEELING VAHAGN – “MESSAGE”, MAN AND NATURE, THE FOUR ELEMENTS, 7-5 MILLENNIUM BC, ARMENIA (C). KNEELING MAN FROM THE URARTIAN BRONZE BELT (C), HISTORICAL MUSEUM OF ARMENIA. CONSTELLATION “KNEELING” (D).



FIGURE 4. PETROGLYPHS OF THE FOUR ELEMENTS, SOLAR (HEAVENLY) AND IDEOGRAMS WITH CROSSES, SWASTIKAS, EIGHT-POINTED STAR, SNAKES AND DEER.

sent by his royal parents to seek out and escort his sister Europa back to Tyre after she was abducted from the shores of Phoenicia by Zeus. Cadmus was credited by the ancient Greeks (Herodotus is an example) with introducing the original Alphabet or Phoenician alphabet – *phoinikeia grammata*, “Phoenician letters” – to the Greeks, who adapted it to form their Greek alphabet. Herodotus estimates that Cadmus lived sixteen hundred years before his time, or around 2000 BC. Mikael Chamchyan date leads battle with Hayk and Bel – 2492 BC.

Moon as the result of collision between earth and another planet?

June 6, 2014

“One possible explanation for how the moon formed is that another planet, which some scientists refer to as Theia, collided with Earth billions of years ago. Scientists have attempted to find enough differences in moon rock samples compared to rocks found on Earth to prove that the moon was created when our planet collided with another world in the distant past. Now, they may have discovered enough of a difference in the lunar rocks, though it’s a minor one, to validate the theory that the moon has both Earthly and other-worldly origins. Three lunar rocks which Apollo astronauts collected from the moon’s surface and returned to Earth with in the 1960s have been re-analysed



FIGURE 5. PETROGLYPHS RIDES BULLS (A, B) UKHTASAR, ARMENIA AND STONE TOMB STONE (C), UKRAINE.



FIGURE 6. PHILOSOPHICAL PICTURE OF THE WORLD:
THE FOUR FORCES AND ACTS OF BIRTH, GEGHAMA
MOUNTAINS, ARMENIA.

by scientists from Germany's Georg-August-Universität Göttingen. The rocks might offer proof that they are different enough from Earth rocks that they came from another planet when it collided with our own. After another world, let's say one called "Theia," slammed into Earth, the theory goes that molten rock was formed and flung up into orbit around our planet where it cooled and became Earth's largest natural satellite. In mythology, the Greek goddess, Theia, was the mother of the moon.

Scientists may never know with 100 percent certainty how the moon was formed, but the re-analysis of the three lunar rocks by scientists from Germany has helped add validity to the giant impact idea. Douglas Cobb, <http://guardianlv.com/2014/06/moon-result-of-collision-of-earth-with-another-planet/>.

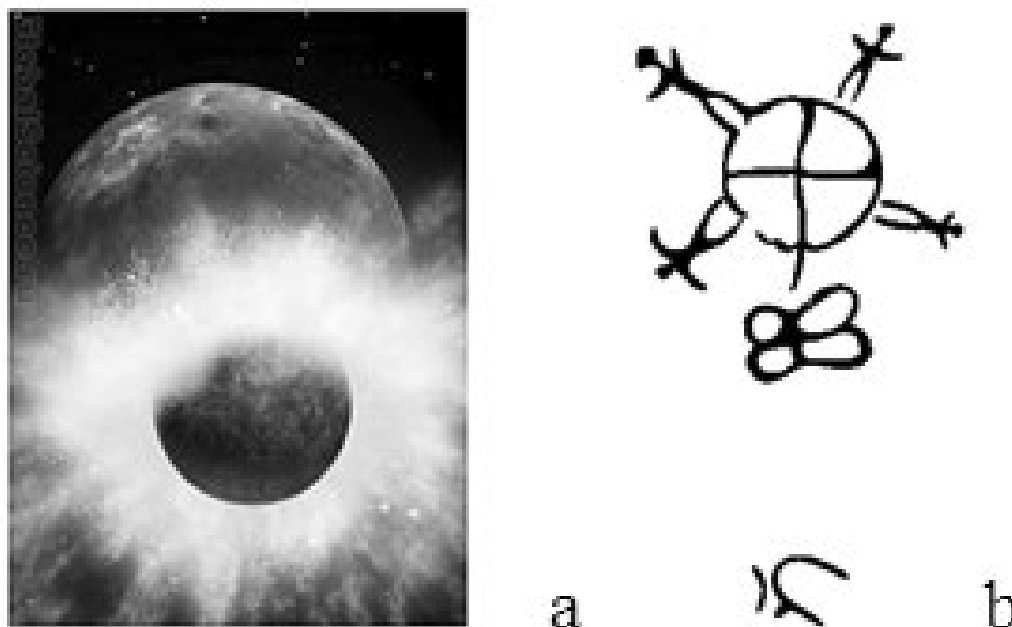


FIGURE 7. HOW THE MOON WAS CREATED BY MODERN SCIENTISTS (A) AND ANCIENT PEOPLE BY THE ROCK ART FROM ARARADIAN MOUNTAINS (B).

Conclusions

1. Names of gods Vahagn (Vahagn), Zeus (Zeus) and Yahweh (Yahwe) consist of four letters, as well as the name of the Biblical Adam, and symbolize the four elements of nature.
2. Traditional views of scientists on the impact of prehistoric Armenian culture and art on the genesis of the world's culture and science do not correspond to the history of M. Khorenatsy and the modern theory of the collapse of the language, especially in Armenian rock art and language in its prehistoric connections with the European, Greek (Phrygian, Thracian) rock art and language which do not conform to the basic features of Armenian-Greek and Biblical mythologies. Re-assessment is called for to address these issues.
3. Petroglyphs from the Araradian Mountains indicate intellectually and spiritually keep many elements of prehistoric knowledge. They are priceless and not yet fully deciphered. They can learn a lot, in particular, how the moon was formed, tell us about the role of man and his place in the cosmos, as well as the future of humanity.

Bibliography

- VAHANYAN, G. 2007. *Rock Art in the Frame of the Cultural Heritage of Humankind*. XXII Valcamonica Symposium, Darfo Boario Terme (BS), 18-24 May 2007, Valcamonica, Italy.
- VAHANYAN, G. 2010. *Volcanic eruptions from Mountains of Ararat till Alps, Indo-European myths, Rock art and iconography*. Convegno internazionale, L'arte Rupestre delle Alpi, 21-24 Ottobre 2010. Capo di Ponte, Valcamonica, Italy.
- VAHANYAN, G.; BLEYAN, V.; QOCHARYAN, L.; VAHANYAN, V. 2005. *Rock Arts of Armenian Highland*. The International Conference "World of Rock Art", Institute of Archaeology of the Russian Academy of Sciences, Moscow, Russia.
- VAHANYAN G.; PETROSYAN S. 1991. *Karedaran The Database of Armenian Rock Art* (Tracce #12, Online Bulletin by Footsteps of Man), Italy.

- VAHANYAN, G.; STEPANYAN, A. 2005. *Searches for Protocivilization (Rock Arts, the Processes of Learning and Thinking)*. The International Conference “World of Rock Art”, Institute of Archaeology of the Russian Academy of Sciences, Moscow, Russia.
- VAHANYAN, G.; STEPANYAN, A. 2004. *Prehistoric art in Armenia: new discoveries, new interpretations and new methods of research*. XXI Valcamonica Symposium “Prehistoric and Tribal Art: New Discoveries, New Interpretations, New Research Methods”, 8-14 September 2004. Darfo Boario Terme (BS), Italy.
- VAHANYAN, G.; VAHANYAN, V. 2006. *Stone annals of Civilization*. Monograph, Yerevan, Nzharr. Armenia.
- VAHANYAN, G.; VAHANYAN, V. 2011. *Rock Art as a Paradigm of Communication and Visual Arts in the Past and Future*. XXIV Valcamonica Symposium “Art and Communication in Pre-literate societies”, 13-18 July 2011, Valcamonica, Italy.
- VAHANYAN, G.; VAHANYAN, V. 2013. *The Cross, the Swastika, the Star of David, and the Eight-Pointed Star in the Rock Art of Armenia. The History of Motifs and their Cultural Influence*. XXV Valcamonica Symposium “Art as a Source of History”, 20-26 September 2013, Italy.
- VAHANYAN, V. 2009. *The epistemology and the linguistic-historical comparative analysis of the Armenian and world rock art and visual artifacts*. XXIII Valcamonica Symposium “Making history of prehistory, the role of rock art”, 28 October – 2 November 2009, Valcamonica, Italy.
- VAHANYAN, V.; VAHANYAN, G. 2009. *Intercultural relations between Old Europe and Old Armenia*. XXIII Valcamonica Symposium “Making history of prehistory, the role of rock art”, 28 October – 2 November 2009, Valcamonica, Italy.
- VAHANYAN, V.; VAHANYAN, G. 2010. *Armenian Pleistocene Rock Art as Origin of the Universal Visual Motifs of the Indo-European Myths*. IFRAO Congress, 6-11 September 2010 Symposium. “Signs, symbols, myth, ideology”. Ariège-Pyrénées, France.

A Complex Research of Paleolithic Art in Ukraine

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Abstract

Turning to the generalization and systematization of the Late Paleolithic Art in Ukraine it needs to understand some specific aspects that characterizes this period of time, natural-geographic, social and cultural environment in which they are being developed. Regard to the objective analysis of the phenomenon of Paleolithic Art in specific geographic boundaries, we believe it is necessary to consider not only the chronological framework of the process. In our opinion, it is important to analyze the dynamics of development, that is the construction of spacetime model. Of course, the problem of analysis of the Late Paleolithic Art is very significant. However, in our work we try to reveal the positive elements of classification similarity, community of territorial distribution and stylistic unity. Using such criteria of analysis in our opinion it is possible for a sufficiently large spatial coverage, which gives us the art on the territory of modern Ukraine in the Late Paleolithic chronological framework.

Manipulation Tactics: A Cultural Interpretation of Rock Art Images Massed in Southwest China

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Abstract

Rock art in southwest China, characterized by its distinctive feature of being painted with red pigment, is atypical of Chinese southern rock art. The content of the rock art painting in southwest china can be divided into two parts: wildlife images usually in areas make a living dominated by hunting, such as western Yunnan, Tibet; and images with human themes in areas where farming dominated the means of livelihood, such as Guangxi Huashan, with both types in Guizhou. But the method of painting and the colours conform to the surface characteristics of rock art; the size of the compositions is also noteworthy. Some of the rock art in southwest China has different content, but the images of the individual body masses are very similar. This is the same throughout China. The conclusion is that the art has a high degree of consistency. Is it constrained by the people who created the rock art? This is an interesting question.

This article will try to explain this phenomenon, which involves the witchcraft and sorcery operations of ancient people. Although rock art reflects people's religious concepts like their view of god, the communication between God and man and so on, it cannot generally be said that human beings who make rock arts have entered the religious phase. Therefore, from the existing text of rock arts we know that the relationship between rock art and everyday life reveals strategies for actions and manipulations, which have a strong practical purpose. In rock art landscapes, images that are covered up or broken seem to suggest this kind of utilitarian purpose.

Research on the Development and Utilization of the Guizhou Ancient Petrography Resource

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Abstract

Studies were conducted to investigate the distribution, characteristics and current status quo of petroglyphs in Guizhou province. The research team has studied 28 petroglyph sites, mainly located in areas in Anshun, Qiannan and Qianxinan. We found that the distribution of Guizhou petroglyphs has three typical characteristics: scattered distribution; mostly located deep in the mountains; mostly (about 93 percent) on steep cliffs.

We also found that the Guizhou petroglyphs have three features: first, painting is the main artistic method; second, the pictures are characterized by a small frame, a small number and small figures; third, subjects can be classified in three categories, graphics,

symbols and lines; fourth, most of the ecological environment of the rock art is very good; and fifth, most of the petroglyphs are located in the ethnic-minority areas (about 86 percent of the total). This paper considers that the petroglyphs are a valuable culture resource in Guizhou province, with important academic value and economic value. Therefore the author recommends:

- *establishing the petroglyph open-air museum somewhere near Guiyang city;*
- *exploiting and developing some petroglyphs near convenient transport systems and close to other famous attractions;*
- *improving the study of the petroglyphs.*

Discovery and Study of Two Groups of Writing on the Cliff in the Hongshan Culture Area

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China

Abstract

In eastern Inner Mongolia, two groups of painting show the water chestnut, prayer, prehistoric tribal hunting, breeding, production and life scenes. The two groups have 14 and 19 paintings each, respectively, reflecting the ethnic order: a multiple footprint, a large freehand, intuitive, conceptual abstract, a memory of the symbol, the sun, the moon, dog, human, bird, plant and arrows are seen. The two groups of paintings have special scenery, where the former is a more coherent interpretation of the narrative than the latter. The Chinese northern desert also provides evidence allowing us to date rock paintings.

Communication and Transform: In-Depth Reflection of Helan Mountain Rock Art

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Abstract

In the northwest of Ningxia, there lies a lofty mountain range named the Helan Mountains. It is a north-south range, otherwise also regarded as the agriculture and animal husbandry dividing line. Geographically, there are a lot of cross-mountain valleys, which became traffic channels. The unique geographical environment and protected farming areas created a region of multi-ethnic cultures. Rock art is a typical representation. Rock art scattered in the Helan Mountains includes different periods of history and cultures. Early periods represent animals and the female reproductive totem, etc. The following period depict various cultural connotations of the human face in petroglyphs, totem symbols and mask graphics. The rock art shows mainly ibexes, horses and other livestock which are regarded as crystallizations of different cultural groups such as the Xiongnu, the Xianbei, the Tujue, the Huihu, the Dangxiang and others from Mongolia. Thanks to its unique petroglyphs, the Helan Mountain region is also considered the end point of the diffusion of the human face in rock art. From two aspects of communication and transformation, this paper discusses the influence of Helan Mountain rock art.

Research of Classification and Stages of the Rock Art on Lusen Mountain in Qinghai¹

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Abstract

Based on the examination of the research materials which came from the workshop of the Rock Art Research Association of China in July 2013, and the summaries and collection of the existing materials according to production methods and artistic expression of rock art, in this article, the rock art on Lusen Mountain² was divided into eight kinds of forms. After observing and comparing the evolution of the eight kinds of forms, we suggest that the rock art on Lusen Mountain went through four stages: the formative period, the first pinnacle (yak period), the second pinnacle (deer period) and the decline period, and we sum up the main characters of each stage.

The rock art on Lusen Mountain lies on a hill in Jianghe township, Tianjun county, Haixi, Mongolia and Tibetan autonomous prefecture of Qinghai Province. The geographical coordinates are 37°18. 035' N, 99°66. 727' E, altitude is 3,331 m, relative elevation is about 20 m, and the local Tibetan people call it Lusen.

There is a river running from north to south across the foot of the southeast of the mountain, the width of which is more than 10 m, with many fish. Here it is flat and open, has luxuriant water plants and grass, and is an important pasture for the local herders; some residents are still living at the foot of the mountain. Here is an important place of worship and a holy mountain for the local residents and herders put prayer flags on the top of the mountain. In the investigation, the local people who accompanied us said that we could not relieve ourselves at the top and foot of the mountain, and we could not fish in the river. The northwest of this mountain is a cliff which is vertical, the west and south are relatively flat, and the rock art is distributed on a lot of rocks dispersed on the southeast slope. A rock³ about 10 m across has the greatest concentration. Not only are the numbers of individual rock art very rich, but also the content and production methods of rock art are very diverse, and can be called the most beautiful representative work of the rock art on Lusen Mountain.

Research on classification about the no. 1 bit of rock art on Lusen Mountain

Huisheng Tang and Wenhua Zhang made the scientific and systemic record of the rock art on Lusen Mountain the first time in their book *Qinghai rock arts*, involved 39 sites of rock art, covered the rocks which with the cognizable rock art basically. In this book, authors thought the rock art on Lusen Mountain had three production methods: vertical engraved recess lines chiselling, grinding and scratching. They also made a point that the vertical buffeting is oldest, and the grinding and scratching are the latest, but have not researched the classification and stages systematically. However,

¹ The subject was the National Social Science Fund Project for Rock art Research Association of China, named Protection, use and development of China western rock-arts (2010-2013), presided over by Yasha Zhang, Project No. 10MB2030.

² Lusen is the Tibetan transliteration of the mountain where rock art is. The book *Qinghai rock arts* (Science Press, 2001) co-authored by Huisheng Tang and Wenhua Zhang, called it 'Lushan' first. But in cultural relic protection unit of Qinghai province it is called Lusen. In order to accurately find the paintings and avoid ambiguity, I use Lusen.

³ In the book *Qinghai rock arts* (Science Press, 2001), it was called the no. 1 bit. I also use this term.

classifying the rock art by certain criteria, summarizing the relative relationship of age and sequence of development that are preconditions for investigating the connotation, function, age, family and other problems of rock art are also the basic work and prerequisite of rock art research. Therefore, I will try to give a few comments about the classification and stages of the rock art on Lusen Mountain in Qinghai, based on *Qinghai rock arts* and with my own dates and thoughts from site inspection.

As mentioned above, the no. 1 of rock art on Lusen Mountain has rich content, a large number of vestiges showing superimposition-breaking relationship and repeats, providing a good sample for the research of classification and stages of the rock art on Lusen Mountain in Qinghai. Also because of the rich content, the authors of *Qinghai rock art* introduced and described the representative pictures, but I got some new dates in the field study. Therefore, I will first make additional remarks of the other contents what were not mentioned in *Qinghai rock arts* on the basis of classification.⁴

The most essential cultural feature of rock art is reflected through its production methods, artistic expression and theme. The judgement of people on the image and context of rock art is difficult to disentangle from the effect of subjective understanding absolutely, the expression of things for rock art itself is often symbolic and abstract, adding to the long history, parts of rock art are damaged or blunt. In order to make the classification more objective, I would divide the rock art on Lusen Mountain into the following four types mainly based on the production methods: A upright chisel; B chisel first then grind; C first incise then grind by metal tools; D incise with metal tools. I would divide the artistic expression of rock art on Lusen Mountain into the following four types: I entire expression; II entire expression, and profiling; III expression by profiling, and ornamenting inside; IV just expression by profiling. In the production methods and artistic expression, the latter is more easily affected by foreign culture, and has changing forms; as well, the former is more stable and lasting, it only has to change when the productive forces and production tools have significant progress.

By making the production methods and artistic-expressions of rock art in different groups, the rock art can be clearly identified on the no. 1 bit of rock art on Lusen Mountain should be grouped under eight main types, such as AI, AIV, BII, BIII, BIV, CIII, CIV and DIV,⁵ next I will introduce the eight types.

AI (Fig. 1, Fig. 2, Fig. 3), upright chiselling entirely, presenting the whole shape of things similar to silhouette.



FIGURE 1. FIGURE.



FIGURE 2. ANIMAL (LIKE A DOG).

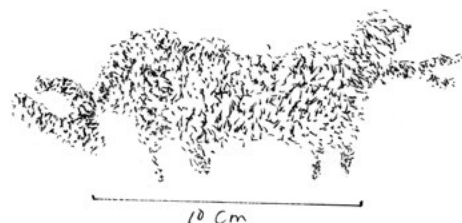


FIGURE 3. YAK.

⁴ There is a need to explain that overlying rock art is difficult to identify, rock art is severely damaged by natural forces, limitation of time and conditions for work. Due to the above reasons, the additional remarks do not cover all the images on no. 1 bit.

⁵ There is a grinding curved groove on the no. 1 bit, a large number of recesses(bot) around it, and it is the underpart of Fig. 63 in *Qinghai rock arts* (Science Press, 2001). There is an image which has two grinding figures which look like copulation, and thought to symbolize intercourse between man and woman in the book. Because, basically the style of rock art on Lusen Mountain was realistic, and most of the content were things of reality, only one abstract image, so when the classification and stages about the rock art on Lusen Mountain was done, it was not included in my paper.

AIV (Fig. 4), chisel of an outline of the animal using a stone implement, this type on the no. 1 bit of rock art on Lusen Mountain is only one.



FIGURE 4. YAK.

BII (Fig. 5, Fig. 6), upright chiselling entirely, but the edges have obvious traces of grinding, perhaps the first maker made it by intention, maybe there was re-creation by followers as well.

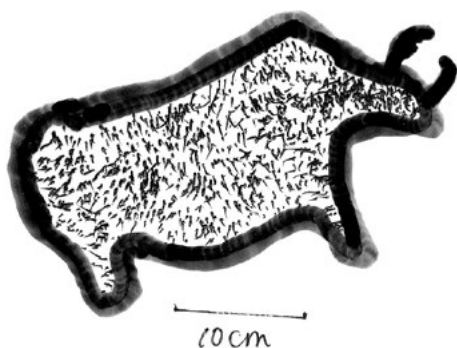


FIGURE 5. YAK.

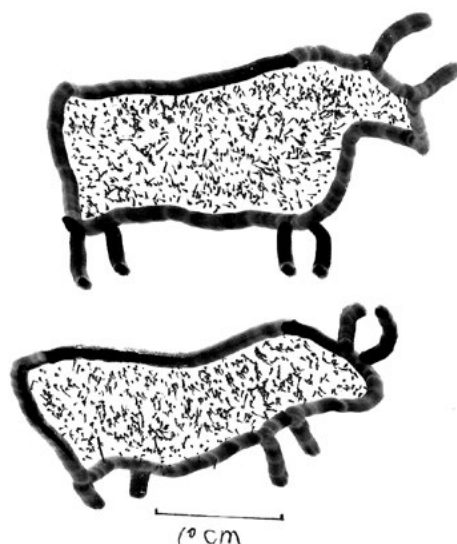


FIGURE 6. YAK.

BIII (Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11, Fig. 12), chisel first then grind, showing the outline of animal, but also grinding some ornament on the body of the animal.

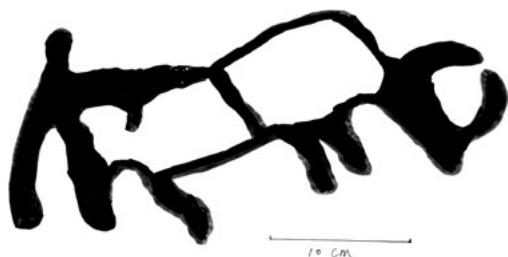


FIGURE 7. YAK.



FIGURE 8. YAK.

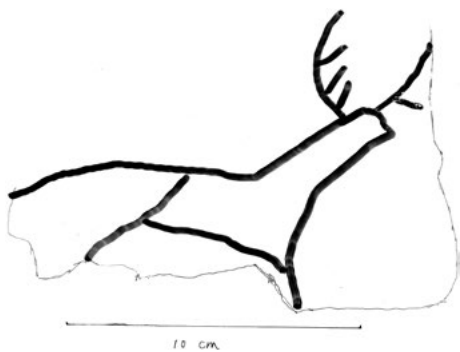


FIGURE 9. DEER (REAR DAMAGED).

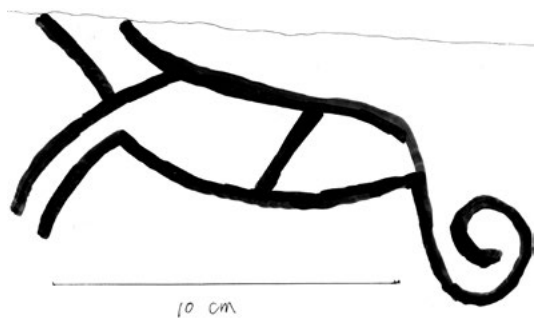


FIGURE 10. ANIMAL LIKE A TIGER,
(HEAD DAMAGED, TAIL CURL).

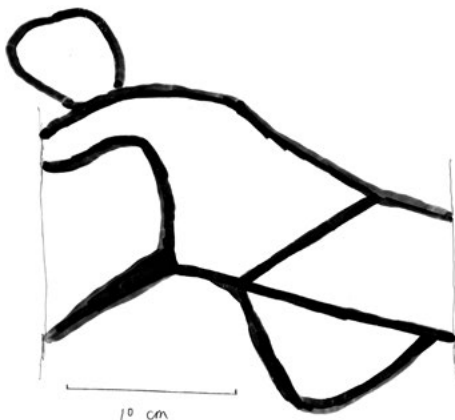


FIGURE 11. YAK (REAR DAMAGED).



FIGURE 12. YAK (REAR DAMAGED).

BIV (Fig. 13, Fig. 14, Fig. 15, Fig. 16, Fig. 17), chisel first then grind, showing the outline of the animal only.

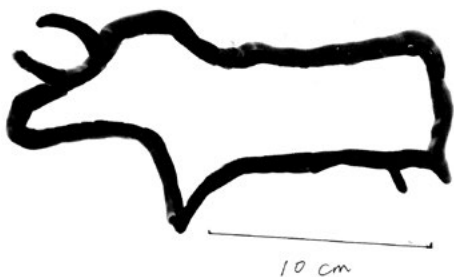


FIGURE 13. YAK.

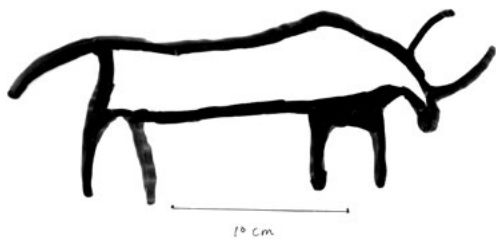


FIGURE 14. YAK.

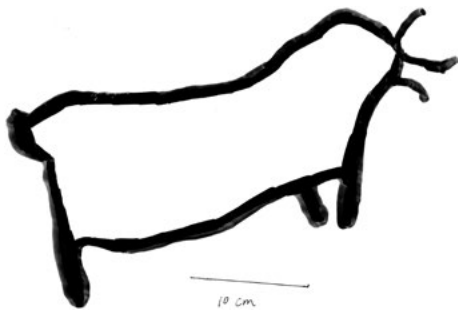


FIGURE 15. YAK.



FIGURE 16. YAK
AND HORSE.

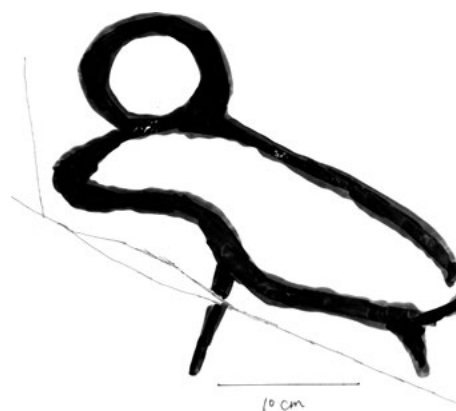


FIGURE 17. YAK.

CIII (Fig. 18, Fig. 19, Fig. 20) have obvious vestiges of grinding deepened after incising by metal tools, grinding the outline of the animal and some ornament on body of animal at the same time.

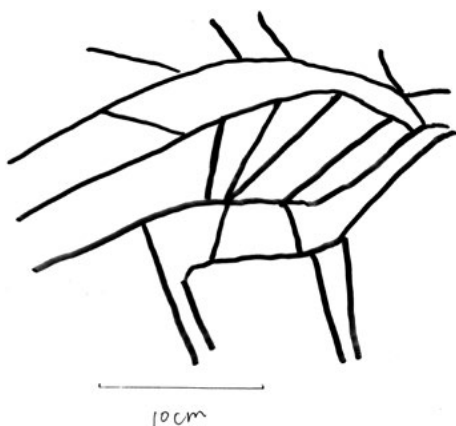


FIGURE 18. DEER (ANTLERS BACKWARD).



FIGURE 19. DEER (ANTLERS FORKED
TO THE OUTSIDE).

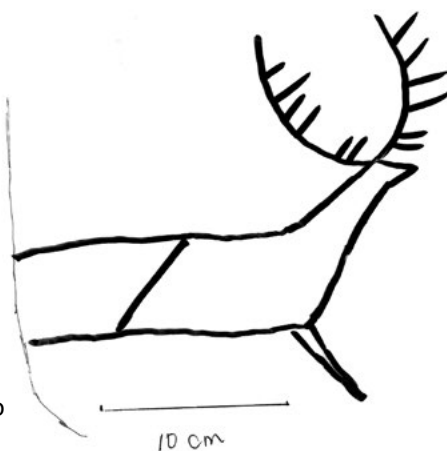


FIGURE 20. DEER (ANTLERS
FORKED FORWARD, EXTENDED
FROM BACK).

CIV (Fig. 21, Fig. 22, Fig. 23, Fig. 24, Fig. 25, Fig. 26, Fig. 27), grinding deepened after incising by metal tools, perhaps the first maker had made it completely, maybe there was re-creation by followers as well.

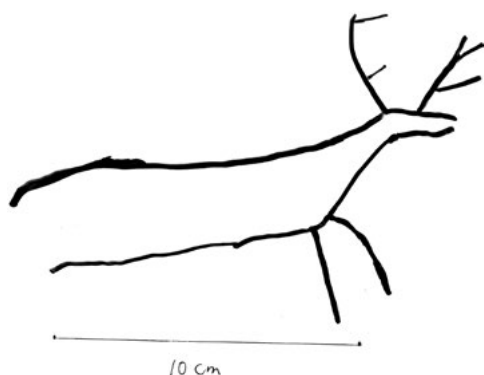


FIGURE 21. DEER (ANTLERS FORKED FORWARD).

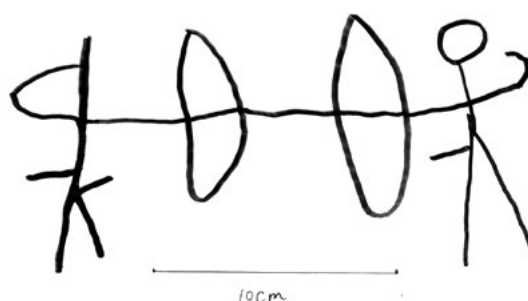


FIGURE 22. SHOOT FACE-TO-FACE (PROMINENT GENITALS).

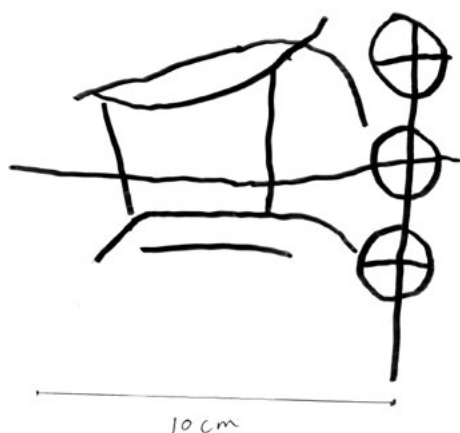


FIGURE 23. CHARIOT.

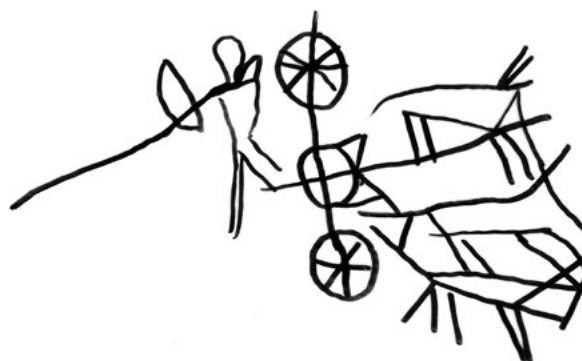


FIGURE 24. CHARIOT AND HUNT DIAGRAM.

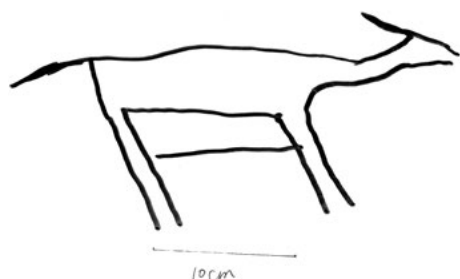


FIGURE 25. ANIMAL (LIKE A DOG).



FIGURE 26. TREE.



FIGURE 27. DEER (ANTLERS FORKED OUTWARDS).

DIV (Fig. 28, Fig. 29), incised by metal tools directly, without vestiges of grinding, or just several details have been ground.

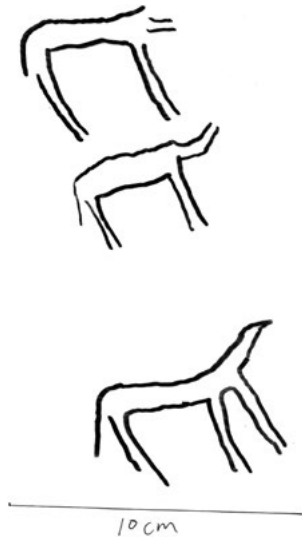


FIGURE 28. ANIMAL
(LIKE A HORSE).



FIGURE 29. DEER
(ANTLERS SIMPLIFIED).

Research on the stages of the no. 1 bit of rock art on Lusen Mountain

After dividing types and styles systematically for the no. 1 bit of rock art on Lusen Mountain, we research the stages by analysing the development of the production methods and artistic expressions of rock art, and make sure of the age of the rock art by observing superimposition-breaking relationships.

In terms of production tools, metal tools form a landmark in human productivity progress, and there is no doubt that rock art made by metal tools is later than rock tools, though rock was maybe also the tool for rock art after metal tools appeared. Thus, we can conclude that the A type and B type should be earlier than the C type and D type. The rock art shown in Fig. 30 probably represents a hunting scene for yak. From the analysis of production methods, it is obvious that the art of the trees is different from the yak and figures in the creative period. The drawing of trees was made by metal,



FIGURE 30. PROBABLY
REPRESENTS A YAK
HUNTING SCENE..



FIGURE 31. PROBABLY REPRESENTS
A YAK HUNTING SCENE.

and the method for yak and figure was polish and chisel. More important, there is the mark of rework by a metal tool in the painting of the bow and arrow beside the figure, which strongly suggests this.

Second, the four kinds of rock art on Lusen Mountain are obvious in their artistic expression. Take the common animal paintings, for instance, early humans showed the animal with a similar silhouette, and later the body contour stressed animal at the edge of the image, and then to the outline, but still symbolic and with some decoration on the body, until finally the fully formed contour artistic style. Of course, the reverse trend may be inferred, so we must be specific about the rock art on Lusen Mountain itself. From the production methods of the rock art on Lusen Mountain, the type I found only in type A, type II only in type B, type D is IV type rock. And we can think that the type A and type B made by stone tools are earlier than the type C and type D made by metal tools, so the development of artistic expression on Lusen Mountain from I type to IV type is clear.

Last, by analysing the relation between production methods and forms, we can determine the development from type A to type D. The rock art on Lusen Mountain from A to B and then to C production methods and rock type I to type II and III to IV type has a strong correlation, with a vertical hammer and chisel to hammer and chisel and edge grinding, then progress to the simple characterization of contour, which is also consistent with the laws of logic. This trend has also been seen in paintings. The development process of C type to D type has no very clear evidence, just from type A to type C, gradually forming a grinding style of painting. Taking into account the cultural phenomenon of inertia, we believe that in the early stage of making petroglyphs in metal tools, people still retained the traditional grind method, then after a period evolving into simple scoring. This omission is not only reflected in the production methods, but the period of animal patterns also showed a gradually simplified phenomenon.

To sum up, according to the production methods, form and number, and the relationship between various rock paintings, we can develop the theory that rock art evolution is divided into the first (AI), second (A class IV, BII, BIII, BIV), third (CIII, CIV class) and fourth (DIV) stages.

Evolution of rock art on Lusen Mountain

The above conclusion is only for the no. 1 bit of rock art, but if we want to take this as the standard to explore and summarize the characteristics of the various stages and evolution of rock art on Lusen Mountain, we need to verify it in the whole range. For this purpose, I reorganized the other designs of rock art on Lusen Mountain, which have been recorded in *Qinghai rock arts*. Because in that book the classification of the production methods was not the same as mine, and the artistic expression can be summarized in the pictures and text only, we cannot generalize. But we can differentiate the types A, B and C, D in general terms, and call them type AB and CD. Also we differentiate the I, II, III, IV, calling them first, second and third (see Table 1).

TABLE 1.

No.	Production type	Manifestation mode	Content and quantity	Notes
L2	AB	First	Yak 3	Fig. 66 ⁶
			Archer 4	
			Animal (like a dog) 3	
		Second	Yak 6	
		Third	Yak 1	
L3	AB	First	Bird (eagle) 1	
			Animal (like a dog) 1	
			Figure (knee-tuck type) 1	
		Third	Animal (like a sheep) 1	
		Third	Yak 3	
			Animal (like a horse or tiger) 1	
L4	AB	Third	Deer 1	
L5	AB	Second	Animal (like a tiger or leopard) 2	
L6	AB	First	Shoot face-to-face 1	
			Yak 3	
L7	AB	Second	Yak 1	
		Third	Animal (like a camel) 1	
			Animal (like a sheep) 1	
L8	AB	Second	Yak 2	
L9	AB	Third	Yak 2	Production later
	CD		Camel 1	
L10	AB	Third	Dog 1	Added later
L11	AB	Third	Animal (like a pig) 1	
L12	AB	Third	Animal (like a sheep) 1	Another 2 images are unrecognizable
L13	AB	First	Yak 1	
L14	AB	Third	Yak 1	
L15	AB	Second	Animal (like a sheep) 1	
L16	AB	First	Yak 1	
L17	AB	Third	Yak 1	
		Second	Animal (like a sheep) 2	
		First	Figure 1	
L18	AB	First	Yak 1	Antlers without forks
L19	AB	First	Animal (like a deer) 1	
L20	AB	First	Bird (like an eagle) 1	
L21	AB	Second	Yak 1	
L22	AB	Second	Yak 3	
L23	AB	Third	<i>Om mani padme hum</i>	Production later
	AB	Third	Yak 1	

⁶ In *Qinghai rock arts* (Science Press, 2001), the text of L2 has 16 individuals, but counting from the figure, L2 has 17 individuals. It may be a clerical error, please refer to the pictures.

INTELLECTUAL AND SPIRITUAL EXPRESSION OF NON-LITERATE PEOPLES

No.	Production type	Manifestation mode	Content and quantity	Notes
L24	AB	Third	Yak 1	Another damaged image like a yak
		Second	Yak 2	
		Second	Animal (like a tiger) 1	
L25	AB	Third	Animal (like a wolf or a dog) 1	
L26	AB	Third	Yak 3	
		Second	Deer 1	
L27	AB	First	Yak 1	
		Second	Yak 1	
			Animal (like a tiger) 1	
		Third	Animal (like a sheep) 1	
L28	AB	First	Archer 1	
			Yak 1	
		Second	Yak 2	
			Animal (like a tiger) 1	
	CD	Third	Animal (like a leopard) 1	
L29	AB	Third	Animal (like a horse) 3	
		First	Animal (like a dog or fox) 3	
L30	AB	First	Yak 1	
			Figure on horseback 1	
			Animal (like a dog or fox) 1	
		Second	Animal (like a tiger) 1	
			Yak 3	
			Yak 2	
	CD	Third	Animal (like a leopard) 1	
L31	AB	Third	Animal (like a leopard) 1	
	CD	Second	Animal (like a leopard) 1	
	CD	Third	Animal (like a leopard) 1	
L32	AB	First	Archer on horseback 2	
L33	AB	First	Animal (like a leopard) 1	
			Yak 1	
L34	AB	Third	Yak 2	Production later
	CD	Third	Dog 1	
L35	AB	Second	Yak (double-head) 1	
L36	AB	Third	Animal (like a sheep) 1	
L37	AB	Third	Yak 1	
			Animal (like a sheep) 1	
L38	AB	Third	Animal (like a sheep) 1	
			Deer 1	
			Yak 1	
L39	AB	Third	Yak 1	

Table 1 shows that the rock art on Lusen Mountain went through four stages: AB-first, AB-second and AB-third belong to the first and the second stages, and CD-first, CD-second and CD-third belong to the third and the fourth stages. From the frequency, the rock art, except the no.1 bit of rock art on Lusen Mountain, was based on the styles of the first two stages, and had the figures of the two stages once in a while. As well when it advanced to the no. 1 bit of rock art on Lusen Mountain, a large amount of rock art was grouped there, presenting the characteristics of the number of extremely rich and repeatedly made pieces.

Conclusion

Thus, based on analysing the development stage and performance content of the rock art on Lusen Mountain synthetically, we can reach the type division and evolution and characteristic of each stage, as follows.

The rock art in the first stage (AI) was upright chiselled entirely, showing some situation, such as riding and shooting, shooting mostly. The subject of rock art was not completely formed, content was messy, thus reflecting the diversity of purpose and function of early rock art. The birds and the eagle graphics which appeared once in a while may relate to the totem faith in early Qinghai-Tibetan areas.⁷ In the later part of this stage, the yak became an important theme of the rock art on Lusen Mountain, the production methods also began to simplify, from upright chiselling entirely to chiselling an outline of the animal. So this stage can be called the formative period.

The distinctive feature of rock art in the second stage (AIV, BII, BIII, BIV) is that yak was the main content: the frequency and artistic level of the yak graphics both occupy a prominent position. On the expression of the yak, the no. 1 bit of rock art is different from other rock art: the proportion of yak on the former is higher, and the latter also has some other animals here and there, with deer graphics which had very smooth lines in the latter. This phenomenon may reflect a developing process of the rock art on Lusen Mountain: developing from the foot to the mountain towards the special location where the no.1 bit of rock art lies, which showed the extraordinary divine status of the no.1 bit of rock art in the rock art makers' hearts. The production methods of rock art at this stage had the evolution process from upright chiselled entirely, then ground edge, transitioning to chiselled first then ground, showing the outline of the animal, with some ornament ground on the body of the animal, up to the outline of the animal just chiselled and ground. I think the second stage represented by the yak graphics is the finest fastigium of the rock art on Lusen Mountain, so it also can be called the yak period, and this period mainly reflected the characteristics of local culture on the Qinghai-Tibetan Plateau.

The contents of rock art in the third stage (CIII, CIV) were richer and had a lot of graphics, such as deer, tree, big predator and chariot; the deer and the tiger were especially beautiful. Abundant content of rock art may be found in the Inner Mongolia region of northern grassland culture. Rock art of superb quality was related to the progress of the production tools during this period. In particular, it is important to note that the yak as once the most important theme of the rock art on Lusen Mountain no longer appeared from this stage. The third stage which is represented by the deer graphics is the second of the rock art on Lusen Mountain, so it also can be called the deer period. The appearance of deer and tiger graphics which had beautifully decorated and smooth lines, and the disappearance of yak graphics, reflect the northern grassland culture and the penetration and influence of northern Qinghai-Tibetan Plateau.

The fourth stage (DIV) is the decline stage of the rock art on Lusen Mountain. The rock art on this stage was made cursorily, the ratio of some graphics was extremely uncoordinated, artistic level was greatly reduced, most of them were a parody of existing rock art.

The rock art on Lusen Mountain is located in the northern Qinghai-Tibetan Plateau, which is in the intersection region of Qinghai-Tibetan Plateau culture and the northern grassland culture. The content of the rock art reflects the characteristics of this civilization collision zone in part. In this paper, on the basis of the classification, we propose that the rock art on Lusen Mountain went through four stages. This is the basic work to discuss further, in the larger regional space and cultural context, about what should be the focus of future research. Comparative study of the rock art on Lusen Mountain, on the Qinghai-Tibetan Plateau and on the northern grasslands, and the two other cultural heritages, will be beneficial to the exploration of the relationship between two kinds of culture and their origin, and also may solve the dating problem of the rock art on Lusen Mountain.

⁷ See Yasha Zhang, "The 'bird' graphics in the Tibetan rock-arts", *Tibetan Studies* 2, 2006.

Using the Montage Technique to Read Various Cave Painting Sites on Guizhou Plateau

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Abstract

On Guizhou plateau, cave painting and rock engravings have been found at various sites and were considered to be prehistoric in origin. The rock art depicts the lives and times of the people who lived in the cave. They used the simplest visual language showing their daily lives. The prehistoric artefacts could also be abstract art, such as what was found in the Redcliff celestial script in Guanling, Guizhou, the meaning of which is still unknown.

The word montage simply denotes 'cutting' in French. It is using a series of short shots and editing them into a sequence to condense space, time and information. Visual thinking is another elaboration of montage. Children round the world can use this technique to read the paintings. So, we can read and interpret the cave paintings, such as the Niu Jiao well cave painting in Guanling, the Bai Yan Jiao cave painting in Changshun, the Sanmeiyan cave painting and the Tiziyan cave painting in Kaiyang, Guizhou.

Agricultural Worship in the Rock Art of Jiangjunya, Lianyungang City, East China

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Abstract

Lianyungang, Jiangjunya, is located on the east coast of China. Here the most representative rock art shows the god of grain worship, reflecting China's primitive agricultural society. Determined by the micro-erosion dating method, the god of grain worship in Jiangjunya is shown to date back 4,500-4,300 years, the Longshan culture period. The rock art is categorized as petroglyphs. The article traces Jiangjunya's paleoclimatic environment, farming conditions, rice planting and cultivation, and describes the calendar of the East Yi clan, astrology rock art in Jiangjunya, myths and legends in Jiangjunya and surrounding archeological discoveries. The deduction is that grain worship is the most common rock art of the ancient East Yi clan, and its creation process is primitive witchcraft in which prayers are made for a good rice harvest. The rock art reflects the ancestors' religious faith as well as their perception of the world, and reveals the original cultural forms in this area.

Image Classification and the Symbolic Structure of the Rock Art at the Zuojiang River, Guangxi

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Abstract

So far, 81 rock art sites, 178 paintings and thousands of individual images have been spotted on the cliff banks of the Zuojiang River, Guangxi, in southwestern China. Of these, 90 percent are images of human figures, and the rest are animal images (mostly canids) and symbolic designs (especially the circle, which generally may be regarded as bronze drum designs in ancient southwest China).

The subject and content of all the sites of the Zuojiang River are highly consistent. In other words, all the rock art in this region expresses the same subject: prayers of collectivity, usually showing mass sacrifice scenes. Local researchers made various assumptions of what they prayed for, such as the holy landscape, astral subjects, ancestral subjects, gods, dogs of the bronze drum and celebration for victory in wars, etc. Nevertheless, there is no dispute that the subjects the rock paintings expressed must be indigenous people's scenes of sacrifice.

We found that the figures of prayer, which are the most popular image on the Zuojiang River, are actually the basic motif of world rock art. Compared with similar figures rock paintings around the world and in China, the prayers at Zuojiang River have their own particular features:

- *Ninety percent of the figures are of identical postures, and it is very rare to see thousands of*
- *such prayer images concentrated in one rock art region.*
- *These postures of the human figure can be divided into two types, the front side and the profile side, which represent different social rank and status.*
- *The local complex and diverse religious rites are described by arranging the figures vertically or horizontally, adding various kinds of weapons or accessories, changing figure sizes and so on.*
- *The rock art of the Zuojiang River formed its own unique syntax and grammar through the various relationships of characters and the collocation of figures with animals, decorations and weapons.*

Research on Face Rock Carvings in Northern China

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Abstract

Face rock carving is a distinct rock carving type that focused on facial and semi-facial portraits in mysterious shapes and with profound implications. Albeit a global cultural phenomenon, face rock carvings are discovered only in the Pacific Rim, which includes China, Mongolia, Siberia, America, Canada, Chile and Australia. An abundance of face rock carvings have been found spreading as a ribbon from the west to the east in northern China, in Badan Jara, Table Mountain in Wuhai, Yinshan and the Xar Moron River in Inner Mongolia, Helan Mountain in Ningxia and the Amur Basin.

The connotation has been the subject of extensive literature, including the spread and changes in the face rock carvings in the context of art history, religion and folkways. However, most of the existent studies are subject to limitations due to the use of incomplete data in terms of region analysis, periodization and chronology.

This paper is an attempt to develop an archeological methodology for the study of face rock carvings. Using 565 face rock carvings found in northern China, their distribution and characteristics are summarized in a systematic archeological classification. We also conduct a periodization and chronological study.

Discussion of Reproduction Worship in Chinese Rock Art

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Abstract

Reproduction and multiplication are major themes in human beings' existence, and thus are derived numerous religions, witchcrafts, myths and legends, which have become dazzling pearls of human culture. The article classifies Chinese rock art into two categories: symbolic metaphor and realistic expression. While the symbolic metaphor is expressed in hoofprints, footprints, cavities, concentric circles, triangles, bows and arrows, illustrated by taking Henan province's as an example (about 4,000 years ago), realistic expression is expressed in images of the penis, vagina, sexual intercourse is illustrated by Xinjiang Hutubi rock art (about 3,000-4,000 years ago). The two types of rock art show the ancestors' desire for life and yearning for the prosperity of future generations. Due to constraints of the human relations concept and Confucianism in China, the realistic expression pictures diminish during the evolution of culture and art, whereas the symbolic metaphor combines with rich transformation, abstract and folk art, becoming an important art expression form of China's folk religion. This category is still widespread.

An Ancient Sacrificial Place: Research Into Rock Art in Xianju

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Abstract

Xianju, a town located in the southeast of Zhejiang province, boasts nearly 20 sites of cliff painting. This paper demonstrates that these serve as worshipping places for the ancient Yue (a country in the Zhanguo period). People offered sacrifices to heaven for fertility, from the perspectives of their geographical location, names, content, local legends and customs, ancient worship systems and so on.

Significance of the Stabilization Works Which Protect the Rock Art Painting in Ningming District

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Abstract

Rock art is a common cultural phenomenon in early society. The typical rock art painting, Huashan rock art in Ningming, Guangxi, is now seriously damaged. The rock art cracked easily. Since 2001, our management has promoted protective research, and the research achievement was successfully applied in our stabilization works. This safeguarding protection not only helping us solve the climatic problems but also gives us ideas on how to protect the rock art in our country.

Petroglyphs of the Northern Pacific Rim: The Rock Art of the Xiliaohe River and the Amur River

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Abstract

The human-faces petroglyphs in Asia, America and the Atlantic are a unique type of rock art, called by scholars the Pacific Rim culture. Based on archeological data analysis, the human-faces petroglyphs were made in Asia mostly during the Neolithic and the Bronze Ages. In America, the human-faces petroglyph culture lasted until near modern times. The special geographic distribution of human-faces petroglyphs is important for us to understand our ancestors' living patterns, art creations, customs, religions and their tribes' migrations.

After sorting and analyzing the geographic distribution and classification characteristics of the human-faces petroglyphs in the northern Pacific Rim, we selected the Xiliaohe River and the Amur River as research targets for indirect study by date and by typology based on macro-recognition, employing archeological data and image comparison methods, then we tried to establish a regional chronological space-time framework for the human-faces petroglyphs.

The major research and steps were as follows:

- *defining the concept of human-faces petroglyphs;*
- *making statistics and analysis on the distribution data;*
- *based on the data analysis, I first made studies of human-faces petroglyphs in the Xiliaohe.*

River and Amur River areas, because they are widely found at different periods. Utilizing archeological investigation and research results, combined with image structure characteristics and types of human-faces petroglyphs and relevant archeological survivals to establish a basic chronological scale, the main styles and types of human-faces petroglyphs for each period were organized.

The conclusions are based on comprehensive research on the human-faces petroglyph creation methods, chronological classification and colour types.

1. *The human-faces petroglyph is the outcome of the complex economic conditions of the Neolithic period. The material base for its coming into existence and evolution is not determined by a single economic form. It is a complex outcome of the combination of several economic forms.*
2. *The same style and type of human-faces petroglyphs existing in many places in the northern Pacific Rim indicate that the evolution of human-faces petroglyphs is closely related to the migration of hunter-gatherer tribes, the spread of their cultures and the ethnic mixture.*
3. *The diversified types and styles of the human-faces petroglyphs reflect the environment, living patterns and the different ethnic cultures. The places where the human-faces petroglyphs are located and their ethnic cultural particularity have different cultural meanings. The local cultures in each place have an important impact on the creation of human-faces petroglyphs in that area.*

On the Disciplines of Taking Image in Chinese Rock Art

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Abstract

Taking image is the first step in forming the image in rock art. There are several principles of taking image in Chinese rock art. The first one is simplicity, which includes the “projection profile” technique, the “part for whole” technique, and the “abstraction” technique. The second is the principle of maximizing profile which is often presented in original art. The third is the partial emphasizing principle, which is exemplified as shape emphasizing and location emphasizing. The fourth is the principle of divergent perspective, which shows the lack of background and demonstrates the tactile characteristic of rock art. The comprehensive application of these principles represents the characteristic of rock art’s taking image, demonstrating the thought processes of primitive inhabitants taking image.

