Book of abstracts of 20th INTERNATIONAL ROCK ART CONGRESS
IFRAO 2018 “Standing on the shoulders of giants / Sulle spalle dei giganti”
Valcamonica - Darfo Boario Terme (BS) Italy, 29 August - 2 September 2018
Edited by: Marisa Giorgi

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ifrao2018@ccsp http://www.ccsp.it

Conference venue
Darfo B.T. Congress Centre and in the connected location of the Consolata - Centro Formativo Provinciale Giuseppe Zanardelli - Valcamonica (Italy)
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A1 Modern (re)uses of rock art: art, identity and visual culture. (Andrzej Rozwadowski, Jamie Hampson, Marta Smolinska)

B1 Statue-stele in Europe, Asia and the Mediterranean basin. (Stefania Casini, Angelo Eugenio Fossati, Marta Diaz-Guardamino)

C1 Pastoral Graffiti: Old World case studies in interpretative ethnoarchaeology. (Giovanni Kezich, Marta Bazzanella, Silvia Sandrone, Adriana Gandolfi)

D1 Rupestrian archaeology, questions & answers: tools, methods and purposes. (Andrea Arcà, Yang Cai, Paolo Medici, Giulia Rossi, Manuel Santos-Estévez)

E1 Rupestrian expressions in historical periods. (Federico Troletti, Philippe Hameau)

F1 A northerner’s view on rock art. Aspects, mobility and materiality on the Scandinavian Rock Art. (Johan Ling, Jan Magne Gjerde)

G1 Public policies and rock art, between research and preservation. (Valerie Feruglio, Nathalie Fourment, Jacques Jaubert, Roberto Ontañon Peredo)

H1 Rock Art Science. (Robert G. Bednarik, Giriraj Kumar, Tang Huisheng)

I1 Representations of weaponry and tools in prehistoric, protohistoric and traditional tribal communities: an approach by archaeology and anthropology. (Ana M. S. Bettencourt, Hugo Aluai Sampaio, Manuel Santos-Estévez, Zulfiqar Ali Kalhoro, Alessandra Bravin)

B2 Current Research in the Rock art of the Eastern Sahara. (Paolo Medici, Maria Carmela Gatto, Pawel Lech Polkowski, Heiko Riemer, Frank Förster)

D2 Challenges and changes for rock art research in the digital age. (Julian Jansen van Rensburg, Bernadette Drabsch, Rebecca Dohl)

E2 Inscriptions in rock art. (Stefania Casini, Angelo Eugenio Fossati, Blanca María Prósper, Joan Ferrer i Jané, Mohammed Maarqaṭen)

F2 Managing sustainable rock art sites. (Tiziana Cittadini, Ramon Montes, Luis Jorge Gonçalves)

B3 Archaeoaesthetics for rock art studies. (Steven J. Waller, Legor Reznikoff)

C3 Mens simbolica’ (Symbolic mind): questions on the mythic-symbolic process, from prehistory to the present day. (Umberto Sansoni, Pier Luigi Bolmida, Federico Maillard, Gabriella Brusa Zappellini)

D3 New research in the rock art traditions of the Alps. (Andrea Arcà, Angelo Eugenio Fossati, Damien Daudry, Silvia Sandrone)

E3 Experiences of Colonisation: Rock art as “subaltern” narratives of indigenous and First Nation Peoples lived experiences during colonial times (Dario Sigari, Marco Garcia Diez, Valerie Feruglio)

F3 Rock Art and Ethnography. (Claire Smith, Sally K. May, Ines Domingo)

G3 Distribution, chronology and territoriality of upper Palaeolithic rock art. New discoveries and new approaches towards a review of the phenomenon. (Dario Sigari, Marco Garcia Diez, Valerie Feruglio)

H3 Special session (Mila Simões de Abreu)

B4 Anthropomorphic images in rock art. (G. Terence Meaden, Herman Bende)

E4 The history of rock art research (Jamie Hampson, Joakim Goldhahn, Sam Challis)

G4 Recent Rock Art Research in North America. (Mavis Greer, James D. Keyser, Jack Brink)

H4 Pigments: from science to art. (Ana Isabel Rodrigues, José Mirão, Peter Vandenabeele)

I4 Rock art - reflections of a cultural heritage. (Suely Amancio Martinelli, Suely de Albuquerque, Carlos Xavier de Azevedo Netto)

A3 Rock art and human use of space in desert landscapes: a comparative perspective. (Guadalupe Romero Villanueva, Zaray Guerrero Bueno, Marcela Sepúlveda)

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F5 Recent research developments in rock art research in the Middle East, Caucasus and neighbouring areas. (Angelo Eugenio Fossati, Mohammed Maarqaṭen, Dario Sigari)

G5 Rock art in landscape of motion. (Pawel Lech Polkowski, Heiko Riemer, Frank Förster)

H5 Rock Art and World Heritage. (Sally K. May, Jan Magne Gjerde, Paul S.C. Taçon)
On behalf of the organising committee and all our sponsors, it is our great pleasure to welcome you to the The 20th International Rock Art Congress IFRAO 2018 ‘Standing on the shoulders of giants/ Sulle spalle dei giganti’. We hope that this five-day conference (29th of August - 2nd of September) will provide a platform for the communication and advancement of new research through the collaboration and exchange of ideas. The Book of Abstracts provides a synopsis of this scientific exchange, bringing together rock art specialists and scholars from around the world, representing a wide range of cultural manifestations relating to rock art.

We hope that this congress’s productive environment for debate and discussion not only provides established scientists with the opportunity to put forward and develop new research but inspires and encourages new scholars to engage in the field of rock art research by ‘standing on the shoulders of giants’.

This conference has been planned with you in mind. We hope that you enjoy it. Here’s to a successful conference.

The IFRAO organising committee
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BOOK OF abstracts
A NORTHERNER’S VIEW ON ROCK ART. ASPECTS ON MOBILITY AND MATERIALITY ON THE SCANDINAVIAN ROCK ART

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The intention of this session is to shed light on Scandinavian rock art regardless of regions, tradition, time and space. There has been a tendency within rock art research to merely focus on either the Northern Rock Art Tradition (NT) or the Southern Tradition (ST). There exists some general similarities in terms of the location of rock art, narratives, chronology and formats used in time and space between these traditions but also obvious differences.

Thus, the objective with this session is to stimulate different perspectives and themes that highlights the intersection between these two rock art traditions in Scandinavia.
Sailing rock art boats. The introduction of the sail in the North

The Scandinavian rock art conveys important information about the early development of the sail in the region, potentially pushing its use here back by almost 2000 years! In conjunction with experimental sail trials and comparisons with early use of sails in other parts of the world, the rock art suggests that the sail became increasingly important as a complement to paddling in response to an increase in the need to transport people and goods over short, medium and long distances. The regular use of the sail as a complement to paddling, can be linked to the early development of the Scandinavian chiefdoms around 1600 BC, significantly increasing the range and intensity of regular communication in Bronze Age of Scandinavia and beyond. This research allows us to better understand the dynamics of seafaring during the period and the level of communication across the region.

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Keywords: Bronze Age seafaring, development of the sail, prehistoric seafaring, sailing, navigation
This paper, focuses on the rock carvings at Nämforsen, and their comprehensive study over the past half century. Hallstöm initially argued that the Northern tradition’s masterpiece carvings were heavily influenced by the Southern tradition, a view he later modified. Despite limited research pointing to similarities with the Southern tradition, the notion that the carvings belong to the Stone Age and solely characterized by Northern cultures has become firmly established. Contradicting this argument are the two neighbouring Bronze Age settlements of Ställverket and Råinget and their links to the carvings. In addition, the lack of elk bones and presence of fish bones, indicates that the animals consumed were more frequently depicted. The numerous coastal burial cairns from the Bronze Age are included in the analysis as there are links to the settlements and possibly the carvings.

A special type of manned ship is highlighted that appears carved at “strategic” locations on the rocks. Moreover, the bronze casting at Råinget was possible linked to the advancing Bell Beaker culture that also left its mark in the form of a typical flint arrowhead found in Ställverket. This points to a growing trade and exchange network during the Bronze Age in this area.

Keywords: Nämforsen, rock carvings, Mesolithic, Neolithic, Bronze Age, settlements, pitfalls, burial cairns, Northern Tradition, Southern Tradition, bronze casting, Ananino bronze axe, Bell Beaker arrow-head
The research history of rock art in Scandinavia has a clear division between the Northern Rock Art Tradition (NT) and the Southern Tradition (ST). This divide was established in the early 1900's in Scandinavia and has been projected through the 20th century as a clear opposition. The division is problematic since most rock art research merely focuses on one of these «traditions». This division has not been established in the rest of Fennoscandia (Finland and NW-Russia) even though the material record has its clear counterparts to the NT and ST. An unparalleled discovery of Stone Age rock art in northernmost Europe during the last decades has contradicted the strict divisions based on economy, geography and time. Hence, revisiting some of the previous dichotomies is advocated and the study applies examples from some of the large rock art concentrations such as Alta in Northern Norway, Onega and Vyg in NW-Russia and Nämforsen in northern Sweden. This paper has its origins in the research of the Stone Age boat depictions in northernmost Europe and is an attempt to nuance this strict north-south division between the NT and the ST in rock art studies.

Keywords: rock art, Scandinavia, Fennoscandia, Northern Tradition, Southern Tradition, boats
Shamans and Sun Horses - Otherworldly Passage in North European Folklore and Rock Art

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Keywords: sun, boat, horse, elk, religion, ethnography, mythology, folklore, shamanism, comparison

Scandinavian rock art traditions are typically viewed as the products of two distinct cultural spheres, and interpretations of their semantic content tend to use different analogies. The southern agricultural/maritime tradition draws upon Indo-European and Mediterranean religions, while the northern forager tradition is seen in the light of Uralic and Siberian ethnography. As a result of this divergence, the interpretations are sometimes more different than the material itself. Yet some motifs display striking similarities between north and south, such as the relationship between boats and elks or horses. While boats and horses are taken to be solar helpers in southern Bronze Age iconography, boats and elks are viewed in the light of shamanic institutions in the north. This paper will compare and examine the symbolism of the two traditions with the folklore and mythology of Eurasia, particularly northern Europe, and aim to show a deep relationship between the cosmologies produced in the rock art.
The petroglyphs on the rocky islands of Kanozero (Kola Peninsula, Russia) were discovered in 1997 and they currently number around 1,300 engravings. In the summer of 2017, more rock engravings were discovered here. These include cup-marks, anthropomorphic and zoomorphic images. Among these important findings are two groups of petroglyphs on Kamenniy Island: one on the lowest point of the rock- near the water level and another at the highest point: on the top of the island. At the lowest point were revealed only a series of cup-marks but in the newly discovered group on top of the island were anthropomorphic figures and no cup marks. In other known groups on the islands of the Kanozero, cup-marks often coexist with anthropomorphic figures. In this report, the author analyzes the characteristics of the cup-marks engravings among Kanozero petroglyphs and the context of their possible relationship with anthropomorphic figures. In Northern Europe, the distribution of cup-mark carvings often dated to the Bronze Age, but at Kanozero we have a rare case of the coexistence of cup-marks with other images which researchers used to relate with the Northern Neolithic tradition. Among the Kanosero petroglyphs, more than 100 cup-marks have been identified and their number increases.

Keywords: cup-marks, anthropomorphic images, Kanozero, Bronze Age, Neolithic
Contextualizing Honnhammar

Taking as a starting point the large assembly of painted rock art at Honnhammar in Middle Norway an attempt is made to try to establish links between Honnhammar and other rock art sites in Fennoscandia. At Honnhammar about 120 figures are known from 25 sites. The motifs are comprised of geometrical figures, cervids, fishes, whales, boats (carved) other (non-cervid) animals and at least one human figure. Exploring the figures and the themes depicted are one side of the analysis. Other factors as well, such as possible anthropomorphic and zoomorphic features in the rock, the relation between the rock art and the microlandscape (i.e. the rock as canvas) and between rock art and the macro landscape could also be explored. The aim is to try to contextualize Honnhammar within the broader rock art tradition of Fennoscandia and thus seek a better understanding of what kind of site Honnhammar is.

Keywords: rock paintings, fennoscandia, landscape
Disarticulated Anthropomorphs and Defleshed Animals

The paper seeks to explore the structuring of imagery at Northern Tradition rock art sites of Norway and expressed relations between human skeletons, disarticulated skeletons and both fleshed and defleshed animals. It will be argued that the rock art contains essential information about former rituals and death treatment, which provides a much deeper understanding of past mortuary practices. Burials from the Mesolithic (and the Neolithic) are generally missing in the archaeological record of Norway, which to some extent might have, and still is, caused by acidic soil conditions, but could also be the result of death practices which left little remains and few intact bodies or skeletons. The paper also discusses Mesolithic concepts of life and death on the background of seemingly vital and possibly moving animals and human skeletons organised as potential narratives at many rock art panels of the Northern Tradition.

Keywords: Mesolithic, skeletons, disarticulation, deflesh, mortuary practices
Hunting Stories in Scandinavian Rock Art

Since the beginning of rock art research, Scandinavian petroglyphs have given rise to vivid interpretations, related to stories and myths found in Saami ethnography, Old Norse religion, and Indo-European mythology. However, we still do not know if, and how, these images are really telling stories. In this paper we will discuss a narratological approach to petroglyphs. In particular, we shall analyze the ways Scandinavian Northern and Southern traditions depict hunting scenes. We compare images of wild boar hunting found in the South with hunting scenes, mainly of deer, in Northern material. A preliminary observation is that the scenes differ in ways that reflect not only different hunting traditions, but also different usages of the pictures, i.e. putting emphasis on different aspects of the hunting process itself. While the Northern tradition includes several phases, such as tracking, killing, and the anatomical inner details of the hunted species, the Southern tradition is more focused on the killing, or confrontational, aspect of the hunt. With respect to narrativity, the Northern hunting scenes thus seem to rely more on interrelated images, while the Southern tradition more on showing minimal narratives in single images.

Keywords: petroglyphs, Scandinavia, narratology
A century ago rock art in Scandinavia was sorted into two traditions; a Stone Age ‘hunter-gatherer’ tradition and a Bronze Age ‘agrarian’ tradition. The relevance of this division may be questioned. In general rock art belonging to these traditions is found at separate locations but occasionally occurring at the same sites and panels. The Stone Age tradition is dominated by zoomorphs, especially cervids, but also marine animals and birds. Ships and cup-marks dominate the Bronze Age tradition, but include footprints and horses.

The author has conducted detailed studies of the main motifs belonging to both traditions in Central Norway, where they are well represented. These studies demonstrate local differences within both traditions regarding the choice of motifs and their representations. This holds especially true for the Stone Age sites, where style varies between sites. Some basic similarities in image form can be identified but dissimilarities are more dominant. During the Bronze Age it is evident that different motifs were preferred in different panels. Thus, the homogeneity of both traditions, may be questioned. While local differences dominate between Stone Age sites, Bronze Age motifs are more standardised. However, panels and sites are dominated by different motifs, which indicate that local sub-traditions may have existed.

Keywords: motifs, constructions, dissimilarities, contacts, local traditions
In this presentation I wish to focus on the different elements that seem to collide and meet at the different rock art panels, with focus on the region of Central Norway. In many ways the panels are often located at places where there is a presence of different elements, as for example waterfalls, streams, seas/lakes or rivers near the rock art panels. These locations seem to be important, but the rock art panels also seem to be mirroring this dichotomy of water elements meeting the land elements. In both traditions (the Northern and Southern rock art tradition) we can see rock art panels where the figures seem to create contrasts of elements. Land animals meet sea elements, and only a few rock art sites consist of only one motif. The dichotomy seems to be an important part of the narrative of the rock art. In between this contrast of land and sea elements we find the human element, either as anthropomorphic figures or boat motifs. How can we interpret this dichotomy? Can we interpret the dichotomy as being the main narrative throughout the Northern and Southern tradition? Or can we see that traces of certain elements where added later, thus changing the narrative?

Keywords: elements, land, sea, dichotomy, landscape

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Fig.1 - Footprints at Selbusjøen. (photo Heidrun Stebergløkken, NTNU University museum)
Scandinavian rock carvings are often painted red, to make them more visible to the observer, and it is a widespread notion among people that this was what they looked like in their heyday - red carvings on grey bedrock. I propose that it in fact was the other way around with major parts of the UNESCO World Heritage rock art of Alta in Northern Norway - that bright and clearly visible rock carvings were produced on strikingly red-coated sandstone in the seashore zone, and that the contemporary seashore at the Hjemmeluft site can serve as an illustration of how the environment may have looked like when the rock art was made. By examining the rock surfaces at the Hjemmeluft site and the corresponding current seashore zone, using field observations and geochemical analysis, and comparing with the Kåfjord site, I suggest that the bedrock in Hjemmeluft and Kåfjord displayed aesthetic similarities previously not noted, namely the red color on the rock surfaces, confined within the borders of distinct geological formation layers.

Keywords: Alta, rock carvings, color, geochemical processes, seashore, aesthetics
This session aims to profile a suite of current and past Australian Research Council and other research projects from across the Kimberley over the last decade

a) Regionalism in Kimberley rock art

The Kimberley has been characterized as a style province for over 40 years even though it shares many style elements with Arnhem Land. There are also significant variations within the Kimberley repertoire at the regional and sub-regional level. Clearly different scales of spatial resolution will be fruitful in addressing both a) shared style elements over larger areas, and b) understanding variability at the (sub)regional level as a product of socio-linguistic, demographic and temporal factors. Issues to be addressed include the identity of the individual and group; the transmission of new traditions through time and space; art in mediating demographic, environmental and social dynamics; and the relationship of changes in graphic vocabulary and regional technological organization as deduced from habitation records.

b) Advances in dating rock art

Multi-institutional projects are developing novel methods and techniques to date the stylistically distinct art periods from the Kimberley. These include U-series dating of mineral crusts (beyond oxalates), cosmogenic radionuclide dating of scars and roof fall events, and a combination AMS and OSL dating of mud-wasp nests and plasma oxidation pre-treatment for AMS dating. A suite of new absolute dates are being generated for the Kimberley which will extend the known age of the early figurative traditions and provide far greater resolution for styles initiated at the Pleistocene-Holocene transition and through the Holocene. These advances will be profiled likely with discussion of new comparative dating frameworks emerging from Arnhem Land.

c) Art within archaeological contexts

The excavation of occupation sites associated with art production has increased in northern Australia, adopting an archaeo-morphology approach as advocated from work in the Aurignacian-aged cave systems of France (such as Grotte Chauvet) and sites like Nwarla Gabarnmang in the Northern Territory. The approach can recover plaques with pigment art fallen from rock shelter walls and
re-fitted using laser techniques. Micro-fragments of ochre as well as crayons can be recovered as well as paint splashes and other forensic traces. In addition, other types of symbolic behaviours (such as ornament production and ochre application on human bodies, wooden artefacts and stone tools) can also be deduced from recovered assemblages. Recent research projects adopting these approaches will be profiled.

d) Contact rock art
The North-West of Australia has a long history of contact spanning the era 1606 until the 20th century and possibly earlier from pre-Macassan voyagers from SE Asia. These encounters and sometimes economic and social relations are captured in contact art ranging from various sailing vessels from SE Asia, Europe and the Americas through to pastoral themes such as the buggy, horse and rifle. The contact art of the Kimberley speaks to Indigenous resilience in the face of European colonization and the new economies which emerged from pearling, pastoralism, mining and missionary expansion. Art illustrating social relations over large geographic areas will be profiled here from northern Australia.

e) Advances in theory
Both existing and new theoretical approaches deployed to understand Kimberley rock art will be profiled in this strand with a focus on their utility in describing changes in wider occupation patterns through space and time. They will also be situated within recent forums on rock art theory such as the 2016 ACRA 3 Conference in Alta, Norway and the 2017 Wenner-Gren Foundation Conference “Innovating Rock Art Research Theory and Practice Workshop” in Salzburg. Approaches will likely include: formal methods, style aesthetics and context; information exchange theory; engendered and subaltern approaches; group boundary formation models; relational ontologies; phenomenological approaches, personhood and identity; and PCA analysis of style and language congruence.
Inputs of the analysis of colouring and coloured matters into the integrated study of the rock art site of Nawarla Gabarnmang (Arnhem Land, North Territory - Australia)

In the rock art site of Nawarla Gabarnmang - radiocarbon-dated from ≥48,000 cal BP to the early twentieth century - in the Jawoyn country (Arnhem Land - Australia), excavations have revealed a large number of artifacts. The ceilings of the site contain well over 1400 still-visible paintings in multiple, superimposed layers. This art raises questions: is it an expression of the first humans arrived in Australia 65,000 years ago, or the evidence of recent occupation periods? How does this art inform us about the cultural practices? To get a better insight into the artistic and cultural practices, the temporality as well as the uses of Nawarla Gabarnmang since the first prehistoric activities until the recent periods, the colouring and coloured matters excavated under the painted panels on the ceilings are studied. Through an integrated approach, the analysis allows to rebuild the steps of the “chaîne opératoire” leading to the production of paintings. Then, cross-referenced with archaeological, archaeo-morphological and rock art studies, the results provided by the integrated study of the artifacts bring information as well on technical and behavioral evolutions, as on the cultural involvement of this site, not only in its spatial but also in its temporal dimensions.

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Keywords: Rock art; Colouring/coloured matters; Physico-chemical analysis; Integrated study; Nawarla Gabarnmang

Fig.1 - Photograph of the interior of the rock art site of Nawarla Gabarnmang (© J.-J. Delannoy)
Fig.2 - Distributions of the rock art artifacts at Nawarla Gabarnmang (© G. Castets) (grindstones; ‘crayons’; colouring matters; white clayey matters; drops of paint; coloured rock fragment)
The Kimberley region, possesses an extensive collection of aboriginal rock art that potentially dates to more than 40,000 years ago. However, dating of such art using conventional techniques remains problematic. Here, we develop a new approach which makes use of the difference in production rates of in-situ $^{10}\text{Be}$ and $^{26}\text{Al}$ between intact rock walls and exposed surfaces of detached slabs from rock-art shelters to constrain the age of Aboriginal rock-art. In the prevailing sandstone lithology of the Kimberley region, open cave-like rock shelters with cantilevered overhangs evolve by the collapse of unstable blocks weakened typically along joint-lines and fractures. On release, those slabs which extend outside the rock face perimeter will experience a higher production rate of cosmogenic isotopes than the adjacent rock which remains intact within the shelter. The dating of these freshly exposed slabs can help reconstruct rock-shelter formation and provide relative ages for the rock art within the shelter. Seven rock-art sites have been dated and results range from 9.8 to 230 kyr. A large number of similar sites in the region have been mapped and are potential candidates for this new approach which can constrain the controversial relative chronology of the various aboriginal rock art styles.

Keywords: aboriginal rock art, rock art dating, cosmogenic nuclides
This paper discusses the exploitation of geophytes (tubers of perennial plants used for starch storage) as Indigenous food in the Kimberley region, Western Australia and their portrayal in rock art. The social and economic significance, as well as the seasonal exploitation of geophytes and the antiquity of Aboriginal settlement in the Kimberley region is explored. Our investigation focuses on the study of these tubers in rock art images, together with the ancient starch preservation in associated archaeological deposits. The use of modern reference botanical collections and the archaeological sampling of ancient grinding stones beneath the art panels and elsewhere is described. By identifying the plants from which the starch residues are derived and determining their age, we may indirectly date the antiquity of the plant motifs in the rock art. Many of the plant species represented in the motifs were commonly utilised in Aboriginal subsistence practices in northern Australia in the early ethnography, especially, but not restricted to, long yam, cheeky yam, three species of waterlily and bush potato. Preliminary results suggest both seasonal geophytes exploitation and their concomitant portrayal in the Kimberley rock art.

Keywords: rock art, plant motifs, starch grain analysis, nutrition, Kimberley
How well-defined is regionalism in Kimberley rock art?

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The Kimberley region of Western Australia has many thousands of rock art sites scattered throughout a vast rugged wilderness that is larger than Italy. People have lived in the Kimberley for more than 50,000 years, and although still poorly constrained, rock art probably dates from at least 40,000 years ago. At the time of European settlement 150 years ago there were thirty distinct Aboriginal languages in the Kimberley, so clear regional variations in rock art styles might be expected to follow traditional language boundaries. There is a well-established relative chronology of major rock art styles across the Kimberley, and the limited spatial distribution data for some of the earlier styles (>20,000 years old) clearly indicates broadly transgressive relationships with modern language boundaries. The more-recent Wanjina painting tradition (<5000 years old) has a narrower distribution, largely confined to three main language group areas. This paper presents stylistic distribution data from over 1000 art sites across the region.

Keywords: Gwions, Wanjinas, relative chronology, Kimberley, rock art

Fig.1 - Yowna Gwion Roe River Kimberley.
Fig.2 - Wanjinas Kimberley Australia.
Estimating the age of Australia’s Kimberley region rock art using radiocarbon dating of mud wasp nests

One of the techniques being developed in the Australian Research Council Linkage project “Dating the Aboriginal rock art of the Kimberley region, West Australia” uses radiocarbon dating of mud wasp nests. Mud wasp nests in this region of Australia are known to survive for as long as 30,000 years. It is their ability to survive for many millennia, and their ubiquity in shelters where rock art is found, that make them a target for investigation. While it has been possible to collect many mud wasp nests that have a clear and direct association to rock art motifs, the small sample size and very low carbon concentration pose significant challenges. Uncertainties that can detract from the application of this technique to rock art dating are those of the inbuilt age of carbon incorporated into the nest at the time of construction, and potential contamination of nests, post construction, with unknown carbon sources. Current research is focussed on methods to reduce these uncertainties as well as methods to extract carbon suitable for dating.

Keywords: radiocarbon dating, mud wasps, pretreatment, Kimberley
Mineral accretion systems associated with rock art in rock shelters of the Kimberley region, NW Australia

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Mineral coatings, fringes, glazes and skins forming on the surfaces of sandstone rock shelters in Western Australia’s Kimberley region offer the potential to provide both datable materials to bracket ages of rock art motifs, with which they are often spatially associated. As part of a major rock art dating project, we have combined field observations and laboratory characterisation techniques to identify a series of largely discrete mineral deposition systems operating on rock surfaces in the region. These mineralising systems have differing sources, transport mechanisms and depositional styles, and include polychrome lateral fringes, dispersed wall coatings, layered shelf deposits, floor glazes and silica skins. Mineralogies are dominated by combinations of sulphates, phosphates, oxalates, and, in some cases, silica. Carbonates are almost entirely absent. The Mg-phosphates are uranium-bearing and prime targets for U-series dating, whereas the Ca-oxalates are suitable for radiocarbon dating. Coherent internal stratigraphies at mm scale within layered polychrome fringes and shelf deposits, are essential for the reliable application of U-series techniques, and for cross-calibration between methods. This study has provided a rigorous basis for establishing targeted sampling and analysis strategies essential for replicable rock art dating, and also has potential for informing future rock art conservation strategies.

Keywords: rock art, Kimberley, Australia, mineral accretions, dating

Fig.1 - Lateral polychrome fringes, Kimberley rock shelter

Fig.2 - Grooved floor glaze, Drysdale River area, Kimberley, NW Australia
Mineral coatings forming at the interface between the atmosphere and host rock on the surfaces of sandstone rock shelters in Australia’s Kimberley region, offer the potential to provide datable materials to bracket ages of rock art motifs with which they are often spatially associated. An increased understanding of complex processes behind the formation and preservation potential of these mineral deposition systems has been achieved by combining detailed field observations with multiple mineralogical and geochemical characterisation techniques. In turn, the different characteristics of each deposition system have been used to assess their suitability for the application of radiometric dating methods. Coherent internal stratigraphies are identified in several of the depositional systems, essential for the reliable application of uranium-series dating techniques, whilst floor glaze mineralogy, identified as dominated by carbon-bearing calcium oxalate minerals, provides radiocarbon dating opportunities. Trace element pre-screening maps are used to identify areas of high uranium and layers likely to contain oxalate within the accretion stratigraphies, allowing suitable material to be identified and targeted for the application of different dating techniques. This study provides a rigorous basis for establishing targeted sampling and analysis strategies essential for reliable rock art dating as well as having implications for rock art conservation.

Keywords: Rock Art, Dating, U-Series, Radiocarbon, Accretions, Mineral
The antiquity of north Australian rock art? Reassessing the chronologies of western Arnhem Land and the Kimberley within an archaeological and environmental context

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Recently published radiocarbon age determinations for the figurative anthropomorphic dominated rock art style known as the ‘Northern Running Figures’ have changed the previously proposed age estimations for ‘Early’ and ‘Middle Period’ rock art styles in the western Arnhem Land rock art sequence (Jones 2017). A revised chronology for ‘Early’ to ‘Middle Period’ western Arnhem Land rock art is presented with the assigned age estimations for different stylistic periods evaluated against newly reported archaeological evidence in conjunction with environmental data. The implications of the newly proposed western Arnhem Land chronology for the current Kimberley rock art chronology (Veth et al 2017), and north Australian figurative rock art more broadly will then be discussed.
Oxalate minerals for rock art dating: study continues

Development of AMS allowed targeting oxalates – whewellite and weddellite as a dating material for rock art. Further studies have confirmed that carbon in oxalates is not derived from the substrate on which they grow but most probably originate from microbiotic activity on rock surfaces utilising atmospheric source. The other rock surface objects which potentially carry oxalates are the remnants of mud dauber nests. Oxalates could form post-construction from bacterial activity in the nest stump. Another recognised source of oxalates associated with rock art is the use of plant sap as a binder for mineral pigments. In all instances oxalates on the rock surface exist in a mixture with other materials which may contain carbon bearing contaminants. Hence the study of a bulk sample averages radiocarbon of all carbon compounds with unknown source and relationship with the rock art. Therefore, chemical pre-treatment methods were developed to isolate a specific compound, in our case calcium oxalate. We present data of exploiting such compound-specific dating approach on mineral skins, pigments and other surface deposits from northern Australian and African rock art sites. The presence of whewellite was investigated with XRD, SEM and FTIR methods. Selectiveness of the method and further studies are discussed.
Two Women and Bush Honey

The narrative of two women and their experience gathering bush honey is a significant story that crosses the landscape of Wanjina Wunggurr Wilinggin people. One of the places the women visited is Nyornja, at the eastern end of Jilariba (currently known as the Munja Track) in the centre of the Kimberley region of northwestern Australia. As part of a community history project initiated by the Wilinggin Aboriginal Corporation to record stories about archaeological sites along Jilariba, Nyornja and five other sites were visited in 2017. Guided by Traditional Owner Mr Dutchie and his family, narratives about the two women were recorded at the sites. Some of these sites were included in a 1980s repainting program that resulted in several of the images being entirely obscured by new images painted on white background - all in acrylic paint. Despite this, the narratives and significance of the sites to the sites have remained unchanged. Nevertheless, the lack of visibility the motifs supporting this important story, could well its disappearance in the stories of future generations. Here we discuss the role of the narrative, people’s response to the new paintings and their plans for reparation. Implications for interpreting rock art are also considered.

Keywords: Aboriginal narratives, visitor impacts, central Kimberley, overpainting rock art

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Being and Otherness: new perspectives on the study of Personhood and Identity in NE Kimberley (Australia) rock art repertoire

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Keywords: identity, personhood, embodiment, Kimberley rock art, Iconographic analysis

Rock art research has increasingly focused on the study of social identity, with efforts concentrated on elucidating past ethnicity and identity signalling. This paper is concerned with the exploration of different approaches that link theoretical advances in identity studies with the representation of anthropomorphs in the rock art repertoire from the NE Kimberley, Australia. The current research explores the embedded character of rock art with the surrounding landscape and expands on interpretations of social identity signalling by considering human experience as relational and embodied. The analysis will involve an iconographic description of human figures and their associated components (such as accoutrements, weapons, and clothing items) belonging to Gwion Gwion and Static Polychrome stylistic phases, with the aim of exploring (i) how the human body was constructed and represented in these two styles and (ii) if categories of personhood were grounded on a previous understanding of the human body. The paper will contribute to more nuanced understandings of how social identity was demarcated and inscribed in social bodies.

Fig.1 - Gwion composition from King George River. (Kimberley Visions Project/Balanggarra Aboriginal Corporation)
Fig.2 - Group of Static Polychrome Figures, Drysdale River. (Kimberley Visions Project/Balanggarra Aboriginal Corporation)
Advances in Rock Art Research from the Kimberley, North-West Australia

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**Performance in the recent rock art of the southern Kimberley**

The Kimberley region of north west Australia is well known for its extensive Aboriginal rock art, particularly the iconic Gwion Gwion and Wanjina figures suggested to date from the terminal Pleistocene and late Holocene, respectively. However, most research so far on this art has been concerned with its antiquity, the motifs represented, their song lines and the sequences in which they have been made. Our research indicates that Kimberley rock art in the more recent past is tremendously diverse and that this diversity is largely unrecorded. The recent art corpus includes scratchwork, pecking, engraving, painting and drawing. These styles occur in combination, and contrasting techniques and are used to augment or mark existing images, indicating that the recent art is associated with a complex performative narrative. The performative aspect of rock art is not often discussed in the archaeological literature. In the anthropological literature art performance is often described in the context of ceremonies where decorative accoutrements such as elaborate headdresses, play an important role. In this paper we record and discuss the performative elements of a new body of Kimberley art.

**Keywords: performance, Kimberley rock art**
Over the past thirty years an elaborate stylistic chronology has been created for the Kimberley art sequence. What has not been addressed is regionality, the geographical and temporal distribution of stylistic periods within the body of art. I will discuss this in relation to two research areas, the northern Drysdale River and the north Kimberley coast, west of the King George River. The art sequence covers a time of extreme climate change, from the aridity of the Last Glacial Maximum (LGM) to the end of the Ice Age, and the ensuing world-wide sea level rise and changing weather patterns. Whilst the river was no doubt affected by changes in climate which impacted on water flow, tens of thousands of square kilometres of low lying coastal land was first exposed, and then inundated by changing sea level. This flux may be evident through the distribution of changing art styles with time, perhaps more pronounced on what is now the coast, than inland rivers.

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Keywords: Kimberley, Western Australia, rock art, regionality, Bradshaw (Gwion-Gwion / Giri-Giri) Ar
Some insights into the Gwion - Straight Parts Figure periods

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In the Kimberley Rock art chronologies developed by Welch 1993 and Walsh 1994, the Straight Parts Figures (previously called Clothes Peg) period is placed between the ‘Classic’ Tassel and Bent Knee/Sash and Painted Hand Periods. The Straight Parts period includes many different style variations and associated motifs and is one of the most widely spread in the Kimberley art body. The stylistic evolution and changes from the earlier Tassel – Bent Knee/Sash Gwion figures, which has drawn considerable attention, raises numerous interesting questions. There appears a clear link with the earlier period figures in accoutrements and some of the signature indicators that point towards a more contemporaneous association, rather than a sudden major cultural change. There are numerous transition elements as well as possible interesting links with the Elegant Action Figures. From the earliest observed rigid ‘straight part’ or ‘static polychrome depictions a much more diverse range of presentation and interaction has been noted from extensive recording and observation of this style period in the Drysdale River Region and more recently other major art areas in the Kimberley. This paper will highlight key observations and thoughts to illuminate some aspects of this very complex period in the Kimberley art body.

Keywords: East Kimberley, rock art, Western Australia, Gwion, stylistic analysis
Although geographically distant, the rock art of the Kimberley and western Arnhem Land in Australia has often been identified in the literature as sharing some stylistic similarities. This is particularly true for the earlier periods (the Gwion Period of the northwest Kimberley and the Dynamic Figures of western Arnhem Land), which primarily depict anthropomorphic figures engaged in activities with similar material culture assemblages. Previous researchers have considered the stylistic and material culture similarities so striking that they argued for a cultural connection between the two regions, known as the ‘Kimberley-Arnhem Land rock-art Province’. Using a robust approach from targeted case study areas in both regions, this paper seeks to quantify the similarities and/or differences between depictions of material culture items within the Gwion Period and the Dynamic Figure rock art. We assess the feasibility of the ‘Kimberley-Arnhem Land rock-art Province’ hypothesis based on our new findings and consider the implications for our understanding of early human occupation of these regions and interactions across the vast Australian continent.
Signifying Animals and the Archaeozoology of Bidwern (rock art), Arnhem Land, Australia

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Analysing animals depicted in rock art can provide an important approach to understanding human, animal, and ecological relationships that are encoded within the abundant Indigenous rock art of western Arnhem Land, Australia. Without a late Pleistocene paleontological faunal assemblage in northern Australia, rock art provides a potential record of the interaction between people and fauna beyond the early Holocene. For palaeontologists, the discovery of any previously unreported species in northern Australia can significantly shift the Australian natural history record owing to the current fragmentary evidence and contested timings for fauna extinctions. This paper also reports on the application of archaeozoological identification and analytical methods applied to an Arnhem Land rock art assemblage. This research into Indigenous human-animal relationships and environmental change are also applicable to global rock art contexts. The lack of any overarching synthesisal framework to identify fauna in rock art has meant interpretations are open to question, often debated, and sometimes inconclusive. Accurate identification of animals in rock art will enhance our understanding of human-animal relationships past and present especially during and after the Pleistocene-Holocene transition when major environmental change occurred across northern Australia.

Keywords: Australia, Arnhem Land, fauna, archaeozoology, ecology

Fig.1 - Arnhem Land, X-Ray Barramundi Painting. (photo Daryl Wesley)

Fig.2 - Arnhem Land, Macropod. (photo Daryl Wesley)
This contribution discusses the methodological and theoretical challenges underlying the ongoing study of rock art representation of gender in two topographically distinct catchments researched by the Kimberley Visions team in 2017: the Drysdale River and the King George River (KGR). In particular, I will explore the differences between the representations of human figures in different styles such as the Irregular Infill Animal Period art, the Gwion imagery and the most recent Wanjina period as an attempt to elucidate ways to understand the fluid construction of social subjects through time. I will also report on a series of sites in the KGR where human bodies with exaggerated body parts might be providing insights into a complex social dynamism due to environmental change and contact and interaction with cognate regions such as the Central Kimberley and the Victoria River District in the Northern Territory. The analytical categories that will be employed in this formal approach to tackle gender representations will be enriched by the initial information shared by some Traditional Owners especially senior female elders.

**Keywords:** gender, rock art, interaction, human figures, change through time
Frequently, we have read that the most important and fruitful stage of prehistoric rock art finished with the end of the Palaeolithic Age. This is due to traditional research and the people in general, having the tendency to give a higher value for the indisputable aesthetic criteria and the greater antiquity of Palaeolithic rock art, in contrast to the more synthetic and conceptual expressions of post-Palaeolithic rock art.

However, against this simplistic assumption, this Session addresses those aesthetic values of post-Palaeolithic rock art manifestations around the world and also its intrinsic values as cultural expressions of human groups. Over the last 10,000 years human groups were able to surpass hunters-gatherer economic bases to reach new productive systems, linked initially to agriculture and livestock and further on to the increased exchange of surpluses and the new technological achievements in the exploitation and use of metals (copper, bronze and iron), that will lead to increasingly complex societies.

Social, technological and cultural evolution/revolution closely linked to different rock art expressions are unique in every part of the world but have common interpretative and functional value. A lot of questions arise: Is it possible to observe thematic and stylistic analogies depending on the socio-economic bases of each group in different parts of the World?: What factors could influence the artistic expression of each group in each period and in each territory?: Are Naturalism and Schematism tendencies different stylistic responses according to particular socio-economic developments, or are they styles associated with evolution and cognitive development processes?: Is it possible to observe the same evolution (stylistic, symbolic, functional) in post-Palaeolithic art all over the world or can we find some aspects evolving in response to regional factors?

This session, aims to be a pooling of this worldwide post-Palaeolithic rock art research, a platform for the presentation of new and important findings, a discussion forum to address interpretative, terminological, chronological, technical aspects to improve our knowledge about every one of these forms of expression.
In November 2013 and February 2017, the Department of Biology at the University of Florence and the Museum of Natural History of the Maremma in Grosseto organized two archaeological missions in Tigray (northern Ethiopia). The expeditions, sponsored by the Ministry of Foreign Affairs and the Italian Institute of Prehistory and Protostoria, were carried out on the direct request of the local authorities and were undertaken in the context of the research program on rock art sites, evidence of prehistoric archeology and the ethnological survivals that the University of Florence and the Museum of Grosseto have begun to implement since 2002. During the missions, a survey was carried out to identify new sites with rock art and to document, through the application of the latest techniques, the artistic manifestations previously known in the specific archaeological literature. The successful outcome of the explorations, during which many new rock site sites have been identified, allows us to present a complete description of the rock art of the region.

Keywords: rock art, Tigray, northern Ethiopia

Fig.1 – Ba’atti Barud, Tigray, Ethiopia. (photo L. Bachechi)

Fig.2 – Ba’atti Barud, Tigray, Ethiopia. (photo C. Cavanna)
In the last five years, new discoveries have come to light in the northern zone of the Guadalope and Matarranya basins (Teruel, Spain). The number of known sites within this traditional rock art nucleus has increased, filling a large territory. Two main post-Palaeolithic styles (Levantine and Schematic) are represented, giving interesting data about prehistoric occupation of the space and their own cultural landscape considerations. The style and themes depicted within these sites (one of them part of a recently defined phase: macro-Levantine) can be compared with those already known and geographically close, but also with a number of other sites located on the Eastern part of the Levantine rock art distribution area (Castellón, Tarragona). All together these demonstrate an interesting and complementary distribution of the decorated spaces throughout different stylistic phases, pointing to distinctive landscapes based on different human occupational patterns, relating to either the hunter-gatherer or food producing groups in the area.

Keywords: Middle Ebro basin, Post-Palaeolithic art, Levantine, schematic, territory, hunter-gatherer
Time and space are the silent referents of archeological conception. Since these two depend on each other we can introduce rock art within time and we are enabled to better understand the emerging groups of expression (fig. 1a). The objective of this article is to present, through temporal sequencing, the phenomenon of transmission and the surviving of rock art as an essential factor of memory preservation for cultural groups.

In Mexico, rock art is found throughout the country with a temporal range that spans from a thousand years to the present without a loss of continuity. The first examples are assigned to the hunting and gathering groups overlapping with the imaginary of semi-sedentary and sedentary groups as points of learning and tradition. The great Mesoamerican cultures permeated and imposed, a specific cultural set of iconographic motifs (fig. 1b-c). Subsequently, the arrival of the Europeans brought with them a colonial world view and cosmological understanding, the beliefs and traditions of which were delivered and imposed on the indigenous populations. The ethnic groups assumed these traditions and impregnated them with a cosmology adapted to their own experiences (fig. 2).
New shelters with Pre-Schematic rock art in Extremadura

For over a decade, we have been working on the characterization (technical, stylistic and iconographic) of the Pre-Schematic rock art. This rock art style has been defined by the graphic expression of groups with a hunter-gatherer economy during the first part of the Holocene until the start of the Neolithic, that carried with it a new rock art cycle: Schematic rock art. Within the context of this research we present two new shelters where we have located motifs from this pre-Schematic rock art cycle, which serves also to highlight the link between the Pre-Schematic rock art figures painted on the shelters and figures engraved on rocks in the open air alongside the great river basins of the west of the Iberian Peninsula (Douro, Tagus and Guadiana).

Keywords: Pre-Schematic rock art, hunter-gatherer, Mesolithic

Fig. 1 - General view. “Ramones” rock art shelter, Garbayuela, Badajoz, Spain. (author Hipólito Collado)

Fig. 2 - Deer painted in red (detail). “Ramones” rock art shelter, Garbayuela, Badajoz, Spain. (author Hipólito Collado)
And the Holocene arrived: post Paleolithic rock art around the world

Post-Palaeolithic art in the autonomous community of Extremadura (Spain): a panoramic view in light of the latest research

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The Autonomous Community of Extremadura, on the south west Iberian Peninsula, has a density and diversity of rock art. In addition to Palaeolithic rock art, the research carried out over the past decades has enabled the characterization of successive post-Palaeolithic art cycles, which reflect a continuity of graphic use during recent Prehistory and Proto-history. Arising out of the pioneering work of Henri Breuil and Juan Cabré Aguiló, modern research has established a pre-schematic cycle, characteristic of a transitional stage between hunter-gatherer societies of the Upper Palaeolithic, and the producers of the Neolithic period. This is made up essentially of zoomorphic and anthropomorphic figures, abundant in the Manzanez Mill Rock Art complex (Cheles/Alconchel, Badajoz), with other semi-naturalistic zoomorphic figures located in sets of schematic cave paintings at the Monfragüe or Las Villuercas complexes (Cáceres).

In addition, a rock art cycle has been identified, largely on isolated rocks, occasionally located near Iron Age sites:
- Guadiana River Grouping: Iron Age filiform engravings, with an extensive iconographic and thematic repertoire- mainly zoomorphs (including weapons, abstract motifs and anthropomorphs)
- Las Hurdes Grouping: fusiform notched and cut engravings (including weapons and podomorphs).

Keywords: Iberian Peninsula, rock art, Extremadura, Palaeolithic, post-Palaeolithic
Recent discoveries of petroglyphs at Chitral: clues for reconnecting the ancient Silk Route

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District Chitral, located between 71°12´ and 73° 53´ east longitude and between 35° 13´ and 36° 55´ north latitude, representing the north-western boundaries of Khyber Pakhtunkhwa Province, of Pakistan, is the most secluded region of the province, but it is known throughout the world for its rich cultural heritage and scenic beauty. In the recent past the author was leading the excavation of a proto-historic cemetery where the documentation of a number of rock carvings in the surrounding area was undertaken. These rock carvings in the first instance were found to be similar to those found along the silk route. However, after detailed analysis, a vast number of variations in the depictions has been brought to light and links to the geographical landscape and trading paths support the evidence of trade routes that once connected Tajikistan through to Chitral and to the silk route. The presentation will firstly discuss the depicted humans, divinities, animals and hunting scenes and the study of their form and the techniques used to create them. Secondly, correlations will be made with the excavated proto-historic cemetery for a comparative chronology and finally a re-establishment of the evidence of the ancient trade route passing through this area connecting to the main Silk route.

Keywords: Proto-Historic Cemetery, rock carvings, Silk route, chronology
Two serpent-like sculptured stones were found by a joint Swiss-Ukrainian expedition at the Kamyana Mohyla 1 multilayered site in 2016. Their stratigraphic position is related to several Mesolithic horizons lying in light-yellow loess-like loam under an impressive sequence of later cultural deposits. The C14 dates for these horizons encompass a 8540-7380 calBC timespan; a later date seems more probable. The two local sandstone sculptures were modelled to represent snake heads, with their eyes, noses and mouths highly visible. One figurine was ornamented with lines and dots, in one case forming a zig-zag pattern.

The site is situated in front of substantial sandstone formations and rocks—Kamyana Mohyla. Kamyana Mohyla is known for its numerous rock-art images engraved on its stones and inside its rock-shelters. The closest analogies for the ophidian sculptures come from Kamyana Mohyla itself (but they are lacking a stratigraphic context). The newly-discovered figurines are the first known sculptures for the Mesolithic period in south Ukraine.
In the 1980’s and 1990’s prospecting work carried out by researchers from the Museum of Huesca led to the discovery of several dozens of shelters and caves with Post Palaeolithic paintings or engravings in the Río Vero area (Huesca, Aragón, Spain). At that time, the ensemble of sites was large but seemed almost isolated in the context of the central Pre-Pyrenees. In the following years, thanks to the progress of investigations and above all thanks to chance findings, the discovery of new groups of painted shelters has contributed to demonstrate a wider distribution of Post Paleolithic rock art in this geographical area. The sites recently studied are located in the western section of the Pre-Pyrenees mountain ranges, where the group of sites, Salvatierra de Escá was discovered, as well as in the oriental section, where the new findings such as Cova del Bubu or Abric de la Diva are added to those known for many years, such as Cova del Tabac. Most of the figures correspond to the schematic rock art style but they exhibit regional disparities and the association between groups is yet to be established. This work is part of the doctoral thesis of one of the authors.
In a century of research on the rock art of Galicia and northern Portugal, it has been stated that the most represented animal is the deer, relegating the presence of equids merely as something anecdotal. In this naturalistic style, the presence of equids was usually dependent on representations of deer hunting, the deer being the most highly represented animal within petroglyphs in Galicia. However, there is a shift in the paradigm of zoomorphic representation that has its natural border in the Bay of Vigo, south of which the deer becomes a more minor representation and therefore also the rock engravings representing deer hunting scenes. Deer are pushed into the background in this new scenario by the omnipresence of equids in what can be considered a new model in the hunting scenes in the petroglyphs of the northwestern peninsula. Equids are represented in various scenarios; alone, in groups, ridden, harassed or even hunted by humans. In the same way that the hunting scenes of the male deer are represented, the equids are surrounded by anthropomorphs on foot or on horseback, aided by canines, injured or falling into traps. The same iconographic discourse is observed as that in deer scenes, except that the protagonists change.
The earliest representation of physical violence in human history is probably found in the early and middle Holocene rock art of the Sahara and the Spanish Levant. Amongst thousands of depictions known from both areas, a few dozen show combat scenes between small groups of archers. Contrary to the first representations of violence in Egypt and Mesopotamia during the 4th and 3rd millennium BC but also in Bronze Age Europe, these images do not express a glorification or celebration of violence. The similarities between the rock art of the Spanish Levant and that of the Sahara may reflect long-distance communication and migration from the Sahara to the Iberian Peninsula due to the rapid increase in aridity in the Sahara around 5500–3000 BC. However, there are also differences: In the Sahara various different depictions of life and people are represented in rock art, while in the Spanish Levant fighting men predominate. A comparison between the fighting scenes of the Sahara and the Spanish Levant and their chronology allows us to delve into the social background of this first evidence of human awareness concerning violence and its consequences.

Keywords: Spanish Levant, Sahara, rock art, fighting scene, archer, migration

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Fig.1 - Sefar, Tassili N’Ajjer, southern Algeria. (Sylvia Gill, based on Lajoux 1962: 160-162)
Fig.2 - Les Dogues, Castellón, Spain. (Porcar Ripollés 1953: 78, fig. 2)
In southern Chile (36-42° Lat. South) there are few rock art sites. They exhibit large variability in terms of location, iconography and technology. At the sites being highlighted, paintings can be found, as well as deep and superficial groove petroglyphs that depict humans, plants and abstract representations. The rock art is located on open air sites, in rock shelters and caves. Such high heterogeneity makes it very difficult to classify them into “styles”. In this work we propose that the rock art characteristics correspond to the type of social organization of the groups within this territory. This reflects communities that were organized at a local level, that had a dispersed and disaggregated use of space and did not have formal political hierarchies. We propose that such social features would lead to the development of local particularisms within the rock art production, while other cultural features such as language and certain pottery styles would help to sustain and reproduce a recognizable regional cultural unit.

Keywords: Southern Chile, heterogeneity, local communities, rock art
The study of rock art in the Aysén region, Central Chilean Patagonia, began in 1970 (Bate 1970, 1971; Niemeyer 1979-1980). The first research in this area was focused on various valleys, especially the valley of Jeinimeni and the Ibáñez River valley, both associated with the basin of the lake General Carrera, Buenos Aires. The lake covers areas in both Chile and Argentina. Currently in the area of the Jeinimeni valley, there is no excavated archaeological context that allows for temporality of the rock art to be determined. Therefore, the association to other occupational deposits in the area allows for the inference of a chronology that extends the concerned period from approximately 7,000 years B.P. to historical times. These sites exhibit remarkable figures described as zoomorphic motifs and interpreted as guanacos, that have been created in various locations and forms by hunter-gatherers. As such, from the systematic recording of three sites from the Jeinimeni River Valley and research at the Ibáñez River Valley, we can suggest an initial interpretation. The research suggests that representations point to a distinction in the use of space in terms of its significance and that this can occur in two ways; simple space and composite space (Boschin 2009).

Keywords: Rock art, guanaco, use of space, significance, Chilean Patagonia
One of the most interesting engraved rocks which I have found in the Shara Mountain in R. Macedonia, is a rock with footprints and cup marks in the form of a spiral. Somewhere below middle of the rock there is a bigger, central bump – a groove around which numerous cup marks are positioned in several rings. In this way, a large spiral is created which stretches upon the biggest part of the rock. On the upper part of the rock, there are two human footprints (fig.2), both of them representing the right footprint, which are positioned vertically one under the other. These art elements point to cosmological symbols: the cup marks represent the stars in the sky and may represent the first astral maps of our ancestors, and the footprints are a symbol of the eternal comings and goings from this world. The time period represented is most likely the Neolithic to the Bronze Age. From this composition and research there are the inevitably questions which arise: How could our distant prehistoric ancestors know about these cosmological aspects? Did they discover it by themselves or did they have assistance from somebody else? If so who?

Keywords: Neolithic, Bronze age, human footprints, cup marks, spiral, astral symbols
As a result of the research project “Rock Art in Serra de S. Mamede”, which took place between 2009 and 2015, it was possible to carry out archaeological surveys in three shelters which have painted rock art. Two of these shelters provided different dates situated between the late Palaeolithic and the Middle Ages. It should be noted that two dates obtained which are attributable to the beginnings of the Chalcolithic are properly contextualized with the pictorial elements from within one of the shelters. In this paper we will try to understand and contextualize the absolute chronologies obtained and situate them within the environment and sites with painted rock art.

Keywords: absolute dates, shelters, schematic rock art, Portugal
In Slovakia, just in the area of the Slovak Karst, there are over 1,000 caves, from which many archaeological finds from various periods have been found. The best-known are most probably the geometrical drawings from the Domica cave. Over the course of the last ten years, the walls of some other caves have been examined, and in at least ten of these charcoal “signs” can be found. These consist of simple assorted lines with combinations, clusters, plain schematic shapes, sketches or smearing traces of torches, mainly in less accessible locations. Sometimes individual charcoal signs can be found in abysses, mainly in the back of caves. Over the past years, we have been able to obtain a number of charcoal samples, taken directly from the walls, for dating. This was carried out not only in Domica, but also in Ardovská, Silická ľadnica and the Číkova Diera caves. Although there were problems and complexities associated with sampling the thin charcoal layers, we were able to obtain some interesting data. The samples come from very simple schematic drawings; some of them resembling human figures or animals. The date range obtained from the samples ranges from Neolithic to the Early Middle Ages.

Keywords: Prehistoric rock art, caves, radiocarbon dating, signs, Neolithic, Eneolithic, Bronze Age, Iron Age, Early Middle Ages

Fig.1 - Sampling in the Ardovská Cave. (photo František Engel)

Fig.2 - The sign from Silická ľadnica Cave. (photo František Engel)
A prehistoric cupule representation recovered from Sri Lanka

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Keywords: cognitive archaeology, prehistoric symbolism, landscape archaeology, cupules, Sri Lanka

Dealing with isolated and non-figurative symbolic expression created by non-literate communities in an archaeological perspective, poses number of theoretical and methodological problems at the interpretative level. This paper discusses a symbolic manifestation found on a natural rock boulder situated in a rock shelter occupied by prehistoric communities during the mid/late-Holocene (5000-3500 BCE). This symbolic record contains 659 individual minuscule cupules hewn into the rock surface and scattered in an irregular pattern. The regional distribution pattern of the prehistoric sites and the archeological material excavated from five prehistoric cave shelters in the area, are taken as proxy data to contextualize the social and ecological fabric of this symbolic record. It is hypothesized that the rugged terrain in the surrounding area was inadequate to maintain an increasing population within a limited area, thus compelling the decision makers in the prehistoric groups to share their memories and experiences of the landscape they utilized, in order to control the competition for food. The preliminary analysis allows for the formulation of a working hypothesis which proposes that these symbolic representations manifest the imaginary landscape of the immediate surroundings of the prehistoric communities of the area.

Fig. 1 - A view of the Badahena galge cave in Opanayake of Sabaragamuva Province (from East). (photo Ra Somadeva, 2018)
Fig. 2 - The rock contains cupules engraved on its surface (a vertical view). (photo D. Devage, © Raj Somadeva, 2018)
Traditionally “Saharan rock art” referred to the prolific artistic traditions of the central Saharan massifs (SE Algeria and SW Libya). However, in the past decades new finds have shown that several other areas of the Sahara are equally rich in both petrographs and petroglyphs.

Studying the regional artistic successions, a uniform pattern may be discerned despite the seemingly unrelated stylistic traditions and large their geographical displacement. In the widely separated Tassili-Acacus, Tibesti and Gilf-Uweinat regions one may observe two distinct phases of paintings: an earlier phase (lacking clearly identifiable domesticates), with several styles, exhibiting a high degree of abstraction, including unnatural depictions of the human figure and of fauna, on occasion accompanied by imaginary or composite beings. These styles are superseded in all mentioned areas by a range of naturalistic artistic traditions, all made by cattle pastoralists, with realistic depictions of humans, cattle and other animals.

Keywords: Sahara, pre-pastoralist, pastoralist, abstract, naturalistic

Fig. 1 - Karnašahi, eastern Tibesti (photo by author, enhanced with DStretch YBK filter)
Fig. 2 - Oued Tasset, central Tassili N’Aţjer (photo by author, enhanced with DStretch YRD filter)
Anthropomorphic images appear widely across the world of rock art from the Upper Palaeolithic through to the Neolithic and Bronze Age, and for some continents to later yet still prehistoric times. Artwork relevant to this session may be paintings, engravings or scratchings on cave walls, or as images pecked into rocky surfaces or on standing stones. The session is directed at anthropomorphic images in which the possibility of recovery of the meanings intended by the artists and sculptors exists. Such prospects might relate to known or inferred legends, myths or folklore, and include matters that recognize the unremitting importance of human, animal and crop fertility to humankind. Art forms may be present in whole or as pars pro toto, in which a part stands for or symbolizes the whole. Images or artistic compositions may articulate, in ways more or less manifest, scenes of dramatic action as with hunting and dancing, mating and birthing, ritual and ceremony, some of which may overtly or latently express yearnings for the rewards of fruitful fecundity.
Morphological Diversity of Anthropomorphs at Three Rock Art Sites in Canindé do São Francisco, Sergipe, Brazil

Studies of rock art in Canindé do São Francisco city show the existence of an original set of graphics and a thematic heterogeneity that points to differing moments or epochs of decoration of the rock shelters, embracing elements of the São Francisco, Northeast and Agreste archaeological Traditions. At the Patrocina site, where the panel presents large geometric anthropomorphic figures of open contour traces 1m high, the figures form a principal axis of the panel. Morphologically they resemble figures of the Northeast archaeological Tradition by presenting rectangular shapes and geometric infills, more precisely with the Serra Branca style dating from 6000 BC. At the Candido site, the presence of an anthropomorphic giant on the ceiling, 2m long, and with anthropomorphic sets on the central wall of a small structure, is remarkable. This site has a differential in presenting small figures as well as the great figure painted on the ceiling of the cave (grotto), similar to anthropomorphs seen in the Agreste archaeological Tradition. At the “Letreiro” site, the figures prominently occupy the central wall of the shelter, and present morphological characteristics similar to those of the Agreste archaeological Tradition in which the anthropomorphic figure is well emphasized and highlighted with pigment infill throughout the body.

Keywords: morphological diversity, anthropomorphs, rock sites, Sergipe, Brazil
Hybrid Beings in the Rock Art of the Rapa Nui, Easter Island: Divisible and Compositional bodies

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Keywords: rock art, Easter Island, ontology, archaeology of the body, analogism

Rock art in Rapa Nui is one of the most ubiquitous archaeological material forms. It is also a great example of the huge diversity that defines the Rapanui visual arts. Among this diverse universe, rock art motifs depict human bodies, human body parts, human-animal hybrids, and what Lee called “combined sea creatures”. Rock art in general and these depictions in particular, have been rarely assessed beyond typological approaches and/or mythological interpretations. In this work, I intend to put in context these human and hybrid bodies and body parts by addressing them as part of the bodyscape of the Rapanui, evaluating the kind of discourse they encouraged about the body and the world. In order to do this, I will consider a broader set of anthropo-zoomorphic objects made by pre-European islanders, including wooden and stone carvings. This work is an attempt to re-value the material characteristics of rock art, its iconographic features, and its relation to other examples of visual arts. The work concludes that the depiction of beings composed of different body parts of humans and non-humans, is part of relational constructions of the body, and to a particular ontological frame, broadly characterised by Descola’s analogism.
In 2010 we completed the first inventory of the natural and cultural landscape of the Alto de la Guitarra archaeological site in the Moche valley, La Libertad Department, Perú. 70 years of past research, in particular by Castillo (2000; 2008) and Campana (2004a; 2004b; 2006), enabled the development of a new holistic research strategy (Castillo and Barrau: 2010; 2014). The research included 401 engraved boulders, together with associated structures and communication pathways. The whole site is considered a major crossroad of trails connecting the Chicama valley to the north with the eastern Serranía de Carabamba, and the southern Virú valley. The Alto de la Guitarra site is considered an open-air rock art sanctuary.

In this article we present a set of anthropomorphic rock art engravings that represent a chronological and cultural sequence for the area. The study involves techniques of production, iconographic features and the spatial distribution of the boulders and the associated structures in relation to the tutelary mountains. The research is delivered in the context of the archaeological and ethnohistoric evidence on mythology and ritual, which may reflect aspects of the social dynamics and symbolic universe associated with the societies that produced the rock art at the site.

Keywords: rock art, petroglyphs, Alto de la Guitarra, Moche Valley, Peru
Manitou and image stones in North America

Since ancient times the Native or Indian people of North America have believed in the existence of a supernatural, omnipresent and omniscient ‘force’ or ‘presence’. The recognition of this presence was and is a tangible entity seen and felt by hundreds of generations of the Indian people of North America, their daily lives filled with it. All-encompassing and pervasive, it is universal in scale. For many of the Native people living here, manifestations of the supernatural could be expressed by one word: Manitou. Manitou itself was seen to rest in distinctive rocks and boulders. Of these, some were looked upon as ‘spirit’ or ‘image’ stones. Image stones were often times altered or dabbed with paint to suggest a human appearance or profile. Many were the subject of legends and myths. When discovered or purposely placed on the cultural landscape, they afforded a sense-of-place and acted as ‘guardians’ to be propitiated through prayer and offerings.

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Keywords: Manitou, spirit, image stone, spirit, rocks, landscape
The Thunderbird tradition is likely one of the most ancient and widespread Native American traditions in all of North America. Stories of Thunderbirds are part of almost every tribe’s mythology. The Thunderbird is said to arrive in the Spring of the year, its coming announced by thunderstorms. Lightning is said to flash from its eyes and the thunder is said to be the noise of a battle between the great bird and giant serpents. Thunderbirds have occurred as a rock art motif for millennia, some of the pecked images dating back at least 7000 years and likely far more. Many birds and insects are associated with the Thunderbird with other forms anthropomorphic in appearance. In this presentation, we will look at numerous rock art images of Thunderbirds, the physical setting, differing styles and what may have inspired the artists to create these ancient images.

Keywords: thunderbird, storms, thunder, lightning, serpent
This article presents a set of exceptional anthropomorphic images that were painted in the Monte Calvario site, located within the Poro Poro archaeological complex, Department of Cajamarca, Peru. These expressions are described, and spatial, temporal and cultural parameters defined in order to achieve a solid foundation, in which anthropological and ethnohistorical data is added and analyzed. The remarkable results enabled us to define a sacred space in which ritual and ceremonial activities related to the cult of mythical ancestors, water and fertility, were performed. Furthermore, the identification of six anthropomorphic figures representing shamans, two of them couples, associated with the set of large anthropomorphic images, was crucial in reinforcing the idea of their role in mediating with deities.

The aforementioned complex covers an area of approximately eight km2, and in four field seasons we conducted surveys that involved the recording of five architectural units, rock art expressions, and also carried out a stratigraphic survey at the foot of panel 6 of Monte Calvario, that is, below most of the representations that we are dealing with in this occasion.

Keywords: Rock art paintings, Monte Calvario, Poro Poro, Cajamarca, Peru
The recent discovery of the Grotta Palmieri (discovered October 2017 by Roberto Palmieri) extends our knowledge of prehistoric rock art in the territory of Lettopalena, which already included a site with paintings and an isolated boulder with many engravings. Grotta Palmieri is a shallow cavity, located in a steep part of the left bank of the Aventino River, just above a narrow path partially cut into the rock. A series of black figures are concentrated on the inner part of the left wall, while evidence of a sub-triangular stain and some other minor traces are in red-ochre. On the right-hand portion of the inner section there are some non-descript black signs, but they likely represent a name. An anthropomorphic figure (head and torso) seems modern, but we can attribute to prehistory the red stain and various black signs, both for the typology and the technique of application, not by charcoal, as with the more modern signs, but with liquid pigment. Highlighted, are a probable bird-head anthropomorphic figure, which may have a pendant motif inside the red stain, and other possibly anthropomorphic and zoomorphic figures. These will be examined and compared with paintings and engravings from other prehistoric sites of the territory.

Keywords: anthropomorphic black figures, Grotta Palmieri (Abruzzo), liquid pigments, modern charcoal figures, prehistoric paintings

Fig.1 - Grotta Palmieri: Anthropomorphic figure and red stain. (photo Di Fraia)
Fig.2 - Grotta Palmieri: Anthropomorphic and possibly zoomorphic figures. (photo Di Fraia)
Anthropomorphic images occur throughout the Australian rock art repertoire, and from the earliest times, perhaps 40,000 years ago, to the present. Some of the earliest paintings have fine details including musculature, weapons, and personal adornments. Later paintings and petroglyphs are typically simpler and larger, and commonly portray human/spirit entities such as Wanjinas, and Jilinjas in the Kimberley region, Quinkan in Cape York Peninsula, and Baiame or Bunji in south-east Australia. In the early ‘Panaramitee tradition’ in central Australia, pecked footprints are the most common anthropomorphic depiction, and petroglyphs of stylized ‘Archaic faces’ occur across the central deserts. In more recent rock art of Arnhem Land similar partial body depiction extends to paintings of human vulvas suggestive of the people’s fertility hopes.

Keywords: petroglyphs, rock paintings, footprints, vulvas, rock art

Fig.1 - Gwion painting, King Edward River, Kimberley, Australia. (photo Mike Donaldson)

Fig.2 - Human footprint petroglyph, Panaramitee, South Australia. (photo Mike Donaldson)
Unlike painted images there is limited evidence of engraved anthropomorphic figures in Australia. This is especially the case in south east Queensland (an area of around 22 420 km square) where there is little rock art evidence remaining. Apart from the Chalawong site, south of Gatton, and some scattered finds of minor and fast deteriorating engravings, there is little in regards to engraved rocks. One has to travel 370km north to the Burnett river, central Queensland, to reach another significant rock engraving site. The largely schematic representations that form the basis of current known engraved sites in south east Queensland highlight the rarity of anthropomorphic images in the area. This being the case, a small number of anthropomorphic images present on an engraved rock area, recorded at a new site 20km outside of Brisbane, represent significant new data and may indicate stylistic and cultural changes in the area. Importantly the engravings denote at least two different anthropomorphic styles with differing symbology associated with them. Furthermore, these images also represent new opportunities for local Indigenous groups to reconnect with their land and stories.

Keywords: engravings, anthropomorphic, rock art, south east Queensland, petroglyphs

Fig. 1 - Kangaroo and anthropomorphic engraving, south east Queensland. (photo Marisa Giorgi)
Fig. 2 - Recording of the engraving, south east Queensland. (photo Marisa Giorgi)
Anthropomorphic figures with multi-layered meanings in Yokuts and Western Mono rock art (California, USA)

Yokuts and Western Mono tribes of central California had close cultural ties, and many people were bilingual. They believed the present world was the only one. The human era followed a prehistoric period during which animals, birds, and other beings created the universe. The creator beings had human and animal attributes, and lived in a social context that set the example for the human descendants. Their worldview encompassed a reciprocal system where humans and animals were peers. Moiety lineages, associated with totemic animals and patrilineal descent, formed the basis of their societies. Pictographs combining human, bird, and animal traits are common, and reflect characteristics that are important in their traditional stories. This paper examines the iconographic clues that identify the anthropomorphic figures, and the role the anthropomorphs play in the oral narratives, which may combine totemic attributes that represent a moiety lineage or guardian spirit. The relationship between site size, whether the site is public or private, and the placement of the figure in relationship to others can be important. Also addressed, is the frequency a figure is painted, as well as artistic differences and similarities in content and presentation within tribal areas and across dialect borders.

Keywords: anthropomorph, rock art, iconography, Yokuts, Western Mono, California

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My topic is the relationship between anthropomorphic motifs and animal representations. As in the case of some female figures in the women-bison-panel of the Pech-Merle Cave, which Leroi-Gourhan has interpreted as transformations between the motifs of bison and woman (see his illustration from Leroi-Gourhan 1958, fig. 1). Or, at the rock pendant in the Salle du Fond of the Chauvet Cave (fig. 2), which shows a female abdomen with a bison’s head directly above the accented vulva. I would like to interpret this anthropo-zoomorphic representation as a key ingredient for a main narrative line in Chauvet’s entire presentation program. A narrative that concerns the relationship between the sexes. My method is based on the Inquiring Image Description approach, which the art historian Hanna Deinhard developed as a basis for a Sociology of Art (Deinhard 1970). By adopting, as example, the depictions of the Chauvet Cave, I would like to demonstrate how such an image description may succeed in reconstructing narrative elements incorporated in Upper Palaeolithic representations. A. Leroi-Gourhan, “Les symbolismes des grands signes dans l’art pariétal paléolithique”, Bulletin de la Société préhistorique de France, 55 (7-8), 1958, pp. 384-398. H. Deinhard, Meaning and expression. Toward a sociology of art, Boston 1970.
Anthropomorphic rock profiles from prehistoric cult places in Southern Thrace

Anthropomorphic rock profiles are often observed in the prehistoric cult places of Southern Thrace (this historic region nowadays extends over the territories of Bulgaria, Greece and Turkey). Their presence is often characterized as being an interesting natural phenomenon or is neglected because of the insufficient qualification of the researchers, the lack of any long-standing interdisciplinary research, and the absence of scientific research on the subject. This paper aims to analyze the Thracian anthropomorphic rock profiles in the context of archaeological material. These include pottery, figurines and petroglyphs (insofar as it is possible regarding the petroglyphs, as the data is limited). They are from sites located in the territory of Southern Thrace, allowing corresponding parallels with archaeological materials from the territory of the Western Balkans and Romania. In the second part of the paper the research is examined in the light of published studies by Prof. A. Raduncheva, Prof. M. Gimbutas and D. W. Bailey, where anthropomorphism, in the context of prehistoric art, is covered. In the final part, the anthropomorphic rock profiles and their presumptive relation with prehistoric Ancestor Worship is considered.

Keywords: Anthropomorphic rock profiles, prehistoric cult places, religion

Fig.1 - The anthropomorphic rock profile at Popovo Gradište (Bishop’s Castle), Dolno Dryanovo village, Western Rhodopes Mountains, Bulgaria. (photo I. Filipov)

Fig.2 - The anthropomorphic rock profile at Tzareva Tzarkva, Zelenigrad village, Pernik Region, Bulgaria. (photo I. Filipov)
Hieros gamos or Ἱερός γάμος: symbol of fertility and of orphism in Thracian ideology

Thracian iconography is based on two fundamental images around which developed the main mythological and epic cycles. These images are the figures of the Great Goddess and the Hero—supreme companion of the goddess. Their hierogamic relationship is evident in the mural fresco on the dome of Kazanlak’s tomb, where goddess and hero hold each other’s hand. Other data which inform us about this relationship also comes from literary sources, iconographic and epigraphic works which refer to the Hellenistic and Roman periods. But how are these deities represented or symbolized in earlier periods? What are the Greek colonies’ contributions to the Thracian religion in regards to the images of the deities? The Thracian period in question is from the Late Copper Age to the Early Iron Age which goes to the 6th and 5th centuries BC.

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Keywords: Great Mother Goddess, anthropomorphic face, mushroom hierophany, sacred marriage, hieros gamos, rock-cut throne

Fig 1 - Stone mushroom menhir of village Lyra Aegean Greek Thrace. (photo Stavros Kiotsekoglou)
Fig. 2 - Anthropomorphic niche of village Lagyna, Aegean Greek Thrace. (photo Stavros Kiotsekoglou)
The anthropomorphic and fertility images of High Lunigiana are sculptures that have been carved in the rocks and are quite different from the engravings of Valcamonica where tooling only lightly cuts the surface. The Lunigiana images generally follow the natural shape of the rock whose surface is deeply carved so that it represents, for example, the essential anatomical aspects of the face. Some may represent a deceased person, with the function of protecting the surrounding environment, and some are fertility images. The carving techniques and polishing vary. The technique is less precise in the Rock of the Giant Anthropomorph whose image is etched in the sub-cylindrical vertical rock that serves as a neck. They are clearer in another anthropomorph, called The Sleeper, whose facial expression surprises viewers for its features and proportions. Another image is named the Archaic Cameo, which celebrate a dead person, possibly a clan hero, as identified by the oblong shield above it. Polibius wrote that this shield is typically Apuan-Ligurian, as such, this image possibly belonged to the archaic Apuo Ligure people. The period varies depending on the carving, but they can be dated to between the Neolithic and Bronze Age. Different from the anthropomorphic carvings of the Orans.

Keywords: High Lunigiana, anthropomorphs, sexual carvings, stele, petroglyphs
The anthropomorphic engravings of Azrou Iklane (Guelmim Region, Morocco)

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Keywords: Morocco, rock carvings, recent prehistory, historical eras, continuity, anthropomorphic

The site of Azrou Iklane “The Tattooed Stone” in south-west Morocco is characterized by the presence, on the dry river bed of the oued, of a slab of brown quartzitic sandstone 140 m long by 20 m wide, with around 10,000 engravings. The oldest of them is attributed to the Bovidian style (ca. 3000-1000 BC), succeeded by the Libyco-Berber style, also known as the “stage of the horsemen” (500 BC – 1500 AD), before the tradition was perpetuated into modern and contemporary times. The site is a summer camp for various groups of the Aït Oussa Arabic tribe, which makes it an area for important social expressions. The anthropological research on the tribe adds contextual knowledge to the engraving dynamics whose temporal continuity is remarkable. Although each of the chronological phases has its own particular iconographic themes, the anthropomorphic image seems to be constantly present, in varying forms and numbers. The extensive analysis of this theme raises and questions the role of such images over time within such a major site of Moroccan rock art. This research is part of the ongoing multidisciplinary project carried out by a Franco-Moroccan team that will lead to a comprehensive publication of the site.

Fig. 1 - The slab of Azrou Iklane traveled by a shepherd and his flock. (© J. Masson Mourey - Mission « Paysages Gravés »)
Fig. 2 - Anthropomorphic engraved on the slab of Azrou Iklane (© J. Masson Mourey - Mission « Paysages Gravés »).
At Avebury Cove in southern England is a master carving in which, with changing viewpoint of a single carved surface, transfiguration takes place between (a) a fine human face sculpted in profile and facing the winter solstice sunset, and (b) a hare seen in spring boxing mode when this same rock surface is viewed perpendicularly. The pecked carving is subtle and highly refined. It dates from the Late Neolithic. The head of the hare becomes the eye of the human when viewed edgewise. The back of the hare is the cheek of the human face. After nearly 5000 years the hard sarsen rock is a little weatherworn or damaged by cattle rubbing against its lower half. The human head is best seen in the morning after about 11 a.m. when sunlight is at an optimum angle. There is absolutely no possibility of pareidolia. The deep carving at the human eye is particularly impressive for stone-masonry skills. It is relevant to enquire, are there any other known examples of such metamorphosis in rock art images anywhere in the world?

Keywords: Avebury, carved hare to human head, metamorphosis, rock-art transfiguration
Male and female anthropomorphic, pars-pro-toto, carved images and the hieros gamos at Drombeg Stone Circle, County Cork, Ireland

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Keywords: Neolithic calendar, Drombeg, fertility religion, hieros gamos, intelligent planning, Neolithic rock art.

Exquisitely pecked on two megaliths at Drombeg Stone Circle (Southern Ireland) are images whose functions likely expressed anthropomorphic gender identity to a comprehending community. One carving — ithyphallic and testicular — is pecked into a megalith that is 2m tall, narrow and straight-sided. This helps confirm long-held deductive reasoning suspected by megalith specialists that standing stones shaped like this denote masculinity. At Drombeg this evocative male stone casts at sunrise a ‘male’ shadow upon one of two stones deemed to be feminine. One recipient ‘female’ stone is lozenge-shaped — a traditionally recognized indication of femininity. The second is a very broad, 2.1m wide, 1.1m high megalith bearing a carved open vulva, firmly suggesting that this stone is feminine too. During the course of the farming year at 45-46 day intervals beginning with the winter solstice, the rising sun casts shadows from a sequence of male-type stones upon one or other of the female-type stones. The consequence is a working calendar with major dates encoded in the stones, in which union between opposite-gender pairs is achieved by the action of planned shadows that the community could watch in a world favourable to fertility religious ideas such as the hieros gamos between Sun and Earth. Other recumbent stone circles in County Cork function similarly as sunrise calendars — and so do Stonehenge and Avebury.

Figs.1 - Drombeg Stone Circle. (photo Terence Meaden)
Fig.2 - Drombeg Stone Circle. (photo Terence Meaden)
This paper is an interpretation of the iconography that is found etched on the limestone pillars at the archaeological site of Gobekli-Tepe. The methodology used is a comparison of Gobekli-Tepe’s imagery with other schematic types found in Europe and the Fertile Crescent areas; over a period ranging from the Upper Palaeolithic to the Neolithic in order to establish a continuity of the belief paradigm. What emerges from the analysis of the anthropomorphic and zoomorphic forms, as well as symbols such as the ‘H’ and crescent shapes, is that this is a site that points to a centrality of the Mother Goddess. Whereas the Mother Goddess may not be explicitly represented as a female deity, the triad of her functions of birth, death and regeneration (as seen in the cycles of nature) have been expressed in the stone iconography as in the mythology of later times. Furthermore, symbols like bucrania and perforated stones, the metaphorical uteri and vulvas, point to a belief in the Mother Goddess. The fact that the stone circles are substratum and were possibly covered is another indication that the circles were the womb of the Mother Goddess, out of which a symbolic rebirth or transformation took place.
Anthropomorphic representations in the archaeological area of Seridó in Brazil

The Seridó region is located in northeastern Brazil, comprising an area of great archaeological potential. There are numerous sites containing a high diversity of image forms from which it is possible to identify examples of motifs that are related to cultural links between human groups. From this research there is the possibility of identifying migratory routes; cultural preferences reflected in rock art material; exteriorization of scenes reflecting aspects of daily life and other symbolic representations and peculiarities, all of which include in the analysis the anthropomorphic forms. The objective is to expose how the pictorial representations of anthropomorphs in the region can facilitate diverse research pathways, which will succeed in the interpretations of the image manifestations in terms of the preferences of its authors reflected by cultural influences. This includes analysis of the materialization of thoughts reflected in expression through images, possible links related to landscape, proximity of water sources, human burial sites and rock art sites associated with burials with or without funerary goods. Considering the elements of research presented, the aim is to reconstruct the role of the anthropomorphic representations within the aforementioned contexts.

Keywords: anthropomorph, Seridó, cultural influences, materialization of thoughts, graphic dynamics

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The discovery of Anfratto Palmerini in Pescosansonesco (PE) is presented to the international scientific community for the first time. This narrow cavity, unsuitable for any practical activity, was discovered in 2016 on Monte La Queglia, 560 metres above sea-level. It has a vaginal shape and its particular position receives total illumination only in the days following the winter solstice. Inside, the remains of several red ochre paintings are preserved, often overwritten by engravings, and there are some charcoal marks. This paper illustrates and documents the figurative repertoire of the cavity or crevice, among which are handprints in red ochre and various symbols, painted or engraved, such as floral pictograms, anthropomorphic figures and stylized female sexual symbols. The presence of these symbols, largely attributable to the representation of the human figure and some of its specific parts, suggests clues as to the first frequentation of the Anfratto that were probably of a ritual nature with implications related to the sphere of sexuality/fertility. Lastly, we try to understand how the environmental context has influenced the first artists in selecting the site, characterizing its functions and amplifying the symbolic implications of sexual/regenerative rituals, thus determining the semiotic value of handprints, engravings and symbols.

Keywords: Anfratto Palmerini, filiform anthropomorphic figures, handprints, human figure, rock art
Anthropomorphs are meaningful graphic systems, divided into syntagms that are supralinguistic and function with two paradigm subsets of codes: graphemes, which include head gear, body decorations, arms and legs apparel, and footwear; grapho-kinemes, which are hand and body gestures, including the directionality of legs, feet and head. Spatial syntax is the visual placement and juxtaposition of each element that encodes temporal and spatial context. These components combined suggest hermeneutic associations. Three panels in eastern Utah, USA, that span three millennia, are analysed. Anthropomorphs in panel one, circa 1900 CE have well-established declarative hermeneutic associations. Body postures and arm gestures, costumes and headdresses provide kino-graphic information that parallel historic events. Anthropomorphs in panel two, circa 1100 CE, have no known hermeneutic associations, but with this analysis, self-identity and a defined narrative emerges. Panel three, circa 1000 to 500 BCE, demonstrates the validity of this analysis, in a suggested narrative and surprisingly with existing ethnographic literature, explicative associations are provided. The application of this system demonstrates the potential of providing multiple lines of evidence for hermeneutic associations with anthropomorphic figures in rock art.

Keywords: syntagms, graphemes, grapho-kinemes, spatial syntax, gestures, ethnographic analogy, hermeneutic associations
The mythical narrative of the “Dolmen Goddess” at Langeneichstädt, Germany. A misled interpretation of warrior armour depictions?

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Keywords: anthropomorphs, goddess, megalithic, menhir, statue-stelae, warrior

The megalithic stone cist of Langeneichstädt (Saxony-Anhalt, Germany) contained as capstone a reused menhir with an oval, dotted and dashed engraving. From its discovery in 1987 on, it was immediately interpreted as female deity with a chthonic context, although female attributes were completely lacking. Nowadays, the site is promoted for tourists and visitors with road signs to the “Dolmen Goddess”. This public notion strengthens the primary interpretation of the excavators without allowing other meanings. But the term “goddess” is misleading at this site. In comparison to other middle and western European engravings on menhirs and megaliths, six anthropomorphic motifs from Neolithic and Chalcolithic periods may be determined: 1. menhirs having an anthropomorphic shape, 2. statue-stelae, 3. orthostats with “breasts” and/or a necklace or vulva, 4. orthostats with a cauldron-shaped motif, 5. orthostats bearing a rectangular motif with a retracted middle top edge, and 6. the above mentioned filled oval motif. From these, just motif 3 and some statue-stelae are distinctly “female” depictions. In contrary to the common interpretation, the filled ovals seem not to be anthropomorphic deities nor yet “female”, but rather some kind of Neolithic buckler or pelte in analogy to similar motifs in warrior accoutrement depictions from stone cists and statue-stelae. The repeated portrayal of this kind of personal defensive weapon as pars pro toto for the complete armour or actually for the warrior himself may represent some kind of male narrative, especially in megalithic grave or hypogean contexts.

Fig.1 - The so-called “Dolmen Goddess” from Langeneichstädt (Germany)
Fig.2 - Menhirstelae from Petit-Sion, Switzerland (Corboud, 2009)
Anthropomorphic figures of East Siberia

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The anthropomorphic figures of East Siberia considered here have been presumably dated to the Bronze Age to Early Iron Age by previous researchers. They comprise of various scenes and compositions but many of them render a similar style throughout Cis-Baikal, Trans-Baikal and Yakutia. This paper explores the issue of general and specific traits in the rock art of this region based on the stylistic analysis of anthropomorphic figures. The region has seen very little rock art research in the last decades. In the 1960s to early 1990s more than 200 sites were published in a series of monographs in the form of black-and-white tracing copies. However, the author’s fieldwork in the region uncovered many discrepancies with the publications and allow including more aspects of rock art sites in the analysis. For instance, many figures which looked the same in black-and-white copies have a different context such as the color of paint and the quality of the rock surface. On the other hand, some figures show stylistic similarity which was not rendered by tracing copies. This more detailed analysis which is based on the collected data will give a more thorough view into the prehistory of Siberia.

Keywords: anthropomorphic figures, Siberia, Transbaikal, Yakutia, Bronze Age

Fig. 1 - The site of Kazachiy III, Zabaikalskiy krai, Russia. (Photograph and Stretched version by I. Ponomareva; tracing after Mazin, A.I., 1986. Tayozhnye pisanitsy Priamur’ya [The Taiga rock art sites of the Amur region], Novosibirsk: Nauka)
Cartesian dualism has dominated the archaeological understanding of material culture for more than a hundred years. Archaeologists have been separating the spiritual from the economic, the sacred from the mundane, and the religious from the social. However, depictions of human faces and rice-crop images found at the Jiangjunya rock art site in Lianyungang City, Jiangsu Province, China, reveal entangling relationships between spiritual and economic aspects. Drawing on the “relational ecology” model and the Amerindian perspectivism theory, the author provides an ontological analysis of the Jiangjunya rock art and its economic, social, spiritual, and historical contexts according to archaeological record, proposing that prehistoric farmers along China’s East Coast perceived rice plants as relating to persons. It is argued that rice was conceptualized by them not in utilitarian terms as a means of subsistence to be used and consumed by humans; but rather as maintaining interpersonal and intersubjective relationships with humans. By means of comparison with Alaskan Eskimo ethnographic data, the author further hypothesizes that the human masks of Jiangjunya reveal a personhood of the rice rather than representing humans or anthropomorphic gods. This point of view transcends the boundaries of Cartesian anthropology.

Keywords: Cartesian anthropology, masks, rice-crop images, other-than-human, relational ecology
Man on a cart with a wheel in hand: comparison of the Edakkal Cave petroglyph with an earlier sign at Mirzapur Cave

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Geographically, Edakkal Cave (11.6258° N, 76.2356° E) is situated on a section of the lower Deccan Plateau. Edakkal is a natural cave, probably created around 40,000 years ago by an earthquake. It is like a hall with a narrow corridor. A set of Brahmi inscriptions is situated on its walls and recently another Brahmi inscription (Sri Vazhumi) has been identified by Dr. M.R. Raghava Variyar. Various types of figures are portrayed on the rock wall, among them the obverse and reverse lines of a chieftain are significant. The author noticed a picture of a man standing on a cart and carrying a wheel in his hand. A similar picture in Mirzapur Cave was first studied by D. D. Kosambi as reported in his 1962 work ‘The Myth and Reality’. This paper compares and discusses the older engraving of Mirzapur Cave along with this picture identified in the Edakkal Cave.

Keywords: Edakkal Cave, Deccan Plateau, Man with wheel in hand
During the Mesoamerican Late Post-Classic Period (1350-1500 AD), the Zapotec people conquered the Isthmus of Tehuantepec. A new social and spatial interaction arose. The symbolic landscape passed through a process of appropriation and reinterpretation by the conquerors. The creation of new rock art expressions played a prominent role in this process. The paintings and engravings of rock art sites scattered all over the region are usually associated with mountain worship and its link with natural phenomena and agricultural cycles. However, the site of Zopiloapam stands out for its style, its iconography, the type of support and its location within the landscape. There is a predominance of anthropomorphic figures closely related to war and sacrifice symbolism that clearly express the idea of power and magic embodied in these images. The purpose of the present study is to explain the links between these characters, their attributes, the space in which they are immersed, and their possible relationship with the political and religious ideology of the time.

Keywords: Zapotec rock art, conquest, migration, political and religious ideology
Anthropomorphic images are numerous among the rock engravings of the Moroccan High Atlas Mountains. The life-size images of men are considered as representations of important figures, gods or heroes, tribal chiefs or valorous warriors. Some images show men hit or stabbed by different weapons such as axes, daggers, arrows, etc... Yet it is undeniable that at least one image may represent the death of a man, in a deliberate, premeditated and cruel way.

Keywords: rock art, Morocco, men, torture, sacrifice
Childbirth Postures
Adopted by the
Bovidien Women
of Tassili n’Ajjer
(Central Sahara of
Algeria)

Today, all women, whatever their background or culture, adopt a particular posture or position to facilitate delivery at the time of childbirth. The study of rock art scenes from Tassili n’Ajjer (Central Sahara), shows that Bovidian women chose some of these postures linked to delivery. The application of the physiological and gynecological parameters in the study of the delivery scenes of the Tassili n’Ajjer during the Bovidian Period, helped not only to identify these postures, but they also gave detailed information of the different phases of childbirth (contraction, effacement, dilatation and expulsion). The current study highlights an important element related to the societal life of the Bovidian women by going beyond aesthetic and stylistic considerations and studies.

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Keywords: Tassili n’Ajjer rock art, woman, childbirth posture, physiological, gynaecological
During the last ten years in Kazakhstan as well as all over Central Asia new rock art sites have been discovered. New concentrations of petroglyphs were found in western, north-western, northern, southern and south-eastern Kazakhstan. These new findings brought about not only the identification of new regions with petroglyphs, but also new anthropomorphic images hitherto unknown in the Kazakh rock art. These new sites, to which we will make reference concerning our subject, are Bojan- Zhurek, Kuldzhabasy, and Sauyskandyk. Some anthropomorphic figures are related to similar examples of rock art in Central Asia from the beginning of the Bronze Age and reflect a closeness of ideology to the population of this territory.
The Fluteplayer is an anthropomorphic figure characterised by the depiction of a flute being held or played. The image can be portrayed in numerous ways, and can often be shown with animal or insect like features and a humped back and/or headdress. Research has primarily focused on its symbolic interpretation, and although well informed and proposing a convincing argument, it fails to identify the individuality of Fluteplayer imagery and its placement within the landscape. Focusing on Fluteplayer rock art imagery in Chaco Canyon, this discussion will address these highlighted problems, and proposes that to gain an accurate understanding of the image the Fluteplayer needs to be situated back into its original context. By analysing the surrounding features associated with each site a context can be established, working to the theory that rock art is fluid and often incorporated into changing cultural landscapes. From this a greater knowledge and understanding of Fluteplayer placement and interaction within Ancient Chacoan society can be determined, and its wider cultural implications.
This “Archaeoacoustics for rock art studies” session will focus on multidisciplinary approaches to the study of sound relative to rock art. Topics will cover a wide range, including:
- theoretical frameworks of acoustical archaeology;
- the physics of various sound phenomena;
- quantitative methodologies for accurately documenting and presenting acoustical characteristics of rock art site soundscapes vs. surrounding non-decorated locations;
- psychoacoustics of sound perceptions and neurological processing;
- use of ethnography and mythology for comparing and contrasting cultural influences in ancient vs. modern scientific cultures;
- analysis of rock art iconography for evidence of response to sound, such as representations of musical instruments, dancing, mythical noise-making beings, thunder, and potential abstract symbols of sounds;
- Valcamonica rock art sites, as well as global archaeological sites.

Key questions and considerations to be addressed include:
- best practices for studying the interactions of the dimensions of sound and sight;
- how to address changes over time in the sonic qualities of archaeological sites, as well as changes in the culturally influenced cognitive perceptions of those sounds;
- the future role of rock art studies in archaeoacoustics, and how archaeoacoustics can inform rock art studies.
Since no instrument can definitively prove the artists’ intended identity of rock art images, researchers relying on visual recognition use the convention of describing motifs as “Anthropomorphic” if they appear human-shaped, “Zoomorphic” if animal-shaped, and “Geomorphic” if inanimate or unrecognizably abstract. In a similar fashion, the author has noted that echoes are typical at rock art sites, and these auditory characteristics can be described as “Anthrophonic” for sounds duplicating human voices, “Zoophonic” for sounds mimicking animal noises such as hoofbeats, and “Geophonic” for sounds of inanimate objects or for unrecognizable sound effects. Superior pattern processing is considered a hallmark of the evolved human brain. However, visual and auditory recognition in humans is not a perfect process. Because we rarely experience the exact same sensory input twice, some degree of perceptual plasticity is evolutionarily advantageous to allow for this variability during cognitive interpretation of the environment. This involves relating new sensory input to prior experience. The recognition process comprises template, prototype, and feature matching. Case studies will be presented in which the sounds that can be heard at specific rock art sites correspond to the images the artists depicted. Ancient mythology of echo spirits and hoofed thunder gods support this connection.

Keywords: archaeoacoustics, sound, mythology, anthropophonic, zoophonic, geophonic
The Eagle’s nest is a vision quest and rock art site located on the extreme top edge of the Niagara escarpment in southern Fond du Lac, Wisconsin (USA). The vertical cliff face of the escarpment is approximately 35m (120 feet) in height. Sound at the base of the escarpment traveling up the rock face is amplified and can be heard coming from a distance, often times kilometers away. Other acoustic properties at the Eagle’s nest site vary from the subtle sound of the wind whispering in the cedar trees that surround the pit/nest to whistling sounds heard as the wind blows through holes and a V-shaped notch in the rocks, the whistling perceived to be the sound of spirits as they enter and exit this reality and the next. In addition, the loud cries of birds such as hawks, turkey vultures and other birds riding the thermals produced by the up-sloping wind add to the phenomenal attribute that sound provides in this unique setting.

Keywords: Eagle’s nest, escarpment, sound amplification, whistling

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This paper will present the results of an interdisciplinary research in the archaeological context of 140 rock art sites located in Serra da Capivara National Park, Piauí, Brazil. The chosen theme was the pre-colonial musical practice in this region. The analysis of rock figures allowed us to infer the direct presence of music through objects coupled to human figures and, indirectly, by the assumption of the existence of music in scenes in which the gesturality of human figures represent dance movements. Also found was a wooden flute, with the air circulation tube filled with sediments. Effectively, there is no original sound; for this reason, we use the term “sound visions”. To accomplish this work, bibliographical research on the subject in related areas was undertaken as well as field research, including the photographic survey of the pictorial corpus of the archaeological sites and laboratory analysis of the associated archaeological material. Interdisciplinary research allowed us to infer the presence of pre-colonial music in this region, as well as to create a “sound vision” focused on the contemporary artistic-musical re-reading of rock art through the analogy of languages and the use of information technology, resulting in Musical Archeology.

Keywords: sound visions, rock art, Serra da Capivara National Park, musical archaeology, interdisciplinary research
Echoes and their rock-art context in the pitoti, the later prehistoric rock-engravings of Valcamonica (BS), Italy: a breakthrough discovery?

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Keywords: archaeoacoustics, Valcamonica, rock-art

A decade ago, during the prize-winning PITOTI project, we searched for acoustic effects at Valcamonica rock-art sites. Led by Well, a professional musician playing a vast wooden Alphorn – what else in the Alps!? – and high trumpet, we started at the most famous site, the Massi di Cemmo. Results were immediate, unambiguous, astounding: a strong echo rebounding from the high curving cliff behind the small boulders which carry the art. We found the same effect at the Massi’s famous sister sites: the Capitello dei Dui Pini, near Paspardo; and the Cornii Freschii, near Boario Terme. Although they are at middle, high and low positions within the valley, respectively, all three are in similar acoustic positions. The art at each is similar, and of the Chalcolithic (Copper Age) period, around 3000 BC. So an archaeoacoustic aspect is evident at three sites. We have found none at any other of the hundreds of Valcamonica art sites. Is this a chance effect meaning nothing? Or a breakthrough discovery? Analysing the three locations topographically, and studying the statue-stele, portable boulders of the same period and carrying similar art, we show decisively that the discovery was and is real, significant and a breakthrough.
In the last few years the authors of this paper have worked on the project “SONART – The Sound of rock art: Archaeoacoustics and post-Palaeolithic Schematic rock art in the Western Mediterranean”. The aim of this project is to analyse the relevance of acoustics as a factor for the production, location and active use of post-Palaeolithic rock art sites and landscapes. A comparative study of acoustics and the location of rock art in different regions of the Western Mediterranean is being undertaken in order to explore the auditory perception and sensorial experiences sought by prehistoric communities. The potential use of landscape acoustics to produce music in the past is one of the other aspects covered in this project. In this paper we will present an overview of the results obtained so far in a sample of rock art areas in Spain, France, and Italy. We will also discussed on the new and portable equipment for performing acoustic measurements in rock art landscapes.

Keywords: acoustics, schematic rock art, soundscapes, Mediterranean, auditory perception
Within the rock art of Valcamonica, among other themes, several representations of musical instruments are evident that only occur from the Middle Bronze Age (16th cent. BC) and throughout the Iron Age (1st millennium BC). In previous periods only figures that can be interpreted as dance scenes have been located, these are dated to the end of the 3rd A style period (2500-2000 BC). These consist of depictions of parallel rows of anthropomorphs that seem to dance in a circle with open arms, juxtaposed or connected together. Dance scenes also appear late in the 2nd and in the 1st millennium B.C., occasionally accompanied by human figures playing rhythmic or melodic musical instruments. In fact, several female figures play wooden sticks, but also horns, and aulos. During the art of warriors, the so-called 4th style of Valcamonica rock art (1st millennium BC), there are numerous images of musical instruments, including carnyxes, cornua and harps depicted isolated or associated with warrior figures. The possible chronology and interpretation of these instruments and themes are discussed here.
Many competing models for explaining the placement and symbolism of Western North American petroglyphs have been proposed, but these have often been difficult to unequivocally substantiate. One of the more promising models melds emic and etic perspectives, examining related oral traditions (song and narrative) through neuropsychology theory. The resultant cognitive approach considers a phenomenology of petroglyph production and interaction as an inherently multi-sensory embodied experience. This study employs the aforementioned cognitive approach to two slot canyon petroglyph sites at the convergence of the Mojave Desert and Great Basin. Employing emergent zero-impact experimental methods, this project explores socially weighted psychological implications of spatially-contextualized petroglyph production methods. This paper argues that far from accidental choices, production methods at the study locations enhanced sensory manifestation of culturally significant components of connected oral tradition. Specifically, the percussive marking technique is intrinsically an audible experience enacted judiciously at choice soundscapes. Quantitative datasets characterizing novel acoustical attributes belonging to key loci within each site are curated and contextualized in a 3D digital environment. These data are reported alongside relevant oral traditions, and connections are reinforced through iconography. While not exhaustive, this study demonstrates means of producing socially significant interpretations through systematic practices of non-destructive data collection.
It has been a few years since Archaeoacoustics has emerged as a field of research, although the subject existed long ago, e.g. since Vitruvius (see The evidence of the use of sound resonance from Palaeolithic to Medieval times, Acoustics, Space and Intentionality, Lawson, G. and Scarre, C. eds., Cambridge (McDonald Institute for Archaeological Research, Monographs), 2006, p.77-84). Archaeoacoustic research is now very prolific, and it is time to make an appraisal in order to improve studies in this field. There are many different facets to this research including the study of: ancient instruments (flutes, lithophones, etc.), closed spaces (caves, temples), and open spaces and sites. We will limit the discussion to the methodology needed to study resonant spaces, such as painted caves, temples or open echoing spaces.
CHALLENGES AND CHANGES FOR ROCK ART RESEARCH IN THE DIGITAL AGE

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Rock art research has undergone a radical transformation over the last few decades as researchers are finding alternative ways to document, analyse and present their research. Much of this is based around digital enhancement and recording technologies that are providing us with new and innovative ways to capture, process, visualise and interact with rock art and rock art sites. Additionally, these technologies are creating a new set of practical challenges related to the curatorship and management of these digital rock art archives.

In this session we aim to draw attention to these alternative methodologies and the challenges that rock art researchers are facing by focusing on a series of themes related to:

Recording and dissemination of rock art
Digital curatorship of rock art
Rock art heritage management
Rock art outreach

The intention of this session will be to bring together speakers that are using new, innovative and alternative ways to deal with rock art and provide a platform from which they are able to share the challenges and changes these methodologies have brought. We envisage that this session will provide a stimulating setting for enriching discussions and allow for interesting heuristics that can help challenge and transcend many of the common regional and conceptual departmentalisations plaguing rock art studies.
Neolithic image, symmetry and context: challenges in montane stone from Cumbria, U.K.

In 2015-17 surveys in the mountains of Upper Eskdale, Cumbria, U.K., revealed Neolithic sites and artefacts. The first site, a cairn near a prominent rock tor, features a façade boulder of banded Borrowdale Volcanic Series (BVS) rock with distinctive natural markings brought out through application of Reflectance Transformation Imaging (RTI). The second site features a slab of BVS volcaniclastic sandstone (Image 2), let into a socket on the edge of a small rectangular bay. The slab, a polissoir, features a raised concave panel with distinctive grooves, bevelled areas, geometric and other engravings, one set anthropomorphic, worked into it. New digital technologies, such as RTI and laser scanning help to reveal intricate surface detail on these boulders. New challenges involve the assessment of results from these studies alongside the incorporation of these digital technologies into the montane archaeological settings and landscapes of the stones. Here the application of LIDAR and other digital remote sensing, such as GPR, have specific limitations due to complex geologies and thin stratigraphies.

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Keywords: Neolithic, RTI, digital technologies, Upper Eskdale, Cumbria
The documentation of rock art has noticeably changed through the last decades. While the usual hands-on-methods like tracing are nonetheless still in use there are also new techniques with non-destructive digital methods such as RTI. Another of those digital recording methods is the digital 3D-photogrammetry via Structure from motion. This technique is now widely used to support epigraphic work or the documentation for excavation. While this process can be used for recording rock art, especially concentrating on the overall place of its installation, the usage of such 3D models is problematic, as there are considerable limitations with publishing this kind of digital data. This also applies to the vast number of photographs which usually accompany the rock art documentation process. Most (paper or online) publications are not able to cope with the modern output of digital data. This paper will give an insight into one possibility of publishing digital data, like 3D models, in combination with a “normal” online publication process. This is the “Citable”-project of the Excellence Cluster “TOPOI – The Formation and Transformation of Space and Knowledge in Ancient Civilizations”.

Keywords: structure from motion, 3D models, digital data, publication, rock art, Egypt
While the technological advances of the past decades have brought about many exciting changes to the field of rock art research there is a risk that the current focus on the latest gadgetry is overshadowing other methodological approaches. In the Hunter Valley of Australia, a team of Natural History Illustration students from the University of Newcastle have been going into the field to record rock art sites as part of their ‘Shared History Project’. They have been working alongside Aboriginal representatives, drone pilots, archaeologists, conservators, historians, archivists, and digital recording specialists using the latest 3D capture technologies to visually document the rock art sites along the sandstone ridge that stretches between Newcastle and Sydney. All of the artworks are shared with the local community, effectively building a sense of connection with the fragile sites. Their interpretive and informative artworks are complementing the latest scientific methods of rock art research and are helping to tell a story that is both comprehensive and emotive and includes illustration of associated stories and environment. In this paper, we will argue that the inclusion of artists in rock art recording teams, alongside specialists using the latest technology, could be a more effective and innovative methodological approach for the future.

Keywords: rock art, Australia, artists, natural history illustration, Hunter Valley, innovative methodological approach
Using Digital Data
to review Gender
Construction in the
forager Rock Art
of the Brandberg/
Daureb, Namibia

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Over the last 30 years, the Cologne based project “The Rock Paintings of the Upper Brandberg” has documented and published over 800 sites with over 43,000 painted figures comprising about 80% of the mountain’s rock art. The corresponding database - modelled on linguistic and Gestalt theories - has been analysed since the 1990s, revealing that human figures are not generally gendered by appearance, style or activities. Careful analysis points to certain combinations of features, activities, gender specific postures and objects handling as typical for particular genders. Furthermore, a third gender with typical expositional features and narrative actions can be identified. By comparison on different scales (single figures, figure pairings, and co-occurrence within all sites), the presence of male and female dominated social situations becomes evident. In this context, depictions of humans of all genders in their specific scenic configurations and spatial localization appear also to reveal a discourse on social roles, thus inviting interpretation as male and female initiation rites and the role of “zero marked” gender performance in the forager rock art. Here, distinctive attributes (body decoration, postures, tool handling) are counted instead of depicted sexes, though these are also significant as are displays of typical all-gender performance in interacting with children (e.g. carrying a child).

Keywords: scenic configurations, gender construction, data mining, third gender, rock-art database

Fig. 1 - Sex categories of human figures and their gender performance (Oliver Vogels)
Fig. 2 - Example of gender performance when carrying child, Daureb-Namibia (Heinrich-Barth-Institut)
The research being presented focuses on the rock art of an Eastern Egyptian Desert location, wadi Abu Subeira. A French-Egyptian team headed by G. Graff has been working on an archaeological concession in this wadi since 2012. Around 400 rock art sites have so far been recorded, dating from Epipaleolithic to Modern times, with a majority of the sites belonging to the predynastic period (fourth millennium BC). The focus of this current research is a critical comparison of different digital technologies, in particular RTI (Reflectance Transforming Imagery) and photogrammetry. To facilitate this comparison, we have been able to use these two technologies on the same panels or on panels in close proximity. As such, it is possible to compare the results of both technologies and assess their ease of use, flexibility and the advantages one over the other in the context of the site and scientific objectives. The aim is to find the most adaptable solution on a case by case basis.

Keywords: RTI, wadi Abu Subeira, Egypt, photogrammetry, digital technologies
Revisiting digital near infra-red (NIR) photography for subterranean rock art recording

Whilst the value of using NIR photography in rock art studies has been realised it remains seldom utilised, a situation that has slowly begun to change with the advent of digital photography. The seminal paper by Fredlund and Sundstrom (2007) has demonstrated how it is possible to use consumer level digital cameras to take pure or false-colour NIR images of rock art. However, whilst good results were obtained, the methodology and techniques employed were largely unsuitable for operating within a subterranean environment. Consequently, we sought to devise an alternative methodological approach. One that would allow us to use digital NIR photography deep within the confines of a cave, where using a generator and not being able to see through the viewfinder was both impractical and dangerous (Fredlund and Sundstrom 2007: 737). Within this paper we will present the work undertaken in the Dahaisi cave on the island of Soqotra, Yemen, focusing on equipment and methodological approaches developed in consultation with leading authorities within the professional imaging industries of the U.K., subsequently producing a cost effective and readily accessible solution to working in the confines of a subterranean environment.

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Keywords: Near Infra-red (NIR), photography, subterranean, Soqotra, Yemen
Frobenius was the most famous German anthropologist of the first half of the twentieth century and an ambiguous figure. His endeavours as rock art researcher are less known. He believed that the great rock art tradition, which had flowered during the ice age in Europe, had not entirely vanished but persisted first in Northern Africa and spread from there to the rest of the continent. To prove this continuity, from 1913 onwards, he undertook a number of expeditions to northern and southern Africa, always taking along professional artists to copy rock art onto paper and canvas. Combining oral tradition and ethnographic analogies, he was the first to speculate about shamanic practices depicted in southern African rock art. He had established the world’s largest archive of painted rock art copies by the 1930s and then sent out further expeditions to document rock art in Europe (Spain, France, Italy, and Scandinavia), as well as in New Guinea and Australia. This paper traces the story of Frobenius’s expeditions, his ideas about rock art as well as the huge success he had in exhibiting rock art in the 1930s in Europe and in the USA.

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Keywords: history of rock art research, Frobenius, Africa, expeditions, exhibitions, reception

Fig. 1 - The artist Agnes Schulz copying rock art 1929 in the Matopo Hills in Zimbabwe. (copyright Frobenius Institute)
Fig. 2 - Display of the exhibition “Prehistoric Rock Pictures in Europe and Africa”, Museum of Modern Art, New York, 1937. (copyright MoMA, N.Y./ Scala, Florence)
We present a novel, multi-user, virtual reality environment for the interactive, collaborative 3D analysis of large multi-scale 3D scanning data and report on our experiences of using this technology for rock art research. Our experimental system consists of a real-time rendering system for large 3D point clouds, a multi-user 3D display infrastructure and a suite of collaborative 3D interaction techniques and tools. A multi-scale 3D scan of the cultural heritage site of Valcamonica in Italy with its large collection of prehistoric rock-art served as the test case for its evaluation. The system design in this initial application results from an in-depth exchange with a small group of archaeologists with expertise in rock-art. It allows them to explore the prehistoric art and its spatial context with a highly realistic visual appearance. A set of dedicated interaction techniques was developed to facilitate collaborative visual analysis. A multi-display workspace supports the immediate comparison of geographically distributed artifacts. An expert review of the final demonstrator confirmed the potential for added value in rock-art research and the usability of our collaborative interaction techniques.

Keywords: multi-user virtual reality, multi-scale 3D scanning data, visual data analysis
Recent Rock Art Studies in the Misool Islands, Raja Ampat, West Papua

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Keywords: rock art, south Misool, Raja Ampat, sea cliff, maritime

Geographically the Misool Islands were considered, in the past, as a bridge for navigation by the sailors from Seram Island towards Papuan land. Documentation of rock art in the region of the Misool Islands, Raja Ampat archipelago, in the Province of West Papua, has been reported since the 17th century, more precisely from 1887. The study of rock art in this area has developed further in the last ten years, including research on the maritime cultures. The recent research in the region has been carried out by the National Research Centre of Archaeology in 2014 and 2016. From this we could uncover more than a thousand images of the rock art in the area, including human figures, marine fauna, boats and geometric images, spanning over fifty sites situated on the karst cliffs, rock shelters and caves. The analysis within this research related to the social meaning of the rock art as well as the art's connection to Austronesian cultures and maritime cultures in the area. The results of this research will expand knowledge for the development of maritime research associated with Austronesian cultures.
The digital age continues to add complexity to debate on art and authenticity. Rock art, seemingly undeniably ‘authentic’ is not, however, immune from this debate. Indeed, we have remarkably little clarity on what ‘rock art’ is – or is not. Combined with the rise of contemporary archaeology, it behooves archaeologists to not only gaze back on past rock arts – but also to imagine what future rock arts might look like. Historical inscriptions and graffiti provide useful case studies through which to examine rock art’s theoretical adequacy as well as test its methodological and interpretive limits. Digital manipulations of rock art are equally useful in interrogating often spurious notions of ‘accuracy’, while dealing with the place-embedded nature of most rock arts. Using case studies from northern Australia, southern Africa and San Francisco, I examine how the digital aids and hinders our understand of past place-making practices through rock art.

Keywords: authenticity, digital, future, graffiti, Indigenous
Unraveling the
Sequence of Rock Art
Superimpositions in
Cerro de los Indios 1
(Santa Cruz Province,
Argentina)

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Keywords: Patagonia, vector
graphics, hunter-gatherers,
superimpositions, rock art

This paper focuses on rock art manifestations in Cerro de los Indios 1 (CII), a shelter in the Santa Cruz Province, Argentina, occupied by hunter-gatherer groups throughout the last 4000 years. Stylistic traits of certain motifs suggest a longer, more continuous occupation of the site than previously established. This triggered the question as to whether the execution of art could have been an independent activity, or if it changed throughout time as the use of CII varied. To approach this, an analysis of superimpositions was proposed. The way motifs were executed over preexisting ones can provide information on different decisions taken regarding previous manifestations; these attitudes are likely to have varied throughout time as relationships between groups and their environment were altered. For this analysis, the photographic record of CII art processed with DStretch was traced on vector graphics software, dividing in layers each tonal series as found in the superimposition sequence. By choosing which layers to make visible, it became possible to observe how subsequent occupants treated the preexisting motifs, and therefore identify if the moments of the sequence corresponding to variations in the use of CII, manifested changes in the perception of the preexisting art.
Phantoms on granite: evidence of Iron Age engravings in Western Galicia (NW Iberia)

Hitherto Côa Valley, in north Portugal, was known as the only area with Iron Age open-air rock art in N.W. Iberia. The purpose of the research being presented is to reveal new data about protohistoric rock art out of hillforts in Galicia. Galician rock art is known for its prehistoric engravings, which are mainly made on granite bedrocks. This type of stone has a wide range of physical and chemical characteristics due to its geological origin. Over time, the rocky outcrops had endured weathering processes that engendered sandy and corroded surfaces. In fact, this degradation shapes the visual appearance of engraved supports and, consequently, their recording. In the case of the engraved supports located in Western Galicia, they show scenes with zoomorphic figures, horses with riders or warriors. The composition of the scenes was created by overlapping layers of figures, at least in three panels.

To examine and understand the engraved panels, we used methodologies which included photography with oblique lighting and coloured gels (for filters) complemented with photogrammetry and geological analysis. Moreover, the geological analysis of granitic etched surfaces will cast new light on Galician rock art studies and it will increase the inventory from Protohistory and other rock art periods.

Keywords: granite, engraved, Iron Age, horse, warrior, superposition

Fig. 1 - A Xesteira 8 (Moaña, Pontevedra). Oblique lights photograph. (author Alexandre Paz Camaño)
Fig.2 - A Xesteira 8. Photogrammetry capture. (author Eloy Martínez Soto)
This paper approaches Rock Art as a human archive; applying archival theory to archaeological practice in Aboriginal cultural sites to build knowledge about their context, cultural landscape and wider relationships for future preservation and care. Aboriginal site recording to date has been largely limited within the purview of archaeologists and anthropologists working in conjunction with Aboriginal people. This paper proposes that the GLAM sector (i.e., Galleries, Libraries, Archives and Museums) can play a new role in comprehensively broadening the recording of Rock Art sites as “archives in the field” safeguarding their evidential nature in a scientific framework. The GLAM sector offers multidisciplinary perspectives that are underutilised in terms of projects and engagement with Aboriginal communities and culture. This wide discipline approach encourages other knowledges to also be applied to the study of Rock Art, such as those that enhance social and emotional well-being and what can be done in practical terms of learning, advocating and sharing knowledge that respectfully honours the First Peoples of Australia, through professionalism and respect. The University of Newcastle’s GLAMx Living Histories Digitisation Lab has been associated with the rock art projects of Wollombi, Hunter Region of NSW, involving historical research, survey documentation, illustration, education and advocacy.

Keywords: rock art, archive, Australian rock art, Australian Aboriginal, GLAM sector
Current Research in the Rock Art of the Eastern Sahara

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The area of the Eastern Sahara (Egypt and Sudan) has been a crossroads for people, goods and ideas from the Paleolithic onward and their inhabitants have left testimony of their lives, beliefs and history on the rocky landscape across deserts and along the Nile.

In the last decades, research on rock art has increased considerably breaking grounds in advancing theoretical and methodological approaches, as well as in contextualizing art in its cultural and natural settings.

This session aims at discussing current research in the rock art of the Eastern Sahara, focusing on the following topics:
- Regional overviews and rock art distribution
- Rock art and the landscape
- Style analysis
- Chronology and advances in dating rock art
- Rock art within archaeological contexts
- Multidisciplinary approaches
- Interpretation
- Recent discoveries
Rock art from the 4th millennium in Upper Egypt and Nubia overwhelmingly features animal figures; while most differences in their morphologies correspond to diachronic differences, some definitely point to regional variations. Indeed, some animal depictions cannot be related to Predynastic iconography appearing on Naqadan artefacts and may instead be ascribed to local traditions in the Dakhla/Kharga oases on the one hand, and A-Group Nubia on the other. When plotted on a GIS, their geographical distribution yields very promising information on these populations’ rough territory and movements through the desert (see Fig. 1), as well as probable cases of hybridization due to cultural contacts, where two iconographic traditions meet on the same panel. Fig. 2 (featured in Dunbar 1941) is one such example: much the same way M.C. Gatto has pointed out “the presence of a regional variant of the Naqadian culture combining [...] both Egyptian and Nubian traditions” (Gatto 2006), the co-presence of iconographical types known to be proper to Nubia (no. 2) with others definitely from the Naqadan tradition (nos. 3, 4, 5) and possibly a type of oryx usually clustered in the Oases region (no. 1) corroborate the hypothesis of the First Cataract serving as a hub connecting the Naqadan, Oasian and Nubian cultural ensembles.

Keywords: Predynastic, animal depictions, intercultural relations, Nubia; travel routes

Fig. 1 - Rock art sites sorted by cultural ensemble and cases of ‘culture palimpsests’. (map by the author)
Fig. 2 - Example of “culture palimpsest” panel - El Malki (from J.H. Dunbar, 1941, The rock pictures of Lower Nubia, Cairo, Government Press)
The rock art and rock inscriptions of the greater Elkab area extend over a broad area, between es-Sebaiya in the north and the area of el-Atouany in the south. Presenting a hybrid corpus linking the styles of the Thebaid, the Wadis of the Eastern Desert, and more southerly traditions, the Elkab region demonstrates a progression from ritual hunting imagery, through festival navigation, to official royal inscriptive “seals” as means of marking place, and linking maker, viewer, and landscape in a performative interaction. During four field seasons in the hinterland of Elkab, the Elkab Desert Survey Project of Yale University and the Royal Museums of Art and History, Brussels, has discovered a number of important rock art and rock inscription sites, augmenting and geographically greatly expanding those already known from the Wadis Hilal and Mahamid. These include the earliest thus far identified monumental hieroglyphic inscription at the el-Khawy site. This inscription is particularly important, revealing the geographic and conceptual range of early writing in Egypt, and providing a transitional stage of inscription between the elite and ritual imagery of the late Predynastic Period, and the overt statements of royal authority that come to dominate many such sites during the Dynastic Period.

Keywords: rock art, Predynastic Egypt, Protodynastic Egypt, Early Dynastic Egypt, Elkab, ritual hunting

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Competition, conflict and control; Suggestions of motive in the use of petroglyphs recently recorded from the northern eastern desert of Egypt (Kom Ombo basin)

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From previous surveys, (Rohl, 2000; Morrows, 2002; Luft, 2010; Judd, 2009; Lankester, 2013) of the region, evidence of group/cultural interface has been sourced from palimpsest clusters of petroglyphs. Distinctions between figures, their styles and associations, provided the patina agrees, can be reasonably dated to the pre-dynastic periods (Huyge, in Friedman, 2002, Egypt and Nubia: gifts of the desert, pp.192-206). The placing of one motif over that of another might seem incidental in many cases at obvious sites as waterholes or vantage points. However, if certain motifs display regional significance, such as elephant and specific giraffe, their use might suggest potential rivalry regarding ‘ownership’ of the area and therefore claim to its resources by competing chiefs/élites. Hints of how one groups strategy succeeds another’s in this respect may be also in the same data. A rare depiction of direct conflict between a ‘soldier’ and a female religious ‘orant’ figure will be discussed using a wider analysis of associate figures from the locality to illustrate potential use of data from the region.

Keywords: asses, giraffe, elephant, narmer palette, figures

Fig.1 - Wadi Bezeh, Feb. 2017. (photo G. Dicks)
Fig.2 - Wadi Bezeh, Feb. 2017. (photo G. Dicks)
The present state of rock art sites in Ayn Sukhna, Egypt

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Keywords: rock art, Ayn Sukhna, Suez Gulf, Wadi Recess, Wadi Sukhna

The rock-art of the Eastern desert is not particularly well known and is situated in military or remote areas where permits are required to undertake visits or research. Furthermore, it is still vulnerable to many threats. Ayn Sukhna is located on the western bank of the Suez Gulf, 120km east of the city of Cairo. The rock art at Ayn Sukhna is highly homogeneous, and there are a great number of significant images, which date back to ancient periods. The images constitute not only evidence for the ancient activities in these valleys, but also purely reflect the economic activities, the faunal presence, and the importance of the site. Unfortunately, the rock-art sites in Ayn Sukhna are increasingly under threat and recently a number have already been destroyed, due to efforts to establish an effective road network and the huge national project in Gebel el Galâla. The aim of this paper is to explain the importance of the rock art in the Ayn Sukhna sites especially in two main valleys (Wadi Recess, Wadi Sukhna), tracking the infrastructure work in these valleys, which recently destroyed several sites and completely changed the topography. Furthermore, suggest a plan to preserve and manage the remaining sites.

Fig.1 - Wadi Recess during my first visit in 2013 before the disappearance of the site. (© Mahmoud A. Emam)
Fig.2 - Wadi Sukhna during my second visit in 2015. The construction work appeared to the left of the photo. (© Mahmoud A. Emam)
Cross-road of people and ideas, and ancient frontier between Egypt and Nubia, the region of the Nile’s First Cataract provides one of the longest rock art sequences of the entire African continent, starting from that produced by hunter-gatherer groups of the Late Palaeolithic up to that associated with more recent periods. The present contribution aims at discussing the corpus of rock art identified and investigated by the Aswan-Kom Ombo Archaeological Project in selected areas of the region, to include a section of the west bank north of Aswan, Wadi Abu Subeira and its southern extension, and a portion of the desert east of Kom Ombo. It shall highlight variability in chrono-spatial distribution, technology, iconography and meaning. Emphasis shall be given to the Predynastic/Early Dynastic rock art, its regional context and its importance in the frame of the rising Egyptian civilization. In this respect, the site of Nag el-Hamdulab shall be examined in detail. In particular the technologies used for documenting rock drawings and landscape shall be examined and theoretical approaches shall also be cited.

Keywords: rock art, First Cataract region, variability, predynastic/early dynastic, Nag el-Hamdulab

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Fig.1 - Main panel at site Nag el-Hamdulab with virtual restauration of the king figure. (AKAP Archive)

Fig.2 - Panel from Wadi RasRas representing an herd. (AKAP Archive)
Since 2009, the Hierakonpolis Rock Art Survey has conducted in-depth analysis of all markings of human agency in the areas surrounding the archaeological excavations. The resultant corpus is unique in a number of ways. Found in context with extensively researched archaeological excavations, relations are observed in the distributions of settlements, cemeteries and rock art localities. The corpus, while strongly conformant to the repertoire and characteristics found in Egypt generally, carries its own distinctive traits. These offer opportunities for correlation with motifs on other media, providing a key to chronological placement and attribution. This, along with connections to other types evidence to be presented here, indicate production of rock markings and petroglyphs from at least the Early Predynastic to Dynastic and possibly Roman periods on the site. Stylistic features on some petroglyphs hint at the producers’ intimate knowledge of decorative schemes prevalent on other media at the time. Such knowledge might be linked to the production and use of decorated wares known to have occurred on the site.

Keywords: Hierakonpolis, predynastic Egypt, fauna, boats, geometric motifs
Over the last decades, an important amount of new information became available for Predynastic and Early Dynastic rock art, but the possible diversity in the concept of rock art sites in different environments has not attracted sufficient attention. Based on case studies from the Eastern and Western Deserts (including the western Theban desert) as well as from the Nile valley (Elkab and Aswan region), the semantic interpretations and differences will be discussed. Comparison with different types of objects mainly found in cemetery contexts will in the end allow a better integration of rock art within the visual world of Predynastic times.

Keywords: Egypt, Predynastic, Early Dynastic
Rock art presumably served many diverse purposes, including delineating boundaries, guiding people through the landscape, identifying marks of specific groups or individuals, a way of passing the time, documenting the landscape, presenting information about the landscape, an aid in wish fulfilment, doorways into another world/dimension, and as a surface to place icons for reverence. This paper discusses how rock art was used to shape and control the desert landscape of North Kharga Oasis, in Egypt’s Eastern Sahara, at times even serving as a point of dialogue between people far removed in time.

Keywords: Egypt, Eastern Sahara, giraffe, oryx, elephant, rock art
The Boat as a Liminal Object in Egypt’s Eastern Desert Rock-Art

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Keywords: desert, boats, liminal object, pottery, rock art, Egypt

The Eastern Desert can be seen as a liminal zone between the normally ordered social world and the supernatural otherworld. It is in this area, where as a sacred domain the usual rules can be suspended and a connection made with the sublimity of the cosmos, that we see hundreds of boat images many miles from the River Nile. These vessels can be observed being dragged in much greater numbers in the middle of the desert than adjacent to the cataracts and river shoals where we might expect them. Moreover, they occur in combination with animals and human figures in hunting scenes—in some cases appearing to participate in the chase. Images of boats are also prevalent on pottery found in Naqada I and II predynastic graves in the Nile Valley, while in the Pharaonic Period boats are seen prominently in tomb scenes representing the otherworld. This paper explores the desert as a liminal zone, examines why the boat is such a prominent liminal object in the rock-art scenes and on grave pottery, and also seeks to explain how the boat's transformative power operates.
In this paper I will discuss the available examples of the petroglyph motif compositions known as the ‘hippopotamus hunt’ found in the Nile Valley and surrounding deserts, paying close attention to the formal elements that compose the image and their relation to socio-cultural processes affecting the Nile Valley, especially during the first half of 4th millennium BC (Naqada I-IIc). This period witnessed some of the most important changes in Egyptian history, most notably the emergence of chiefdoms and of course a new type of communal leadership. While the faunal record shows that wild animals did not play a considerable part in Naqadian diet, petroglyphs depicting the hunting of great, dangerous wild animals abound. Moreover, the fact that in many instances the hunter struggles with animals from different biotopes in the same representation challenges the idea that they simply portrayed what they did and saw. The aim of this paper is to suggest that petroglyph carving had less to do with registering facts than with constructing a symbolic narrative which in fact shows the emergence of a new type of communal leadership, expressed graphically by certain attributes of prestige such as headdresses, staves, penis sheaths and fake tails.
A Pharaoh in Valcamonica: egyptian rock art in the archives of the Centro Camuno di Studi Preistorici

The Centro Camuno di Studi Preistorici (Valcamonica, Italy) has carried out missions beyond the Alps to research and document rock art sites in Italy and the world, creating thousands of archived reports. Between the ‘80s and the early 2000s the institute has participated in several missions to the Near East, in particular the Negev desert, but also in neighbouring regions, such as the Egyptian Sinai, with a special focus on rock-art sites. The CCSP archive thus obtained a wide breadth of documentation, in particular a range of photographic forms of data (film, both black and white and colour, and coloured slides), related to the rock art of the Sinai region. This covers areas in South Sinai: Wadi Hadra, Gebel Hamman Fara’un, Wadi Hagag Ein Hundra, Wadi Mukateb, Wadi Mughara, Sarabit El Khadim; and in North Sinai a site with engraved surfaces that was found emerging from the sand dunes (not always visible); also, in the Timna Valley (Israel) rock-art sites of the area close to the Shrine of Hathor and the pharaonic copper mines were located. The research presents the documentation, as yet unpublished, gathered by the CCSP between the ‘80s and the early 2000s, and highlights areas of interest for rock art research.

Keywords: Sinai, Timna Valley, Egypt, rock art, CCSP Archive

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The emergence of an artistic canon at the Tamada discontinuity (Ennedi, Chad)

In the decorated shelters of the south-western Ennedi, the appearance of a standardised iconography at the inception of the Iron Age marks the most visible stylistic discontinuity. The Manda China and Tamada sites possibly host the oldest examples of this art, relying on the recursive reproduction of humans in a standing pose with flexed arms and open hands. In the Tamada canon, even sleeping humans and seated women are represented by simple rigid rotations of the whole body or part of it, starting from this basic pose. Individuality was expressed through small differences in hairstyles and body decorations. The cattle figures appearing at the Tamada discontinuity are characteristically healthy, curvaceous animals. Drafts of uncompleted motifs indicate templates may have facilitated the countless reproductions.

How the original Tamada art became a shared graphics fated to proliferate, with variants until the introduction of the camel, is a mystery. However, these orderly compositions indicate the artists’ focus was on the social portrait of families, with well-defined gender roles, and possibly well-structured clans. The placement of highly visible, distinguishable cattle figures at the same spots, or central to of the most elaborate compositions, reflects the centrality of cattle for the societies thriving in the Ennedi at the time.

Keywords: Tamada, Ennedi, Chad, rock art, Manda China

Fig. 1 – Manda China shelter, south-western Ennedi. (photo Alessandro Menardi Noguera)
Fig. 2 – Manda China shelter, south-western Ennedi. (photo Alessandro Menardi Noguera)
Rock art constitutes a peculiar characteristic of both ancient Egypt and Sudan, in particular during the prehistoric and Predynastic periods. The connections between the subjects of rock art panels and their geographical setting has been highlighted by many scholars because the artistic expression is strictly integrated with the specific area in which it has been created. However, it is not always possible to study rock art in its original context, given the natural or human influenced environmental changes. Nonetheless, modern technologies (Remote Sensing, satellite imagery, GIS systems) can be useful to examine the links between rock art subjects and the landscape in which they could be seen, because visibility is also an important factor. The ‘Heritage and Dams in Nubia Workgroup’ aims for the creation of a GIS-database which includes all the Nubian archaeological sites effected by the building of the Aswan High Dam. The current research focuses on the significant rock art sites and, specifically on their spatial connections with the original Nubian landscape, as it can be inferred through the GIS-database analysis and published material. The study of the geographical setting of the rock art subjects will allow for a series of results which could be compared with other sites and locations.

Keywords: rock art, Nubia, landscape, GIS-database, spatial analysis

Fig. 1 - Korosko district (Egypt). Sites distribution from Suková, L., The rock art of Lower Nubia: Czechoslovak concession, Charles University, Prague, 2011.

Fig. 2 - Abka Region (Sudan). Sites distribution from Hellström, P. and Langballe, H., The Rock Drawings, Andelsbogtrykkeriet, Odense, 1970.
Stylistic diversity and spatial distribution.
Recent Rock Art documentation at Gebel el-Silsila (Upper Egypt)

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The site of Gebel el-Silsila lies in Upper Egypt, approximately 65 km north of Aswan. While previous academic reports describe a landscape more or less empty of any rock art, the ongoing Swedish expedition (Lund University) has documented close to 100 prehistoric and early dynastic rock art and rock inscription sites in the region. In addition, 104 individual dynastic and Graeco-Roman quarries have been documented and studied, of which the majority bear inscribed and painted commemorations of the site’s ancient visitors. Indeed, the quarryscape of Gebel el-Silsila displays an astounding concentration of rupestral material, among which abstract geometrical patterns, concrete pictograms and wide-ranging graphic motifs. This paper aims to present a general introduction to the rock art and pictorial designs illustrated at Gebel el-Silsila, including their stylistic, technical and chronological diversity, as well as considerations for their spatial distribution, archaeological context, and – if possible – an interpretation of their significance. The material with which the current paper will be concerned are geographically distributed on both sides of the Nile, from Gebel el-Silsila in the south to Wadi Shatt el-Rigal in the north, and a chronologically range from Epipalaeolithic to Roman imperial history.

Keywords: Egypt; Gebel el-Silsila; Stylistic diversity, rock art, rock inscriptions
The current state of rock art research in the Dakhleh Oasis

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The Petroglyph Unit of the Dakhleh Oasis Project (D.O.P) has been investigating rock art for over 30 years, discovering numerous petroglyphic sites from various periods. There is no doubt now that Dakhleh should be considered among the biggest rock art complexes in the Western Desert of Egypt. However, fieldwork has ceased due to the 2014 socio-political conditions in the region. This situation provides, on the one hand, an opportunity to evaluate and analyse the rock art documentation collected during the last three decades, but on the other, also forces us to re-think research strategies, aims, and possibilities. In this paper I aim at providing an overview of rock art categories and traditions as recorded in Dakhleh, as well as enumerate and discuss selected interpretational issues. This will form a basis for evaluating the current state of our knowledge on rock art in the region and will act as a background for discussing the future of rock art research in the region. As 35 years have passed since Anthony Mills published the first rock art findings of the D.O.P., it seems a timely résumé of the research. It will hopefully serve to establish new goals for our research, even if the current challenges prevent fieldwork.

Keywords: Dakhleh Oasis, Anthony Mills, Egypt, rock art, Petroglyph Unit D.O.P.

Fig.1 - Prehistoric engravings depicting pregnant(?) females. Dakhleh Oasis, Egypt. (photo by the author)
Fig.2 - A dynastic depiction of a foot. Dakhleh Oasis, Egypt. (photo by the author)
Veneration scenes in the graffiti of the royal necropolis at Thebes

The workmen of Deir el-Medina, who carved the royal tombs of the Valley of the Kings during the New Kingdom (1550–1050 BC), left around 4000 elements of graffiti across the mountain of the royal necropolis. Only 120 of these graffiti depict veneration scenes, where the artist is shown worshipping the deities. The small number of veneration scenes illustrates their particular significance for the producers of those graffiti. In this paper the first comprehensive and collective study of these 120 veneration scenes is undertaken. This study not only analyzes the content and spatial distribution, but also the titles and biographies of their authors as well as the specific fingerprints of the artists, in order to identify them, especially to understand their social status, and subsequently their motives for drawing this graffiti. The study correlates the deities depicted in the graffiti to the spatial distribution, to explore the connection between the depicted deity and the place where it is drawn. In addition, a comparison between the graffiti veneration scenes and their counterparts in all kinds of religious expressions, in Villages such as on stelae or in tombs, was undertaken to better understand the Deir el-Medina religious life during the New Kingdom.

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Keywords: graffiti, rock art, Valley of the Kings, Thebes, Deir El-Medina
Feet graffiti appear throughout Ancient Egypt, known as personal markers of priests in temples and voyagers along trade-routes, and similar contexts have been documented also within the area of Gebel el-Silsila, which will be considered. However, the current corpus appears within a cemetery, habitually adjacent with physical remains. The aim of this paper is to explore the function and relationship between a series of feet graffiti engraved within the New Kingdom necropolis at Gebel el-Silsila. What was their significance? Who produced them and for whom? How were they interpreted by later ancient visitors?

Their locality and contemporaneity with the mortuary landscape raise questions concerning their meaning: were they representations of the deceased, thus grave markers, possibly denoting position or orientation? Or were they possibly carved by family mourners wishing to honour their departed loved ones? In addition to questions of signification, this paper will explore spatial distribution, individual styles, sizes, attributes and other contextual rupestral details (previous, contemporaneous and later), such as game boards and quadrupeds. By analyzing the placements of these feet, it is hoped that this paper opens to further discussion regarding placement and orientation, and if this corpus relates with our modern rituals of mourning our dead.

Keywords: Egypt, Gebel el-Silsila, fieldwork, feet graffiti, mortuary landscape, current research
The research of Nubian rock art, in the context of the more general archaeological research, begins between the second half of the XIX century and the XX century. The rich repertoire of sites is known through a series of publications in different languages and with various kinds of approaches.

The research will address the following points:
1- The history of the research.
2- The methodological approaches adopted by the authors of the publications.
3- The debate concerning the chronological problems.
4- The analysis of the synthesis of the general rock art features, particularly the techniques used to make the rock art and the styles evident in Nubian rock art.
5- The types of interpretations proposed for the regional rock art contexts.
A systematic survey of Jebel Uweinat and the surrounding smaller massifs in the centre of the Libyan Desert (Eastern Sahara) have yielded over a thousand new rock art localities in the past 20 years. This corpus of new material, and the availability of novel digital image processing technologies permitted the reassessment of previously defined styles and cultural units and the establishment of a firm relative chronology that corresponds well with absolute dates provided by archaeological and climatic studies. There is a clear cultural succession spanning over 4000 years, from the middle Holocene until the time of first contact with Dynastic Egypt in the early Middle Kingdom.

Examining the Gilf/Uweinat region in a broader Saharan context, some very clear parallels may be observed with the rock art and cultural development of the Central Saharan regions (Tibesti, Tassili N’Ajjer).

Keywords: Eastern Sahara, Jebel Uweinat, rock art, regional context, Libyan desert
During the last ten years, new Palaeolithic rock art sites have been discovered and important reviews of already known sites have been carried out. We are now called to rethink and reframe this heritage in the light of the latest investigations. Two new visions are marking the new research perspectives: a) the “beyond its territory” approach and b) the expansion of knowledge of non-strictly-European rock art complexes.

The open air rock art of Gobustan, Azerbaijan, and Qurta, Egypt, has incredibly stretched the boundaries of this cultural expression. From the easternmost foothills of the Caucasus, to the north-east of Portugal and passing through Egypt, it appears that symbols and figurative styles might potentially be shared. This territorial “expansion” marks a change of Palaeolithic rock art, showing a greater complexity and graphic variability within a same formal, conceptual and possibly interpretative tradition.

In this context, it is very important to know the chronology of cave art, to be able to characterise specific moments and to establish links and graphical networks. Applications such as the 14C AMS, the Uranium and OSL series represent a development in our knowledge, as well as graphic trends of stylistic, technical and territorial type. The so-called cave art has seen an important review of its chronology and distribution, thanks to new dating methods and new discoveries, e.g. recently discovered caves in North of Spain.

Chronology and territorality are the two variables at the centre of the debate about Palaeolithic rock art, which would be sterile if limited to an abstract analysis of these topics. Rock art should be considered as a cultural witness of societies, as a unique element to be added to other prehistoric disciplines, in the understanding of the social processes that occurred during the Upper Palaeolithic.

In 2007, Bicho et al. wrote: “In the future it will be necessary to continue this line of research to really understand Palaeolithic graphic imagery in relationship to the territorial dimension of human groups. To do otherwise would be to undervalue the complex territorial reality that characterized the end of glacial times in Europe”.

Ten years later we suggest a development of this proposal, discussing the new discoveries and the new research approaches relating to the territorial dimension of human groups and to the social processes occurred during the Upper Palaeolithic during its different phases.
Danbolinzulo (Zestoa, Basque Country): new Paleolithic cave art and its implications in the definition of graphic territories

Danbolinzulo cave was discovered for science in 1980, but the rock art within the cave was not located until 2014. It is a cave formed by an ample chamber, its maximum dimensions are 25 m wide and 8 m deep. We could define at least four ensembles of depictions: 19 animal motifs (5 ibexes, 4 ibexes or hinds, 2 horses and 8 undeterminable quadrupeds) a possible anthropomorphic figure, four signs and multiple remnants of pigment. All graphic units were executed by drawing with red pigment, only in two cases we were able to document engravings complementing the red drawing. This paper presents the newly discovered ensembles and analyzes their themes, techniques and styles. The graphic depictions of Danbolinzulo have significant similarities – created through drawing in red, simple anatomical representations and simple outlines complemented, in some cases, with interior flat washes– these elements link it, stylistically, formally, technically and thematically with other caves in the Cantabrian region (e.g. Tito Bustillo, Llonín, El Castillo, La Pasiega, El Pendo, El Salitre, Covalanas, La Haza, Arco B, Pondra and Arenaza). Taking the chronological variability of these sites into consideration, we can estimate the creation of the rock art in Danbolinzulo cave as being before 18.000 cal BP.

Keywords: Paleolithic cave art, Iberian peninsula, rock-art, Basque Country, Upper Palaeolithic

Fig.1 - Figurative depiction in Danbolinzulo cave. (copyright by B.Ochoa, M. Garcia-Diez, I. Vigiola)
La Pileta was the first Palaeolithic rock art site discovered in Southern Iberia. The existence of pre-solutrean graphic horizons was barely mentioned in earlier work, as such, all the Pleistocene art in La Pileta is usually associated with the Solutrean and Magdalenian periods. Subsequently, direct 14C-AMS dating of an aurochs in Horizon-C indirectly raised the possibility of pre-Solutrean rock art in this site. We re-evaluate the presence of a pre-Solutrean artistic cycle in La Pileta and, by extension, in Southern Iberia. The current project that we developed with help of new technologies aims for a new-complete reading of prehistoric art in Southern Iberia and we present some of the new data collected.
Some preliminary results are presented derived from an approach inspired by feminist archaeology applied to the study of the sexed bodies, which are present in the Levantine cave paintings of the Province of Valencia (Spain).

All the published reports of human representations whose sex can be determined were compiled accounting for a total of 119 figures. From these, 73.9% belong to men and 26.1% to women, evidencing a clear imbalance.

Based on these data and other markers that seem to have gone unnoticed for previous studies, we return to the hypothesis that women were a socially exploited group in these societies.

### Table with the human representations of Levantine rock art from the province of Valencia (Spain) compiled in the work

<table>
<thead>
<tr>
<th>Site</th>
<th>Municipality</th>
<th>Male Representations</th>
<th>Female Representations</th>
<th>Bibliography</th>
</tr>
</thead>
</table>

**Total: 88**  51  139

**Percentage:** 73.9%  26.1%
This work analyses the nomad routes of Upper Palaeolithic human populations between the Pyrenean Mountains and the western Iberian Peninsula, based on archaeological and palynological approaches. The study used data from several archaeological sources (caves, rock-shelters, habitats and rock-art imagery) and palynology records for this period from the north and centre of the Iberian Peninsula. The investigation correlated this information with thermopluviometric matrices from 22,000 years ago (Late Glacial Maximum, LGM) and 6,000 years ago (Holocene Climate Optimum, HCO) to discern contexts that allowed fauna and human migration across this region. These results help explain archaeological evidence, most from rock-art sites. Migratory routes of human populations accompanying herbivorous displacements suggest long journeys for hunting during this period that had remarkable environmental restrictions.

Keywords: nomad routes, Upper Palaeolithic, Pyrenean Mountains, Iberian Peninsula, archaeology, palynology
For the last century, scholars have been investigating the “meaning” of European cave art. In the context of this research, some of them (i.e. Sauvet, 2005) have explored a very specific aspect, that of the lateralization of figures, which is the direction (left or right) that animal images have in respect to the viewer. This apparently simple feature seems to hide deeper information. My PHD dissertation focused on this topic, and in this talk I aim to summarize some of these results.

Using a statistical program (SPSS), I have been able to find some significant correlations between lateralization and animal connotation, the most striking being that dangerous animals (mostly felines) face left and non-dangerous animals (mostly horses) face right. Astonishingly, the same distinction seems to exist in other rock art traditions, such as in the Neolithic site of Messak, Libya (Le Quellec, 1998, p. 322). This can be related to brain hemispheric specialization. As a conclusion, I suggest that dividing the most featured animal species in 5 different groups helps explain some particularities connected to lateralization and to other statistical peculiarities concerning animal images in European cave art.

Keywords: cave art, Upper Paleolithic, lateralization, visual semiotic, hemispheric specialization

Fig.1 - “Crossed bison”, Lascaux, France. (photo Conseil départementale de la Dordogne)
The recent review of the upper Palaeolithic rock art of the Italian peninsula also dealt with the Valcamonica rock art heritage. According to the research published so far, at least two rocks in the lower valley preserve late Pleistocene-early Holocene engravings, Rocks No. 6 and 34 of the Luine Park in Darfo-Boario Terme. The figurative repertoire includes almost exclusively large sized zoomorphic figures such as elk, fish and deer, which are engraved using a contour line technique. In recent years a systematic documentation of the two rocks has been undertaken. Through this research and recording process we aim to update our knowledge of these engravings and contribute to the study of Valcamonica and its first people, framing them within the wider archaeological context, in chronological and spatial terms.

Keywords: upper Palaeolithic, open air rock art, Valcamonica, Luine, zoomorphic figures
On the walls of the rock shelters in the archaeological area of Serra da Capivara National Park we find a set of prehistoric rock art paintings that demonstrates a relation of past human groups and Pleistocene megafauna. This research undertook a morphological and anatomical analysis of the fossils of these extinct animals found in the same area, comparing them to the formal characteristics of the zoomorphs represented in rock art paintings. Thus, the hypothesis of the presence of pictorial representation of these animals by prehistoric man in the study area is reinforced. The probable representations of these giant animals and their reconstructions were analyzed morphologically in a comparative way, presenting as probable indications of the relation between man and paleofauna. In the rock art paintings, the probable representations of animals from the Macrauchenids family, and other recurrent megafauna families such as Toxodontids and Glyptodontideos (giant armadillo), clearly stood out.

Fig. 1 - Toca do Sobradinho I, Rock Painting, Serra da Capivara National Park, Piauí, Brazil. Possible representation of Macrauchenia patachonica. (tracing Iderlan de Souza)

Fig. 2 - Representation Macrauchenia patachonica. Archaeological Area Serra da Capivara National Park, Piauí, Brazil. (draw Ariclenes da Costa Santos)
EXPERIENCES OF COLONISATION: ROCK ART AS “SUBALTERN” NARRATIVES OF INDIGENOUS AND FIRST NATION PEOPLES LIVED EXPERIENCES DURING COLONIAL TIMES

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It can be argued that rock art is likely to reflect moments of culture-contact that has occurred between very different cultural groups throughout human history. This session examines the evidence of culture-contact that was experienced by Indigenous and First Nation peoples during the more recent phases of European colonisation that took place in many regions of the world. In particular this session draws on the ‘subaltern history movement’ or ‘history told from below’ where the historiographic writing has questioned dominant nationalist narratives where they represent only the history of ‘elites’ or the colonial state. There is greater understanding from this historical research of the ways that Indigenous and First Nation peoples engaged with the colonial state and settler society. The objective is to draw attention to the differing Indigenous and First Nation people’s understandings of colonialism by bringing together global examples of the colonisation experiences as demonstrated in their rock art. Rock art produced during colonial periods of history illustrate distinct maritime and terrestrial themes including ships, structures, wagons, objects, firearms, introduced animals and various scenes of interaction notably with an emphasis on conflict. Therefore we would like to invite papers that investigate rock art from this colonial period and have explored the narratives that were being communicated by the production of these rock art assemblages.
The colonial Zapotec religious creations painted in the rock art of Ba´cuana, Mexico

The Ba”cuana rock art site was painted by the Zapotec, of Mesoamerican tradition, in the Postclassic (1350 - 1521 A.D.), on their arrival at the Isthmus of Tehuantepec. It is the most complex site with the largest number of images, so it was one of the most sacred places in the symbolic landscape built when they conquered this territory. During colonial times it was the only place where they continued to produce painted expressions, most of which were of a Christian religious character. These expressions, however, hide complex relationships with pre-Hispanic symbolisms. In this work I want to establish a sequence of the different colonial interventions. I will analyze how the religious aspects alluded to by the paintings changed throughout the colonial period, and how it relates to the pre-Hispanic expressions. The research will demonstrate how the Zapotecs were active agents in the creation of new religious and ritual developments where they fused and accommodated the European and the indigenous elements in a singular way. I will explain the evolution of this sacred place from the end of the pre-Hispanic era to the present day and how the changes in the Zapotec traditions were reflected in this place.

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Keywords: Zapotec, colonial, religious, hybridization, agency, esoteric
Áísínnahkiopi: The Place Where you Can See the Path Ahead. Writing-On-Stone and the narrative of cultural contact on the Northern Plains

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Rebecca WILDE, Alberta Parks: Writing-on-Stone Provincial Park / Áísínai’pi National Historic Site
Camina WEASEL MOCASIN, Kainai First Nations/ Head of Education: Head Smashed In Buffalo Jump (UNESCO World Heritage Site)

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Keywords: Áísínai’pi, Blackfoot, cultural contact, landscape, rock art

Writing-On-Stone/Áísínai’pi has always been a sacred place where one could connect with the spirit world. People have come for ceremonies, to seek visions, and the assistance of spirit beings. Áísínai’pi is situated within Blackfoot Country, along the waters of the Milk River, a tributary of the Missouri River. Áísínai’pi has long been a liminal space that many First Nations groups traversed, sought refuge, camped, hunted, and recorded their stories. The remarkable landscape contains a diverse rock art assemblage that provides stunning examples of transitions in subject matter and practice. These transitions reflect a changing world due to colonizing influences with the arrival of Euro-Canadians and Americans. Individual panels of petroglyphs encapsulate microcosms of emerging dynamics between First Nations groups, and between First Nations people and settler communities. In this paper we explore a range of illustrative examples associated with this period of Euro-Canadian and American cultural contact on the Northern Plains. Drawing from ethnohistorical evidence and oral histories, we investigate the sociocultural impacts that are mirrored in the rock art of Áísínai’pi. The aim of this paper is to explore how contact affected the lived experience of First Nations people, and the art they depicted, as they sought the path ahead.

Fig.1 - DgOv 2 Bird Rattle, engraved panel.
This article extends the discussion of rock art to the context of its representation in national museums. The article is based on five-years of doctoral research involving four museums on three different continents. National museums need to be sensitive to the complexities of representing cultural identities; however, too often narratives are conveyed through Eurocentric voices, which limits their social capital. Combining the theories of social semiotics and cultural historical activity theory, a model was developed to assess the process of representation, the Zone of Mediational Knowledge, which is viable for practitioners of rock art and museums alike. Western knowledge and Indigenous Peoples knowledge differ and acknowledges both tangible and intangible heritage. Collaborating with source communities needs to be an active part of the curating process and of an archaeologist’s process of the contextual understanding of objects. The study found three out of the four museums had little or no representation of rock art. In conclusion, the national voice influenced what narratives were presented and the extent the Indigenous Peoples voices were empowered in the process of representation of their culture and history, especially their history during and after colonisation.
Colonial incursion in the lands of Indigenous peoples of the Pilbara and Kimberley regions of Western Australia through the establishments of sheep and cattle stations has been fraught with violence, rebellion, sexual and economic exploitation and damage to and loss of culture, as well documented in the historical record in Australia (e.g. Allbrook & Jebb, Gregory & Paterson 2015, Pederson & Woorunmurra 1995) and around the world (e.g. Taylor & Pease 1994). While it might be expected that rock art would reflect these types of changes in the life and the drama of such relationships, this may not always be the case. This paper explores the historical inscriptions and contact rock art in two Indigenous rock art provinces, one near Old Woodbrook Station in the Pilbara and the other in the south-central Kimberley region, to reveal the underlying narrative of colonial interactions with Indigenous peoples in those areas isolated from the Swan River Colony 1,200 - 2,500 kilometres to the south.

Keywords: historical Inscriptions, colonial rock art, contact rock art, Indigenous narratives
In the Mezquital region in the state of Hidalgo, Mexico, there are several canyons that descend from the Hualtepec volcano. In them, there are numerous sites of rock art that share the use of the color white, their themes are both pre-Hispanic as well as colonial in origin, forming a unit that can be attributed to the Otomi culture. It is of relevance that in the site of El Cajón the face of Christ is wearing the three ‘potencias’ inspired by the encoded images of the Testerian catechisms. It draws attention for being a unique case among the other Christian images in temples and on crosses, and because it is hidden in the roof of a small rocky niche, accompanied by the Otomi rain deity, the Sacred Serpent Bok’yä. Thus, this Christ image masterfully expresses how the Otomies integrated into the New Spanish world and how rock art was fundamental to attest to and reformulate their worldview. To carry out the research, different sources have been consulted: colonial writings, Testerian catechisms, the iconographic corpus of the region and the current oral history, where the figure of Christ and the Otomi culture are intertwined.
Second-hand? Insights into the age and ‘authenticity’ of colonial period rock art on the Sunshine Coast, Queensland, Australia

In Australia rock art records the experience of the colonised. Post-colonial rock art is a window into the complex interactions of cross-cultural exchange, preserving important perspectives from endemic Aboriginal societies across the continent in the face of often disempowering and violent interactions. But identifying colonial period rock art is not straightforward, leading to a reliance on depictions of ‘exotic’ animals and material culture. Here we consider the insights held by the fabric of a rock art site regarding how, and when, it was constructed. We report the identification of a mass produced, titanium based paint during the in-field, geochemical analysis of three white hand stencils in southeast Queensland. The authentic manner in which the stencils were made and their arrangement upon the sandstone boulder is consistent with Aboriginal rock art across the continent, and chemical indicators of post-depositional weathering suggest the stencils have been in place for many decades. Rather than ‘second-hand copies’ of Aboriginal art made by European descendants, we suggest that these stencils provide rare insight into the continuing cultural traditions during a time of significant socio-political change for Aboriginal Australians.

Keywords: authenticity, pigment analysis, colonial rock art, Southeast Queensland, Titanium pigments
Artefacts have the remarkable ability to not only reflect periods of stress within and between different societies but to also play an active role in assisting these groups to navigate these experiences. As Hodder (1979: 450) argues, “When tensions exist between groups, specific artifacts may be used as part of the expression of within-group corporateness and ‘belongingness’ in reference to outsiders”. If we accept this premise that in times of stress we may see an increase in the production of symbols of identity then it follows that sudden, obvious shifts in style evidenced in the archaeological record may be indicating such traumatic episodes. In this paper we test this theory against the emergence of a particular rock art style in Australia. We argue that the decorative painted hands of western Arnhem Land emerged in response to contact with groups from overseas in the recent past. The painted hands are more than simply hand stencils or markers of individuality. They represent stylized and intensely encoded motifs with the power to communicate a high level of individual, clan and ceremonial identity at a time when all aspects of identity were under threat.

Keywords: Australia, contact, stress, identity, style
Histories of archaeology (e.g., Willey & Sabloff 1974; Fağan 1995; Murray & Evans 2008) often imply that, until recently, there were no systematic studies of rock art. Some studies (e.g., Trigger 1989; Kehoe 1998) devote two or three pages to rock art studies; others do not mention rock art at all. This bias has many roots, one being the lack of incorporating personal and institutional archive materials into rock art studies; indeed, most archaeological research before the Modern Era of Christian Jürgensen Thomsen and others did not end up in printed books. Implicit theoretical biases within the discipline of archaeology have also led to the privileging of stratigraphic excavation in describing the history of archaeology. Ironically echoing the famous notion that ‘American archaeology is anthropology or it is nothing’ (Willey & Phillips 1958: 2), the implication in these histories is that without stratigraphy, archaeology is nothing.

Rock art researchers have in fact successfully married data collection with theory for more than 300 years. Indeed, some researchers were pioneers in defining the intellectual concepts and frameworks that are still used in cognitive, heuristic, and problem-oriented research today (see, e.g., Whitley & Clottes 2005; Hampson 2015). We do not suggest that there is a single factor that unites or united rock art researchers; nor do we claim that there is a neat evolutionary tale running through the history of rock art research. In this session, however, we invite speakers to concentrate on the aims and successes of both famous and less well-known rock art studies, both chronologically and thematically, and show that rock art researchers helped to shape the discipline of archaeology. We aim to demonstrate that rock art research did and does matter.
The great French archaeologist Prof. Dr. Etienne Patte was the first to disclose the rock engravings in this area of the Balkans. Although he had no obligation to enter military service, he decided to join the French army and requested to serve in the Balkans (the Eastern Front). No one knew his main aim was to try to find out if there was rock art in this area affected by the war. Initially, he discovered many heaps of Palaeolithic flint remains in old Turkish trenches. Encouraged by these discoveries, he was eager to discover rock art carved on the rocks in the area secured by the French army. Etienne Patte had brought equipment to properly document the rock art and was overjoyed when he discovered the first engraved cup-marks. He placed part of the rich documentation of these discoveries made during his military stay in the Balkans in a museum in France. In 1917 and later in 1937, he published all the material. Subsequently, unidentified individuals studied this corpus on the engraved rock engravings; they thought the engravings indicate exactly where Turkish or Roman gold was hidden. Professional studies of rock art in the Republic of Macedonia started in 1991.

Keywords: Etienne Patte, Balkans, Eastern Front, Palaeolithic, flint, cup-marks
Mongolian rock art sites were first recorded and published in 1886 by researcher Potanin who was sent by the Imperial Russian Geographical Society. From 1948 to 1990, local archaeologists independently and jointly conducted field research with scholars from the Soviet Union. After 1990s, cooperation with other countries became possible as the country transitioned to a democratic society.

The purpose of this paper is to give overall summary of rock art research collaborations. It also discusses about dating methods employed up to present and challenges faced in this region.

Keywords: Mongolia, History, Challenges, Collaborations
Today, archaeologists of the last 25,000 years in southern Africa cannot escape the question whether the societies they study were, or were not, similar to those hunter-gatherers observed by European travellers or modern anthropologists. This question was raised by rock art scholars and quickly worked its way into the fabric of mainstream archaeology. Moreover, because of the equivocal division between the Later (c. 25 000 BP to 2000 BP) Stone Age and the Middle Stone Age preceding it, the ethnographic approach to archaeology has influenced the debating of modern human behaviour. In this endeavour it has perhaps been misused, as recent debates concerning ‘Primordialism’ have shown. Originally, though, it was because the ethnographic analysis of images worked so well, that rock art research led the way, precipitating the paradigm shift from 1960s and 1970s environmental determinism to more anthropological understandings of excavated archaeology. Factors such as aggregation and dispersal, exchange, visiting, and gender relations, as well as the ritual that may have concerned all these, were brought into sharper focus. The gauntlet thrown down by rock art researchers, picked up by various brave and prominent archaeologists, fuelled the Great Kalahari Debate and has helped, hindered, and made interesting the archaeology of hunter gatherers worldwide.
Many years ago, one of the authors (Chippindale) wrote about the pioneering study of the prehistoric rock-art of Monte Bego (then in Italy, now in France) by Clarence Bicknell (1842–1918). This remarkable field-worker was the first to record to a level anything like modern standards and was equally modern in his research analysis. Where previous students had mistaken natural rock formations for archaeological traces and speculated about Phoenicians climbing up there, Bicknell, as an experienced botanist, applied the skills of a field-recorder. He correctly identified the characteristic motif, which looks rather like a giant insect squashed on the rock, as an image of a horned ox.

Since then, Marcus Bicknell—family custodian of Clarence Bicknell’s fine art legacy—has encouraged others to study his forebear.

The other author (Avery) has explored Bicknell’s botanical work and in so doing found that Bicknell’s interest in the archaeology of Monte Bego, where he had gone intending to botanize, was prompted less by his own volition than by the encouragement of his friend Fritz Mader.

So who was Fritz Mader? What was his place in the story of how Alpine rock-art was discovered and made sense of? This paper will explain.
In Spain much attention has been paid to the discovery and theories of Upper Palaeolithic art (Breuil 1952, Jordá 1969, Ucko and Rosenfeld 1967, Drouot 1973…, Moro & González Morales 2013, Palacio 2017). A fair amount of literature has also been written on the discovery and the different theories related to Levantine art (Almagro 1964, Beltrán 1986-87, Ripoll 1997, Díaz-Andreu 2002, 2012). In contrast, although some comments on the finding of schematic art can be found in articles and books, the development of the studies on this rock art tradition in the nineteenth and twentieth centuries is still a pending subject of study. In this paper the reasons for the lack of attention to the history of schematic art in Spain will be analysed. A social history of who has been interested in schematic rock art will be undertaken, comparing whether the professional background of rock art researchers working in this rock art tradition is different to that of others interested in other fields of archaeological research. The impact of theory in the study of schematic rock art will also be reviewed, assessing whether ideas developed in other areas of archaeology have permeated the way in which research on schematic rock art has been undertaken in Spain.

Keywords: schematic rock art, history of archaeology, rock art, theory, social history
Forgotten records of rock art: acquisition, catalogue and analysis of the data gathered during the expeditions in Valle Camonica by the Forschungsinstitut für Kulturmorphologie (Frankfurt am Main) between 1935 and 1937

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Keywords: Valle Camonica, rock art, history of research, Frobenius

From 1935 to 1937 the Institut für Kulturmorphologie of Leo Frobenius organized three research expeditions to the rock art area of Valcamonica, a remarkable archaeological research if considered in terms of logistics, scope and cultural context. The wealth of data includes hundreds of photographs, rubbings, watercolours, tempera that represent a unique extensive account of the rock art locally known so far. Except for some images published by scholar Franz Altheim and assistant Erika Trautmann who later were associated with Himmler’s Ahnenerbe, the archive remains largely unpublished. In 2015 the Archaeological Superintendence of Lombardy launched a specific project in order to acquire a digital copy and compose a detailed catalogue of these documents. As a result, about a thousand images have been scanned with modern techniques by the institute itself and transmitted to Italy. An inventory of this material has allowed the authors to identify rock art panels already seen at the time and to check the long-term conservation impact of the documentation techniques used by past researchers. Concurrently, accompanying notes and memos are detailing the specific role played by the German expeditions in the wider context of the history of rock art research during the nationalistic temper of the 1930s.
More than a century ago the Swedish archaeologist Gustaf Hallström set out to document and study the monumental art of northern Europe from the Stone Age. Hallström, a pioneer in rock art research, crossed national boundaries studying the similarities and dissimilarities over vast distances, arguing for cultural contact. The political situation between the east and west enforced by nationalistic movements in archaeology delayed and truncated some of Hallström’s work. When Hallström started his rock art quest in 1906, about 20 rock art sites from the Stone Age were known in Fennoscandia (Norway, Sweden, Finland and NW-Russia). At present, more than 300 sites are known; as Hallström foresaw in 1938, this remarkable growth creates a challenge to attaining an overview of the knowledge of the material. This presentation aims to give a general overview of the “monumental rock art of northern Europe from the Stone Age” during the last century initiated by the footsteps of Hallström crossing borders and boundaries in rock art research.

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Keywords: rock art, Stone Age, research history, Fennoscandia, Gustaf Hallström
This paper presents an overview of the earliest rock art research in northern Europe and how it contributed to the formation of an archaeological science in the nineteenth century. It focuses on the debate that occurred in the wake of the discovery of rock art in the famous Bronze Age cairn of Bredarör on Kivik in Scania, southern Sweden in 1748. This was one of the first documented attempts to formulate an archaeological method based on studying the prehistory without explicit support from historical sources — a brave attempt to “let mute stone speak”. Anders Forssenius and Sven Lagerbring were the authors of this attempt, which used a comparative method to date the rock art in Bredarör to the Roman Iron Age. Their thesis, published in 1780 in Latin, is little known outside Sweden. In support of their interpretation, they made use of the similarities between the rock art and the iconography of Roman coins found in the vicinity, and an innovative distribution map of the latter. Either way, this bold attempt to formulate a free standing archaeological method for the study of pre-history did not gain any direct followers and it was several decades before these methods were re-visited.

Keywords: Bredarör on Kivik, birth of archaeology, enlightenment, methodology, comparative dating
The IX Congrès International d’Anthropologie et d’Archéologie Préhistoriques was held in Lisbon in 1880. In 1879 Marcelino Sanz de Sautuola had identified the rock art of the Altamira Cave, which was not discussed at the congress, despite insistence. It was the Congress that discussed what had no future, the “Tertiary Man” of Carlos Ribeiros, and did not discuss what did have a future—rock art. This communication addresses the background that prevented discussion about rock art and the displacement of Marcelino Sanz de Sautuola to Lisbon, giving priority to a subject that today is a nothing more than a scientific oddity, namely, “Tertiary Man”.

Keywords: year 1880, year 1879, rock art, “Tertiary Man”
The history of rock art research in far west Texas and beyond

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Most histories of archaeology suggest that, until recently, systematic studies of rock art did not exist. As early as the nineteenth century, however, rock art researchers not only acquired and analysed archaeological and anthropological data and knowledge, they were also among the first to define the intellectual concepts that continue to drive problem-oriented research today.

In this presentation, the author does not suggest that there was (or still is) a tidy, single factor that unites rock art researchers. By outlining the goals and successes of some of the early North American rock art studies, however, and by drawing on historiography from North America and beyond, the author demonstrates that rock art researchers helped shape the burgeoning discipline of archaeology: highlighting the recursive nature between theory and data, and situate the few studies that focus on the rock art of west Texas within the broader, continent-wide research history.

Keywords: rock art, history of research, west Texas

Fig. 1 - A colour plate of Meyers Springs in Kirkland & Newcomb’s The Rock Art of Texas Indians (1967). Kirkland painted the original watercolour in the 1930s.

Fig. 2 - There has been a long history of research at the site of Hueco Tanks near El Paso. (photo J. Hampson)
Early anthropologists in the Southwestern United States (Fewkes, Holmes, Kidder, A. Morris, Stephen, Stephenson) took rock art seriously as historical records and culturally significant symbolic systems up to the “chronology revolution” in the 1920s. Many then turned their attention to stratigraphy, dendrochronology, and pottery seriation, but several (Colton, Roberts, Turner) incorporated rock art into culture histories. By the 1970s, most archaeologists dismissed rock art as scientifically unknowable, leaving its study to art historians and avocational enthusiasts. Rock art research re-entered mainstream scientific discourse recently, after Native Americans and the general public demanded attention to it. In natural and cultural resource management planning projects, we have noticed that non-Native archaeologists focus on chronology, architecture, and site function, but Native American participants look to images on stone as direct records of migration, habitation, resource use areas, teachings, and spiritual connections that transcend time. Early ethnographies show that Native American understandings of rock art are many, varied, and persistent. We would do well to re-evaluate and reclaim our late nineteenth century disciplinary history. Taken together with a deeper understanding of Indigenous ontologies, we forecast that rock art will become an essential line of evidence for past lifeways.

Keywords: rock art, Southwestern United States, history of archaeology, Indigenous ontologies
A history of research into regional difference in Southern African rock art

The 1970s were a watershed decade in rock art research in southern Africa. Prior to this, very few professional archaeologists were involved in studying rock art; this was left to the many amateur researchers. Beginning in the late 1960s and gaining momentum in the early 1970s, there was a brief spurt of quantification in southern African rock art research which was soon abandoned in favour of the interpretative approach using San ethnography to understand the symbolic dimensions of the art and its production. The extraordinary productivity of this ‘cognitive’ approach, which still dominates San rock art research today, meant that issues such as regionality fell by the wayside. In this paper, the author focuses on the history of research into regional difference prior to the 1970s. Beginning with the work of Miles Burkitt (1928), the study of regional difference in rock art was a dominant feature prior to the advent of the interpretative approach. Although this line of research was largely abandoned, many of the conclusions reached can still be seen in the form of tacit assumptions in research today. With a recent renewed interest in regional difference in southern African rock art, it is time to interrogate this history.

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Keywords: South Africa, regionality, history, rock art

Fig.1 - Elephant Shelter, southern Cape, Eastern Cape Province, South Africa.
(photo G.B. Laue)
Fig.2 - BAE2, north-eastern Cape, Eastern Cape Province, South Africa.
(photo G. Blundell)
Rock art is one of the archaeological remains in Mexico and Central America that received less attention due to the prominence of other vestiges like monumental architecture, hieroglyphic writing, codices and pottery. These are mainly related to Mesoamerican cultures that, seen as “high cultures”, played a fundamental role in the construction of modern national identities. Nevertheless, despite the existence of Mesoamerican rock art, this has played a secondary role in archaeological research and is absent in the histories of archaeology. All of the above creates an impression that the study of rock art here is something recent or new. Although there was an increase in research in the last two decades, some of it more systematic, this does not infer an absence of earlier studies. This paper presents the development of rock art research in Mexico and Central America, from the earliest antecedents (colonial and nineteenth century) to the end of the twentieth century. The intention is to reflect on aspects such as motivations for its study, main lines of interpretation, recording methods and ways of disseminating the results (both texts and images).

Keywords: rock art, historiography, Mexico, Central America

Fig. 1. San Borjitas Cave, Baja California Sur, Mexico. (drawing by Barbro Dahlgren, 1951)
Fig. 2. Codex Teotenantzin. (drawing published by Leonardo López Luján and Xavier Noguex, 2011)
Alexander Adrianov (1854-1920) was one of the outstanding researchers of Siberia, especially in the field of its archaeology and particularly its rock art. Between 1902 and 1915, Adrianov discovered, investigated and documented many rock art sites on the banks of the Yenisei River and adjacent areas. He made great use of photography for documenting the rock art; like many other researchers of the time, he also made drawings and descriptions in his field diaries; however, he is best known for his special method of copying rock art: using soft paper (moistened and beaten onto a rock surface with a brush) to make imprints from petroglyphs—so-called estampages. Hundreds of them have survived until today in storage at the Museum of Anthropology and Ethnography (Kunstkamera) in St Petersburg. The great importance of Adrianov’s collections lies in the fact that during the twentieth century some of the recorded sites have completely disappeared (having been flooded by the Krasnoyarsk reservoir or demolished by quarries), some have partly deteriorated, while at others some images have been damaged by modern graffiti. Thus, Adrianov’s priceless materials are in many cases the only evidence we have for lost pieces of our heritage. The estampages are imprints, which means they are exact copies, objectively reflecting the carved surface in every detail, even if in negative and in mirror image. Digitizing the collections of estampages enables us to turn them into positives, and to use them for the reconstruction (in the form of a tracing) of disappeared panels.

Fig. 1 - Maidashinskaya rock art site at the Yenisei (the site is demolished by the quarry). Estampages made by A. Adrianov in 1904. (photo A. Solodeinikov)

Fig. 2 - Oglakhty rock art site at the Yenisei (the panel is flooded by the Krasnoyarsk reservoir). Estampage made by A. Adrianov in 1907. (photo A. Solodeinikov)
In lines with the issues of marginalization of the rock art studies (Willey & Phillips 1958) in the history of archaeology (Willey & Sabloff 1974; Fagan 1995; Murray & Evans 2008), this paper intends to look at socio-political grounds defining the academic as well as public understanding of rock art. Accordingly, the article is investigating the history of scholarship and understanding of the Aboriginal rock arts in the Hunter region, NSW, Australia. The paper will particularly focus on the evolution in knowing of rock arts in archaeological as well as non-archaeological scholarship and the respective implications on how the rock arts were perceived in the given context.

Analysing the mentioned historiography, the paper takes advantage of the relationship between semiotic (Habermas 2001) and knowledge theory introduced by Habermas (Habermas 1972, 1974). From this perspective, one “knows” on the basis of the already known—that is subject to processes of meaning making and normalization. Therefore, understanding language as the realm of meaning making, that sits in close relation with our knowledge, the paper looks at different forms of language that have been used by scholars.

Interested in such interaction, the paper discusses how the socio-political context has framed/ formed rock art historiography.
European traditions, essentially those coming from the research of the Institut de Paléontologie Humaine in Paris, mainly offer elements for the study of rock art. Since then, the first recordings of rock art have been interpreted, but also the notions of its meaning and function. Both the interest in breaking down the representations (Breuil) and the determination of these motifs as religious spaces have been projected and prolonged in the American environment in notions such as ritual, primitive and shamanism, which has caused the loss of the value of the archaeological records and the unproductive and monotonous determination of the interpretations. New paths with the awareness of these historical limitations have been set in motion to produce, not only the total reconstruction of the sites, but also their links with the language and the complex systems of elaboration of rock art motifs.

Keyword: recording, interpretation, sense, function, rock art, history, research

Fig.1 - Book cover of *La Caverne de Font-de-Gaume*, Capitan, Breuil, Peyrony, 1910.
Fig.2 - Institut de Paléontologie Humaine, Paris France. (photo Guillermo Muñoz)
Studies carried out by GIPRI encompass a set of historical social qualities that show the different stages of research. Thanks to this, we now know there are thousands of sites in Colombia where pre-Columbian communities made rock art (paintings and engravings). Different contexts have generated possibilities and barriers for carrying out the studies. Circumstances both aided and obstructed certain research activity over the last 45 years. Various narratives will show the complexity of these processes, which not only refer to external influences, national and international, but to the complex conditions of government policies and governments, such as the university, cultural centres and entities in charge of history of settlement and Colombian archaeology in general.
Mainly, the history of rock art research involves male researchers and sometimes their female assistants. Even the work of the early female rock art researcher Erika Trautmann in the 1930s is particularly connotated with her male associate, the classical philologist, Franz Altheim. Only upon a closer look at her curriculum vita, her own achievements emerge from the shadows. Trained as rock art copyist in the Frobenius-Institute (Germany), Trautmann successfully managed to get her first own expedition to Val Camonica in 1935 and published newly discovered rock pictures. Together with Altheim, she joined in 1938 the Forschungsgemeinschaft Deutsches Ahnenerbe of Heinrich Himmler’s SS. Within their relationship, while Altheim possessed the academic background for their common publications, Trautmann wielded her excellent political connections, so assuring the funding for further expeditions to Scandinavia, Italy, the Balkans and the Ancient Near East. Furthermore, both wrote reports about their voyages and international colleagues for the German intelligence service. Intent on proving a supposed Teutonic cultural predominance, they interpreted the rock art signs of Valcamonica as derived from antetypes in Scandinavia, referring to the Teutons as cultural conveyors to the pre-Roman peoples. Thus, their work contributed much to the development of National-Socialist ideology. Archaeological comparisons of daggers, tools, personal equipment and other material such as the cauldron of Gundestrup in Denmark and the so-called “Cernunnos” figure in Valcamonica should prove this Aryan cultural transfer to the South, figuring out direct links between archaeological findings and rock art pictures. Despite and due to the ideological background of her interpretations, the discoveries and recordings of Erika Trautmann should find a place in the history of rock art.
Rock art research in Madurai, Tamil Nadu, India

Rock art research in India owes much to the role of the British regime during the twentieth century. Although initially languid, research in the post-independence period from the 1950s onwards gained momentum and there was no looking back. Rock art, both in petroglyphic and pictographic form, has been reported across all parts of India. On the basis of stylistic affiliations, rock art has been dated from the Palaeolithic age onwards and continues until today in the form of living traditions.

Tamil Nadu in Peninsular India has a rich tradition of rock art. Although there is more rock art in the Northern part, there are also traces in the Southern part—Madurai stands unique in this tradition.

This paper focusses on the rock art of Madurai, which has vestiges of unique styles of red and white pictographs, as well as petroglyphs connected with Jainism. The paintings usually date to the Late Iron Age, Early Historic phase, and the petroglyphs date roughly from ninth to thirteenth centuries.

Keyword: red ochre, bird-headed man, Jainism, Tirthankaras, bas-reliefs

Fig.1 - Seated Tirthankaras, Perumal Malai, Madurai, Tamil Nadu. (photo Sujitha Pillai)
Fig.2 - Bird-Headed Man, Kidaripatti, Madurai, Tamil Nadu. (photo Sujitha Pillai)
The History of Kimberley Research 1838 - 1938

For many years the history of rock art research in the Kimberley has followed a consistent pattern based on the reports of explorers, surveyors and researchers. Their work was published in books or academic journals and so was accessible in reference libraries. The advent of mass digitisation over the past two decades has resulted in a wealth of new data becoming available. This new information, coming from previously obscure or unobtainable sources such as newspapers, or from university and museum archives, reveals a far more complex history of the discovery and understanding of Kimberley rock art. It is also a history of information gained, then lost, through the ephemeral nature of newspaper accounts.

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Keyword: Kimberley, Western Australia, discovery, rock art, Bradshaw (Gwion-Gwion / Giri-Giri) art, Wandjina art

Fig.1 - Kimberley - Gunn 1896

Fig.2 - Kimberley - Gunn 1896
The history of rock art discovery and research of the Gwion (Bradshaw) art body in the Kimberley, Western Australia

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The Kimberley Australia is one of the most sparsely populated and remote regions in northern Australia, with a wild landscape extending over 420 000 square kilometres. It is one of the key sites of the first human occupations of the continent over 40 000 years ago. European intrusion only occurred in the 1980s. It was forays by early explorers, pastoralists and missionaries that first described the rock art they encountered. Most prominent were the imposing Wanjina, haloed figures representing the creator spirits of the land. Alongside and barely recognised, often overpainted, were elegant and highly ornamented naturalistic portrayals of human figures. This was termed Bradshaw art after its initial European recorder. It is now recognised as Gwion art and considered the Wanjinas’ ancestors. An international expedition in 1986 completed the first descent of the Drysdale River recording one of the most extensive bodies of Gwion art in the Kimberley. Recording has been ongoing for the past 30 years and triggered a major interest in this art. The initial recording was undertaken by dedicated amateurs from all backgrounds and this has formed the basis for a concerted research effort today. Major academic institutions and philanthropic organisations in partnership with the Aboriginal traditional owners are now undertaking wide-ranging research work to provide new insights into this art. This paper sets out the history of the discovery, recording and research of the Gwion (Bradshaw) art body in the Kimberley.

Keywords: rock art, history, Kimberley, Western Australia, discovery, Bradshaw (Gwion) art

Fig. 1 - Winged Figure Drysdale River Expedition. (© Joc Schmiechen)
Fig. 2 - Long Gallery Drysdale River. (© Joc Schmiechen)
A self-effacing discipline: a history of thinking about rock art and identity

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Keywords: identity, ethnicity, Africa, theory and practice

Rock art studies have long been self-effacing, the humble handmaiden. Like the handmaiden, rock art studies have too often been forced into carrying the unwanted offspring of the archaeological master. In recent decades, it has become an archaeological sin to link material culture traits to contemporary identities. Archaeological pots, as students are regularly reminded in the classroom, do not equal people. Rock art studies have rarely dared to challenge their master, but the real world has been less compliant. Material culture markers have been foundational to Indigenous land rights claims on many continents, art styles have been successfully copyrighted by some cultural groups, and a reflexive understanding of ethnicity remains an important part of many peoples’ sense of belonging. This paper will make the case that, whilst archaeology has serially struggled in its dealings with past and present identities, rock art studies hold solutions. Through the story of two African case studies, that of the Pygmies of central African and the Khoekhoen of southern Africa, this paper will show how rock art studies are able to redress decades of archaeological ethnocide and move the discipline towards a language in tune with and meaningful to peoples of today.
In 1837, Sir George Grey mused on the recent and foreign origins of the Kimberley rock art. Within 100 years, members of the Frobenius Expedition raised the spectre of both older and endemic art origins. Within the next 50 years, regional surveys and excavations produced a 30 000 year antiquity for the possible context of art production. That age nearly doubled over the next 25 years and has run in parallel with increased visitation to, and maintenance of, rock art sites by Kimberley Traditional Owners. It is now known that some Kimberley rock art has a long (terminal Pleistocene) chronology and that the major changes seen in rock art phases can be explained by a dynamic and morphing set of symbolic practices by descendants practicing ‘living art’ (Veth 2017). How has this emerging Deep History of Kimberley rock art production, with clear continuities and transformations, been fashioned by the agency of archaeologists and Traditional Owners and what have been some of the turning points in theoretical discourse? The author argues there have been stronger convergences in origin narratives than generally thought and will profile some key Indigenous and non-Indigenous actors and narratives.

Keywords: rock art, continuities, history, traditional owners, Kimberley, Australia
On the shoulders of giants: the contributions of Tomaz Pompeu Sobrinho to knowledge of the rock art of the state of Ceará, Brazil

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The present paper analyses the bibliographic production of the scholar Tomaz Pompeu de Sousa Brasil Sobrinho (1880–1967), a civil engineer and pioneer in the identification, classification and interpretation of rock art in the territory of Ceará. Although his production was focused on other subjects of pre-colonial history (anthropometry, Palaeo-American migrations and linguistic affiliation of indigenous groups in north-eastern Brazil), his preference for rock art studies was highlighted in the “Revista do Instituto do Ceará” in the mid-twentieth century. The images and descriptions in these publications have been used today as an important tool in locating rock art sites in the state of Ceará. This paper is also used to discuss the influence of Pompeu Sobrinho’s studies on rock art classifications developed in the north-eastern region of Brazil in subsequent decades.

Keywords: rock art, Ceará, historiography, classification, Tomaz Pompeu Sobrinho, Brazil
It has been said that we can infer more about southern African Later Stone Age people from the study of hunter-gatherer (San) rock art than from ‘dirt’ archaeology. In this respect, some approaches to San rock art have led to more influential ideas than others. Though various approaches have been sequential, they were not necessarily evolutionary: subsequent approaches did not wholly replace or invalidate previous approaches. In an academic climate where some researchers think that San rock art still needs to be ‘integrated’ with ‘dirt’ archaeology, a recent study of a suite of eight sites on a ridge in the Maclear District of the Eastern Cape Province has allowed for many of the insights from the various approaches to San rock art to be pooled together. It focuses on the performative aspects of image-making and use—one so often implied by the term ‘ritual’ but left unaddressed. The study provides insight into a sphere of San expressive culture that has left few material traces. It raises questions about the degree of separation between painted images on the walls of rock shelters and the material culture recovered in excavated contexts.
Saharan rock art is considered one of the most remarkable human remains. It reflects much of the past life of the Sahara before the climate change during the Holocene, which can be discerned by the scientific study of both archaeological remains and rock art for better understanding the past.

Saharan rock art has received attention since its discovery by colonial military and exploratory expeditions, then by scholars, mostly French in the Francophone countries, including Mauritania. The later generation of studies was undertaken by specialist scholars, mainly in prehistoric archaeology. This also applies to Mauritanian rock art in the Western Sahara, but it received fewer studies in comparison with other Saharan areas (e.g. Monod 1937, 1938; Mauny 1954; Vernet Hamdi Abbas 2010). These studies tried to make an inventory of Mauritanian rock art and classify it in chronological and culture-historical terms.

This paper aims to highlight the general characteristics of Mauritanian rock art and discusses critically the previous studies of Mauritanian rock art as a part of Saharan rock art especially in Tichitt Walata Dhars and Adrar Plateau. Further, it asks to what extent rock art interpretation within the archaeological context can be useful for better understanding the past.

Keyword: Saharan rock art, Mauritania, Western Sahara, Tichitt-Walata Dhars, Adrar Plateau
Across the world, places and landscapes are crucial for understanding rock art’s significance for its makers and users; however, the contextual approach to rock art has long been overshadowed by a preponderance of studies dedicated to images and their meanings. In the 1980s and 1990s, worldwide rock art studies testified increasingly to the greater appreciation for the importance of landscapes. These studies stemmed from new or newly re-interpreted ethnographic and ethnohistorical studies (especially from Aboriginal Australia) and from distributional and visibility studies of rock art.

In Canada, where rock art research began in the nineteenth century, the importance of places began to be explored in the 1970s notably with the work of Joan Vastokas and Brian Molyneaux. Their pioneering work based on insights from ethnohistory, ethnography, oral traditions and art history opened up the study of sacred landscapes and materialities of rock art. In this paper, the author discusses their work, as well as how it fits into the archaeological trends of the time, and what, if any, impact their research had on archaeological research in the Canadian Shield.
The research of inscriptions is often an underrated subject within the field of rock art studies. These inscriptions document the appearance of writing in different regions supporting the different chronologies around the globe.

This session will welcome reports concerning: the different writing traditions in the world from their origins to the present day; the techniques of their production on the rocks; the paleographic analysis; chronologies; meanings and contexts.

Priority is given to the following issues:
- Alphabets
- Inscriptions at high altitude and at passes and crossings
- Funerary inscriptions
- Didactic inscriptions
- Inscriptions of chronicles
- Votive and religious inscriptions
- Border inscriptions
Letters in the wall. New ancient rock inscription in the cave of “La Zaida” (Used, Zaragoza, Spain)

A group of engravings have been discovered in the corridor of the natural cave of “La Zaida”, in Used (Zaragoza, Spain), where Bronze and Iron Age potteries were also found. The cave is unfit for human habitation, but it is located at a strategic place, close to an endorheic lake where birds pause during their migratory shifts. The rock-motifs are carved on the right wall of a narrow corridor, being illuminated by natural light from the entrance. The engravings are arranged within a rectangular frame, which is divided into six different parallel fields separated by horizontal lines. Some of the carvings can be identified as Latin letters belonging to an inscription in Celtiberian or Latin language, and other motifs are similar to Palaeohispanic writing-signs, although its reading and translation are problematic. Nevertheless, the epigraphy of “La Zaida” points to parallels in other Palaeohispanic & Roman inscriptions carved on cliffs, rock shelters and caves of the Iberian Peninsula, which are related to ancient ritual activities. The interdisciplinary study of these unpublished engravings & texts offers the possibility of bringing new light to the understanding of the languages, writings, and symbolic practices of the Protohistoric and Roman populations in Spain.

Keywords: epigraphy, inscriptions, celtiberian, latin, palaeohispanic, protohistory
The so-called Ròch dij Gieugh (The Rock of the Games), which may be intended as the Ròck dij Gieu (The Rock of Jupiter) of Usseglio, on the mountain slopes of the Viù valley, near Turin, hosts a large number of deep cup-marks, basins and footprints; some Iron Age warrior figures are also present. The Latin inscription “IOVI”, which has the same meaning as the ritual formula “iovi sacrum”, has recently been discovered over its surface, and subsequently comprehensively recorded and studied. The inscription demonstrates that up until the Roman period the rock was utilized as a ceremonial site, probably for leaving ritual offerings. For the first time, the presence of a Latin inscription over a cup-marked surface will contribute to understanding the chronology and meaning of its engraved signs, not only for this important stone, but also for the similar ones which are scattered along the Alps. The evidence of cults in the same area is confirmed by two votive Roman stone altars, dedicated to Hercules and Jupiter; the first one was found at the foot of a very high mountain pass (2680 m.a.s.l.), along a path joining the two alpine slopes.

Keywords: Jupiter, cup-marks, ritual site, votive offerings
In the Postclassic period, around 1350-1400 A.D., there was a migration of Zapotecs, belonging to the Mesoamerican tradition, from the central valleys of Oaxaca to the Isthmus of Tehuantepec. They conquered that area and established an important political entity, with urban settlements. They also created a new symbolic landscape, in the construction of which rock art played a prominent role. More than 25 sites painted and engraved by this new population have been located in the isthmus. Although the Zapotec tradition was one of the oldest in Mesoamerica and in the Classical period developed its own writing system and artistic style, in the Postclassic Zapotecs used an information recording system and an artistic style that was common to many Mesoamerican cultures at that time. It is an ideographic system in which the Mesoamerican ritual calendar had great importance. In this work I will analyze the images of the Bacuana site, the most complex site and the largest in number of motifs. The premise of this research is to demonstrate that Ba’cuana is a sanctuary where petitions were made to the beings that lived inside, and for this they used the writing system and the Postclassic style, with regional variations.
Although the content of rock inscriptions in the most well-known epigraphies can vary, the function of most Iberian rock inscriptions appears to be votive or in general sacred, as is demonstrated by the identification of five abecedaries. The dimensions of the signs, many measuring less than two cm, invalidate most of the alternative interpretations, like territorial delimitation markers or other public usages. Other evidence that supports the interpretation of the votive role of several Iberian rock inscriptions is that they share surfaces with Latin votive inscriptions, the use of the votive characteristic lexicon such as neitin iunstir, the use of repetitive formulas, and the use of unique elements such as the radial inscriptions with the formula kau(f)go befolé. But if they were votive, where are the names of divinities? In some cases, the repetition of the same element, like urchal that appears nine times in the Tarragón shelter, allows us to interpret this element, in most likelihood, as the name of a divinity. But, in the general, it’s difficult to differentiate personal names from the names of divinities. This work investigates this problem and puts forward a number of elements to assist in identifying the Iberian names of divinities within inscriptions.
The name ‘Pennino’ engraved on rocks in the Alpine area: a linguistic and historiographic analysis

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Keywords: celtic inscriptions, *Pennino, Carona, Mur dit d'Hannibal, passes, devotional practices

Poininos (=*Penninos) was the Celtic God of the mountain peaks and the mountain passes, which had a significant presence in the toponymy as Poeninus within the Roman epigraphic and historiographic tradition. The epichoric evidence found so far in the Alps lies within two sites which are distant from each other but similar in form. One of the inscriptions is engraved on a boulder in a small shelter near the so-called Mur d’Hannibal (the Wall of Hannibal), at 2650m a.s.l., in Liddes (Switzerland), while the other two are found on a boulder, Camisana 1, in Carona (Val Brembana, BG) at 2248m a.s.l. On this rock other inscriptions are present indicating the same name in its abbreviated form “pen”, without the latinizing diphthong, whose graphic-cultural motivations will be taken into account. Their location is significant in being situated near mountain passes; the archaeological finds of other Alpine passes reveal a devotional practice that has continuity within Roman times, as demonstrated by the archaeological-epigraphic evidence referable to the god *Pennino, assimilated to Jupiter, in the sanctuary of the Great St. Bernard. Comparisons can also be found on Apennine passes to demonstrate that this deity had a mountain connotation as inferred by this deity’s name.
Ten-years of research, carried out on the Carona rock carvings (Val Brembana, Bergamo), have made it possible to identify the Camisana rock 1 as the focal point of a small natural high-altitude sanctuary, near the source of the Brembo river. Here, on an area of about 30 square meters, hundreds of inscriptions in the alphabet of Lugano bear witness to the devotion of those who passed through the Valsecca pass, which connected two valleys, Val Brembana and Val Seriana. This research has also initiated a series of revisions of known stone monuments, including the so-called Stele of Prestino and a slab reused in the republican Roman walls of Milan, with the famous Mesiolano inscription. What emerges is a little known picture of Celtic cult practices between the fifth and first century BC. in which the votive aspect is closely linked to the practice of writing.
Two new rock inscriptions in Ancient South Arabian alphabet from Shenah, Oman

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Keywords: Oman, Shenah, inscriptions, ancient South Arabian alphabet, rock engravings

The rock art area of Shenah has been known since 1997 and includes a number of sites (around 20) consisting of several rocks with thousands of figures that have been engraved from the 5th millennium BCE until modern times. The figures are engraved on the sandstone bedrock and boulders, often in deep contour or completely pecked inside the images. The representations consist largely of animals, often horned (probably representing the Nubian Ibex, the Wild Goat and the Arabian Thar), but camels, donkeys and horses, sometimes ridden, are also present. Warrior images are not as common in these sites in comparison to other rock art sites in Oman. At one of the sites (Al Qatarah 1) David Insall, who first located the sites, identified an inscription in the Ancient South Arabian alphabet.

A recent survey undertaken by one of the authors in 2015 led to the discovery, within a site on the Shenah plateau, of two new inscriptions in the Ancient South Arabian alphabet. One of them appears to be associated with schematic human figures and forms a curve, like the first one discovered by Insall. Further investigations are required to establish a more precise date for these inscriptions.

Fig. 1 - Shenah, Oman. Inscription in Ancient South Arabian alphabet. (photograph A.E. Fossati, Università Cattolica del S.Cuore di Milano)
The pre-Roman inscriptions of rock 6 at Le Crape (Boario Terme) and the current findings on the Camunnian Alphabetic script

Rock 6 of the Archaeological Park of Luine, Crape and Simoni (Darfo Boario Terme, BS) is one of the most interesting engraved surface in Valcamonica. Hundreds of figures are pecked and incised showing hunter-gatherer art (elks, deer and ibexes from Paleolithic-Mesolithic times), topographic representations, weapons, circles and stars (from the Neolithic to the Bronze Age) and finally the typical warrior art production (Iron Age). It is in this last proto-historic period that several pre-Roman inscriptions are written on the rock. The authors will propose a reading of these inscriptions, defining similarities and differences with the inscriptions of other rocks in the same park and in other sites in Valcamonica. This will also be the occasion of delineating the current research regarding the Camunnian Alphabetic script.

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Keywords: Camunnian Alphabet, pre-Roman inscriptions, Valcamonica, Iron Age

Fig. 1 - Darfo Boario Terme, Crape, rock 6. (photo courtesy CCSP Archive EUR70LXIX007)
Fig. 2 - Darfo Boario Terme, Crape, rock 6. (tracing A.E. Fossati, Università Cattolica del S.C. di Milano)
The aim of the research is to present the cave-sanctuary “Grotta Poesia Piccola”, located in the Roca Vecchia archaeological area in southern Apulia. The cave is part of a karstic system composed of three caves and some corridors which nowadays are flooded by the sea. The inscriptions were discovered in 1983 by Cosimo Pagliara, who published the first report a few years later. In the 90s Pagliara and his team took silicon casts (after cleaning) of the whole inscribed surface of about 600 square meters, later transformed into resin panels. The walls are almost completely covered with graphic and alphabetic evidence, very often engraved one over the other, they begin from the current sea level up to a height of 7 meters. Inside the cave the working conditions are extremely difficult because of the inclination of the walls, the high humidity and also the sea itself. A new interdisciplinary project conducted by a consortium of both private and public research and conservatory institutions has been recently created to record with a new integrated approach to preserve, valorize and analyze the epigraphic data. The research puts forward some critical methodological and hermeneutic problems arising from the cave and the rock epigraphy within it.

Keywords: cave-sanctuary, epigraphy, engraving, Neolithic, Bronze age, Iron age, Roman age
The Roca dels Moros at El Cogul (Lleida, Catalonia) is one of the best-known examples of Levantine Art in the Iberian Peninsula, but the site is also very important in the field of Iberian and Latin epigraphy because of the texts that were engraved in the late period of the shrine's use, between the first century BCE and the Augustan Age. The graffiti were first examined by Almagro (1952) and, in the case of the Iberian ones, later revisited by Untermann (1960, yet his drawing [fig. 1] and readings were not published until 1990). Several studies have come out since then, even if almost all of them rely not upon first hand research but on facsimiles, as does the latest edition of the inscriptions (2014), based on a drawing from 2007 that was made by non-epigraphists and differs from the previous ones in many aspects [fig. 2]. Therefore, a new study is necessary, even more so when the texts continue to pose a series of challenges: there are many Iberian words whose reading is still doubtful, while the strange combination of votive (votum fecit) and border inscriptions (term<in>us?) that we encounter in the Latin section has to be re-examined.
This research examines the very different readings of the inscriptions on the Schneidjoch, North Tyrolia. These include the diverging identifications of the signs, the variants of alphabet used, the relative chronology of the inscriptions and their language(s), all of which are treated as mutually entangled problems.

Keywords: rock inscriptions, variants of alpine alphabets, raetic language, non-raetic language
There are over 300 pre-Roman inscriptions in Valcamonica known today. Some inscriptions, located on terraces overlooking the valley, are found in places interpretable as open-air sanctuaries. Noteworthy is the presence of alphabets (a dozen in pre-Roman characters and some in Latin characters) and inscriptions in which the transition from indigenous writing to Latin is evident. Of particular interest is the presence of high-altitude boulders which seem to define boundaries.

The ever-increasing number of inscriptions needed a proper documentation methodology, that can set valid criteria for the surveying and the analysis of the signs. In 2013 the Archaeological Superintendency started an update of the inscriptions catalogue with new tracings and photographs, accompanied by a recording proposal with ICCD entries, tailored to the special requirements of transcription and reproduction of pre-Roman rock inscriptions. The model, already tested in the full edition of the Berzo Demo-Loa inscriptions (72 entries edited in 2014) is also proposed for other complexes, with the aim of providing an updated set of data with some distributive and interpretative comments.
MADE FOR BEING VISIBLE. DEVELOPING 3D METHODOLOGIES FOR THE STUDY OF ROCK ART CARVINGS

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Doubtless, the expansion of computer research throughout archaeological science has contributed to the growth of new different approaches in archaeological research, and one of them had been the representation and study of archaeological sites and objects by their virtual reconstruction (3D). This is particularly clear in rock art studies where 3D modelling has been one of the most important revolution, in which corresponds to documentation methods and evaluation of the rocks. However, there is a clear lack of standards concerning which are the best methods to use or which is the basic workflow to ensure the most accurate reproduction.

The purpose of this session will be to present different case-studies, centred on the application of 3D modelling and post processing techniques in relation to the study of rock art carvings. It seeks for examples where the use of different virtual documentation methods has implied a better understanding and knowledge in rock art panels.

In this sense, the aim of the meeting will be to learn from those heterogeneous experiences, and show how the use of 3D techniques might assist in improving rock art research, a main step in which it corresponds to interpretation. Four lines of interest are proposed, such as:
- Current methods for rock art recording. From traditional (hand-made) methodologies to the use of New Technologies (Laser scanner, photogrammetry).
- Constructing the mesh. The first (main?) part of the workflow?
- Post processing techniques. Artificial lights, automatic ways to enhance the motifs.
- Going over the 3D model. Generate virtual tracings of rock art panels.

Communications and posters will be welcome. Especially those that deal with new computer approaches to study rock art 3D models. Demonstrations of software or 3D analysis are also welcome in this session, in order to get a more practical meeting rather than a traditional one.
New technological applications for the recording and representation of rock art is so heterogeneous that it requires the development of new techniques. The complexity of the techniques used hinders interdisciplinary understanding, without enabling the establishment of a standardised methodology. Procedures must be normalised and directed, on the one hand, towards scientific analysis, and on the other, towards dissemination and comprehension of the generated data and its applications. It is necessary to aim the recording process at combined objectives, including aspects of recording, preventive control, conservation and interpretation, to benefit a more complete scientific analysis. In order to achieve full technological implementation, it is necessary to provide methods that are easily disseminated, for example, through the creation of databases in 3D web environments. This kind of data allows for instant viewing and analysis, offering valuable graphic and metric data of the three-dimensional model. Credible data is obtained this way, for control and analysis, while there is also a significant increase in the data obtained when recording. User level interactive databases, stored, for example, in JavaScript files in browsers, which integrate WebGL, favour open access dissemination methods, which render technical and scientific aspects more comprehensible.
Recent 3D modeling – SfM technique – was performed on some of the most important cup-marked boulders of the western Alps in Italy, mainly from the Iron Age. Among them the Ròch dij Gieugh, Monsagnasco, Pera Crevolà, Crò da Lairi and Bric Lombatera stones. Some post-production features of 3D models, like the obtaining of curve-level drawings from DEM and QGIS, were also undertaken. The effective application used with the more deeply engraved rock art, cup-marks and basins, that can be treated as three-dimensional objects, is the inexpensive SfM-Structure from Motion technique which is more effective than on the shallow pecked figures, which on the contrary may be considered as dotted drawings; for these last a stereo-photometric based 3D model is preferred. Through the analysis of 3D models of cup-marked boulders, not only was a better visual reconstruction of the engraving sequence obtained, but also it was revealed that the boulder itself was in many cases prepared and squared in order to obtain a flat upper surface, well-suited for the purpose of offerings; thanks to the rotation of such three dimensional objects, it is also clear that some boulders were intentionally broken, confirming the ancient written ecclesiastical documents, where such actions over pagan stones and altars was mandated.

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Keywords: cup-marks, 3D models, stone tables, boulder squaring off
Multisensor data acquisition and 3D enhancing strategies: the case of the Assa Valley rock art

The rock engravings of the Asiago Plateau (Province of Vicenza, Italy) are located on the calcareous, vertical walls of the Assa valley. For this project, we focus on the main rock of Tunkelbald, measuring ca. 20x4 m. with a chronological range from protohistoric to modern times, but predominantly representing the most recent phases. This paper presents a pilot study aimed at investigating the morphological and morphometric characteristics of a selection of engravings and at guaranteeing better outcomes in terms of public archaeology and touristic attractivity. 3D data acquired via laser scanner and structured-light scanner are used to create textured 3D models with micrometric resolution. Morphometric data is converted and processed with LiDAR-derived enhancing techniques such as multiple hillshading, openness, sky view factor, local relief model and many others. These applications offer the chance to read even the most weathered rock surfaces and better identify the iconographic motifs, but also help to reconstruct the tools used for engraving. Finally, the virtual reconstructions and the physical models obtained with the 3D prototyping system can be used for dissemination purposes in order to offer a direct visual, textural and tactile experience of the most significant representations that lie outside the eyesight of the visitors to the site.

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Keywords: laser scanning, structured light, LiDAR data processing, rapid prototyping, Assa Valley rock art, public archaeology
Tailoring digital imaging techniques for the study of rock art panels

The application of digital imaging techniques to rock art panels is one of the most prolific research fields in the discipline, not only for the dissemination of 3D models to the general public but also to the researchers, with the development of more robust recording methods. Thanks to the development of a research project at Campo Lameiro rock art site (Galicia, NW Iberia), more than thirty rock art panels were recorded using dense photogrammetry, later processed in Agisoft Photoscan software to obtain the 3D model of the whole panels. The purpose of this research is to show the application and improvement of cost-effective digital imaging techniques which have allowed us to highlight the grooves within the 3D models, getting an accurate picture of the carved motifs that can be used to carry out better tracings and, therefore, historical studies.

Keywords: 3D modelling, petroglyphs, radiance scaling, mesh, laplacian smoothing, MeshLab, Galicia

Fig. 1 - Pedra de San Francisco, post-processing images.
Between 1914 and 1918 Vergílio Correia identified and published several engraved boulders at Santana do Campo (Évora district, Portugal) in the framework of a research project that he was developing at the megalithic complex of Pavia. To date, the analysis of these sites has only been possible through the tracings and photographs published by Correia (1921). The research was resumed in the framework of more recent works directed by Leonor Rocha and Ivo Santos. The sites have been newly recorded and interpreted through the application of photogrammetric techniques and the numerical analysis of 3D meshes, that offers a new insight into the iconography of engraved motifs. The novelties of the methodology here presented lies in the use of open source software and libraries and the use of high-performance computing (HPC) for processing a large number of photographs.

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Keywords: photogrammetry, open source, HPC, Santana do Campo, Portugal
Documenting rock art using imaging-based recording techniques (photogrammetry) and tridimensional survey, beside the classical epigraphic methods, has become the main approach that supports the entire research on rock art by the Aswan-Kom Ombo Archaeological Project. The applied methodological framework is flexible so to be adjusted according to the several types of rock art sites found in our concession. In general terms it consists of geo-locating the archaeological evidence using global or relative coordinate systems; documenting three-dimensionally the landscape if meaningful, documenting details in high resolution (of rock art panels, inscriptions, single figures etc.), and elaborating in a post-processing stage advanced visual-graphic works, such as virtual restauration, 3D reconstructions and Virtual Reality tours and anything that can provide a better understanding of the site in its entirety. Software that has been recently developed (especially those supporting Structure from Motion technique) completely changed the potential and the perspectives of rock art and archaeological documentation. They increase enormously the advantages in terms of acquisition time and quality/quantity of the acquired/processed information. Our contribution will present the digital documentation process applied to the most relevant rock art sites in our concession area, in the region between Aswan and Kom Ombo in Egypt.

Keywords: Egypt, Predynastic, Structure from motion, Panotour, GigaPan
Discolorations of the rock can obfuscate engravings, rendering traditional recording methods ineffective. Structure from Motion (SfM) photogrammetry and Geographic Information System (GIS) tools can be used to enhance camouflaged engravings. The method makes engravings visible that are not detected in the field, which results in a digitally traced record with a higher level of confidence in the data than a manual recording. Using a GIS algorithm not only highlights the engravings, but also allows for a pioneering way to digitally trace and classify motifs, resulting in a spatially-linked database. The combination of SfM photogrammetry and GIS tools introduces a cost-efficient method to effectively enhance, document, and analyze engraved rock art.

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Keywords: rock art, Structure from Motion, photogrammetry, Geographic Information Systems
SfM and Photometric Stereo, comparison between 3D modelling techniques for accurate rock art recording

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The survey of Pianaùra engravings complex (Arco, Trento, NE Italy) has been the occasion to test an integrated recording methodology based on a multilayered approach (“Un approccio multilayered alla documentazione e interpretazione dell’arte rupestre ...” in XXVI Valcamonica Symposium 2015). 2D photogrammetry, contact drawing, and frottage, have been applied to the 30 meters slab surface under the rock-shelter where a variety of overlapping symbols are clustered. These documentations have been georeferenced and imported in a GIS platform to be compared and interpreted using digitization. Different 3D recording approaches have been compared in pairs. Photometric stereo, a photogrammetric technique well known in scientific applications and recently used as a fast and cheap method for documenting engravings and reliefs within rock art research, is compared with another well-known 3D photogrammetric technique often used in archaeology: Structure from Motion. The acquisition steps are very easy and the output 3D model enables a meticulous reconstruction in both cases. In this paper, objective and subjective quality tests of the same surface are undertaken, to evaluate the strengths and weaknesses of both methods, for their application in archaeological research.

Fig.1 - Pianaùra site, Arco, Trento, Italy.
Fig.2 - Engravings comparison between Photometric Stereo and Structure from Motion reconstruction techniques

Keywords: 3D modelling, photometric stereo, Structure from Motion, SfM, Pianaura, rock-shelter
Close encounters of the third dimension. Recording the three-dimensionality of the “topographic representations” in the Aeneolithic rock art of Valcamonica and Valtellina (Lombardy, Italy)

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Keywords: Valcamonica, Valtellina, “topographic representations”, Copper Age, three-dimensional recording, SfM

In the narrow figurative repertoire on outcropping rock surfaces of the Central Alpine rock art in the Aeneolithic age (second half of IV-III millennium BC), the “topographic representations” – abstract compositions of regular geometric figures commonly considered as portrayals of anthropised landscapes – are one of the most significant and enigmatic subjects. As juxtapositions of modular constituents often arranged in articulated complexes, these representations show considerable compositional solutions of adaptation to the morphology and the natural unevennesses of the rock support: sinuosity, glacial grooves, small ditches, bumps and fractures are purposely exploited in the figural plan through subtle adaptive mechanisms that can acquire meaning also on the interpretative side. This is a peculiarity that the traditional graphic recording methods used for rock art, such as the manual tracing on transparent sheets generally implemented in the alpine region, fail to render successfully due to their bi-dimensional nature, which is indeed able to convey only the planar development of the engraved surface. This study proposes the application of the photogrammetric range imaging technique called “SfM” (“Structure from Motion”) to a properly selected sample of Aeneolithic “topographic representations” from Valcamonica and Valtellina in order to record their three-dimensional features connected to the rock surface morphology, aiming to set this aspect off in an exegetical perspective.

Fig.1 – Grosio (SO, Valtellina), Dosso Giroldo: enhanced three-dimensional rendering of the “topographic representation” on rock 14; middle Aeneolithic age (3000-2500 BC).
Fig.2 – Capo di Ponte (BS, Valcamonica), Seradina II: enhanced three-dimensional rendering of the “topographic representation” on rock 18; Aeneolithic age (3400-2500 BC).
3D scanning and photogrammetry documentation and analysis of rock art panels in the canyons of the Mesa Verde region, Colorado, USA

The paper focuses on the modern techniques of documentation, such as photogrammetry and the laser scanning of rock art sites (petroglyphs and paintings) located in a number of canyons in the central Mesa Verde region in southwestern Colorado (USA). The research was conducted over the course of several seasons by the Sand Canyon-Castle Rock Community Archaeological Project led by the Institute of Archaeology, Jagiellonian University in Krakow.

The petroglyphs and paintings from the project research area include Ancient Pueblo and Fremont rock art depicting shamans and warriors, geometric motifs which are connected with astronomical observations as well as historic Indian petroglyphs, mainly created by the Navajos and Ute, illustrating clan symbols, fighting warriors and hunting scenes with buffalo and deer. The registered data has been used to generate accurate 2D documentation and 3D models (the equipment for scanning included a Faro scanner). The 3D models that were generated have also been used to interpret some details by varying the position of the light (for example with the use of RTI software). Another element is the virtual 3D models that we used in the game engine and Digital Elevation Model that encompasses the sites and the associated environment.

Keywords: Ancient Pueblo rock art, Mesa Verde, cliff dwellings, 3D scanning, photogrammetry
Imperfect geometries of Galician Open-air rock art carving

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Open-air rock art carving is one of the best-known and studied tangible entities among those that make up the archaeological record in Galicia. It is characterized by representations of both abstract and naturalist motifs, usually on granite. Among the most novel contributions to his study, we find the development of new methodologies of three-dimensional recording and obtaining of digital tracing by means of digital photogrammetry. These methodologies work with the traditional prehistoric groove model that can be found across the bibliography. An open and very eroded “U” Groove. The starting point of our work is a groove model with a concave geometry at the base and an open and convex geometry on the sides; an imperfect geometry with spatial limits difficult to define or vague. We propose both a methodology of computational analysis of the groove and a way of representing it.

1. Photogrammetrical register of the panel in order to obtain a 3D model.
2. Export a three-dimensional point cloud, from which we interpolate a digital surface model (DSM).
3. Computational analysis, by means of an Octave script, of concavity and convexity in the DSM; and classification of the obtained values, based on the certainty of representing a groove.

Keywords: rock art, 3D methodologies, photogrammetry, image processing, uncertainty, spatial representation
3D modelling offers a new prospective for studying ancient items regardless of the object’s actual state and location. This is supported by the latest research on the Kamyana Mohyla prehistoric site located in the Ukrainian steppes. This site is known as a location with numerous examples of ancient rock art, as such, it is an effective location for research on prehistoric cultures. Finds from the 2016 field season resulted in interpretations of animal-like sculptured images made of local sandstone. According to analysis, the objects belong to the Mesolithic Kukrek Culture layer, which is dated to 8500—7400 calBC. To collect all the available information concerning these finds, qualitative research of their structure and texture was needed. These features were recorded using photogrammetric 3D-modelling including measuring, scaling and referencing. Use of a model is the most productive way to describe the complicated shape of investigated objects. Furthermore, it reveals their original state. Thus, photogrammetric modelling appears to be the way to store visual information about recently deteriorated reality and to make spatial visual reconstructions and assumptions concerning the ancient state of objects. This is extremely important considering that unique and unmatched objects might suffer damage during archeological study.

Keywords: Mesolithic, Kamyana Mohyla, photogrammetry, 3D modeling, rock art
Since 2012, The Departmental Museum of Marvels, in collaboration with the Alpes-Maritimes Department Territorial Information Service, have launched a 3D modelling project of the Mount Bégo rock engravings. This was mediation rather than research. Thanks to the multi-resolution 3D models (max. res.: 60 microns) obtained by the photogrammetric 3D capture, and 3D virtual globe technologies, a global virtual project has been initiated. The first application is a 3D real-time application and virtual guided tour of the site, available on a multi-touch screen, in the permanent exhibition area of the museum. Looking to the future, the proposed archaeological operation is built around three different but complementary levels of details: 1. 3D modelling of the Mount Bego’s most significant rocks, using the sub-millimetric ground photogrammetric method; 2. 3D photogrammetric modelling of the largest rocks such as the Altar Rock, the Glazed rock face, the Sacred Way, etc. from images provided by drone survey; 3. 3D landscape-modeling by photogrammetry using aerial images provided by microlight (or a small aircraft), or possibly even by using the LIDAR (Light Detection And Ranging) mapping technique. The ultimate aim is the creation of a 3D geodatabase within which to integrate all the results of these field researches.

Keywords: Mount Bego, 3D modelling, photogrammetric, UAV, LIDAR, Reality Capture
An artificial intelligence software platform to understand and preserve the epigraphic complex of Grotta Poesia cave-sanctuary at Roca Vecchia (Melendugno, Lecce, IT)

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Many IT systems based on artificial intelligence (AI) as well as accurate relief techniques are essential tools in managing research and valorization projects of the cultural heritage. The more challenging the environmental and working conditions, the more crucial are technologies. The cave-sanctuary “Grotta Poesia Piccola”, located in the Roca Vecchia archaeological area in southern Apulia, is part of a karstic system nowadays flooded by the sea. The walls are almost completely covered by graphic and alphabetic evidence, very often engraved one over the other in varying sizes, they begin from the current sea level up to a height of 7 meters. The cave is an outstanding case study to test appropriate tools for the documentation and preservation due to the volume and uniqueness of the rock art and parietal inscriptions. The present work describes the first prototype of a potential AI software platform for the analysis and co-working of captured digital 3D data. The main goal is to update the AI platform with new and innovative tools in an attempt to allow scholars to acquire, decode, share and preserve the figures and parietal inscriptions engraved on these cave walls since prehistory until the Roman Age.

Keywords: cave-sanctuary, rock art, epigraphy, artificial intelligence, photogrammetry, 3D

Fig.1 - Virtual Reality interactive platform prototype. (Cetma-Virtual, Augmented Reality and Multimedia Department)
Since 2014, the Elkab Desert Survey Project (EDSP) has recorded a wealth of rock art and inscription sites in the Eastern Desert of Upper Egypt. During this period, multiple new technologies have become available, and we have continuously developed the use of digital equipment and software to improve and update our documentation. Through extensive field experience and experimentation on one hand, and the increasing need of non-invasive approaches on the other, we could standardize our workflow created to record ancient Egyptian petroglyphs within their topographic context. Computer graphic enable the EDSP to go from site discovery (e.g. el-Khawy) to publication within a single field season, fulfilling all research goals in an effective and accurate manner. Thanks to the new digital epigraphic method that we developed, it is now possible fully to replace the longstanding use of plastic sheets to trace on the rock surface. These results allow us to tackle another goal: presenting these unique sites to the public. The quality of the data that can be currently produced using 3D imaging, combined with systems able to create immersive virtual tours, is offers new exciting opportunities to bring inaccessible rock art locations to anyone in the world.

Keywords: Egypt, immersive archaeology, rock art, digital epigraphy, metadata
Changing faces: applying different recording systems to megalithic art

The last decades have seen a significant breakthrough with regards to the recording of rock art. From the usual rubbing/plastic sheets and day-light recording there has been a move to the systematic use of artificial light and lately assorted protocols involving photogrammetry. The latter has the double advantage of avoiding direct contact with the art and obtaining a clearer picture of the actual representations. In our contribution we deal with several decorated megaliths from Galicia (NW Spain) that were recorded years ago by rubbing on paper with or without the use of artificial light and are now revisited by using photogrammetry. We undertake an appraisal of the results offered by these different means of recording.

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Keywords: 3D modelling, megalithic art, traditional techniques, Galicia

Fig. 1 - Penelas, Rodeiro, Pontevedra, Spain. (photo Ramón Fábregas)
In the 1980s, at least in Europe, rock-art sites, in their own right, became part of the great family of museums. This led to a need for diverse measures in areas open to the public, in terms of infrastructure (roads and access routes, cover, fencing, etcetera) and improved accessibility (trails with moderate slopes, guardrails, facilitated routes, and so on), as well as educational resources (explanations, signage and so forth). On one hand, the measures greatly enhanced enjoyment and cultural recognition of the heritage, but on the other, quite changed the context of landscapes in which rock-art occurs, affecting the relationship between rock surfaces and encompassing environment, as wellimpinging on scientific research.

This session aims to open a debate on issues facing those (academics and managers) who work in these contexts, analyse problems that have emerged in recent years, examine different cases and prospective solutions—in essence, how to reconcile the dynamics of museum display with the maintenance of the environmental context of rock-art sites.

The issues to be addressed (supported by concrete examples) include the following: visitor sustainability (needs and demands required by museological display of a site) and mitigating the degradation of original environmental contexts, technologies and their applicability in rock-art sites, the original document and proposals for augmented reality and educational comparison.
Managing sustainable rock art sites

The ICOM Professional Code of Ethics is the reference text for the feasibility and objectives for museums all over the world (including minimum standards); areas with prehistoric rock art must also conform to these rules. The international law, as applied to outdoor museums in which rock art is located or rock art parks, has not countered the substantial modifications of the associated natural landscapes. In addition, there are also issues concerning the rock art sites still used by indigenous cultures (particularly in Australia), that cannot be impacted with certain touristic or access infrastructure. It is timely to reflect on these aspects as it is necessary to find solutions that, while respecting a museum’s objectives for rock art areas, as expressed in the nationals and international regulational (e.g.: ICOM and individual national legislation), can avoid the alteration of the associated natural landscape. I believe that new technologies engender solutions to the problems raised by these apparent contradictions. These technologies allow us to equip, thanks to the use of several APPs or QR codes, museum peripheral information installations (including 3D reconstructions) and the sites that, in my opinion, should appear as unaltered as possible. Sustainable educational and tourism information systems are required, that respect the site environment as well as local stakeholders.

Keywords: outdoor museums, natural landscapes, new technologies, access infrastructure, sustainable educational and tourism information systems
Since the end of the 70’s the visits to the cave of Altamira have been restricted due to the fragility inside the cave and the previous exploitation it had suffered. Since then, access to the public has been sporadic. But there was a great demand to see Altamira and different solutions were sought. Finally, a multidisciplinary plan for Altamira was developed. The most visible result of the plan was the new Museum of Altamira, opened in 2001, that offers a new way to experience Altamira. The Neocave, part of a permanent exhibition on the Paleolithic “The times of Altamira” devotes to contextualizing the art of Altamira, is a replica of the site museum, rock art reproductions, management plan, museum visitation.

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The visitation numbers resulting from the new Museum of Altamira are highly satisfactory. Receiving more than 250,000 visitors per year (280,000 in 2017) it has become a model of visitation for other fragile heritage sites.

Keywords: site museum, rock art reproductions, management plan, museum visitation.
Managing rock art as a living tradition. Two cases from Queensland

Viewing rock art sites through a western lens lends itself to management that museumises rock art sites rather than highlighting them as aspects of living culture. However, within the Australian context many rock art sites benefit from a level of continuity or connection to contemporary Indigenous communities. This aspect places additional consideration into the management strategies of sites compared to the majority of sites in Europe. In Australia, it is becoming increasingly apparent, that indigenous participation in the management, research and interpretation of sites has many benefits as well as challenges for all the stakeholders. Whilst there is agreement about the need to protect cultural identity and include the indigenous voice some aspects of the site management and legislation are not conducive to encouraging community participation. This being the case, new measures need to be developed to facilitate cultural use. This work critically investigates and proposes new directions for rock art sites through two examples from Queensland, Australia: A small neglected site, Chalawong, and a larger touristic destination, Carnarvon Gorge, to contrast the differing perceptions for stakeholders for a sustainable direction in conservation, tourism and cultural sustainability.

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Keywords: rock art management, conservation, Indigenous, Carnarvon Gorge, Chalawong

Fig.1 - Chalawong (Chullawong), Gatton, Queensland, Australia. (photo Marisa Giorgi)
Fig.2 - Art Gallery Site, Carnarvon Gorge, Queensland, Australia. (photo Marisa Giorgi)
Daraki-Chattan Cave (DC) in the quartzite buttresses of Indragarh hill in the Chambal basin, Madhya Pradesh in India is the world’s earliest Lower Palaeolithic rock art site. There are 12 more early petroglyph sites in the vicinity. In addition, there is a palaeochannel on the hill, Lower Paleolithic factory sites, painted rock shelters, the Bada Mahadev temple with a natural waterfall, all located in the same area. The Bhanpura region also has rock cut caves, temples, sculptures, forts, architectural heritage, religious sites, Gandhi Sagar game sanctuary and a vast lake and immeasurable natural wealth. The present paper endeavours to apply system dynamics as a modelling technique for the optimal utilization of the natural and cultural resources and suggests strategies for the holistic involvement of stakeholders towards sustainable development and promotion of the Daraki-Chattan Cave.

Keywords: sustainable rock art sites, rock art heritage, System Dynamics modelling, Daraki-Chattan Cave, India
The exceptional nature of the Dolmen de Soto (Trigueros, Huelva, Spain), researched and excavated at the beginning of the 20th century by important scholars such as Obermaier and the Leisner couple, not only lies in it being one of the largest megalithic monuments in Western Europe, nor in the relevance of its engravings, but in other aspects to be discussed in this current research. In addition, the diffusion of the associated research and conservation of the site have succeeded in positioning it as a referent in terms of dissemination activities, becoming a focus of attraction for specialists and the general public. The following report presents the different archaeological activities which have been carried out on the Dolmen de Soto, as well as the main strategies taken to achieve the current laudable success of the site. It is therefore, a possible model for sites with similar characteristics. In a similar manner, this paper tries to present an overall view of the conservation of several megalithic monuments in the area of Huelva (a region with more than 200 places of archaeological interest), the majority of them at a disadvantage in comparison to the archaeological site of Trigueros.
Since November 2016, the technical group of experts of PRAT-CARP Cultural Route has been working on a Handbook for the Certification of visitable Rock Art Sites belonging to the Council of Europe Cultural Route “Prehistoric Rock Art Trails”. This handbook defines the series of indicators that are applied to assess the quality of the rock art sites on this Route, as well as the experiences associated with them, in order to add these to the inventory of certified sites before the European Institute of Cultural Routes of the Council of Europe. The experience and expert knowledge of the managers of these rock art sites within the Council of Europe Cultural Route “Prehistoric Rock Art Trails” enables the International Association I.A. CARP to establish a set of standards and good practices with which the member rock art sites can be assessed, before they are awarded their official certification, this includes the quality of the services they offer and visitor satisfaction. This certification will assist in consolidating the cultural, educational and touristic aspects of the sites, motivate continual improvement and define a standard for new sites that join the Prehistoric Rock Art Trails European Cultural Route. The network currently covers sites in Norway, Ireland, France, Italy, Azerbaijan, Spain and Portugal.

Keywords: European Rock Art Heritage, Prehistoric Rock Art Trails, PRAT-CARP, Certification
The aim of this study is to assess the condition and preservation of prehistoric rock art in the Cork/Kerry region. This requires an understanding of how and where rock art is found, and current provision for its recording and legal protection. The impact of various natural and human agencies on the physical survival of rock art will be assessed, with reference to examples identified in fieldwork. Practical solutions to these problems will be discussed, drawing on best practice in rock art conservation from other parts of the world. The study will include an environmental case-study to examine the conservation of an individual rock panel, and to assess the contribution that new methods of photogrammetry can make to the recording and monitoring of these surfaces. Rock art conservation ultimately depends on awareness leading to an understanding and appreciation of this cultural heritage among landowners, forestry, other developers, and the general public. A number of educational initiatives have been undertaken to raise awareness of rock art in the landscape, and will explore various options for public/touristic presentation. The results aim to contribute to the development of a broad conservation strategy for rock art in Ireland, elements of which might be adopted by central and local government heritage agencies.
Managing ideas, emotions and experience around open-air rock carvings: visions from Rock Art Archaeological Park of Campo Lameiro (Pontevedra, NW Spain)

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Keywords: site management, cultural landscape, educational heritage, intelligent leisure, archaeological tourism

Rock Art Archaeological Park of Campo Lameiro (Pontevedra, NW Spain) is an example of the efficient and sustainable management of Galicia’s rock carvings. From its opening in 2011, the RAAP proposed a different, innovative approach that involved all the links of the value chain integral to the management of rock art: conservation, research and dissemination. Today RAAP is a singular museological space that combines the production of rigorous information and contents (factory of knowledge) in an attractive, educational and entertaining (intelligent leisure) format. As such, visiting the Park is an experience for the senses. The story that we offer to our visitors occurs in three different scenarios (permanent exhibition, archaeological area and a recreation of Bronze Age settlement), and tries to explain how the rock carvings were used in the process of social landscape construction. This was achieved through various approaches, such as guided visits, workshops, dramatizations and experimental archaeology.

Applying this approach, RAAP has become a unique museum that presents its contents in an evocative way, based on ideas, emotions and experience. As a result, these ancient figures carved on open-air rocks have been transformed into an attractive cultural product for archaeological tourism, whose benefits have spread within the territory and the local community.
The National Park of Rock Engravings (Naquane locality), which opened in 1955, was the first archaeological park not only in Valle Camonica but also in Italy. During the last century, several other parks were opened along the Valley that was inscribed for the rock art in the World Heritage List in 1979, first Italian UNESCO Site. In recent years, new archaeological sites and the MUPRE-National Prehistory Museum were added to the network of accessible rock-art areas so that the cultural attractions now available for schools and tourists are greater and no longer limited to rock art but also linked to the archaeological contexts of the Valley. Nowadays, apart from the standard maintenance of this heritage, new challenges have to be faced. This paper will present some of the solutions to the old and new challenges such as, landscape restoration and virtual tours (National Park, Naquane), new technologies for education (e.g. the touchscreen in MUPRE) and accessibility for all (e.g. the new path at Cemmo National Park which is now accessible to those with impaired mobility).
Pedestrian pathways and correlative explanatory discourse: the case study of Passos / Santa Comba Mountain (Portugal) post-glacial schematic paintings

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Keywords: rock painting heritage, explanatory discourses, Passos/Sta Comba Mountain, pathways, Portugal

The Passos/Sta Comba mountain in Mirandela (northeast Portugal) is the most extensive ensemble of post-glacial schematic paintings in Portugal. Although it was discovered in the late eighties, surveying and recording has been slow to progress, mainly due to peculiar conjunctural factors. In fact, it wasn’t until the discovery of the Palaeolithic art of the Côa Valley, and contrary to what happened in Spain, as both the academic community and the political institutions in Portugal had little priority for rock art heritage. Even so, this set of schematic painting has been scientifically published. Some attempts (formulated in projects and programs) related making the mountain accessible to a wider public have always been bogged down with issues related to “ways to enjoy and simultaneously preserve” the fragile rock painting heritage. Nevertheless, people (e.g. while Geocaching or trekking) continue to visit some of the rock shelters without any guidance and frequently complain about the absence of guided visits, access information, pathways, and explanatory panels. This study presents and invites for debate ways of opening up the painted rock shelters to the public and how to minimize the associated conservation risks, with the hope of formulating a successful management plan for this purpose.
Open since 1996 by the Department of Alpes-Maritimes, the Museum of Marvels (Musée des Merveilles) is closely linked to the Mount Bego valleys: Merveilles and Fontanalba. The Museum of Marvels drives ongoing research, conservation and facilitates knowledge dissemination. Every year, the museum welcomes between 25,000 and 30,000 visitors, providing them with a great mix of knowledge, experiences and emotions. Through multiple approaches, this paper aims to analyze the museum’s role in the management, protection and significance of the Mount Bégo rock engravings. Despite the remoteness of the archaeological sites (a few tens of kilometers and at a higher altitude) the Museum of Marvels remains a “site museum” (if not an “on-site” museum) and an essential actor in the knowledge of this important rock art heritage. This is achieved through the use of multiple and complementary platforms for dissemination such as, multimedia and interactive installations in the permanent exhibit, temporary exhibitions, cultural education targeting the general public and schools, scientific and knowledge-sharing publications, research by the Conservation and Research Centre, and much more. That is how knowledge becomes a significant element for management, conservation and site significance, even “from a distance”.

Keywords: museum, Mount Bego, rock art management, conservation, site significance
The Session focuses on the symbolic investigation in the frame of the prehistoric and ethnographic aspects of rock art. There will be contributions both on the universal subjects, defined as archetypes, paying attention to the widespread iconographic convergences, and on the individual cultures with derived diffusion phenomena.

In line with several similar circumstances, the approach will be interdisciplinary: based on the archaeological evidence, comparisons will be presented with historical-religious, ethnographic, psychoanalytic and, in general, anthropological and phenomenological perspective.
What was the experience like for the first humans to ever wield a sword? The Chanson de Guillaume recounts the story of Rainouart, a gigantic human being who, after breaking his wooden mace, marvels at his sword’s perfection.

In addition to archaeological evidence, swords’ exquisite features are detailed in Anglo-Saxon epic poetry and chansons de geste, telling of intertwined metal strips and serpentine designs. Thus snakes become symbols of swords’ venomous killing power. In Valcamonica (Italy), certain rock engravings portray men with swords, together with snakes. These warriors are escorted to the afterlife by wild waterfowl that act like psychopomps, sometimes even being depicted as the burial boat protomes themselves. Swords have even been found in swamp burial sites. In literature, Beowulf tells of Scyld’s magnificent burial boat upon which his swords are to pass over into the realms of the dead with him. Water and swords are the main features of the mortal duel between Grendel’s mother and Beowulf. In a battle beneath the surface of a lake, the hero grasps a supernatural sword and does the deed. This otherworldly, underwater sword that belongs to a predestined hero recalls King Arthur’s Excalibur protected by the Lady of the Lake.
From landscape to mindscape: Valcamonica rock art as a dynamic entity of cultural expression

Rock art is a form of human-driven landscape change, with multiple levels of impact; however, the natural context (from the macro to the micro scale) has always played a fundamental role on human behavioural patterns, as seen from archaeological investigations.

This contribution focuses on the interaction between rock art in Valcamonica and the surrounding landscape in a diachronic perspective, by investigating the iconographic syntax in relation to the morphology of the rock surfaces and considering the role of inspiration and imitation in the figurative choices of human groups and individuals from proto-historic times to the present day.

Keywords: landscape, mindscape, rock morphology, imitation, inspiration

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Fig. 1 - Campanine r. 50 B, riserva naturale incisioni rupestri di Ceto, Cimbergo e Paspardo. (photo Dip. VC CCSP)
Fig. 2 - Exemplification of the relationship between structural elements and rock engravings in a diachronic perspective.
The compulsion to repeat in prehistoric cults of the dead

Burial consists of putting a corpse in a pit dug into the ground, which is the most widespread practice and one of the oldest. During the Upper Palaeolithic, there is abundant documentation of the cult of the dead, with tombs dug into the ground where the corpse, generally supine, was accompanied by funerary trappings. Secondary burial (inhumation preceded by a first deposition or exposure, until the body decayed) was common during the Neolithic, but certainly preceded by shamanic practices of a much earlier age, presumably of Neanderthal origin. Moreover, many traces of exhumation and subsequent manipulation of mortal remains have been found, above all, of skulls and other bones.

The author assumes that these repeated series of shamanic or religious practices are connected with repetition processes of compulsion indispensable for the act of mourning, as is also evidenced by the associated repetitive symbology in some rock art. This behaviour would have its roots in animal phylogeny, where, in many species (e.g., elephants) the group would return after a few days to “revisit” the dead after having first covered the body with grass and branches.

Keywords: secondary burial, cult of the dead, shamanic practices

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Composite creatures of the Upper Palaeolithic: an animated metamorphosis of the imaginary?

In the Upper Palaeolithic, the representation of movement has been a recurrent kinetic strategy. Recent studies in the French area have highlighted a large number of zoomorphic figures, animated through specific graphic conventions, that not only tend to reflect specific attitudes and behavioural postures which can be observed on an ethological level, but also extend their influence to the sequential output of “in action” processes. These analyses are anchored to a “pre-iconographic” approach that—by identifying the narrative pattern of a non-mythological character in the parietal apparatus, but of an ethological one instead—is significantly contributing to the development of prehistoric research. To overstep this level is certainly a risk. If the ethnographic comparative method can be a valid interpretative tool, it is extremely fragile if compared to the stronger ethological analysis. Taking the necessary precautions, this paper intends to suggest an “iconographic-iconological” path. Is it possible to extend the hypothesis of “simultaneous animation” to some therianthropic figures? Numerous hypotheses have been made about the meaning of “hybrid” creatures. In very rare cases, it may concern the graphic representation of the different phases of a transformational process. Could it be a strategy of the imaginary that “life forms” of decorated caves identify the origin of the eternal regeneration of life?

Keywords: prehistory, prehistoric art, prehistoric archaeology

Fig.1 - “The panel of women - bison”, Magdalenian, Pech-Merle Cave, Lot, France. (photo Gabriella Brusa-Zappellini)
Fig.2 - Hanging Rock of the Venus, Aurignacian, Chauvet-Pont-d’Arc Cave, Ardèche, France. (graphical representation Gabriella Brusa-Zappellini)

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Har Karkom has proved to be dense with proofs of presence over time, in contrast with its current desert condition. Its Arab denomination means “Mount of celebrations”, which accounts for its role in the religious beliefs of prehistory. During late Chalcolithic and Early Bronze age (BAC), the human activity in the area was favoured by a much more humid climate than at present, which enabled livelihood activities such as hunting, livestock breeding, and cultivation.

Worship sites, funerary tumuli, altars and geoglyphs on the plateau date to the BAC period, as do dwelling sites in the surrounding valleys and a great quantity of over 40,000 rock engravings spread out over the northern half of the plateau. The author and his team investigated paths climbing to the plateau, so adding new elements to an extensive corpus of data. Cult structures and rock art, mostly belonging to the BAC period, characterise three paths that ascend the mountain: two to the northwest and northeast, the other to the southeast. These “holy paths” were likely routes of pilgrimage to the mountain top and further support the holiness of the mountain during the period under consideration.

**Keywords:** Chalcolithic, Bronze Age, holy paths, rock art, pilgrimage

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Fig.1 - Har Karkom (Negev). (photo S. Castelletti)  
Fig.2 - Har Karkom (Negev). (photo S. Castelletti)
Cultural context and significance of Eastern Polynesia and Easter Island’s rock art

Rock art (pictographs and petroglyphs) are amongst one of the most numerous archaeological features recorded throughout the archaeological landscape of countless Polynesian islands. They are the residue, often extremely fragmentary, of human activity. In turn, as a cultural object, they are the material expression of a concurrent series of alternative actions, and these choices are the reflection of patterned behavior. The purpose of this study is thus the reflection of activity that we suppose recoverable and intelligible. We discuss the iconographic analysis (Leroi-Gourhan, 1975, Echo, 1978, 1985) of a sample of rock art, in its archaeological context, critical in its structural interpretation, which offers significant correlations with patterns of relevance in the reconstruction of the sociopolitical and religious evolution of Polynesian Pre-European culture. We examine a subject of considerable discussion in contemporary archeology: Is the ‘recovery of the mind’ or reconstruction of past cognitive patterns - an attainable archaeological goal? We will use the rich ethnographic tradition of phylogenetically related cultures in Polynesia to develop interpretations of the meaning of Polynesian rock art.

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Keywords: Eastern Polynesia, Rapa Nui, petroglyphs, archeology, iconography, cognition, cultural change
Typologies of weapons, tools, cattle yokes and jewellery within rock art are well known cultural indicators used by archaeologists, palaeontologists, and other scholars. Contextually, the physical characteristics of the cattle represented convey valuable information to palaeozoologists. Nowadays, these can be interpreted without distortions as priceless examples of records produced by non-writing societies. Little attention has been paid to potential rhetorical figures within Saharan rock art. Usually called METAPHORS or ALLEGORIES, they are present even in our daily lives and profoundly influence our conversations as well as historical predictions that have come about. The same evaluations apply to rhetorical figures in contemporary art and non-contemporary paintings. The hypothesis putting forward in this paper is that some Saharan rock art examples can be read and interpreted by means of rhetorical analysis, potentially pointing to the values and convictions within human groups. Such values and convictions directly and accurately inform the observer with the correct rhetorical interpretation key. Some of the present societies in the region encompassing today’s Sahara may have preserved parts of the antique rhetoric of the human dwellers.

Keywords: rhetorical figures, iconic metaphors
The author studied the rock engravings of Mount Ughtasar in Armenia during a fieldtrip to the site in 2011. A joint Armenian-British expedition is presently investigating Mount Ughtasar. The aim of this paper is to compare the mythological scenes represented in the rock art of Mount Ughtasar with those of Har Karkom, a holy mountain of the Bronze Age in the southern Negev of Israel. The most frequent animal figures represented at Ughtasar are ibexes, deer, leopards and snakes. Scenes mostly include ibexes hunted by archers assisted by dogs; other scenes represent anthropomorphic figures with swords fending off attacks by leopards. The name Ughtasar means “mount of pilgrimages”, which implies the site has been visited in ancient times for cult purposes. Thus, the scenes in Ughtasar rock art are most likely related to the description of myths, as were most of the scenes engraved at Har Karkom during the Bronze Age. A further analysis is directed to the stylistic comparison of deer and leopard figures.
It has been an axiom in rock art studies that all human-made marks on rock are symbolic. Symbolicity (the capacity to symbolize) has been thought to be clear evidence of cognitive or behavioural modernity (the possession of language, art, and religion). This assumption seemed obvious when applied to Upper Palaeolithic representations of animals or humans, and when earlier markings—all non-representational—were discovered in South Africa (from 65 to 100 kya), the symbol category was broadened. After European Neanderthal sites (39 to 47 kya) and especially Homo erectus sites in Europe (375 kya) and Java (430-540 kya) were found, the automatic attribution of symbolicity or evidence for abstract thinking became more difficult to assign and maintain. It is time to re-examine the once self-evident meanings and relationships of “symbol”, “art”, and “modern cognition” in rock art studies. Rather than being an all-or-none capacity, I suggest that there is a “spectrum of symbol”, and further propose that an emphasis on cognition (as a sign of modernity) overlooks other brain capacities that have been and still are important to the human mind and its penchant for making marks.

Keywords: symbolicity, cognitive modernity, abstract marks, geometric marks, mark-making
Estilo de pisadas (footprint style) refers to the interpretation or assimilation of a repertory of motifs primarily composed of different animal tracks. Osvaldo Menghin coined the term when he classified the rock art of Patagonia (Argentina) in 1957. Previously, various historiography sources refer to the interpretation of this rock art by indigenous people, as well as references to symbolic resignifications. Rock engravings identified in Paraguay have a preponderant iconography of animal and human footprints, vulvas and abstract signs, which forms part of the so-called footprint style also found in Argentina, Brazil and Bolivia. Some rock shelters are guarded by the Paî Tavýterâ Guarani people that associate this cultural heritage with a transcendent symbolic discourse, thus re-signifying this rock art in a different culture from those who created it.

Keywords: rock art, interpretation, resignification, footprint style, Paraguay

Fig. 1. Paî Tavýterâ tekoaruvicha at the Itaguy Guasu shelter. (photo Museum of Altamira)
Recurrent images of vulva-like figures in rock art: Carnarvon Gorge, Australia and the Americas

The existence of vulva-like depictions in Europe, the Americas, Melanesia, the Pacific Islands and Oceania are indicative of an archetypal use of a motif. This does not suggest an equal ontological view or socio-cultural role of the symbol. The symbol itself, in being representational of a vulva, may point towards an associated fertility use. The motifs’ temporal and physical distribution in many countries around the world indicates its socio-ritualistic importance with at least some shared elements of creation and use. This paper focuses on the representations of vulva-like figures from two sites in Carnarvon Gorge, Queensland, Australia, as a basis for contrast and comparison. The quantitative and relational aspects of the vulva-like engraved images found at the Art Gallery and Cathedral Cave rock art sites within the gorge offer new insights into the vulva-like figure’s use in the area and overseas. Given the area benefits from contemporary Indigenous connections to its sites some elements of interpretation can be obtained that feed into the site’s use and importance, both in the past and now.

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Keywords: petroglyph, engraving, Carnarvon Gorge, vulva-like, fertility

Fig.1 - Art Gallery site, Carnarvon Gorge, Australia (photo Marisa Giorgi)
Fig.2 - American vulva-like figures, Mono County, California (photo courtesy of Courtney Smith)
The philosopher’s eye and the mind in the cave

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Keywords: ancient mind, cave art, cognitive archaeology, phenomenology, symbolic expression

The art of the Upper Palaeolithic caves is a priceless information source because the background where the images were painted and carved has been left on the rock walls; however, in our semiotic investigations we tend to forget that we are dealing with artefacts made by cultures that are completely different, while we are fatally driven to apply our categories and our meaning structures—space, time, logic—to the symbolic expressions of this astonishing figurative production. Thus, in the effort of comparison and interpretation of the images set down on the walls of Palaeolithic caves, we need to perform a philosophical preparatory procedure, to bracket our common notions of a perspective space, an irreversible historical time and logic of formal identity. Equally, we have to leave the idea that a prehistoric consciousness—the mind in the cave—should be enquired by applying the paradigm of our mind and the parameters of our psychoanalysis. Therefore, the aim of this paper is to show how the suspension of our ontological categories and our models of thought performed by phenomenological hermeneutics could help us to mould new conceptual tools to employ in the analysis of prehistoric figurative heritage.
Assessing behavioural response to zoomorphic imagery: the socio-ecology of cognitive biases

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The use of figurative imagery as a communication medium on both portable and non-portable surfaces is observed cross-culturally and through time. Zoomorphic images are but one of a vast array of morphological distinct depictions that can be used, both in isolation and in complexly configured modes of communication, to exploit the sensory responses of viewers. While contemporary observations of zoomorphic petroglyphs and pictographs elicit varied interpretations and assignments of meaning relative to broader re-constructions of past socio-cultural systems, it is often assumed that the images reflected the creator’s intimate knowledge of behaviour and habitat of the subject. Communicating with creative imagery the behavioural characteristics of a species is, in contemporary and recent historic times, made often in the absence of interaction or proximity with the subject while meaning and significance of the imagery is supported within a socio-cultural history and setting. This paper explores varied social conditions, ranging from intra-and inter-group cooperation to competition, within which images depicted of particular species communicate information to targeted observers. I assess the extent to which the use of zoomorphic imagery, in settings prehistoric through the contemporary socio-culturally integrated milieu, is intentionally employed in an attempt to influence or manipulate the behaviour of others.

Keywords: behavioural response, zoomorphic imagery, socio-ecology, cognitive biases

Fig.1 - Registered trademark - D.A. Davidson & Co
Fig.2 - Dinosaur National Monument, Utah. (photo R. Hartley)
This paper aims to provide an interpretative key on a historical-religious basis of the symbol of the snake in the European collective imagination. This creature, by its ambiguous nature, has always given rise to controversial feelings; striking fear and a sense of danger, but at the same time, curiosity and fascination with its ambivalence, as well as, the idea of health, a capacity for renewal and strength. Christian culture has always expressed a negative image of the reptile, far different from that of the oldest traditions. Nevertheless, remnants of ancient cults can be found in festivals, such as, that of San Domenico of Cocullo in Abruzzo (analogous to Nag Panchami in India) and therefore, still exert their influence. The snake is, in these rituals, a positive and apotropaic emblem. In ancient cultures such as the Egyptian, Middle Eastern and Greco-Roman, the serpent shares common symbolic values, which are both negative and predominantly positive. Also, within European Rock Art, in particular the Camuno-Tellina, Atlantic and Scandinavian, it also seems to denote this double symbolism that characterizes the millennial history of this enigmatic “being”.

Keywords: snake, symbol, Cocullo, Nag Panchami, apotropaic, Valcamonica, Valtellina

Fig.1 - Naquane R.35, Capo di Ponte (Valcamonica BS). (photo U. Sansoni)

Fig.2 - Cocullo (AQ), St. Domenico and the “serpari”. (www.6aprile.it)
When art speaks to us of worlds- other and moves in the other-worlds. Metamorphosis and figures in motion. Between Grotta dei Cervi (Italy) to Chauvet Cave (France) and more

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The art of Grotta dei Cervi in Porto Badisco is an essence of mental journeys, myth genesis and holiness. It narrates of hypersensory experiences that take far from daily real life and lead to a dimension “other” where it is possible not only to relive the myth, but also to generate it. This is what artists painted on the swaying walls of Grotta dei Cervi six thousand years ago. They painted what they experienced in their brain and body, and above all in their spirit. This resulted in a strange art, abstract and sub-geometrical. Its semiotics contains graphic procedures which at first glance seem unintelligible, as this art is so rich in metamorphosis and figures in motion. The author sees the same metamorphic, kinetic and symbolic processes that can be found in other geographical and chronological contexts, from prehistory to proto-history. This paper reports some examples.

Keywords: Deer Cave, Badisco, Chauvet, hypersensory, spirit, kinetic art, metamorphosis, myth

Fig.1 - Grotta dei Cervi (Deer Cave), Porto Badisco, Foggia, Italy. (in P. Graziosi, 1973)
Fig.2 - Cala dei Genovesi, Levanzo, Italy. (in S. Tusa, 2004)
This paper presents lines of research for aspects that seem particularly relevant to Ataegina, a peninsular deity. This divinity appears, in many respects, as an exceptional case of the indigenous Iberian religion: namely, in the variants of her nomenclature, geographical extension and iconography. This contribution also considers the case of her cult in Merida, related to Proserpina. This cult functioned as a private worship and was connected with the Mérida elites and their appropriation of Lucus Feroniae. We also glimpse into the feminine Iberian imagery of the deity, including rock art representations, until the Roman times.

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Keywords: peninsular divinity, innominate divinity, Ataegina
The ibex image and ibex hunting were connected to the moon cult spread all over the Near East during Bronze Age. Dance scenes are not as numerous as hunting scenes; nonetheless, they may be interpreted as expressions of the same religious ideas and magic rituals. A very dynamic scene from Har Harash (Figure 1) includes five human figures dancing around an ibex while a sixth one is seated and plays the drum. Another human figure under the ibex image is a later addition. Comparison is made with dancing scenes in honour of the ibex in Kurdistan rock art, and with magic rituals still in use in the early 20th Century AD in South Arabia.

A scene from Har Karkom (Figure 2) presents two anthropomorphic figures dancing with a long object in their hands. To the right of the dancers, a stick followed by dots and a bull figure. In a later period, other ideograms were placed around the Bronze Age scene.

Both the ibex and the bull likely conceal the moon god, and moon worshipping in ancient times was associated with life and fertility. The scenes may be interpreted as rain dances, magic rituals to propitiate rain.

Keywords: Negev, moon cult, rain dance, ibex, bull

Fig. 1 - Har Harash (Negev): scene of dance around the ibex. (courtesy of E. Anati)
Fig. 2 - Har Karkom (Negev): scene of dance. (drawing F. MAILLAND)
There are rock art sites in Brazil with scenes of anthropomorphs surrounding a shape resembling a tree (arboriform); evidently, the scenes depict some kind of rite. The sites are linked to a cultural tradition in north east Brazil called Tradição Nordeste that dates to 12 000 B.P. There are other sites without anthropomorphs, only arboriforms surrounded by unrecognisable images. Both cases are thought provoking and reflect the symbolic depth of these tree-like depictions and how they could relate to material or spiritual matters. Nowadays, indigenous people, from the Amazon to the arid North-east, use powerful plants in rituals. In the north, the well-known Ayuascha plant is used in shamanist rituals and in the north east countryside, the Jurema plant is used in a ritual called the Torém dance where the participants dance in a circle singing ritual songs to invoke “Jurema” strength. Thus, ethnographic information provided by indigenous people in Brazil throws light on prehistoric arboriform imagery.

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Keywords: rock art, tree worship, indigenous ethnography, prehistory, Brazil
With over 700 sites Māori have one the largest bodies of rock art in Polynesia. New Zealand was first settled from central East Polynesia about 700 years ago. Given this shallow archaeological time-depth together with surviving Māori traditional knowledge systems, histories and language, New Zealand could provide a good case study for the archaeological study of past beliefs through rock art research. An examination of the archaeological context of rock art at two of New Zealand’s most notable rock art areas involved re-evaluation of imagery and test excavations at rock shelters, and reviews of the surrounding archaeological, historical and land use histories. An improved understanding of the formational processes behind the surviving archaeological record allowed assessment of the contexts of rock art and the extent to which its spatial arrangement can demonstrate how past belief may have contributed to that formation. In a few cases ancestral representations can be suggested and a regard for tapu (sacredness) demonstrated. More generally, however, preservation issues limited archaeological demonstration of such factors. This identifies the current logistical constraints in Māori rock art research, how some of those may be overcome, and the kind of window into past thinking that it might offer.

Key words: Māori, archaeological context, New Zealand, belief of place
This work examines a series of cave paintings found in hundreds of rock shelters in the Sierra de San Francisco in the central part of the Peninsula of Baja California, Mexico. These belong to the Great Mural tradition that mainly consists of human and animal figures painted in red, black, white and yellow. Analysis focused on those of Cueva del Ratón. A well-founded understanding of the archaeology of the peninsula depends on the study of its cave art, hence our interest in the links that exist between the ideology and the symbolic culture of the groups of hunter-gatherers of this region and specifically the role played by cave art as a cultural material. The semiotic interpretation of these manifestations will allow us to establish that the artistic creation is a system in which there is a relationship between those who made the paintings (the artists) and society. Morphological compositions are described from the images, the role that they represent in the pictorial group by their position, location and distribution in the panels and the importance of the pictorial techniques used in order to try to explain them.

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Keywords: rock art, rock shelters, Peninsula of Baja California, ideology, semiotics

Fig. 1 - Cueva del Ratón, Baja California sur, Mexico. (photo Valerie Magar)
Fig. 2 - Cueva del Ratón, Baja California sur, Mexico. (photo Valerie Magar)
Medieval graffiti on Portuguese churches and castles

Both the inner and outer walls of medieval churches and other buildings, such as castles and towers, were often used to convey rather encrypted messages that were added to the more straightforward ones, like those contained in dedication or devotional inscriptions or epigraphs.

These elements of ‘rock art’ were often related to the cult itself, like the crosses that spanned along the perimeter of the buildings, marking liturgical paths (Fig. 1, church of the Saviour of Bravães), or engraved near the entrances, to somehow ‘protect’ — in an apotropaic sense — the ‘passage’ (Fig. 2, castle of Longroiva); however, these were not the only examples found engraved into the depth of the stone ashlars that formed the structure of most medieval religious and fortified buildings. Some of them, as we will try to demonstrate, had a more cryptic intention, dealing with labyrinth-like and never-ending patterns such as the labyrinth itself or the Solomon’s’ knots that seem related to a sense of eternity associated with the Christian faith and cult. Others had a plainer meaning and purpose, perhaps not free of spiritual connotation, like the geometric games such as the Nine Men’s Morris, playing for the triumph but also, like in the flight from the labyrinth, for salvation.

Keywords: rock art, crosses, engravings, labyrinth, patterns, protection
The spiral, a very well visible element in nature, is part of a small group of abstract symbols found universally, evinced in every great cultural system from the Neolithic period to today.

The paper focuses on the occurrence in Africa with particular attention to the macro Saharan region and Gulf of Guinea, where they are more cogently expressed. The Saharan prehistoric rock art shows, at the moment, an expressive record with 344 images, most attributed to the Neolithic period pastoral phase, with examples of horse and camel periods. More than 200 examples are in wadi Djerat (Illizi, Algeria), the specific area dedicated to that symbol, followed by other areas in Algeria, Niger, Libya, Chad, Mali, Morocco and Western Sahara, so forming a strong symbolic context. Here the spiral, rarely alone, is normally in syntactic dialogue with discs, concentric circles and semicircles, snake-form lines and quadrangular shapes, and in frequent association with bovines and wild animals, and at times, also anthropomorphs. They are prevalently found around and within feminine figures, possibly indicating a relation with maternity, pregnancy and procreation, as general meaning of the cyclic development of life.

Keywords: spiral, Sahara, Africa, symbol, rock art, tradition

Fig. 1 - Tin Teriert, Northern Tassili, Algeria. (photo Oriana dal Bosco)
Fig. 2 - Fulani Village, Ivory Coast. (photo Umberto Sansoni)
The consistency with which zoomorphic figures appear on central Alpine statuary is quite unique to Europe. Deer, ibex, bucks, boar and bovids (in rare instances canines, and one example of a bird) dot a great number of stelae, engraved stones in Valcamonica and Valtellina in Italy, specifically those which bear prevalently or wholly masculine symbolism. Traditionally, such figures have been considered as overlain, a redundant integration into the whole structure composed of the sun, weapons (axes, halberds and daggers), ploughs, and fringed rectangles.

Our present work partially negates this functionalist hypothesis, in particular when considering the symbolic pigeonholing of some compositions with deer, ibex and boar. Our research starts by analysing the arrangement of zoomorphic figure patterns on the engraved side of the stones, their alignment, engraving phases, and their spatial association with other figures. We then focus on the specific iconographic value within its respective context, comparing it to rock art found at other European sites and in Central Asia. Finally, we turn our attention to a general framework for symbolic value attributed to various animals by ancient Indo-European cultures. From this, an extraordinary network of possible symbolic significance emerges both at the local level and from a wider cultural perspective.

Keywords: Chalcolithic, zoomorphic figures, symbol, deer, boar, ibex
Symbol and stone: the significance of megalithic art for Neolithic coastal societies in Europe

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This paper presents selected outcomes of a comparative study of the megalithic art in Europe in order to analyse and explain how inter-cultural exchange between prehistoric societies (around 4500–2500 cal. BC) shaped megalithic art, and to theorize and interpret the significance and function of these images. Most of the some 35,000 existing European megaliths, which include megalithic tombs, standing stones, stone circles, alignments, and megalithic buildings or temples, were constructed during the Neolithic and the Copper Ages and are located in coastal areas. Paintings and engravings are found on several hundreds of these megaliths, especially those from Brittany, Andalusia, Portugal, Galicia, Catalonia, Sardinia, the Maltese archipelago, Ireland and Scotland; some combine to form complex symbolic systems. Strikingly, identical motifs and symbol groups can be found separated by long distances. The transfer of symbol packages between the regions indicates cultural interactions in all its variety from travels to population migrations, the transmission of a similar cosmological worldview and a shared symbolic identity. Beside the far sub-regional view, it is necessary to investigate the megalithic art in a stylistic and semiotic approach in order to discuss the significance of megalithic art for the local communities and their memory and ritual culture.

Keywords: symbol, megalithic art, Neolithic, coastal societies, Europe

Fig.1 - Dolmen de Soto, Andalusia, Spain. (photo Bettina Schulz Paulsson)
Fig.2. - Mane Lud, Brittany, France. (photo Bettina Schulz Paulsson)
The tablet of Shamash and the principles of natural philosophy

The article reveals cognitive content of the ancient Babylonian tablet, depicting Shamash in novel frameworks. It portrays the high level of cognition of our ancestors, their artistic and visual thinking, profound understanding of the principles of Natural Philosophy and Metaphysics. The tablet of Shamash shows the paradigms of knowledge, intercultural communication of old civilizations, remaining faithful to the unified teaching. The authors have identified that the fragments from the ornamental motif of Noah’s Krater are better preserved on the pieces of Hayk’s Krater. Resettling in the land of Torgom, Hayk builds the dwelling of God (temple of knowledge). He fights the tyrant Bel on this very land and defeats him; later he buries his kinsman with honour at the crater of a volcanic mountain in the vicinity of Lake Van, emphasizing the renaissance of the teaching of his father, namely, the values and traditions of Noah. Analysis of the main motif of the depictions on the Tablet of Shamash (found in Babylon), shows the Tablet of Shamash preserved the sacred values of Hayk’s temple of knowledge.

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Keywords: Tablet of Shamash, visual motif, ancient artefact, principles of Natural Philosophy and Metaphysics

Fig.1 - Tablet of Shamash, Neo-Babylonian period, 626-539 BC. (image AN433185001 from the British Museum free image service)
The motif of the depiction of Cadmus fighting the dragon on the Greek krater has ancient Armenian roots

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Keywords: main motif, mythology, the principles of Natural Philosophy and Metaphysics, the tree of knowledge of good and evil, the tree of life

The antique Greek vase (350–340 BC), excavated in Sant’Agata de’Goti (Paestum) depicts Cadmus fighting the dragon. Through the comprehensive analysis of the plot, depicted on the “krater”, we can detect new content, identify and reveal common features and correlations between the key heroes (Vahagn the Dragonslayer and Cadmus, the grandson of legendary Hayk) of Ancient Greek and Old Armenian mythologies.

The author implements a novel approach to interpret the given data. This approach implies not only its description in the view of the mentioned disciplines, but also reveals its correlation and interconnection with the allied subjects within the universal scientific paradigm of systematic approach. This in turn links them to themes found on other mediums such as rock art. The compositional structure, style and main motifs of the depiction are perceived not as an invariable fact, but as a transitive relation, accompanied by several transformations in the expression plane (sometimes in the content plane) and or in the stylized marking of the cognitive modality of the depiction under the study.
Contrary to significant advances in archaeological approaches, little research has been done on contemporary uses of rock art: How does rock art influence and shape different spheres of contemporary societies? Often ‘arranged’ into protected sites open for tourists, and accessible through books and the internet, rock art is now easily reached by people today. Rock art is increasingly a popular topic of visual culture – it is used politically, socially, ideologically, religiously and artistically.

In this session, we look for examples of such reuses of rock art from different places and cultures all over the world. Questions we ask include: What inspires contemporary artists (and not only artists) to use rock art? Is it simplicity of form?, Assumed simplicity of meaning?, Or assumed complexity of ideas hidden in rock art? To what extent are contemporary artists inspired by or influenced by scientific interpretations of rock art? How does the reuse of rock art differ in the Western world as opposed to within indigenous societies? How and why is rock art used to promote concepts of country, state, region, and culture? How is rock art presented in the media? Can rock art be a new source of cultural or ethnic identity? To what extent does professional archaeological and anthropological research influence contemporary uses of rock art?
When, in the early 1990s, contemporary San art joined the international art worlds, the new graphic compositions were immediately linked to the rock art images found all over southern Africa and usually attributed to ‘San artists’. Since then, several researchers have shown that there is no connection between the two practices. However, despite the absence of any perceptible relation of continuity, it appears that rock art imagery has come to assume over time heterogeneous identities, functions, and uses for the actors involved in contemporary San art. Thus, focusing on the Kuru Art Project founded in 1990 in D’kar (Ghanzi District, Botswana), this presentation aims to explore the contexts in which connections have been established between pre-existing rock art and the contemporary paintings and prints. How rock art has been and still is being invested in and reused? By whom? For which purposes?

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Keywords: contemporary San Art, rock art, cultural translation, southern Africa, Kuru Art Project
In Hungary, where (surely) prehistoric parietal art has yet to be discovered, it is interesting to investigate how people are using images of well-known French cave art, images of Scandinavian rock engravings or those of petroglyphs from Valcamonica. The Hungarian examples – e.g. commercial goods and services raffigurating prehistoric images – will be shown in a wider European context and the method of analyzing is planned to be useful for further research with other type of archaeological objects. A well visible example of the re-use of parietal art can be found in the commercial centre, called “Mammut I-II” in Budapest that was built in 1998/2001. Its name is derived from the acronym of “Major Associated Mall Mart and Universal Town” and the visual concept basically is planned on upon characters of Pleistocene fauna, especially the mammoth.

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Keywords: re-uses of parietal prehistoric art, Hungary
“Manistones” as Tibetan Buddhist Rock Art, Living Tradition and Heritage

Tibetan Buddhist rock-art has been the focus of several archaeological studies conducted in the Himalayas. In these works, less attention has been paid to the study of mani-inscriptions, whose name originates from the six-syllables Avalokitesvara Mantra “Ohm Mani Padme Hum”, and to the related carving practice. The “mani” are votive tablets and stones engraved with Tibetan Buddhist scriptures and piled-up together on mani-structures widespread all over the Tibetan plateau. This paper discusses the case-study of the Gyanak Mani (Yushu, Qinghai Province – PRC), a mani-pile made of ten of thousands mani-stones situated in a small village of Eastern Tibet and known as the Greatest Mani-wall in the World (2005 Shanghai). Here, the engraving of mani-stones has been established in 1715 by an errant yogi and is still practiced by the locals. Following a destructive earthquake in 2010, the Gyanak Mani was listed by the Chinese State within the ten top-priority projects for the post-disaster reconstruction of the entire Yushu Eco-tourist area. Therefore, both this particular site and the living tradition of mani-stones engraving are now undergoing a process of heritagization negotiated among several stakeholders at local, national and global level.

Keywords: mani-stones engraving, heritage, Tibetan Buddhism, revitalization, disaster

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This article describes a way of practicing choreography based on archeological thinking. The presentation opens up some views on the re-creation of rock art in contemporary expression and opens up a new perspective on primordial gesture by showing examples of stage performances. Is the fact of being deeply touched by the images of rock art sufficient to liberate and reinvent the ancestor’s traces? Can we find a way back to a fundamental theory of feeling in the search for the integrity of the embodied experience? This interface shows how the performance of gestures, which belongs to the systematic field of choreographic studies, can be inspired by rock paintings. The archaeological site Serra da Capivara in Brazil intensifies the discussion. It helps to consider the source of primordial art as an aesthetic phenomenon, which can relate to the search of identity, belonging and reorientation of culture. The memory, as an investigation of movements and gestures anticipated by archaeological sensory thinking, shows a confrontation and inspires to re-work on the theme of repetition. In fact, the re-danced gestures are conceived as a path to reactivate memory; it shows how to transform the ontological strength into the visual expression of alterity.

Keywords: gesture, sensing, choreography, visual, memory, rock art, Serra da Capivara
The link between prehistoric rock art and 20th century art is undeniable and it’s especially strong with those iconic sites such as the cave of Altamira. The discovery of Paleolithic rock art in the cave of Altamira at the end of the 19th century and the succession of discoveries both in France and northern Spain during the first decades of the 20th century, allowed for a vision of Paleolithic rock art to be drawn in a few short years that is very similar to what it is known today. This historical moment practically coincided in time with the emergence of avant-garde Isms. This avant-garde art movement was looking for a break with the previous art movements and with academic art, and the prehistoric cave paintings surprised them with its innovative technical and formal solutions, despite its antiquity. Suddenly artists found themselves facing a new plastic reality that surprised them by its modernity which, in general, they admired and was inspiring for them.
Creative Interventions: Rock art and contemporary art practice in Australia

The majority of rock art research undertaken within Australia, and internationally, has been carried out by scholars operating within the disciplinary frameworks of archaeology and anthropology. Despite their significant contributions, this paper proposes that art history and art practice-based approaches may provide new insights and interventions in rock art method and discourse. Moreover, they demonstrate how rock art can be a site of active engagement with the past in the present. Focusing on the work of modern and contemporary Australian artists who have found inspiration in petroglyphs and paintings I discuss the potentiality of rock art as sites of ongoing creative production and cross-cultural exchange.

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Keywords: contemporary art, creativity, photography, Australia, cross-cultural exchange
Western perceptions and utilisation of rock art imagery is largely limited to promotional media, tourism, touristic and popular ‘culture’ products and academic publications. However, a different narrative is gleaned through an Indigenous lens, in this case ‘lenses’ of Bidjara, Ghungalu and Garingbal peoples (from the central Queensland highlands of Australia). Interacting and sharing with Aboriginal artists whose practices extend historical rock art cannons allows us to gain further insights into contemporary perceptions and the continuum of the cultural base the art stems from. Dale Harding offers one such cultural continuum with his contemporary artistic directions forming and strengthening bonds for individuals, community and for a larger audience. He achieves this through a visual art practice that extends cultural inheritances and visual languages heavily influenced by historical rock art traditions and their associated meanings, their stories and through ties to place. This paper explores the inspiration behind this contemporary art practice that has its roots in the Indigenous rock art traditions. We hope this paper opens critical discussions on how changing perceptions of rock art can recognise the continuation and contemporaneous relevance of knowledge that prioritises education and the strengthening of cultural bonds to land through the medium of rock art.
One of the most common representations of rock art in the Australian media is when rock art sites are reported to have been vandalised or defaced by graffiti. The other most common representation of rock art in the Australian press is when a site is re-discovered, and new dates help extend the long-term occupation of Australia by Indigenous Australians. Although rich in rock art sites, the cultural identity of rock art in Australia has not been well established, except in a few cases where the label of World Heritage Site has helped a site, Kakadu for example, to create a positive representation of rock art in the media and the public sphere. Furthermore, Australian rock art plays a minimal role in the mainstream visual culture of Australia. This paper will provide an overview of different rock art sites that have been negatively and positively represented in the media, to discuss how and why they are represented in such ways. By comparing Australian rock art sites to other instances where the portrayal of rock art in the media is somewhat positive, the paper will analyse these case studies to answer the question how is rock art represented in the Australian media?

Keywords: rock art, media, Australia, vandalism, cultural identity, representation
In many countries, cultural and socio-political identity is shaped, manipulated, and presented through rock art. Both on and off the rocks, pictographs and petroglyphs are powerful tools. In this paper, I focus on re-contextualised and appropriated rock art images, in commercial settings, in new art works, in academic publications, and as integral components of national symbols. I also consider results from fieldwork in southern Africa, northern Australia, and North America. In all of these regions, there are new heritage centres concerned with conservation, job creation, promoting community archaeology, and – above all – challenging visitors’ preconceptions of rock art and of the Indigenous peoples who made it.
The Lord of the Scepters in the Andean rock at horizon: past and present

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The Lord of the Scepters is the most represented anthropomorphic icon in the Andean rock art zone. Artisans and contemporary artists choose to represent this Lord as a motif in their creations, giving this image a new interpretation while making it available and even familiar to tourists, locals and new residents of the area. In the Atacama Desert, the most ancient drawings of the Lord of the Scepters can be found at the archaeological site known as La Bajada, where a variety of these representational characters are depicted, denoting different authors and pictorial styles. Most of them manifest notions of authority and greatness, both in the earthly and in the spiritual realm. Apparently, these Lord of the Scepters were not illustrations of an “ordinary” inhabitant of the area but of someone who was considered superior to the ordinary. This presentation will look into the peculiarity of this art form. What makes it so inspiring for artisans and contemporary artists to recreate it in different materials, not only in Chile but also in the rest of the world? Examples of the contemporary recreations of the Lord of Scepters will be analyzed as references, together with their cultural and commercial context.

Keywords: anthropomorphic rock art icons, authority representations in rock art

Fig.1 - Lord of the Scepters. La Bajada archeological site, Atacama Desert zone, II region of Chile. (photo Ximena Jordan)
Fig. 2 - Contemporary art craft representation of the Lord of the Scepters. Alto Atacama Hotel, San Pedro de Atacama town, Atacama Desert zone, II Region of Chile.
In the 1980s, Joane Cardinal-Schubert emerged as a contemporary Indigenous artist, drawing on her Kainai heritage to create works that incorporated motifs seen as historic or traditional, while using contemporary materials and methods of presentation. Specifically, she considered the rock art of Southern Alberta, pictographs carved into stone in the Milk River area. Her interest in these images lay in their meaning, which had gone largely unexplored, and in their presence, which established the history of Indigenous people long before Europeans settlers came to the area. In both cases, Cardinal-Schubert had a concern for their preservation. She recognized the difficulty in creating these marks in stone and brought them into wider circulation through her artwork. In addition to the pictograph images, the artist also frequently used a handprint motif that could be likened to images found in Cueva de las Manos in Santa Cruz, Argentina. Similar to the pictographs found roughly 12,000 km to the north, the exact meaning of the images are unknown. However, it is certainly clear that both predate the arrival of Europeans. My paper will discuss how Cardinal-Schubert used ancient forms blended with contemporary mediums to make a statement about Indigenous culture and lifestyles.

Keywords: indigenous, contemporary, Joane Cardinal-Schubert, pictograph, cave art, stencil
Brazil is a continent-sized country when analyzed on a global terrestrial level. Rock art exists in all of the Brazilian states. Notably, there is a predominance of rock engravings in the north and south of the country. However, it is in the northeast of Brazil where the most popular engravings and archaeological site, among scholars as well as the public, can be found. The site in question is Pedra do Ingá, located in Paraíba State and it has aroused the interest of contemporary artists, such as the multi-skilled artist Ariano Suassuna. He created an art paper technique called *Iluminugravura* during the period when Rock Art gained prominence, culminating in the Armorial Art aesthetics. The Armorial aesthetics expanded in the field of visual arts through Suassuna’s nephew and godson Romero de Andrade Lima. In many of their artistic projects, Rock Art is created with paints and colors in the present under the influence of the past. The fusion of Rock Art elements into the Armorial Movement expected in certain ways to reveal and to emphasize the indigenous people’s art at the moment of its contact with European populations during the colonization of Brazil.

**Keywords:** rock art, Armorial Movement, Pedra do Ingá, contemporary art, Ariano Suassuna
Since colonial invasions, African indigenous cultures have withstood and weathered rapid change. Khoisan people of Southern Africa (also known as Hottentots and Bushmen), were among many who were dispossessed of their land by colonial and other authorities from the middle of 17th to early 20th centuries. The art, language, mythology and material culture of the Southern San people have been a source of interest since it was first recorded in in 1779 by Robert J. Gordon. Other publications containing reproductions of San parietal art were produced from the late 18th and 19th centuries by Anders Sparrman, Francois Le Vaillant, Samuel Daniell, John Barrow and Thomas Baines. The unique rock art of San peoples from the early modernism was a powerful source of inspiration for white South African culture. The aim of the article is to present the recognition of rock art in South Africa in an artistic context, especially within modern times (in art of Jacob Pierneef, Walter Battiss and Pippa Skotnes).
The Escoural Cave is located in Portugal, between the hydrographic basin of Tejo, the Sado river, and the Alentejo region, in the Serra de Monfurado, from where it is still possible to see the Serra da Arrábida. This article proposes the analysis of drawing as an initial step that unleashed the processes of engraving and cave painting in Escoural Cave. The perception of reality, gesture-action, pictorial composition, use of materials and the creative dimension are the pillars of reflection for this approach. It is intended to present how these identity elements of a visual culture in the Paleolithic period still reverberate and can also be a foundation for contemporary art.

Keywords: drawing, rock art, Escoural cave, contemporary art, image and culture
Concurrent to the dissolution of the Soviet Union, a new interest in the antiquity of local cultures emerged. In search of the roots of their culture, Siberian artists started exploring local mythologies and prehistoric art assuming they could and can be gateways to the ancestral world. The latter is to be restored to provide a source for new esthetics joining past and present. Particular attention has been paid by artists to rock art and other forms of prehistoric art, forms which have started to be an important source of cultural identity for the Siberian people. This paper will show how rock art is used by modern Siberian artists and to what extent their uses of rock art fit the archeological knowledge about this ancient imagery. Furthermore, taking into account that the most vivid religious tradition of the Indigenous Siberians is shamanism (assumed to be rooted in the remote past and as such to be the religion of ancestors of the Siberian people), rock art along with shamanism are two main themes in modern Siberian art which aspires to transmit ancient cultural codes into the modern world.

Keywords: Siberia, Siberian heritage, rock art, shamanism, modern Siberian artists
In the Path of the Wanjina: Using tourism to revitalise and protect cultural icons

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Australia has the world’s greatest concentration of Aboriginal Rock art, dating back thousands of years. It is the most visible and widespread example within the landscape of the diversity, presence and connection to country of Aboriginal culture in Australia. The Kimberley has one of the richest and largest concentrations of rock art in the country yet the fewest accessible public sites. The most spectacular manifestations are the art sites marking the journeys and deeds of the Wanjina, the creation spirits. The signature haloed heads of these ancestor beings are widely known and, in a few locations, regularly visited by tourists, though many classic sites are not used or accessible. Often the knowledge and care for these locations is fading as the elder custodians pass away. At Mowanjum the new Art and Cultural centre is dedicated to the Wanjina. There is an opportunity for local communities to utilise, protect and preserve this important heritage by creating a managed tourism trail with local guides. Comparison is made with similar projects in Namibia. How could the Path of the Wandjina become a vital part of Australia’s national landscape? It could be a key feature of the Kimberley experience that enhances and adds economic value to the Aboriginal people of the region.

Keywords: rock art, Kimberley, Australia, tourism, Wanjina, cultural revival, cultural heritage protection

Fig.1 - Wanjina Rock Drysdale River. (© Joc Schmiechen)
Fig.2 - Sunburst Wanjina King Edward River. (© Joc Schmiechen)
In the name of ancestors: “repainted identities” and land memories

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The reuse of rock art by two neighbouring tribes of the Nilgiri Mountains, in the southern Indian state of Tamil Nadu, transects social, religious and environmental aspects. Two case studies will be examined from an indigenous point of view. The revival of Vellaricombai-Eluthuparai rock painting in a small community of honey hunters and gatherers, the Alu Kurumbas, has represented a means of integration for social uncertainty with the intent to release tribal people from the loss of cultural identity caused by land grabbing, deforestation and the consequent social grievances. An “invented tradition” encouraged by local foundations and with the added influence of global marketing. Rock paintings can promote concepts of ethnicity and environmental protection, as in the case of the Toda people. Rock paintings representing honey harvesting, with the same methods still being practiced by this community of buffalo herders, are traces of their ancestral cultural landscape and Dreamtime. Despite commoditization, assimilation and land grabbing, these rock evidences still represent for these communities hierofanies of ancestors to be honoured and respected.

Keywords: tribal India, cultural identity, cultural revival, cultural landscape, ancestors

Fig.1 - Eluthuparai rock paintings, Vellaricombai Village, Nilgiri District. (© Laura Teresa Tenti)
Fig.2 - Ancestors painted by Krishna Kitna, Alu Kurumba artist. (© Laura Teresa Tenti)
This paper presents an intercultural investigation of rock art aiming to promote a more balanced and reciprocal dialogue between Western and Native Amazonian Knowledge systems, that may be viewed as an “interepistemological approach”. Along this avenue, rock art is problematized as part of living intangible cultural heritage of Indigenous people in the ethnographic present and as a strategic cultural resource. In many Native Amazonian cultural traditions, rock art sites are considered sacred and dangerous places containing knowledge about living Indigenous historical trajectories imprinted on the landscape. Despite not exactly a “modern” (re)use of such sites, this perspective has acquired a new meaning and function, as they also became a weapon, or tool, as ethno-political territorial markers and, in consequence, played an important role in the struggle for Indigenous cultural and territorial rights in twenty-first century Amazonia. This research examines the case of the resistance of the Munduruku people against the construction of a mega-dam complex project in the sacred rapids and waterfalls of the Tapajos River, bearing rock art made by the demiurge Muraycoko.

Keywords: Munduruku, Tapajós River, Amazonia, sacred rock art, modern indigenous reuse

Fig.1 - Prof. Jairo Saw Munduruku found a petroglyph boulder in the Cachoeira do Cabano location, Middle Tapajós River, Brazilian Amazonia. (photo Raoni Valle, taken during 2015 fieldwork campaign)

The Lascaux International Exhibition, dubbed ‘Lascaux III’, was a blockbuster show which toured seven countries worldwide between 2012 and 2017. The highlights of the exhibition were five ‘facsimile’ reproductions using ‘stone veil’ technology of those parts of the cave not reproduced at the infamous Lascaux II (located near the original cave). Other reproductions on show included a 3D film experience of the cave interior, life-size ‘hyperrealistic’ reconstructions in silicone of Cro-Magnon humans by artist Élisabeth Daynès, multimedia consoles including an animation of a ‘shaman’ painting the ‘scene in the shaft’, and ‘prototype’ copies of artefacts from the cave complex made by Jean-Michel Geneste and Serge Maury for the film Les gestes de la Préhistoire. In this paper, I critically examine the re-use, reproduction and simulation of the art, architecture and archaeology of Lascaux in the Lascaux III exhibition, focusing on how simulation offers new ways of engaging with the art and the problem of the reproduction superseding the original; how the show’s aim to offer an ‘authentic discovery of the origins of art’ reinforced stereotypes of prehistoric cave art and delivered a problematic paragon of Baudrillard’s concept of ‘simulation’.

Keywords: Lascaux, Lascaux III, reproduction, facsimile, Baudrillard, simulation

Fig. 1 - Reproduction of the Lascaux shaft scene, Lascaux III (author’s photograph)

Fig. 2 - ‘What is the scene about?’: still from multimedia console, Lascaux III (author’s photograph)
My general feeling is that rock art is the earliest form of communication. While it is still in use today, it has been displaced by other forms of recording facts and opinions (Today we mostly use print medium for communication). Therefore, as an archaeologist and amateur anthropologist, I would like to continue sharing my observations on interpreting rock art based on my search for basic universals of human behavior which transcend culture, time, and distance. This will include using all of the senses, memory, observation, personal bias, etc... and some observations of modern “rock art” which I have found interesting.

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Keywords: interpreting rock art, human behavior, communication through rock art
The Woodland School of Art, associated with the Anishinaabeg of the Great Lakes area in Canada, is a pictographic style of art inspired by traditional Midewiwin pictography, as well as rock art. This style also known as Legend Painting was originated by the artist Norval Morrisseau in the 1960s. Morrisseau’s paintings inspired other Indigenous artists for whom this style was suited for their own cultural needs while it also helped to promulgate Indigenous culture and arts to Euro-Canadians. This paper will explore how rock art influenced this painting style, especially since the sharing of Indigenous traditional ceremonial knowledge is discouraged. Was this influence evident in the pictorial style or in the stories depicted? Can clear links be established between particular rock art sites and modern paintings? Is rock art’s presence explicit or is there a conscious choice to dissimulate the ceremonial knowledge for a non-Indigenous audience? Finally, was the mainstream art world’s fascination with the Woodland School due to its perceived connection with the Primitive and a timeless, universal and simple art, a category into which, unfortunately, rock art is still often assigned?

Keywords: Woodland School of Art, Norval Morrisseau, Canadian Shield rock art, contemporary art

Fig.1 - Norval Morrisseau. A Separate Reality (fragment), 1979-1984. Canadian Museum of History, Gatineau, Quebec. (photo Dagmara Zawadzka)

Fig.2 - Wizard Lake site, Ontario, Canada. (photo Private collection)
New research in the rock art traditions of the Alps

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Several rock art traditions are evident in the alpine areas of Europe, among the most known are those of Mont Bego and the Valcamonica-Valtellina engravings, although various other alpine valleys have evidence of engravings or paintings on rocks or within shelters or caves. Among these traditions similarities and differences in chronologies and themes have been outlined, however there are still many aspects that require further investigation.

We welcome papers focusing on new discoveries of rock art sites, panels or figures; new interpretations of old data; new chronological proposals and perspectives; and the history of rock art research in the Alps.
The Great Rock of Naquane, Valcamonica, otherworldly things

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A recent and complete study of the Great Rock of Naquane, one of the most important of Valcamonica rock art, was performed by the author. Based on transparency contact-tracings, combined with an ultra-high-resolution photomosaic of the entire surface, 2043 figures were catalogued, 1054 of them being significant. The engraving period demonstrates a late-Neolithic to 1942 time span, although the majority of the figures are concentrated within the VIII to mid V cent. B.C. The interpretative research reveals strong symbolic patterns, mainly expressed by the shovel, loom, deer and weaponed figures, which seem to be connected with female and male mythological characters – in some cases embodying deities – mostly acting over, or better under, an otherworldly stage. All subjects and characters are strongly connected with art which is contemporary to the early Iron Age, as expressed by the nearby situlae art or by the Etruscan funerary paintings, which may underpin a largely diffused belief in the salvation of the soul through the depiction of its otherworldly journey, till reaching the garden of Eden or the island of the blessed. Into this conceptual frame, a large part of the Great Rock Iron Age engraved items suggests the idea of a figurative funerary dedication.

Keyword: Valcamonica, Naquane, Iron Age, mythology, salvation
The presence of shelters and vertical walls displaying rock art paintings is a phenomenon that is known in the Alps even if less studied than the more common engraved rock art. The painted figures were mainly made using ochres of various shades, however, figures created using white pigment and even less common, black figures are also found. We find the same figurative themes in the painted rock art as those that are widespread in the engraved art found on open-air rocks. In particular figures such as: abstract figures (including solar motifs and those considered topographical), anthropomorphic (praying, warriors, horsemen, incomplete figures or with extra limbs), zoomorphs (deer, caprids, fishes and birds), ramiform (plants, trees, spikes). Current research indicates an element of paralleled chronology with some of the engraved figures. The dating of the painted figures has not yet benefited from direct dating methods but relies on a proposed chronology based on comparisons with the engraved art, predominantly from the Neolithic to the Iron Age. The current challenges rest in the chronology of the anthropomorphic figures and the schematic art. The authors examine examples from the central-western Alps with an in-depth analysis of the chronological problems posed by the Valcamonica paintings.
The Balma dei Cervi rock paintings at Crodo: recording, analysis and study

The painted shelter of the Balma dei Cervi, the “Shelter of the deer” at Crodo (Piedmont, I), is one of the most important of all the Alps. The painted area is a vertical wall along an extensive and impressive rock shelter. The forty figures, executed in various shades of red, are characterized by a series of human schematic characters; they reveal a great dynamism, maybe representing movement and/or dance, and are likely to be associated with the series of dots arranged in rows. The iconographic comparison can follow two different chronological paths, linked to the latest phases of the Bronze Age or to middle Neolithic, in this case coinciding with the oldest processes of the Neolithic settlements. The Crodo municipality recently launched a recording project, under the scientific direction of the Archaeological Superintendency and the specialized contribution of the Footsteps of Man archaeological cooperative. The shelter, due to its fragility and access difficulties, cannot be turned into an open-air museum: as such, a virtual online museum is planned. An immersive virtual model will show a 360° panoramic gigapixel photo experience, combined with the rendering of the tracings and D-Stretched images. The virtual online museum will be enriched by 3D-SfM models.

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Keyword: rock-paintings, recording, Neolithic, Bronze Age, virtual museum
This work summarizes the research undertaken for my thesis on rock 116 of Bial do le Scale, Paspardo, and contributes to the study of the 4th style (Iron Age) rock art of Valcamonica. The area is characterized by the presence of several engraved rocks dating from three main chronological horizons: the end of Neolithic, represented by topographic figures, the Bronze Age, represented by schematic human figures and the Iron age, the larger proportion of engravings. As a result of the complete tracing of rock 116, undertaken during the fieldwork organized by the Catholic University of the Sacred Heart of Brescia in collaboration with the Footsteps of Man Society, it was possible not only to catalogue all the engraved figures on the rock, but also to research their representations, chronology and relationship to other rock art in the immediate area. Of the 95 figures identified so far: the majority represent anthropomorphs, but there are also animals and, due to the condition of the rock, unidentifiable figures. The identifiable engravings are all ascribed, as are most of the figures of Bial do le Scale, to the Iron age, especially to the period between the 7th and the 1st century BC.

Fig. 1 - Tracing of rock 116, Bial do le Scale, Paspardo. (tracing Footsteps of Man Society and Catholic University of Sacred Heart)
Fig. 2 - Bial do le Scale, Paspardo, rock 116. (photo Jessica Bezzi)
Among the figures that make up the corpus of Valcamonica’s rock art, there are a number that represent games, or rather board games such as those similar in form to the contemporary games of Nine Men Morris, Alquerque etc. These types of figures are well known and widespread throughout the Alps and have already been the subject of research, but no specific investigations have been carried out with a focus on the area of Valcamonica; the possibility that these figures may represent a function beyond game play has also been explored, touching on the possibility that they may have also taken on a symbolic value at some point in the chronology of their use. The purpose of this work is to present a contextual view of these ‘game’ figures within the Valcamonica region and to draw on the current broader research on these types of figures to offer a chronological and interpretative hypothesis.
Regional and international research on representations of maps in rock art demonstrate their widespread importance within several societies in the past. From larger area, cartographic representations to more specific localised topographic maps they form a physical representation of what is known, perceived or imagined within the landscape. The recent discovery of an ancient topographic map composition on rock five in Castello (a residential area of Paspardo, In Valle), has been uncovered and recorded. The region has several examples of topographic maps including similar engraved geometric images within their compositions. Comparing Rock 5 to the known examples in the literature, such as the Bedolina rock, and drawing on the particular elements of Rock 5 in Castello, it is possible to build on the current knowledge of petroglyphs in the valley. The possible interpretations for these compositions have been explored in the past (e.g. Anati 2009, Arca 1994, 1999, 2004, 2007, Delano Smith 1982, Fossati 2007). This composition not only contributes to the data of the existing known topographic map images of the area but extends the research within the interpretative sphere.
There is remarkable evidence from Val Venosta and Valcamonica, demonstrating the central role of rock art in the formation, preservation and transmission of historical memories. Among other engravings, the stele from Laces in Val Venosta exhibits a very unusual scene. It appears to be a hunting scene, but the archer is not chasing an animal such as a deer, his bow targets another human figure. What event does this chase remind us of? Perhaps the killing of the Iceman from Similaun, not far from Laces? The mummy of this authoritative man, as witnessed by his tattoos and certain objects found on his person, proves his murder was due to an arrowhead lodged under his left scapula. Such a death could not be long forgotten.

In the so-called Middle Val Camonica we can find three places of worship dedicated to three saints, Cristina, Fermo and Glisente, recalling the protagonists of a medieval legend. This legend presents some extraordinary similarities to the rituals represented on the Camunian steles from the Calcolithic period. The anthropomorphic triad of the Ossimo stele with two male and one female figure cannot go unnoticed.

Keyword: Oral traditions, Valcamonica, Laces, rock art, Iceman

Fig. 1 - Laces, Alto Adige, Italy. Copper Age stele. (drawing by A.E. Fossati & A. Pedrotti)
Fig. 2 - Ossimo, Valcamonica, Italy. Copper Age stele n. 9. (photo A.E. Fossati, Coop. Le Orme dell’Uomo)
Neolithic rock art at the Rocher du Château site (Bessans, Savoy, France): research on pigments

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The Rocher du Chateau (at 1750m. a.s.l.) is one of the ten schematic rock art painting sites in the Alps. Thanks to archaeological surveys and excavations, the occupation of the site is attributed to the Neolithic period. Among other artifacts, the presence of pigments and associated pigment fragments point to aspects of the production of rock art on the serpentinite rock. By combining in situ (Raman spectroscopy) and laboratory methods (scanning electron microscopy, X-ray diffraction), the study of the pigment evidence from excavation and the paintings has been carried out. The study of rock art is challenging because of the thinness of the painted layer, the mineral deposits below and above the painted layer, and the requirements for micro-sampling. Integrated methods are essential to understanding the taphonomy of the surface bedrock and to gain insights into the composition of the pigment used. The analysis of the pigment compositions raises questions regarding the preparation and of the supply of the raw materials used. Understanding the association of various minerals and the identification of the anthropic mixtures is crucial to enable comparisons between the pigment mixtures used, the associated pigment fragments or powdered pigments deposits on a surface.

Keyword: rock art, Neolithic, schematic paintings, Raman spectroscopy, pigment analysis, in-situ analysis

Fig. 1 - Macrophotographies of coloring and colored matters (EDYTEM): a) RDC01, b) RDC03, c) RDC06 and d) RDC07 (black scale represents 2 mm). (E. Chalmin)
Fig. 2 - In situ Raman spectroscopy device on the front of the Deer panel (Rocher du Chateau, Bessans, France) (MONARIS). (E. Chalmin)
A comparatively new discovery amongst the pitoti rock-engravings of Valcamonica is ancient painting on exposed surfaces. Faded and faint, these pitoti dipinti, known since 1992, have not been studied closely. The digital technology of colour transforms allows us to recover crsp images. From the main panel, the method recovers them from four faint figures, and discovers two “invisible” figures where the naked eye notices nothing. These six figures are mostly of horses with riders; one is two overlapping images. At another site, painting and pecking (rock-engraving) techniques occur together. The dangers of confident recovery with the powerful graphic tools of colour transforms are explored to answer the question: are the pictures “made” by our image transforms really correct? A distinctive type of axe dates one figure to the Late Iron Age. The emergent manner of this painted art is described, and how it both repeats and differs from the manner with which similar subjects are depicted in pecked figures of comparable dates. The value of analysing Valcamonica art, and rock-art generally, in terms of the three aspects of “subject”, “manner” of depiction and “technique” is demonstrated, as likely to be more productive than the habitual idea of studying “style”.

Keyword: Valcamonica, rock-art, rock-painting, Colour transforms
In June 2014 two engraved rocks with figures of ibex were discovered during surveys conducted by the Société Valdôtaine de Préhistoire et d’Archéologie of Aosta at Mont des Fourches, Saint-Vincent (Aosta). This area was already known for the presence of rocks with non-figurative art (cup marks and grooves). The ibex are mostly depicted with large horns in a lateral view (one is represented in a frontal view), but without the annual horn growth and beard found on the real animals. On the rock that is jutting out over the river Dora there are also 5 fringed figures, U-shaped signs and two schematic praying figures with arms depicted in different positions. The dating for the ibexes and U-shaped figures and fringed figures can be provisionally proposed as being from the Middle Neolithic due to the possible comparisons with the megalithic art of Brittany. In particular compared with the figures located on a large menhir from the Locmariaquer site, which depicts two animals with big horns in frontal and lateral views. Moreover, it is also necessary to consider the proximity of this site to the engravings complex of the Montjovet Chenal shelter, which has megalithic art motifs dating to the same phase.

Fig. 1 - Mont des Fourches, Saint-Vincent, Aosta, Italy. Rock 1. The ibex with horns seen in frontal view. (tracing A.E. Fossati)
Fig. 2 - Mont des Fourches, Saint-Vincent, Aosta, Italy. Rock 2. Grids, ibexes, U-shaped figures. (photo A.E. Fossati)
The cancellation of some figures in the rock art of Valcamonica: in search of a possible interpretation

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One of the least studied phenomena of the rock art in Valcamonica is that of figures that have been defaced, obliterated or damaged on purpose. We are not dealing with the intentionality of overlaps between the figures or the gender changes of the stele from the Copper Age and the gender competition for rock art sites overlapping female on male figures or vice versa. Conversely, the phenomenon of cancellation appears to be more widespread, especially during the warrior art period, from the Final Bronze Age onwards, in almost all the known sites. We find animal, human and object images that exhibit percussions only on certain areas, widespread deep strokes, or whole figures deleted through percussive action. Given the number of effected figures what can be deduced in regards to the significance of this activity? Concerning the complete erasure of human figures, one may suppose ‘damnatio memoriae’; In other cases, these may represent actions that reaffirm the past ritual act related to the image or a later related ritual affirmation somehow connected to the image. Further research will be required to reach a more comprehensive understanding of this phenomenon.

Keyword: cancellation, iconoclast, damnatio memoriae, Valcamonica

Fig. 1 - Capo di Ponte, Naquane rock 50. Warrior figure completely deleted through percussive action. (drawing by A.E. Fossati, Le Orme dell’Uomo)
Fig. 2 - Capo di Ponte, Naquane rock 35. A bird figure exhibits percussions only on certain areas of the body. (photo A.E. Fossati, Le Orme dell’Uomo)
Past cultural exchange between communities in the Alpine area and the Po Valley is nowadays an accepted fact. In this paper, the research aims to clarify the links between the rock engravings and imagery derived from the Etruscan, Raetic and Celtic iconography. Beginning from at least the seventh century BC, the warlike aristocracies of Valcamonica enjoyed showcasing themselves within the engravings in a rich set of scenes referring to the lifestyle and fashion shared by the wealthy élites of the Alpine area and Po Valley. Hence equestrian games are shown in which Etruscan-style acrobatic skills are tested; tribe leaders are represented with signs of power related to Celtic culture; hybrid and unusual animals are engraved recalling Raeto-Celtic themes. Through new interpretation of some engraved scenes the authors intend to offer further insights in order to enhance the understanding of the complexity and richness of Valcamonica rock-art.

Keyword: Iron Age, Valcamonica, iconography, engravings, rock art
This research began with the aim of confirming the data already obtained and consolidated regarding the so-called “figure of the loom”. Only seven such figures are known, that can be seen amongst the thousands of images on the rock surfaces in the National Park of Naquane at Capo di Ponte in Valcamonica (Northern Italy), and these have been left out of the current debate regarding rock art engravings. A second aim was to broaden the horizons of research with comparisons, both archaeological and iconographical, concerning the area of Northern Italy and Continental Europe. Lastly, the main purpose was to expose new elements related to the research object and also to suggest a new analysis and perspective for the chronology of these enigmatic images.
Austrian archeological reports scarcely mention rock art in the western federal states of Austria. During the past four years, rock art has been a focus of documentation by the Institute of Archeology at the University of Innsbruck in particular recording rock art in the Northern Limestone Alps of Tyrol.

Selected steep surfaces of rock boulders in the forests of the Northern Alps display unique rock art. 24 Raetic inscriptions (roughly dated between the fifth and the first century B.C.) have been identified in the area of Achensee. They represent the oldest known inscriptions in Tyrol and 12 % of the known Raetic inscriptions. Furthermore, some rocks from the same locality exhibit additional engravings and indicate a use from late Hallstatt HaD/Latène LTA period of approximately 500 BC to late medieval times until the modern ages.

The rock art of the area was documented using archeological methods including diverse digital 2D- and 3D- visualizations. Despite attempts to interpret the various rock art images from the different time periods, it will remain open for discussion. This comprehensive archeological documentation and analysis of the rock art of Tyrol contributes to rock art research generally and to the cultural heritage of Austria.

Fig. 1 - Achenkirch - AK 1.1 - 1.3, raetic inscriptions. (© Ilsinger)
Since 1868, when the scientific community began to research Mount Bego (Tende, Alpes-Maritimes, France) and its 35,000 rock engravings dated from the Prehistoric times, the area has been the subject of numerous symbolic interpretations, most of which identify the site as a sanctuary dedicated to one or more deities of the Neolithic and the Early Bronze Age. Our theoretical and critical approach aims to identify and expose the main weaknesses of these interpretations, which are often based on inadequate comparisons and hasty observations, sometimes unrelated to the chrono-cultural context of the engravings. Frequentled from the early Neolithic period, the region of Mount Bego is above all a high-altitude environment, first of all linked to pastoralism and the practice utilizing summer pastures, as well as the exploitation of raw materials and hunting activities. From an anthropological perspective, we take into account the diachrony in the creation of the different cycles of engraved motifs and thus discuss the identities and the functions of the prehistoric engravers in order to renew the debate about the meaning of these rock images and their relation to the profane and the sacred.
Similarities and differences in chronologies and themes in the rock art of Valcamonica

Valcamonica has been the focus of research since the 1960s with a continuing improvement on the use of technology and digital resources. The introduction of a database, digital photos, GIS and other technologies have improved the documentation of the rock art, environmental data, rocks and engravings. In light of the detailed research and the publication of new data, it is now possible to start defining the different features of this phenomenon, analysing the chronological diffusion and recurrent themes in different areas. The connection between sites with a high proportion of rocks with rock art and densely engraved panels, and environment, both natural and anthropic, is now visible and it is possible to define recurring models. For each chronological phase, the choice of sites has clearly considered the natural landscape context, the presence or not of water, the territory and surfaces morphology, the proximity or distance of settlements or areas of production, as well as other factors no longer archaeologically visible. The analysis considers the context of the middle Valcamonica, focusing on the left orographic side. The research presented will put forth a synthesis of the distributive features of rock art sites taking into consideration different characteristic such as chronology, recurrent themes, and engraving density.

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Keyword: rock art, Valcamonica, themes, chronology, environment
The pre-Christian cruciform symbol arouses controversial debate because of the difficulty of differentiating them from Christian crosses. There are limited academic studies on the subject and this conceals the fact that when we investigate further these figures appear to represent a significant universal memory. Several tens of thousands of these engravings are distributed in the massifs between Switzerland, Italy and France. Following a detailed study of thousands of these signs in the Alps and the Massif Central of France, my research focuses on what is known about these engravings, the way they evolved over time and their subsequent variations. Among the schematic signs the one with the most variants carries an anthropomorphic explanation, and it represents a significant geographical and temporal marker. The most accepted meaning for these engraved cruciforms is an anthropomorphic representation. It appears to be a particular evolution of the representation of human prayer. These schematic representations are likely to have appeared in Europe from the beginning of the Neolithic period. The cruciform anthropomorph is a highly simplified form, featuring only a horizontal line for the arms and a vertical line for body and legs. They have a strong affinity with cup marked stones.
The echoes of a local pre-Indo-European religion reverberated for millennia in the remote alpine valley of Valcamonica. Recurrent contents are locally worshipped with new expressions in a continuous iconographic line from Prehistory until the Middle Age. In the 17th century, some local sources still recall the veneration of Isis, the main honoured deity on the Latin Inscriptions of Cividate Camuno, the administrative centre of Valcamonica under Roman rule. Local art expression from Middle Age onwards seems to have strong connections with the ancient cults. In this context, Isis Regina – Great Mother, cosmic principle, goddess of fertility and healing, moonlight goddess – could be the Roman interpretation of a prehistoric deity of fertility. Aesthetic forms and styles changed through time, but the social value of a local devotion to a goddess of fertility persisted. The solar disc of Isis could have inspired the polysemic syncretism in Valcamonica, where we find great evidence of an ancestral worship of the Sun. The female stelae in Valcamonica’s rock art will be analysed taking also into account as comparative materials prehistoric figurative expressions of religious beliefs in other parts of Europe, like the Baltic States and Scandinavia, where the Sun is linked to female deities of fertility and regeneration.

Keyword: Isis, fertility, Mother Goddess, Valcamonica, worship

Fig.1 - Stele of Borno 1. (photo courtesy of the Centro Camuno di Studi Preistorici)
Fig.2 - Latin Inscription of the Goddess Isis at the Museo Archeologico of Cividate Camuno (Inscr. lt. X, V 1168). (photo by Monica Pavese Rubins)
In Valcamonica, which is mostly noted for its engraved images on the glacially polished bedrock surface, the discovery of a unique area exclusively decorated with fine scratched images on vertical walls importantly hints towards more complex ritual scenarios than those hypothesized on in the past. The vertical cliffs above Piancogno are difficult to reach, highly exposed to the sun and dominate the valley below. My research has revealed the presence of a large quantity of very detailed figures. Dated to a relatively recent period, between the 3rd and 2nd century AD, and are culturally linked to both the La Tène culture and to the Romanization phenomenon, which flourished with the erection of the Civitas Camunnorum at the foot of the engraved site. Symbols of Christianization were also added in historical times. The iconographic repertoire is very similar to that found in other Valcamonica sites, particularly in the central area of the valley. Nonetheless at Piancogno there is a special preference for figures of weapons, animals and inscriptions in the local pre-Roman alphabet, with mixed cases of inscriptions in Latin alphabet as well. The analysis of this great iconographic complex, which is still being researched, makes it possible to re-read the classic engraved Valcamonica rock art in a new light.

Keyword: Piancogno, Valcamonica, rock art, engravings, scratched figures, Tène culture

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Cross-dating in rock art. A case of study for the definition of the chronology of real finds

In my PhD research, discussed in 2015 at the Universidade de Trás-os-Montes and Alto Douro in Vila Real (Portugal), I examined a series of knives belonging to the family of knives with sinuous blades. These knives are made of iron, with a sheath of composite material (wood and iron). They are known in literature as Introbio or Lovere types and are characteristic of the late Iron Age in Northern Italy, in Alpine and Peri-Alpine areas. The same knives are known in Valcamonica rock art. The focus of this paper is the application of an anomalous kind of cross-dating. If in fact we usually use archaeological finds from closed associations (mainly tombs) to date well recognizable objects in rock art, I propose to use cross-dating in the opposite way. While the dating of Introbio knives from tombs is restricted to the LT D2 (50-25 a.C.), the stylistic rock art phases in which the type appears extends its circulation chronology until the second half of the 2nd century BC. Therefore, rock art can allow to better define the dating of finds rarely attested in dating contexts.

Keyword: cross-dating, Introbio knives, Late Iron Age, rock art, Valcamonica

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Fig. 1 - Lecco (LC), Museo Archeologico. Knife from Introbio (LC, Valsassina). (photo F. Roncoroni)
Fig. 2 - Foppe di Nadro (BS), r. 24 (relief F. Roncoroni)
The project “Quattro Dossi” (Four Hills): new discoveries at Dos dell’Arca (Capo di Ponte, Valle Camonica)

In 2015, the Università di Pavia, in collaboration with Soprintendenza Archeologia della Lombardia, initiated a research project in Capo di Ponte (BS), in the locality, for the first time examined at a macro-area level, and named “Quattro Dossi”. This area includes the sites of Dos dell’Arca, Pié, Piciò, along with a fourth rocky hill that only recently drew archaeological interest. The place has been known since the 1950s, thanks to the presence of several prehistoric rock engravings and archaeological evidence, while Dos dell’Arca was studied in 1962. The excavations, directed by Emmanuel Anati, uncovered a site of great importance, with two main settlement phases dated to the Medium Bronze Age and to the Late Iron Age and the occurrence of engraved rock surfaces covered by archaeological stratigraphy. The 2015-2017 research has revealed a wealth of previously unknown rock art, along with a new documentation of the archaeological structures still standing at the site. This research highlights the work undertaken at Dos dell’Arca, where the new finds have tripled the total number of engraved surfaces known and substantially increased the recorded iconographical features, offering a new and more complex understanding of this central, pre-protohistoric, area of Valle Camonica.
Although rare within the rock art images of the Alps, mounted bowmen have occasionally been recorded: engraved in Seradina (Val Camonica - I) and Carschenna (Graubünden - CH) and painted images in Mompantero (Val di Susa - I). These mounted bowmen have been attributed to the Iron Age period. This current research attempts to analyze these images and assign them precise dating. These will be compared to ones associated with archaeological evidence, the iconography of mounted bowmen on contemporary Greek painted pottery and on Etruscan and Italic bronze vessels. This research also aims to explain this method of fighting: are they representations of Scythian warriors, moving from Pannonia in late 6th-early 5th century BC, as occurred in the 10th century AD with Magyar knights travelling towards western Europe through the Alps?

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Keyword: Alps, Scythians, mounted bowmen, painted rock art, Seradina
The rock called “Altare” (the Altar) is one of the most significant engraved rocks of the rupestrian archaeological sites of the Bego region (in the French Maritime Alpine area). There are approximately 1400 engraved motifs (e.g. weapons, bovids, grids, completely pecked areas) and there are numerous cases of superimpositions worthy of a specific study. The resin cast of a portion of this rock is exhibited at the Musée départemental des Merveilles (Roya valley) and the authors used the data from this cast to compare different restitution and drawing techniques, analyze the results for the understanding of the superimpositions, and for evaluating their advantages and disadvantages. The three techniques compared are: the “classic” contact tracing, the 3D photogrammetry and the 3D Laser Scanning. In light of the results obtained, the authors compare, contrast and evaluate the different techniques to assess their efficacy both individually and in combination as a “case study” useful for the research of the superimpositions of engraved figures and the application of new technologies in the research of alpine rock archeology.
Is there rock art in Slovenia?

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Rock art is present worldwide and over considerable time periods, in a variety of forms. Paintings and engravings in caves or open-air sites have been used as indicators of human activity, often linked to evidence of ritual and belief, from the Paleolithic onward. Found across Europe and from the Iberian Peninsula to Russia, in the Paleolithic, Neolithic and Bronze age. However, there are regions in Europe where there have been no reports of rock art. Often these regions devoid of rock art are limited to within the national borders of a certain country. One of such rock art “black holes” is Slovenia. Despite the numerous engravings and paintings that mark human existence throughout the Apennine peninsula, the first, and so far, last, prehistoric painting site was found in 2009 in the cave of Bestažovca. The fact that the Val Camonica rock art park, with one of the largest collections of prehistoric petroglyphs in the world, is located only 370 km from the border of Slovenia, makes it is hard to believe that the paintings in Bestažovca cave and two undated petroglyphs from a cave near Trnovski studenec, are the only cases of rock art in the entire country which covers an area of 20,273 km².

Keyword: Slovania, rock art, absence of rock art, Bestažovca, Trnovski studenec
In a number of significant sites of the vast ancient pasturelands of the Old World, generations of wandering shepherds have left their testimony in the form of graffiti drafted on the rocks, sometimes in their tens of thousands, over a period of hundreds of years from ancient to modern times. The phenomenon is a conspicuous one, and has considerable significance, under a double perspective. On the one hand, the study of such pastoral graffitis may convey fresh ethnoarchaeological information as to the circumstances of the pastoral activities and the pastoral economy of the past. On the other hand, these signs, which can be often fully alphabetic as well as drawing upon ancient symbolic repertoires, can be of some aid to the interpretation of rock art as a whole genre of human expression, and projected back, in their significance and their modes of appearance, the earliest times of prehistory. Starting from ground breaking research on the sheperds’ writings of the valley of Fiemme (Trentino, Italy cf. www.scrittedeipastori.it ) the session will aim at bringing together evidence from similar cases in other eurasian settings, so as to further the specialists’ acquaintance with this still largely unplundered terrain, in the general scientific perspective of the interpretation of rock art.
Valcamonica rock-art: made by shepherds?

The rock-art of Valcamonica is justly famous: more than 100,000 figurative images are found in a limited area. Prior research approaches to the origin of this rock-art have focused on ritual and religion. This paper instead starts by placing the rock-art in the physical context of its landscape and in the social context of everyday life in a small-scale Iron Age society. I lay out hypotheses that draw on the whole range of views about the making of the rock-art, and develop their spatial and demographic implications. I consider those implications in light both of spatial analyses using, inter alia, viewshed and cost-distance measures, and of a reconstruction of the valley’s Iron Age economic geography that draws on demographic modelling and land use analysis. On this basis, it becomes clear that the most likely creators of much of the rock-art were ordinary people going about their everyday lives: shepherds, farmers, hunters, wild-food gatherers.

Keywords: Valcamonica, GIS, economic geography, demography, landscape archaeology

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Fig. 1 - Reconstruction of Iron Age Valcamonica economic geography (source: Craig Alexander)
Fig. 2 - Sheep in modern Valcamonica (source: Christopher Chippindale)
On Mount Cornón in Fiemme Valley (Trentino region - NE Italy) more than 47,700 writings were created with red ochre, in contrast to most of the alpine inscriptions, which are engraved into the rock. These writings consist of initials, dates, cattle counts, family symbols, pictographs and short messages. The resulting visual effect is that of a painted mountain which is reminiscent of sacral places such as Monte Bego or Valcamonica. The chronological context however is more recent, it spans from the 15th century to the second half of the 20th, when the depopulation of the mountain caused the abandonment of animal husbandry, which is the economic activity that engendered these writings. The prelude to the writing activity on this mountain might even be older. The archaeological investigations carried out in two rock-shelters with evidence of pastoral activity documented in fact the presence of man since the Copper and Bronze Ages. More than 4,000 depictions from Mount Cornón have been analyzed and constitute the subject of this contribution, which also aims to provide an interpretative model for many other parietal art contexts in the Alps.

Keywords: landscape archaeology, pastoralism, rock art, ethnoarchaeology
On the rock faces of Mount Cornón, in Fiemme valley (Trentino), there is an incredible number of inscriptions consisting of initials, dates, cattle counts, drawings and messages, made with a natural pigment called bó. The present contribution intends to dwell on a particular symbol, contained within some of these writings, the so-called “home sign” or “family sign”, used to uniquely identify each family of a community. Family signs, recorded and associated with other information included in the writings, such as the date and the initials of the shepherd and, sometimes, even the signature or the family nickname, makes it possible to recognize some of the family groups who, moving across the mountain pastures, used to practice activities related to the transhumance or to alpine cattle. The continuity over time of some of these home signs allows us to hypothesize on the practice of transmitting pastoral work from father to son, probably indicating a specialization of this activity in the territory concerned. This contribution is part of the popular alpine epigraphic research and in particular it aims at providing elements of comparison to the hypotheses already generated by the observation of the family signs of Cadore, in the Eastern Dolomites.

Keywords: Pastoralism, landscape archaeology, ethnoarchaeology, family symbols, shepherd writing

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Fig.1 - Mount Cornón, Fiemme valley. (photo Marta Bazzanella)
Fig.2 - Mount Cornón, Fiemme valley. (photo Marta Bazzanella)
Lack of written sources and archaeological excavations in Scandinavian rural areas represent the main obstacle for investigating hunter and pastoral communities in historical times. One of the few, but well attested cases concerns the boulder in Storhedder (Aust-Adger, Norway), whose use as natural shelter since the medieval period up until modern times, is attested by numerous pictorial and written graffiti which appear on the surface of the rock. Eighteen written graffiti make it possible to date part of the human activity since they have been recorded with the native Scandinavian writing system, the runic writing, which had been in use in Norway until late in the 14th century. The messages reflect in part the isolation in which medieval Norwegian shepherds and hunters must have lived, more impressive however, is how writing competences spread among Scandinavian medieval rural communities. To have mastery of writing in a still deeply oral-oriented society could have nonetheless symbolized prestige. Particularly remarkable are the hunting scenes and animal-like drawings which accompany the written graffiti. This paper will aim to contextualize human activity from an archaeological and philological perspective.

Keywords: pastoral graffiti, medieval Scandinavia, runic inscriptions
From the XVI century onwards, in Primiero (in the eastern part of Trentino province, Italy), one can find a symbol composed of a mountain silhouette with a cross on its peak. This symbol appears in the center of the milesimi: Which is a type of enigmatic inscription similar to an acronym and containing the date of construction (or re-construction). Symbol and inscription are carved in the door frame of the barn of the maso (farmhouse) which are situated in the maggenghi (mountain meadows) of middle elevation sites. Some useful comparisons may be drawn in relation to the wooden engravings and regional rock art engravings. Usually the symbol’s position is perpendicular to both the door frame and the whole frontage of the cottage. Its exact position defines the placement of the other elements which make it part of the inscription. The particular importance of the symbol’s placements seems to indicate the barn as the most sacred place of the whole maso as well as its functional center. Local memory does not preserve neither the name nor the significance of this symbol. In conclusion, the fact that these symbols indicate the center of the masi, puts into question the recently introduced term by scientists “calvary”, with its direct connection to the sacrifice of Jesus Christ, may be inadequate or even misleading.

Keywords: symbols, cross, inscriptions, barn, maggenghi
The high pastures of Vione, in northern Valcamonica, have been exploited for many centuries by shepherds and people carrying out various other activities. A systematic field survey, made by one of the authors in the summer of 2017, has located several structures, most of which are probably linked to pastoral activities. Forty-seven buildings have been documented, subsequently mapped thanks to GIS technology and classified in different categories according to their dimension, shape and techniques of construction. Thanks to a multidisciplinary approach, data coming from different fields and sources (such as remote sensing, historical cartography, written sources, historical cadastres and place-names) has been combined and processed with GIS spatial analysis, in order to understand the interaction between structures and territory; understand pastoral strategy and their changes through time; reconstruct the absolute or relative chronology of the structures; understand the relationship between pastoral structures and rock art. The paper will compare the research results from northern Valcamonica with those of the two areas used as models for this research: Val di Sole (Trento) and Lessinia (Verona). Links will be drawn between the possible relationship of the analysed structures and the engravings found in Valcamonica.

Keywords: ethnoarchaeology, high pastures, pastoral activities, pastoral structures
The alpine pastures between the Giau pass and Mondeval have yielded significant evidence of human activity, from the Mesolithic to the present, including the Copper Age, the Bronze Age, the Middle Ages, the Modern period and World War I. The main reason for this intense occupation of the area, located between 1900 and 2700m asl, is related to the exploitation of ore resources (galena mining), as well as faunal, forestry and other environmental resources (traditionally animal husbandry and hay-making, nowadays hiking). Three areas, characterised by a gentle terrain and open vegetation, correspond to clusters of engravings on rocks or volcanic bedrock outcrops. These engravings are mainly compass-made circles, with variable grooves (from large and deep to shallow), often concentric, sometimes organized in geometric patterns and other times lacking any geometric organization. This evidence, which is difficult to date, matches with very few other examples. Analysing their spatial distribution, the land-use of the area and the information provided by documentary sources, we suggested they might have been used as boundary markers within the old community of San Vito di Cadore (Regola Grande di San Vito).

Keywords: engravings, compass-made circles, Dolomites, mountain archaeology, landscape archaeology
The availability of fire in high altitude alpine contexts was certainly significant for the late prehistoric pastoral frequentation, as the Iceman’s discovery confirms: Ötzi had, in his belted pouch, a piece of Fomes fomentarius (as tinder) and a flint tool suitable as strike-a-light. During the IV millennium BC, this igniting technology, was widely adopted: the recent finding of a flint tool, with specific wear traces, on the Monte Baldo ridge (at 1734 meters a.s.l.) confirms that this kind of fire-making kit was used in alpine areas, maybe in shepherding and/or hunting strategies. Nevertheless, fire representations seem mostly uncommon in rock engravings, despite several ethno-archaeological sources which highlights the importance, in the Alps area, of fire ignition as a sacral meaning such as:

- ritual blazes (German: Brandopferplätze) on uplands as a message directed to divinities;
- fires from the sky, ignited by lightnings, which were considered as an expression of a “thunder divinity”, such as “Jupiter Feretrius” for the Romans.

These considerations aim to promote a wider interpretation of rock engravings that could represent fire and/or lightning symbols, may be like “The Sorcerer” or “The tribal chief” of Monte Bego.
Cameraccia cave in Valle dell’Alpe (Valfurva, SO)

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The Alpe Valley, the left lateral branch of Gavia Valley, joins Valfurva with Val di Rezzalo, at the Alpe Pass (2462 m. above sea level). It retains a clear glacial imprint from the final late glacial phases and the subsequent Holocene fluctuation. The schist has marble intercalation and an asymmetrical shape due to the dipping of the schistose layers. Going up the left slope of the valley, towards the imposing outcrop of the saccharoidal marble, just a little before reaching the Alpe Pass, we can observe several cavities, presumably due to the karst phenomenon. The biggest one of these cavities is now known as “grotta da l’Édélvàis”, once called “grotta de la Cameraccia”. Before the entrance and inside the cavity, a great number of marble slabs fallen from the vault of the cavern or removed by man are the epigraphical witnesses presumably left by shepherds, who had engraved their names and surnames in big letters, simple initials or dates and symbols. Analyzing these surnames we can recognize two principle areas for their origin: the Valtellinese area with surnames such as Simonelli, Castelli, Zubiani, Menini, Ricetti, Girelli, Pruner, Rastelli, Bormolini, and the Camuna area indicated by surnames such as Boldini, Angeli, Faustinelli, Cenini, and Carettoni.

Keywords: Valfurva, epigraphical witnesses, shepherds, engravings
“Pastoral Graffiti” in the Val Grande National Park and in the protected areas of Ossola Valley. Results of a first mapping

The Val Grande National Park is a protected area located in the Italian Alps, in North-Eastern Piedmont. This alpine environment is mostly wild and uninhabited but retains traces of the once pastoral civilization. Among these are the rock carvings previously mapped in a 2012-2013 survey and published in the catalogue “Messaggi sulla pietra. Censimento e studio delle incisioni rupestri del Parco Nazionale Val Grande”. The logo of the Park was inspired by a stylized “tree-man”, an arboriform petroglyph carved on rocks in the valley. This paper presents a first mapping of the so-called “pastoral graffiti”, sometimes painted, but mainly engraved on rock and wooden supports in the National Park and in the nearby Natural Parks of Veglia Devero and Alta Valle Antrona. The writings are mostly the initials of the author followed by the date and accompanied by drawings, symbols, short messages and diary annotations. The graffiti of the Ossola’s shepherds occupy a specific historical time frame, from the 17th century to the second half of the 20th century, that is, until the end of what is known as “Mountain Rural Civilisation”. In some cases, however, the graffiti certainly shows continuity within the same sites and with the same techniques used in prehistoric rock art.

Keywords: pastoral graffiti, val grande, ossola, wood carving, rock carving and painting

Fig.1 - Alpe Misanco, Natural Park Veglia-Devero. (photo Fabio Copiatti/Parco Nazionale Val Grande)
Fig.2 - Alpe Sassoledo, Val Grande National Park. (photo Fabio Copiatti/Parco Nazionale Val Grande)
There are many sacred symbols among the 4000 pictograms discovered within the more than 47700 writings by the shepherds on the rocks of the Fiemme Valley. They are mainly representations of the cross, but there is also of the sacred heart, aedicules, monstrances and monograms of Christ and Mary, all of these expressing a strong radicalization of the valley floor religiosity. Between the 1700s and the 1800s, up until the beginning of the 1900s, we are facing the folks’ expression of a faith permeated by doctrinal certainties. Sacred aedicules, tabernacles, shrines and recesses were always inside the residential areas or on the sides of the country roads and mountain roads, at crossroads, bridges and stopping stations, to provide reassurance to the believers. Therefore, in most of the cases the crosses depicted on the rocks of Mount Cornón are to be interpreted as gestures of extemporaneous religiosity, probably emulating crosses drawn by other shepherds with auspicious intents. The subject of this contribution is the in-depth study of the typology of the many shapes in which the cross is depicted.

Keywords: pastoralism, shepherds writings, religious symbols, landscape archaeology, ethnoarchaeology, Fiemme Valley

Fig.1 - Monte Cornón. (archivio MUCGT)
Fig.2 - Monte Cornón. (archivio MUCGT)
Villa di Chiavenna is a town of 1000 inhabitants in Val Bregaglia. The valley, partly Italian and part Swiss, descends from the Maloggia threshold, a watershed between the river Po and the Danube basin, orientated towards Chiavenna. The ancient borderline of Villa di Chiavenna, created by the rift of the Lovero and Casnaggina torrents, distinctly indicates areas influenced by Chur in the Middle Ages from those of Como and Milan. The Pré-Végèen mountain pasture is on the orographic left side of the valley. There are dates engraved from the 17th century with much older evidence found at an altitude of 1700 m a.s.l., on the grazing lands of the glacial basin where the Valtura stream originates. The scenic rocky ridges marking the northern boundaries of the pastures, are full of engravings. Hundreds of symbols, some more ancient than others, which are evidence of the presence of shepherds. Cruciform symbols have recently been discovered, probably from the late Medieval period, some with cup marks at the top of the rod, or crossbow shaped (phi) crosses, as well as hourglass figures, step ladders, branches, vulvar, rake and lattice forms. Among the graffiti there is also a female figure, with a baby in her lap, showing its navel and reproductive organ.

Keywords: Chiavenna, Pré-Végèen, Bregaglia, Valtellina Institute

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Beyond cup-marks: rock engravings and ethnography in Val Malenco (Sondrio, Italy)

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Twenty years ago, the author was involved in research on schematic engravings the area of Sondrio, particularly in Val Malenco. Whilst working in the area, she noticed the wealth of ethnographic evidence scattered through the villages, mountain pastures, and trails. This paper aims to initiate an analysis of this evidence, well beyond the mines (the most well-known ancient craft of the area) and to show how engravings are bound to everyday life and linked with property, as well as crafts. Not only has this work identified ways of living dating back to the Iron Age, such as fireplaces placed right in the middle of the kitchen in stone houses (the so-called Cà), pre-writing signs have also been identified that indicate amounts, such as wheat, and an intricate system of indicating property rights. At Chiesa in Valmalenco, for instance, in the area of Carotte two rocks are covered with acronyms, boundary crosses and surnames, in a sort of public village record. The paper will also show how people of Val Malenco were skilled in creating villages (which were eponymously named) and giving them specific features, linking some of them with arts and crafts (such as in Contrada Zarri, where panniers and basket were made for the entire valley).

Keywords: Val Malenco, rock engravings, eponymous villages (contrade), property borders, building techniques
Some striking parallelisms are found between the art of pastoral graffiti, such as can be seen on the slopes of Mt. Cornon in the Fiemme valley (Eastern Alps), and the conventions of the body art of tattooing. There is the prevailing red colour of the marks, which is clearly reminiscent of blood, but also a number of formal and stylistic features of the writings, which makes them akin to the specific graphic jargons of inmates and forced labourers worldwide. Following the combined suggestions of a number of influential authors, from André Leroi-Gourhan to Julian Jaynes, the paper will try to tackle the general significance of this form of expression within an evolutionary, i.e. diachronic, framework in the understanding of the development of human consciousness and expressive faculties.

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Keywords: pastoral graffiti, pastoral culture, Fiemme Valley, tattoos
This still abundant alpine steppe, of volcanic origin, was used for grazing flocks during the snow-free summer months at least since Neolithic times. Within an Armenian-German project all topographic, artificial, and rock art features across two major areas of investigation, measuring 2.4 km² in total, were recorded and mapped in high resolution (Knoll/Meller 2015; Knoll 2017). At least 198 out of 3493 decorated basalt rocks bear recent Graffiti, most of them incised, whereas the ancient depictions were pecked into the varnished surface. Predominantly, the shepherds left their names (or initials) and the year of their visit. The dates recorded range from the 1930s to the 1980s. Names were written in Latin and in Russian alphabet. In combination with this there are also some portraits, pastoral scenes, and objects related to space (especially rockets). These Graffiti provides an immediate insight into Soviet history, when the border between Azerbaijan and Armenia was open and the highland pastures were again populated after a long absence. Furthermore, the analysis of the Graffiti’s spatial placement patterns show, that the recent inscriptions are closely related to stone settings and pens, and that their authors preferred different areas for their “campsites” than the ancient ones. Both, however, meet at prominent waypoints.
Pastoral graffiti and “protohistoric” engravings in Mont Bego region: a study of marking practices over long time spans

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The region of Mont Bego (Tende, Alpes-Maritimes, France), close to the transalpine pass of Tende, is known as a major rock-art concentration in western Europe with some 36,000 pecked engravings (also called protohistoric engravings) and thousands of other incisions concentrated between a height of 2000 and 2700m. Pecked engravings are dated to the Neolithic, lato sensu, whereas the incised engravings are from a much more heteroclite and diachronic group such as drafting lines for weapon figures (Neolithic), arboriforms (Protohistory, Antiquity, Middle-Ages), surnames, dates and shepherds’ inscriptions (Early and Late modern period), etc. The spatial correlations between shepherds’ inscriptions (about 5,500 drawings and texts created since at least 1836) and pecked engravings is very high: ¾ of these historical engravings are on the same rocks as Neolithic engravings. This correlation is explained through our research on Mont Bego’s engravings with particular attention to the history of pastoralism (transhumance, alpine pasture, etc.) and relative contexts of graphical expressions (commemorative, territorial marks, etc.). First, we will focus on shepherds’ engravings (text, signatures, dates, location, etc.) and related ethnological data (pastoral paths, types of flock, age groups, etc.), then we will examine the more ancient periods: pecked and “schematic-linear” engravings, indexes of anthropic pressure, first occupations of the site, etc.

Keywords: pastoralism, rock-art, engravings, diachrony, traditional continuity, Alps

Fig.1 - Valley of the Marvels, the Alpes-Maritimes, France. Text of shepherd between the horns of a bull figure. (photo Emmanuel Breteau)
In recent years numerous sites dating back to Bronze Age and Roman times, located in “extreme” high altitude locations, have been investigated in the Central Eastern Alps of Italy. In addition to places of worship (Alpine Brandopferplaze) and ancient paths, often connected with places of worship, evidence emerged regarding the exploitation of resources (stone, wood, mines and pastures). Recent surveys have been conducted at the Passo del Tonale, between Lombardy and Trentino, where an ancient passageway is perhaps referable to Roman times. Materials and inscriptions found on high altitude mountains between the Raetian and Camunian regions suggest some interesting consideration on the use of resources and the possible role played by signs carved on high altitude mountains. The cultural interpretation underlines the sacred meaning of some sites on mountain tops, explaining them as passage sanctuaries, or more generally sacred areas associated with nature and the mountain. In addition to this interpretation, the practical function of such engraved rocks with pre-Roman and Roman inscriptions is becoming more evident. The carved signs could be used to mark a border, relating to the control and exploitation of the mineral resources, to indicate the rights for using the pasturelands, or to define aspects of the rules for using the territory.

Keywords: central eastern Alps, prehistory-protohistoric, Roman period, exploitation of resources, borders, places of worship enclosures, corrals made of stones not attached with mortar, in Italian is “a secco” (dry-stone wall)
On the Majella mountain the migration of the sedentary shepherd to summer pasture and use of caves and the transhumance of large herds on the high pastures are of great importance and allow for a thorough study of these two aspects of sheep farming. The pastoral sites, created in caves or in shelters situated under rocks, present different typologies of enclosure with dry stone walls and scrub pine branches according to the permanence or not of the shepherd during the night. The engravings that the shepherds left on the rocks during their whole lives, divulge 300 years of their history: it’s a story of paupers and of sufferings and loneliness. Looking at these engravings, we discover these shepherds cursing against the mountain, or expressing their happiness for their departure. The engravings represent crosses, or the monsters they had admired on the capitals of their village churches, and the big ship they saw during their long transhumance trips towards the sea of Puglia; but they also represented their home, writing repeatedly numerous names, many dates and the names of their villages. All these engravings deserve our attention: they are the sign of an ancient world which has disappeared and we didn’t pay attention to its death!

Keywords: sheep farming, caves, engravings, Majella, summer pasture

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Fig.1 - Pastoral cave. (photo Edoardo Micati)
Fig.2 - Pastoral engraving. (photo Edoardo Micati)
Pastoralism without writing: the case of Monti Lessini

In the Lessini highlands a project has been underway since 2005, with a focus on obtaining more information on the most ancient exploitation of the area, which is related to shepherds’ activities. The aim of the project was to locate and document traces of shepherds and sheep farming in the area, distinguishing them from the traces left by the other activities performed in the territory, such as cattle farming; to understand the changes that pastoral structures underwent over time; and to single out the specific characteristics of pastoral sites. A systematic field survey covered the whole of the Lessini highlands. In this way about 600 pastoral structures were discovered, identified and recorded in databases collecting their geomorphological location and architectural features. Archaeological findings dating to the final phases of the Bronze Age and to historical times were found in the same area: they are possibly connected with some pastoral structures (Sauro et al. 2013). Except for a few cases found on the edge of the Lessini highlands, where significant traces of mining activities were recorded, no traces of writings were found: the paper will try to explain this absence, which is likely due to a variety of factors.

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Keywords: Lessini highlands, ethnoarchaeological survey, shepherds’ structures, Final Bronze age
Mountains have often been perceived as sacred places, spiritual centers, the home of the gods or where they manifest themselves and often places were the ritual language - engraved, scratched or painted - is what remains to reflect this concept of sacredness and of frequentation. At the same time, many mountains have also been economically productive places for communities that, despite living in the valleys, have utilised the alpine meadows for pastoral activity, in some cases combined with the extraction of minerals and the creation of permanent or seasonal housing settlements. Almost every mountain in the Alps bears traces not only of material culture, but also of these graphic expressions. This art is the expression of ritual necessity to establish and maintain a good relationship with the world of superior beings and spirits that dwell in the mountains and rocks.

In the case of Monte Bego, a prehistoric sanctuary likely for the entire Ligurian world, it is emblematic in this sense, but more unique than rare in its wealth of figurative expressions. Its most famous rock art is the result of the activity of few artist-priests, while the simpler expressions, like the cup-marks which are found almost everywhere, are the result of popular religiosity.
During the field campaign of a new ethnoarchaeological project in Morocco in 2017, 11 petroglyphs were found around the summer camp of the Aït Atta family the project is concerned with. These nomadic pastoralists spend the summer period at ca. 2500 metres asl in the High Atlas region, some 150 km away from their winter camp in Jbel Sarhro. Focussing on traditional long-distance transhumance activity (“Arehhal”), the group’s historical and social background is one of the targets to which the discovered rock art could represent a significant key. Two petroglyph sites of a grouped symbols type were chosen for detailed optical analysis. Most of the petroglyphs from the Islamic period with its picked podomorphic geometrics match at least to the stylistic record of Southern Morocco and other regions and can be associated with intertribal pacts called “Tad’a / Tata” and a ritual exchange of sandals. Another site is more difficult to interpret but seems significantly older. Limited by a strongly weathered condition some of the traces cutting the rock surface are indefinable anthropogenic or erosion marks. This issue qualifies the second site for photogrammetric and GIS classification analysis which results in a 3D model and a vectoral interpretation of the rock engravings to enlarge the regional occupation history.

Keywords: High Atlas, Aït Atta, transhumance, podomorphs, picking technique, weathering
Pastoralism and quarrying: possible typological divergences in the production of historical rock art in accordance with the sites intended use

This paper aims to investigate a small number of rock art sites dated to the modern period, to identify any typological divergences between the ‘signs’ left by the shepherds and those produced by those engaged in different work activities. The presence of figurative rock art is observable in many places frequented by shepherds, farmers and forest product gatherers: as a matter of fact, different types of ‘signs’, such as anthropomorphic and zoomorphic figures, fortifications, keys, coffins and ostensorsies, and spirals, are recorded here. Conversely, in the areas where there was a predominance of people engaged in mining and stone quarrying a greater percentage of incisions were found, that could be defined as “schematic”. Perhaps this divergence is due to the fact that shepherds and gatherers had at their disposal much more time for engraving, while quarrymen and miners, often working for many hours, sometimes in the subsoil, have created these less elaborate engravings (from a graphical point of view) but with a more useful function, that is to indicate the territory for concessions of exploitation and properties. There are also signs and writings that have propitiatory purposes, these were made for the protection of one’s own life in consideration of the high risk of fatal accidents faced by miners.

Keywords: shepherd rock art, historical rock art, quarrymen, miners

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Pigments: From Science to Art

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Evidence indicates that pigments have been used since the beginning of mankind. Therefore, the study of these materials can reveal the continuous relationship of societies with the environment or the technological skills of different groups. Their conservation is especially challenging.

In rock art, the origin of the material used is very diverse, including organic preparations, plant extracts and minerals. But while trying to characterize the pigment itself, we cannot forget the binding agents, the possible diluents and the contaminants resulting from the production, the application processes and/or decomposition.

In this section a non-limitative list of topics will be discussed, including:

- Application of different techniques (e.g., FTIR, RAMAN, chromatography, SEM-EDS, XRF, XRD) in the material characterization:
- Study of degradation processes;
- Recent advances in in-situ analysis;
- Forensic applications in art and archaeology (e.g. forensic archaeology, authentications procedures);
- Studies about production, use, trade and provenance of the material;
- Other topics
The use of organic binders in Paleolithic rock painting is a debated topic since its discovery. All paint requires a vehicle that binds pigment particles and facilitates their application. The binders conditionate the transformation of the color of the pigments and their conservation. However, various theories maintain that the use of organic materials as binders would have meant the almost total disappearance of the paintings due to the biological agents. Although the fat-based binders do not offer a good performance on wet surfaces, some researches on Paleolithic paintings have revealed the presence of traces of organic matter. These results led us to explore the possible use of these organic materials as binders for the pigments used, despite water probably being the most used binder due to its abundance. Consequently, we have designed a research plan based on the execution of empirical tests using the most common pigments used in Paleolithic rock art (iron oxide, charcoal, manganese, etc.) and their possible binders (animal fat, mainly marrow, beeswax or vegetable resins). Accordingly, we have been able to study their different combinations and responses when applying them on different supports.

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Keyword: rock art, Paleolithic paintings, painting techniques, binder, pigments
Integrating Science and Rock Art in the University Curriculum

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This paper describes a course for university students in their third year of studying chemistry. A series of experiments and projects explores the science of pigments, rock art, and art conservation. Analytical techniques include powder X-ray diffraction (XRD), polarized light microscopy (crystal shape, pleochroism, Becke line, and isotropy), infrared spectroscopy (FT-IR), and liquid chromatography (LC-MS). For example, we heat natural goethite both in the laboratory and in an open wood fire. The conversion of goethite to hematite and other minerals is studied with XRD. In another experiment, natural dyes are extracted from plant materials and characterized by LC-MS. Student-initiated projects include the study of desert varnish, identification of fibers, degradation of pigments by light, and many others. Throughout the course, science is applied to understanding methods and technologies of past artists and conservation of their works. Primary literature is emphasized.

Fig. 1 - Polychrome rock art in Sedona, AZ, USA. (copyright Walter Bowyer)
Fig. 2 - Pigments and XRD. (copyright Walter Bowyer)

Keyword: pigment, analysis, rock art, conservation, pedagogy
Since 2014, the Republic of Bashkortostan has been consistently implementing a program aimed at improving the state of preservation of the Shulgan-Tash (Kapova) Cave and providing better access to accurate information on the cave art. After two years of work, the restoration team, headed by Eudald Guillamet, removed more than 800 items of graffiti on an area of about 120 square meters enabling a new recording of the images in the cave. In the fall of 2017, the image of a camel was revealed from under calcite sediments. According to the preliminary data, one may assume that the camel image was made in one color, and the visual difference between the dark and light paint within that image is due to the state of preservation on the edges of the figure – the charcoal was washed down with water back in prehistoric times. The paint of the better-preserved central part of the image, as well as that of the geometric sign to the right, does contain the charcoal, which was recorded using infrared photography and microanalytic techniques.
Pigment use in the early modern human records of Australasia

The Australasian region features prominently in recent research concerning when we evolved the artistic practices that unequivocally signal human behavioural modernity. Ground ochres are consistently among the earliest evidence for colonisation, including the initial peopling of the Australian mainland, the earliest end-point for human migration out of Africa. While in Indonesia some of the earliest rock art in the world is preserved. Here I will present the results of a variety of recent physiochemical characterisations that I have undertaken on some of the earliest circumstantial, and uncontested, evidence for the production of art in Australasia, including the sites of Madjedbebe and Nawarla Gabarnmung in Arnhem Land, northern Australia and Leang Bulu Bettue on the Indonesian Island of Sulawesi. I will showcase the value of a myriad of techniques including Scanning Electron Microscopy, portable X-Ray Fluorescence Spectrometry, and Synchrotron Powder Diffraction/X-Ray Florescence Microscopy.

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Keyword: Australasia, behavioural modernity, SEM, pXRF, Synchrotron PD, Shychrotron XFM
Pictographs are important archaeological locales that can provide insight into histories of mineral use and pigment preparation technologies. We present the results of a multi-method investigation of pigments used to produce rock art at Babine Lake, British Columbia (Canada). Examination by microanalytical techniques (SEM-EDS, TEM, FIB-SEM, FTIR, high-sensitivity magnetometry) revealed information pertaining to Fe-oxide source selection, the mineral depositional environment of the panels, and evidence for pigment enhancement by pyrotechnology. The pictographs at Babine Lake were painted on an outcrop of argillaceous limestone covered in a kaolinitic weathering deposit. This natural canvas, and subsequent accretionary deposition, has aided in the long-term preservation of the rock art panel. The red pigment is composed of a homogenized mixture of ferrihydrite and hematite that was biogenically produced ex situ by aquatic Fe-oxide producing bacteria, including Leptothrix ochracea. Results from high-sensitivity magnetometry and comparative analysis of fired Fe-oxide bacteria control samples also suggest that the pigments were thermally altered to induce Fe-oxide phase change to enhance colour properties. Our results demonstrate the potential of microanalytical applications in rock art studies, and have archaeological implications for pigment harvesting and source selection, preparation practices, and decision-making in the placement of rock art in British Columbia.
Rock art is the result of historically situated social practices unfolded through its production and use. Taking this into account, we argue that an understanding of the components and manufacture processes of rock paintings allow us to discuss how rock art production was enmeshed in a historical field of social practices, places, and substances. In this regard, our work discusses the potentiality of archaeometric analyses of paintings to understand the historical and social dynamics of the practices. Our research, funded by the FONDECYT project 1150776, focuses on rock paintings made by Late Holocene hunter-gatherers in North-Central of Chile (30° S). We analyzed micro-samples of red, black, yellow, and green paintings using Optical microscopy, Raman Spectroscopy, and Scanning Electron Microscopy equipped with an Energy Dispersive X-ray Spectroscopy system (SEM-EDS). The results revealed the different pigments used, as well as some binders and possible extenders. We argue that the identified components are related to diverse practices, with different spatial, material, and chronological expressions, and briefly discuss how they are participated in broader relational fields that gave rock art its social and cultural relevance. Our research reveals the potential of archaeometric analysis for understanding rock art production and consumption, and its material reality, as fundamentally historical and relational.
Riparo Cassataro, Centuripe (Sicily), is about 400 meters from the Simeto River and close to one of the rocky peaks in the area. Riparo Cassataro is mainly known for its rock paintings, the only site known in Eastern Sicily.

The paintings are on the western side of a boulder that, together with two others, form part of a cavity open on three sides (Figure 1). The cavity is accessed from an opening on the western side, where the prehistoric figures are drawn. Inside the shelter, spread on top of a smooth horizontal surface, around twenty cup marks are also found.

The pictorial complex (Figure 2) is in a good state of conservation and is characterized by figures drawn in red, realized with a rudimentary brush. The pigment was probably derived from nodules of iron oxide common in the area.

In order to characterize the pigments, the combined use of different analytical techniques was carried out in situ. Portable PIXE and XRD devices were used to determining the elemental and mineralogical composition of the paintings.
Raman spectroscopy is considered one of the most powerful techniques in the field of non-destructive analysis of artworks. One of its numerous advantages is that its application is non-invasive, yielding exceptional results without jeopardizing the artefacts. In prehistoric rock painting analysis, Raman spectroscopy can be used in the laboratory or in the field for characterizing pigments (mostly different haematitic compositions, natural green and yellow pigments, gypsum, manganese oxides, carbon or bone black, etc.) as well as causes of deterioration and the substrata. Its contribution for rock art documentation is twofold: identification of the “palette” used by indigenous people and investigating weathering processes that affect these magnificent works of art. The latter being quite significant as most rock art is at risk from both natural processes and human activity.

The use of Raman spectroscopy on the investigation of prehistoric rock art paintings will be illustrated through several examples of rock art found internationally. Its use as a guide technique will be discussed as the results can be utilized in a decision-making process regarding the employment of other techniques (e.g. radiocarbon dating).

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Keyword: Raman Spectroscopy, pigments, weathering products, rock art, mobile and benchtop instrumentation
From rock art to science: elemental and molecular analysis of paintings from Taltal locality, Atacama Desert Coast (northern Chile)

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The rock art from Taltal, on the Atacama Desert coast in northern Chile, stands out for its references to a coastal imaginary, where hunting scenes of different marine animals and fishes prevails, accompanied in a lower degree by camels, anthropomorphs, and others terrestrial mammals. These scenes have been studied mainly from a motif and stylistic approaches. Therefore, in this communication we present an elemental and molecular physiochemical study (Microscopy, SEM-EDX, RAMAN) of multiples samples from El Médano site, located in the upper part of the coastal mountain (600-1300 masl), in addition to several small rock shelters located along the coastline. Between the different sites we have identified a high mixture variability. Nevertheless, the paintings location, beside the sea and in unceasing contact with the coastal fog, facilitated the formation of dense salt layers, damaging their preservation. These conservation aspects should be considered with caution, and have become a methodological challenge for the analytical process and interpretations. Our research finally allows us to ponder and discuss the management of specific knowledge and possible pigments recipes in the rock art technologies developed by the coastal people of the Atacama Desert before European contact (XVI c.).

Keyword: rock art painting technology, pigments, microscopy, SEM-EDX, RAMAN

Fig.1 - One of the motifs from El Médano site, Taltal, Northern Chile. (photo Francisco Gallardo)
Fig.2 - Elemental images by SEM-EDX. (photo Marcela Sepúlveda at C2RMF laboratory)
Since 2008, different studies have been carried out on the pigments of Colombian rock art. For this purpose, different analytical techniques have been used in the identification and characterization of the possible raw materials, their treatments, recipes and visual manifestations after they have been applied. In this presentation, the analysis protocols used in three different zones of rock paintings will be shown to compare their results, advantages and disadvantages. Evidence of the heating of clay minerals was found in Soacha through the use of Infrared Spectroscopy, in Facatativá some experimental practices were performed to try to reproduce the heating processes of the pigments and were analyzed with the help of Raman spectroscopy. In the case of Guaviare, the geochemical analysis of XRF and electron microprobe revealed that the pigments are composed of iron oxides (red pigments) and oxides and hydroxides of titanium, phosphorus and other siliceous aggregates (white pigments). Raman analysis confirmed that red pigments are composed predominantly of hematite and white anatase pigments.
In this paper, we explore the use of red ochre at Hohle Fels cave in southwestern Germany. Here, the ca. 3-metre-deep stratigraphic sequence spans several millennia from the earliest onset of the Aurignacian (32-40ka BP) to the Holocene (ca. 11ka). Nodules of red and yellow ochre materials, some with evidence of anthropogenic modification, were recovered from most archaeological layers and present a unique opportunity to observe diachronic changes in ochre-related behaviors at the site. The ochre pieces were classified by various qualitative criteria, including color, size, and streak, and visual assessment indicates clear changes through time in patterns of source exploitation and utilization, especially between the Aurignacian and Gravettian (27-32ka BP) time periods. Numerous other artefacts with ochre residues, such as bones, shells, teeth, and limestone fragments provide evidence for continued interactions with ochre at the site. In order to address questions of source selection, 193 ochre pieces were elementally characterised by neutron activation analysis (NAA). The use of compositional analyses allows us to explore continuity and change in mineral acquisition strategies. Furthermore, the combined use of qualitative and quantitative methodologies provides an overview of the range of ochre behaviours and how these changed over time.

Keyword: red ochre, pigments, symbolic behaviour, Upper Palaeolithic, archaeometry
The heritage of all rock art must be preserved and studied at the same time. Research and preservation are closely linked, and this forms the basis of this session. The interdisciplinary aspect of research is an integral part of the processes of conservation. To preserve without studying does not make sense and may even increase the risks to sites. In addition to the degradation caused by vandalism the sites are naturally all destined to eventually disappear, only the length of time is variable. On top of the complexities of conservation several other challenges impact the processes and outcomes of projects and the associated research. These include questions such as: How do public policies influence the conservation and research directions? What public or private funds or both, are allocated to these issues? How are the results and outcomes shared with the public?

Within this session we would like to present various international cases framed by aspects such as the administrative influence, which scientists are chosen for projects and the influence of the policies on the research, how many researchers are assigned, what institutions are involved, which methods are selected and who are the stakeholders?
New challenges in research on heritage preservation: a comprehensive experiment in the Pech Merle cave

Preservation of evidence in prehistoric painted caves is associated with the stability of karstic environments that maintain the stability of air/water/rock interfaces on cave walls. Since the nineties, public policies have supported cave monitoring operations that provided an efficient alert system and a decision-making support for protection or remediation. However, over the past few years, significant drifts of key underground characteristics and climate parameters have emerged in the records. Such growing evidence of a changing environment from combined local and global influences, implies a need to define a standard for the stability of the natural processes for conservation purposes. In anthropized and complex sites, new research and additional information for monitoring are urgently needed to maintain the necessary standards for preservation. In the Pech Merle cave (southern France), in addition to the monitoring funded by the Ministry of Culture since 1998, a team of researchers from private and public research institutions decided, two years ago, to contribute all of their own funding, towards a comprehensive data acquisition project which is still ongoing. Logistical support for 3D scanning was provided by the owner of the cave. The first results of this multidisciplinary project reveal considerable additional complexity on top of the natural environmental factors, originating from cave tourism and surface land use.

Keywords: prehistoric painted cave, climatic drift, conservation, monitoring, 3Dscan

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Wherever rock art can be found in the world, with all its forms of expressions, intentionality and its different developments it represents a phenomenon linked to human thought, mental processes and the intellectual, emotional and social evolution of human beings. Rock art is a very vulnerable element and it is also the graphic testimony that has reached us from the most ancient groups, as well as historic and recent communities that became established in Mexico. This makes it worth preserving. Within the analysis of the processes involved we move from registry to research and preventive preservation, actions of the specific public policy. Registry, through which information capital is preserved; research, as the basis for any decision making and preserving actions with legal support and lastly, raising community awareness. These are some actions designed to prolong and safeguard the life of rock art as an archeological asset. Public policies designed around effective research will provide a starting point to a new preservation paradigm. The dialogue between researchers and policy implementers is key to understanding the real needs of the communities and rock art per se.

Keywords: rock art; Mexico, conservation, sustainable management
Within archaeological evidence, prehistoric paintings and engravings on rocky supports offer an important potential for information on the material and immaterial aspects of past cultures. Rock art is one of the few types of prehistoric evidence whose character represents a universally accepted heritage value. Traces of rock art have survived over considerable lengths of time, but in a state of evident fragility and represent a small element of what existed in prehistoric times. The geobiological changes over time within rock shelters together with new contemporary agents of deterioration (urbanization, pollution and ecological imbalance) increase the conservation risks to this heritage. The Seridó Archaeological Area, which includes rock art, represents a recognized and important area of cultural and natural heritage value on which multidisciplinary studies currently converge. From the perspective of preventive preservation (Brunet, 2006), this research project aimed to develop an indicative diagnostic system with the goal of describing the conservation status of rock art sites in Seridó. This would allow for the proposal of mitigation measures based on protocols that are integrated within the current documentation for the area, initiating a method for identification, evaluation, detection and control for the risk of degradation of sites with rock art.

Keywords: rock art, conservation, Seridó Brazil

Fig.1 - Rock art site of Casa Santa, Carnaúba dos Dantas, Rio Grande do Norte, Brazil. (photo Cisneiros, 2018)
For the past 20 years Altamira has had limited visits inside its cave, it was closed for public visits in 2002 as a means of preventive conservation. During the years of closure, it remained permanently monitored and the research into the main parameters for conservation continued. In 2012 the Ministry of Culture, public administration responsible for the management of the cave, launched a new Research Program for Preventive Conservation and Access Regime for the cave of Altamira. It concluded in 2014 with the drafting and implementation of a Preventive Conservation Plan. Within the project, experimental visits to the cave were carried out during a year in order to measure the exact impact of visitors, and after analyzing the results, it was determined that the cave could remain open to the public in a regime of five people visiting the cave once a week; 37 minutes, of which only 8 minutes in the room of the Polychrome paintings and following a strict protocol of access.

Keywords: site management, preventive conservation, conservation research, public visits
To understand the evolution of the endo-karstic environment within the framework of the assessment of the preservation and study of parietal art, it seemed that observations and experiments in the scale of 1 (full-scale) were necessary. The implementation of the laboratory cave of Leye was thanks to Norbert Aujoulat’s conception of having an undecorated cavity, without archaeological interest, dedicated to the study and understanding of the underground ecosystem and its interactions with the environment. The goal of this research is to develop, in the long term, an expert system that services parietal archaeology and the preservation of the decorated caves. For that purpose, a first stage in the study of the facies of the walls consisted in creating their physiochemical characterization within the cave of Leye. Furthermore, an evaluation of the parameters which control these facies was made from a corpus of non-decorated caves of the Vézère watershed.
3D models of decorated caves have the potential for a variety of applications once they are controlled and fully utilized by archaeologists. They have the capacity to be an effective method in the study of rock art at a variety of different scales, while also representing an important tool for the communication of results to the general public. When considering a 3D model with a scale that allows for the model to represent the whole cave, the environmental appropriation by the Palaeolithic people can be considered. The 3D model can be used to rebuild the original state of the cave. It can also be used to improve the hypotheses of movement, points of view, and different kinds of lighting, etc.

A 3D model with a scale that encompasses a cave wall panel, concerns the rock art reliefs, taking into account the figures as well as the wall taphonomy. The millimetric and inframillimetric scales help with the technological analyses. Different ways of scanning have to be used for each goal. This form of rock art research is also a way of combining preservation with the management of important heritage sites.
In the Vézère Valley, the conditions were favorable for human settlement, the archaeological deposits and the decorated caves are testimony to this. The sites within the valley provide the dual value of heritage significance and the archaeological evidence for understanding past societies. The valley’s exceptional character explains why fifteen sites, of which the most emblematic is the cave of Lascaux, were recognized by being listed on the UNESCO World Heritage List, in 1979 -“prehistoric sites and decorated caves of the Vézère Valley”. But these sites are vulnerable as they are part of a complex karst environment; the protection zones necessary for their conservation must include particular considerations derived from hydrogeomorphological criteria. In response to these requirements, public policies have historically included various facets: research and information, institutional involvement, the physical environment and legislative protection. Henceforth, the complementary use of the revised protection plan and the actions of the Ministry of Culture and the Ministry of the Environment, will make it possible to further meet the protection needs of these sites, in a renewed dynamic: fundamental understanding of the sites to be enhanced and shared management with local actors on the wider scale of the whole valley.

Keywords: Vezere Valley, UNESCO, “Operation Grand Site”, research, conservation, regional policies
The Gravettian decorated and sepulchral cave of Cussac, discovered in 2000, with very favorable conditions for archaeological preservation, has seen the implementation of a conservation policy, that prioritises and merges both research and preservation.

In Cussac, in parallel with the pursuit for public control of the land, the elements of research that constituted the comprehensive consideration for the cave were in its hydrogeomorphological, climatic, karst, and microbiological context, which were prioritized, with an objective for the site’s environmental protection. Then, from 2009, the interdisciplinary archaeological research that was implemented, both challenged, enriched and fed into various aspects of conservation. An integrated approach for the cave has meant that the different concerns are not considered in a parallel and distinct way but that on the one hand the development of archaeological research and on the other the conservation requirements are approached in a holistic way. Concrete examples will be presented to illustrate with more clarity, this integrated approach. The research and analysis of the integrated approach in Cussac could benefit the scientific and administrative personnel in charge of rock art conservation, and the wider archaeological community as a model for future sites.
Collaboration with Australian Aboriginal communities has been standard practice in rock art studies and archaeological research for decades. Set against this backdrop, statutory responsibility for Aboriginal heritage, which typically falls to government agencies, has increasingly involved Traditional Owners. Formally this has seen the rise of co-management agreements, the representation of Aboriginal people within peak bodies, and the vesting of statutory responsibilities for objects/places with Aboriginal organisations (such as Land Councils). More and more, Indigenous Australians are driving the research, assessment and management agenda relating to their heritage; not only adopting, but engaging with, modifying and innovating the use of western scientific method and technologies. In this presentation Yuin Artist/Activist Clive Freeman, Traditional Owner of Wreck Bay, will discuss his experiences as a director on the board of the jointly managed Booderee National Park. Booderee is Aboriginal land, leased back to the commonwealth by The Wreck Bay Aboriginal Community for the creation of the National park in 1995. Clive’s discussion will focus on the extensive cultural landscape in which rock art and ochre quarries sit, highlighting the challenges for western management frameworks, such as National Parks, where continuing cultural practices are a part of everyday life.

Keywords: Aboriginal Australia, joint management, National Parks, cultural landscapes
The Lascaux cave (Dordogne, France) discovered in September 1940 has undergone extensive modifications to its morphology since this date. The entrance has been substantially widened in order to accommodate rapid access for the public, leading to the destruction of the entrance scree. Inside, the grounds have been modified, sometimes dug more than a meter to allow people access whilst standing up, sometimes raised with rubble accumulation. The current morphology can be viewed thanks to 3D laser scanning, its morphology at the time of discovery is based on contemporary interviews or images from that time. With the assistance of data from various sources such as archived information, the 3D model had been modified to recreate the morphology at the time of discovery. Several interesting results for conservation and research have resulted from this work. The simulation of the thermo aeraulic flows based on this rendered morphology will contribute to knowledge of the climatic conditions in the cave at the time of the discovery. As such, the same work could be applied to reproduce the Palaeolithic morphology. It will pave the way for research on the wall accessibility and the distribution of the archaeological evidence.
The aim of this paper is to provide a general perspective of the public policies guiding the management of cave art sites in Spain. The role of the state and regional governments is fundamental in this matter as the Spanish heritage legislation considers the entire archaeological heritage as appertaining to the public domain. The second basic principle in the management of those sites is that they enjoy the maximum legal protection in Spanish heritage regulations. They are given this designation “automatically” from the moment of their discovery. Caves are also affected by other sectorial legislation managing the environment, urban planning, underground water, development, etc., but the heritage value prevails in any case (or it should prevail) over the other laws. Those general principles are applied throughout the country but it is necessary here to consider the complexity of Spanish administration, which is structured into seventeen autonomous communities, all of them endowed with the exclusive control of heritage management, expressed in a number of self-governing heritage laws.
Since the discovery of Altamira in 1879, a long history of research, conservation and management of cave art sites began in Cantabria, Spain, which has progressed in line with the advances in knowledge related to the conservation, research and enhancement of archaeological sites. There are currently seventy Palaeolithic cave art sites, of which ten are world heritage sites and seven are open to the public. These caves embody an outstanding universal value and they also represent an important factor for tourism. The objective of this Plan is to mobilize public resources for the enhancement of the region’s most important heritage sites, through improvements in management and infrastructure related to the caves or the renovation of regional museums and the reinforcement of collaborations with the national museum of Altamira. All this, in the framework of an action plan aimed at boosting up what this area has to offer in terms of research, conservation and public enjoyment of its magnificent heritage. Only in this way will the intended returns to society from this potential element of cultural and socioeconomic development be fully realized.

Keywords: cave art, research, conservation, management, public archaeology
Management and conservation for the Valle Camonica Rock Art

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Keywords: Valle Camonica, UNESCO, conservation, rock art, copper age, rock paintings

After an initial project carried out between 2012 and 2014, in 2017 the Ministero dei beni e delle attività culturali e del turismo started a new project on knowledge, management and monitoring of the Valle Camonica engraved rocks, with public funds for Italian UNESCO Sites (according to the Law 77/06, Financial Year 2015). The new project continues from the previous one, but focuses on new rocks found in the last years, on the rocks located in the National Park (loc. Naquane), on Eneolithic stele, boulder-menhirs and on few, but interesting, rock paintings. The archaeological heritage has been recognized, catalogued (www.irweb.it) and georeferenced to build a Geographic Information System. Also, on this occasion, all the groups of researchers working in Valle Camonica are involved in the work. The state of conservation of the paintings is analysed with the collaboration of the Istituto Superiore per la Conservazione e il Restauro, while for the biodeterioration the Università di Torino-Dipartimento di Scienze della vita e Biologia dei Sistemi is involved.
Within the extensive area stretching from Egypt to Iran (and the associated regions), rock art represents several traditions which exhibit remarkable chronological sequences spanning from the last phases of the Paleolithic until the modern era. The body of associated rock art research in these regions is comparatively small and the number of ongoing projects are few. There is a clear need for diffusing the results of the ongoing research and our hope is that this session can stimulate discussion among scholars on the various themes emerging from such investigations and promote interest in future projects.

Given this, we would like to invite scholars to present papers focusing on new discoveries, the investigation of the chronological sequences, the similarities of styles and of associated themes within this geographical area.
There are some images in the rock art of Iran of which their use and meaning is unclear. Some rock art researchers believe that these signs are tribal symbols and in Saudi Arabia, people called these kinds of symbols Wusum. In Iran, there are similar images within rock art that are also found in stonemason imagery. The stonemason’s signs are carved on rectangular stones in Achaemenid, Sassanid, Safavid and post Safavid mosques, places and bridges. These images consist of a circle, rectangular, line and a curved line, so they are not varied. In this paper it is suggested that the usage of these signs is also similar; and the people whom use these signs had a similar goal. Their goal is that of introducing themselves to other people, but in rock art that goal may be more for a territorial demarcation and the stonemason’s goal is to declare the artisan of a particular stone or to declare the work of a particular team.

**Keywords:** signs, rock art, stonemason, Iran, tribal symbols

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Fig. 1 - Some of the tribal symbols in Meymeh Plain. (photo Ali Aarab)
Fig. 2 - Some stone mason’s marks in Chehel Sotoun place
The Gobustan Rock Art Cultural Landscape, which was included in the World Heritage List of UNESCO in 2007, is located in a favorable landscape 60 km south of Baku. Archaeological research, which first began in Gobustan in 1939, is still in progress today. The rock art database establishment project was initiated in 2016 and Jingirdagh-Yazilitepe was chosen as the first area of research. As a result of the survey, man-made cupules, cup marks of different sizes and forms, and scientifically important complexes with petroglyphs have been registered in the area called “Sona Gaya”, located between the Cingirdagh mountain and the Toraghay mud volcano. This paper covers the initial results of the documentation project conducted in Jingirdagh in 2016-2017, including newly recorded petroglyphs and newly recorded engraved rocks.

Keywords: Gobustan, Jingirdagh, rock art database, petroglyphs, fieldwork
This paper focuses on the recent research of rock-art in south Uzbekistan. Except for one case represented by a site with rock paintings in a small shelter Zaraut Kamar, there was no rock-art known in this area four years ago. In 2015 during the Czech-Uzbekistani archaeological expedition, the first stones with petroglyphs were discovered and subsequently this phenomenon became an object of research. The discussed rock-art lies in the Surkhandarya Province in the steppe landscape of the piedmont of the Kugitang Mountains. The petroglyphs being studied are depicted on the loose lying stones which have a black patina. Based on the stylistic and iconographic analogies, it is possible to date most of petroglyphs to the Late Bronze Age and Early Iron Age, with some cases overlapping into the Medieval Period. The data presented here summarizes the results of three seasons of research (2015-2017). Over 170 stones with petroglyphs were collected. The most common representations identified were animals, then human figures, vehicles and geometric patterns. The motifs represented are similar to other sites with rock-art in Central Asia and this current research help to fill the gap in the knowledge of this topic.
A project begun almost 20 years ago not only led to the presentation of much testable data about Saudi Arabian rock art; it has coincidentally also resulted in the discovery of major rock art complexes. The massive Shuwaymis complex, the largest and most impressive Neolithic rock art concentration in the world, was discovered in 2001, and the al-Mismā rock art complex in 2017. The first is now inscribed on the World Heritage List, the second will remain inaccessible. The Deputy Ministry of Antiquities and Museums of the Kingdom of Saudi Arabia began a project introducing scientific methodology in its rock art survey program in 2001, now continuing under the auspices of the Saudi Commission for Tourism and National Heritage. This project has, among other results, yielded the first scientific and direct rock art age estimates reported from the Middle East. A preliminary chronological sequence of Arabian Peninsula rock art has been established on their basis and is briefly presented in this review paper. Currently the project is engaged in the submission of the Hima Cultural Precinct, comprising more than 550 sites, to the UNESCO World Heritage List.

Keywords: Saudi Arabia, petroglyph, radiocarbon dating, microerosion analysis, OSL analysis
The research of Israel’s rock art is a rather new development. With Biblical Tels strewn throughout the country, scrolls and ostracons, few archaeologists were interested in the “mute” images found scattered on various boulders through the desert. In recent years the rock art research of the Negev has been rekindled with surveys being carried out, data collected and chronologies emerging. Until recently it was believed that the rock art was restricted to the Negev desert, though a number of new “accidental” finds from the north of the country present a new and much more diverse picture, one, amongst others, tied to megalithic monuments.

The rock art located in the lush northern part of the country and that found in the arid desert situated in the south were created by different cultures in different periods. Interestingly both traditions offer a link to the cultures of Transjordan, reflecting the movement of people and/or ideas. The research presented will offer a brief overview of the rock art in Israel, the research, new findings, chronologies and traditions.
Gobustan’s archaeological sites represents striking examples of the organization and transformation of a landscape into a ritual space, on the one hand, and on another into a space for living, and eventually into the space that today yields the traces and cultural links to our ancestors in the form of signs left by them in the landscape and, to some degree, within the oral tradition. All these layers make up the Cultural Landscape of the Archaeological complex of Gobustan. For the purpose of drawing up the basic documentation of an archaeological complex for Gobustan, a digital data base was created in 2004, the first in Azerbaijan and the Caucasus, recording petroglyphs, caves, settlements, barrows and burials. In recent years, 3D Modelling technology has been used as a modern method for the documentation of the petroglyphs of Gobustan. Radiocarbon dating of the occupation layers of caves was also necessary for a complete and detailed study of these petroglyphs. As such, in 2010, research on the dating of occupation layers of caves and shelters began. The use of new methods (night photography) and programs (3D modeling) have enabled us to discover and register more than 200 new images from the rocks of Gobustan.

Key-word: 3D modelling, Gobustan, rock art, Ana zaga, rock art database
The T-shaped figure is a common subject in the rock art of Northern Oman and is known in other areas on the Arabian Peninsula (Northern Galilee, southwest Saudi Arabia, UAE, and Yemen). It consists of a capital T-shaped engraving that can occur in isolation, in association with other similar figures or attached to the waist of human figures. Because of its simple form, it may represent several different things and since the beginning of research, its interpretation has intrigued scholars. Rudolf Jäckli, one of the first scholars studying Omani rock art, thought that this figure could be the depiction of a very stylized human, but he also mentioned the interpretations proposed by others: a palm tree or a battle-axe. We think that the T-shaped figure should instead be interpreted as a dagger, like already previously recognized by L. Newton, J. Zarins and before by E. Anati. The chronology of this figure is confirmed by its presence in the Yemenite warrior stele and on the engraved blocks of the Omani al-Khashbah 1 tower dated to the 3rd Millennium BCE. Its presence in rock art can probably be interpreted as part of some male rituals associated with the initiation of the youth.

Keywords: Northern Oman rock art, T-shaped figures, 3rd Millennium BCE, daggers

Fig. 1 - Shenah, Quatarah, Sultanate of Oman. Group of T-shaped figures overlapping animal figures of previous chronology. (photo A.E. Fossati)
Fig. 2 - Wadi Aday, Sultanate of Oman. T-shaped figures associated with a schematic human figure and a circle with internal dot. (tracing by A.E. Fossati)
Over 200 individual examples of petroglyphs were discovered during the Wadi Raghwan Archaeological Project, which focused on a semi-arid zone approximately 800 square kilometres in size, to the northwest of the city of Ma’rib. These examples can be broken down into several categories of iconography: Zoomorphs, isolated or in combinations, in both naturalistic and schematic representations; Anthropomorphs, both isolated and in combinations, all of which are schematic; Geometric symbols (including wusum), isolated or in combinations; and “Doodles”; and Cupules (cup marks). They occur in nine concentrations within the landscape, while dense concentrations are found in three locations and are associated with graffiti. When the iconographic study is correlated with locations and graffiti, three associations emerge: clusters with both Ancient South Arabian script and Arabic graffiti, suggesting specific activities such as accessing water, stone quarrying and camel caravan stop-over points; a likely ritual context within a hidden valley; and graffiti associated with “cognitive maps”. While numerous examples exist of graffiti associated with rock art, and of likely ritual contexts, the specific iconography and script associations here are unusual; associations with camel caravan traffic locations and cognitive map depictions in rock art are not commonplace in Arabia.
Mor-Siāh and Qale-Yāvar: two clusters of petroglyphs in the Qameshlu National Park, central Iran

Two clusters of rock art, including more than a hundred petroglyphs, are identified from the Qameshlu National Park in central Iran. As in other parts of the country, the ibex motif and hunting themes are the most common characteristics of the rock art in the region. Geometric markings also form a part of the rock art in the Qameshlu area, and all panels are made on the schist rocks, mostly situated along seasonal water courses. The Qameshlu National Park is the habitat of various species such as, deer, and ibex whose images can be abundantly seen in the rock art of the region. Although superimposition of depictions indicates that the petroglyphs were made in different periods, the hunting potential of the area as well as the archaeological and historic evidence suggest that a percentage of the petroglyphs, including hunting scenes, are likely to have been made by hunters probably during the centuries of Islamic rule.

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Keywords: Iran, Qameshlu, petroglyph, ibex, hunting, rock art, Mor-Siāh, Qale-Yāvar
A New Discovery in the Eastern Mediterranean: Hand Stencils of Doğu Sandal Caves, Mersin Province in Turkey

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This research concerns the new discoveries of rock paintings located in Dogu Sandal Valley of the Middle Taurus Mountains, Mersin Province, Southern Turkey. Although the red colour of some paintings is be visible in six different caves, only two of these caves have some discernable figures. Approximately 60 residues of paintings have been located, which are in the shape of hands and were likely made with a technique which sprayed red paint as well as a hand printing technique. These caves contain 37 hand stencils and 20 hand print figures in total. In addition to the hand figures, schematic human, animal and geometrical figures have been discovered in the caves. A human figure has been located on a hand stencil. This figure has both arms open, like the ones seen from the Neolithic Age. That is the reason why we think that there must be two separate painting layers in the caves. It is unfortunate that there is no archaeological material that has been found in the caves. Suggesting a chronology is quite difficult without analysing the residues. However, our preliminary assumption is that they may belong the pre-Neolithic period judging by the symbolism and schematic characterizations. On the basis of their characteristics, it seems that they are unique for Anatolia as well as the Eastern Mediterranean.

Keywords: rock painting, hand stencils, handprint, Middle Taurus, Eastern Mediterranean, Doğu Sandal Valley
Recent research developments in rock art research in the Middle East, Caucasus and neighbouring areas

Thousands of carved images and inscriptions have been discovered across the Arabian Peninsula since the second half of the 19th century. While the rock art of Arabia has been dated back to the Neolithic period and continued until the eve of Islam, the written record started at the end of the second millennium BCE. Scholars distinguish between Early North Arabian inscriptions (dated from 8th century BCE to 4th century CE) such as Thamudic, Dadanic-Lihyanite, Safaitic and Hismaitic and Ancient South Arabian Inscriptions (dated from ca. the beginning of the first Millennium BCE to the eve of Islam). Both inscriptions and images, which appear together in many ancient Arabian monuments, were used to transfer information to their viewers. The inscriptions were in many cases used to convey and clarify the meanings being expressed through the associated images. After presenting a general view of the associated inscriptions and images of pre-Islamic Arabia, with examples from Yemen, Oman, Saudi Arabia and Jordan, this paper focuses on the topic of the relationship of some inscriptions to the carved images and the value of these inscriptions for understanding the related images.

Keywords: inscriptions, Arabian Peninsula, early North Arabian inscriptions, ancient South Arabian inscriptions

Fig. 1 - Al-'Ula, Saudi Arabia. (photo Mohammed Maraqten)
Archeological fieldwork in the Suren Mountain ranges and its foothills (2016-2017 Seasons)

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The Sharezur plain in Iraqi Kurdistan is bordered from the east with a rough mountain range called Suren. This mountain range also marks the Iraqi-Iranian border.

This paper presents the results of fieldwork conducted by the author in the Suren range and its foothills. During this fieldwork several archaeological sites have been recorded for the first time including several rock art sites, a number of caves, a rock-cut-tombs, etc. The recorded archaeological sites are dated to different periods of the first millennium BCE to early in the first millennium AD. The research presented focuses on the rock art discovered. The rock art researched includes a large panel of horsemen and other animals.

Keywords: rock art, rock-cut-tomb, Suren mountain, Zagros, Kurdisttan-Iraq

Fig.1 - Suren Mountian. (photo Dlshad Marf)
Fig.2 - Suren Mountian. (photo Dlshad Marf)
Bedouin tribal symbols (single: Wasm, plural: Wusum) form part of the Central Negev petroglyph complex. The Bedouin wusum, composed of geometric motifs, form the last phase of the Negev Rock Art chronology, a tradition that has lasted through to present times. The wusum were originally used as animal brands, signs indicating livestock ownership. Wusum were also used as a form of signature, representing the family or tribal entity.

The wusum, engraved throughout the Negev, affirm the existence of Bedouin groups (extended families and tribes) in the region. By conducting spatial analysis research on the data base derived from the rock art surveys of different areas of the Negev Desert, it may be possible to detect ancient social territorial boundaries and reach a more in-depth understanding of the Bedouin tribal spatial dynamics.

Keywords: Wusum, Bedouin, tribal symbol, Negev, spatial analysis

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Fig. 1 - Wasm, Ramat Matred. (photo Ifat Shapira)
Fig. 2 - Wasm, Ramat Matred. (photo Ifat Shapira)
Ovçular cave, is a small sheltered area on the upper terrace of Böyük Daş in Gobustan. Literally it means the “hunters’ cave” due to a hunting scene found on an engraved boulder just in front of it, R.45.

The site is composed of at least two main rocks, called Rock No. 45 and 46, and four “secondary” panels and rocks, Rocks No. 45a, 46a, b and c. The figurative record includes dozens of zoomorphic and anthropomorphic figures, included the famous “domesticated bull” and the “Yalli dancers”, together with geometric and linear designs.

In 2015 the site was systematically documented and the subsequent research and results form the basis of this current paper.

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Keywords: Gobustan, upper Palaeolithic, Böyük Daş, Caucasus, Ovçular cave
My paper focuses on presenting the Duduk Mountain to the world both visually and through documentation. According to my artistic view, I visualised the loneliness of stones through their matching iron rust color. The experience of acquiring images and post-shooting operations such as, depth of field, lens, color, exposure, setting the flash, bouncing lights, season selection, necessary equipment etc., was obtained from photo documentation during visits to Ankara Gudul Duduk Mountain Rock Art sites in 2013 and 2015.

Thirteen different sites have been identified with signs or rock engravings as well as artifacts. Collective memory is mirrored in the images on the rock. Having one of the earliest civilizations in history, Turks also engraved rock pictures in the locations they migrated.

Anatolia, which gifts different knowledge layers to the memory of history, overlaps with the other cultural heritage areas of the world and transforms into a different civilization by changing shape in its past layers of time.

Keywords: Anatolia, Ankara Gudul, Duduk Mountain, Rock Painting, Photo Documenting
Recent developments in rock art research in Armenia: the Ughtasar Rock Art Project

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One of the first projects to bring modern technology to rock art recording in Armenia, the Ughtasar Rock Art Project team is currently analysing the data collected during our recently completed survey of c1000 carved rocks within a naturally bounded landscape set within a remote caldera high in the Syunik Mountains of southern Armenia. This paper will focus on the latest results of our research including the investigation of various themes, for example hunting, humans physically attached to animals and more generally the apparent relationships between animals and humans, their distribution and context within the landscape. This research will also look at how these themes compare and contrast with those found in the rock art traditions of neighbouring regions within the Southern Caucasus together with Iran and Anatolia.

The striking predominance of the wild mountain goat in Armenian rock art and in rock art sites and other forms of material culture over a vast geographical area from Egypt to Central Asia will be discussed. How may the Project’s on-going research into this intriguing phenomenon help to inform us about the life-ways and worldviews of those who created the rock art over the course of millennia?

Fig. 1 - Rock 25, Ughtasar. (photo Chris Musson, © Ughtasar Rock Art Project)
Fig. 2 - Rock 58, Ughtasar. (photo Chris Musson, © Ughtasar Rock Art Project)

Keywords: Ughtasar, Armenia, petroglyphs, landscape, mountain goats
RECENT ROCK ART RESEARCH IN NORTH AMERICA

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Rock art in North America is the focus of a variety of projects ranging from locating and recording for purposes of expanding the database of known sites to in-depth analyses contributing to our understanding of the many past and present cultures of the United States and Canada. Presentations of different projects occurring in the region provide insights for an informed and inclusive understanding of regional cultures and provide comparable data for current directions in recording and preservation. The many aspects of rock art research in North America showcase the variety of work occurring on this site type and the progress being made in conservation, preservation, and interpretation.
Circles in Northern Plains Rock Art, USA

Among contemporary Native American Indian tribes, the circle is considered a sacred shape, even in utilitarian arrangements like tipi rings or fire hearths. In regional rock art, circles seldom occur as stand-alone images but usually are part of a complex arrangement even though the referent may seem utilitarian, like a shield or drum. Amalgamation of secular and sacred concepts is considered regularly by cultural resource managers and researchers, and our examination of this shape within rock art of the Northern Plains provides support for how the circle was elevated to a lofty position that regional cultures retain today. The evolution of the role of the circle in rock art, its changes in meaning and function can be inferred from their distribution, incorporation into more complex images, relation to other panel components, and ethnographic reports of the circle’s place within various cultural groups. This demonstrates their place within society, providing evidence for beliefs and rituals, which helps explain how ancient beliefs are incorporated into modern cultures that are not directly associated with the people who originally made the circles and how those incorporations affect management considerations. Thus, understanding historical changes in meaning and use of the circle motif, helps managers deal with variability in the concept of sacredness of circular shapes throughout the archeological record.

Keywords: USA, circles, shields, sacred, management

Fig. 1 - Circular shields and anthropomorphs in northwestern Wyoming, USA. (Photo John Greer)
DStretch is a rock art enhancement program used by researchers worldwide. It contains many different enhancements derived from the decorrelation stretch algorithm. The variety of enhancements gives DStretch unique versatility as will be shown in this presentation which documents the beautiful rockshelter El Chavalito in Baja California Sur, Mexico. This rockshelter contains hundreds of paintings belonging to the Great Mural tradition. The paintings are mostly in reds, but yellow, white, and black pigments are also used. The background rock varies from a light colored, mottled volcanic breccia to a light brown tuff covered in places with dark black organic stains and bright white mineral stains. The paint condition varies from faded and nearly invisible to bright. These conditions make documenting the paintings a challenge and give an excellent demonstration of DStretch techniques. The Great Mural art of the Sierra de Guadalupe is less well known and less studied than that of the Sierra de San Francisco to the north, but is in fact the area of origin of the Great Mural tradition. El Chavalito is an important regional center near the southern limit of this tradition.

Keywords: DStretch, rock art, pictographs, enhancement, Great Mural, Baja California Sur

Fig. 1 - El Chavalito panel before enhancement. (photo Jon Harman)
Fig. 2 - El Chavalito panel after DStretch YRE enhancement. (photo Jon Harman)
Vertical Series - New Discoveries and Distribution

The Vertical Series rock art tradition consists of abstract geometric shapes repeated in rows or columns. It is found from western South Dakota, northern Wyoming, and up through Montana into southern Alberta. However, a large gap has existed between known sites around Calgary, Alberta and those below Great Falls, Montana. Recent discoveries have filled this gap, giving a fuller picture of the tradition’s visual vocabulary and distribution. Dating estimates for these images, has ranged from the Archaic to the Historic period. Analyzing superimpositions with other associated rock art traditions can narrow this likely timeframe and may indicate Vertical Series’ geographic dissemination over time across the northern plains.

Keywords: USA, Northern Plains, Vertical Series Tradition, dating
Five petroglyph horses incised at Eagle Creek Canyon in north-central Montana tell a story of historic period Crow and Blackfoot horse raiding. Located along the major war trail traversing north-south through the high Plains of Montana, Eagle Creek Canyon was originally described by Stu Conner in the late 1980s, but his analysis of the imagery there was handicapped by the paucity of data available to him about horses in this region. In the ensuing 30 years hundreds more rock art horses have been described so that we now have well defined styles for both Crow and Blackfoot artists. This new information allows us to develop a much deeper understanding of this site. For the Crow, the Eagle Creek Canyon petroglyphs were a calling card taunting their Blackfoot rivals' that they had entered their homeland to steal horses and count coups. Once found, however, a Blackfoot artist canceled out one of these Crow “taunts” with his own horse, undoubtedly stolen from the Crows. Comparing details of the images at this calling card site to those at other similar sites, we can now begin to formulate a typology of calling card petroglyphs and better understand how they functioned and when they were made.

Keywords: USA, Northern Plains, biography, horses
Three major rock art sites, adjacent to one another, in the Hole in the Wall region west of Kaycee, Wyoming, exhibit more than 75 stenciled hands and arms. This large concentration of stenciled hands is highly unusual for Wyoming. In addition to the hands, the sites include large bears, masks, and other images that are not found at other regional sites. These sites suggest influence from outsiders or actual occupation of the Wyoming area, perhaps as a migration or part of a trading or exchange system.
Numerous issues regarding the peopling of the Americas remain contentious. Completely uncontroversial, however, is the accepted fact that arriving Paleoamericans were anatomically and cognitively Homo sapiens. They set foot on a continent empty of humans but teeming with animals that has been described as an “animal landscape” similar to Africa’s Serengeti Plain. One would expect these early colonizers to have left behind, like their Paleolithic counterparts in Europe, naturalistic images of the large megafauna with which they shared the continent. Instead, they chose to create abstract-geometric designs as is amply evident from surviving parietal and mobiliary art. For unknown reasons, nearly all the species that died out during the Pleistocene-Holocene Transition are absent from the early settlers’ iconographic “meme pool.” Still, several tantalizing exceptions are currently known. They include, in North America, two realistic portrayals of Mammutus columbi (Columbian mammoth) in Utah, twinned engravings of Mammut americanum (mammoth) in Ohio, and the plausible depiction of a Bison antiquus (Ancient bison) in Utah. South America, in turn, has yielded evidence for bona fide paleoart identifiable as extinct Glyptodon (giant armadillo) and Hippidion (early horse).

Keywords: peopling of the Americas, Pleistocene-Holocene Transition paleoart, abstract-geometric markings, extinct megafauna depictions, human universal of ratification
Western Message Petroglyphs: Esoteric Rock Art Found in Association with Historic Trails, Town Sites, and Historic Quarries and Mines

Dispersed across a wide region of the Western United States, Western Message Petroglyph sites are remarkably homogenous and recognizable based on their image content, style of execution, geographic contexts, and landscape settings. Our investigation of more than thirty WMP sites has produced a compelling number of evidential strands that has led us to propose that these petroglyphs date to the historic era of Western Expansion (1847 – 1903) and are of Euro American manufacture, despite their incorporation of a late form of Native American pictographic writing. Variations can be recognized within the classic template for these sites, most notably in some California locations where the classic form loses its linear structure. In this presentation we highlight and contrast examples of classic Western Message Petroglyph panels with variant forms found in California.
Since 2011 the Sand Canyon-Castle Rock Community Archaeological Project, the first Polish archaeological project in the US, has been conducted in the Mesa Verde region of southwestern Colorado. The project focuses on an analysis of the socio-cultural changes that took place in Ancient Pueblo culture in the Lower Sand Canyon area, Montezuma County and includes surveys, limited excavations and documentation of rock art and murals from the area. In addition to the main research area, we have started photogrammetry and 3D scanning of rock art in nearby Sandstone Canyon. All of these canyons are part of the Canyons of the Ancients National Monument. The rock art from the area includes ancient Pueblo rock art as well as historic petroglyphs (mainly of the Navajos and Ute), depicting geometric motifs, probably astronomical motifs, clan symbols, shamans, warriors, and extended scenes that depict fighting and the hunting of large animals, mostly deer and bison. Almost every panel of the rock art bears traces of modern graffiti or vandalism such as initials and names. In 2016 and 2017 we collaborated with modern Pueblo people from the Hopi tribe in Arizona to better understand and interpret the rock art and its location within the landscape.

Keywords: Mesa Verde, Sand Canyon, Pueblo rock art, Pueblo oral tradition
Results of linguistic and mtDNA analysis of the Fremont people (1000 – 1300 A.D.) show a mixture of Pre-Hopi (Uto-Aztecan) and Tanoan (Jemez) ancestry. Oral traditions of Paiute and Ute name the Fremont people, as the Mu:kwitsi/Hopi (Shaul 2014). Analysis of Fremont rock art, supports this with early depictions of Awanyu, the Tanoan plumed serpent and to Hopi with male hair styles, garden plots and Hopi creation deities. Climate change (A D 1100-1300) to cooler dryer seasons favored “Travelers” strategies over agricultural subsistence, (Simms 2008). Rock art in 9mile Canyon portrays the arrival of Numic immigrants with large burden baskets for gathering wild seeds (cheno/ams), and suggests displacement of Fremont (Mu:kwitsi/Hopi) distinguished by their Hopi hairstyle and hock-leg moccasins fighting Numic (Paiute/Utes) distinguished by their footwear and hairstyles. Cultural diagnostics include directionality (left-to-right sun-wise direction) specific to Numic language speakers, while Hopi and Tanoan cultural preference is a right-to-left directionality.
As a result of a 2005 Congressional mandate to double the size of the Petrified Forest National Park, the Park faced the enormous task of surveying, recording and evaluating new archaeological sites to determine how to preserve them for public use. Lacking the resources to record the extensive new rock art sites, a team of four avocational rock art enthusiasts volunteered to assist the Park in meeting its urgent goals. Starting in 2015, this team, known as the JPRARA (JP Rock Art Research Associates) has worked closely with the Park Superintendent and Park Archaeologist to record priority sites. Information gathered on five major sites has enhanced the basic knowledge of ancient cultures (Pueblo, Hopi, Navajo,) provided a basis for comparative studies on rock art styles, and guided the Park’s policies in conserving cultural resources. Already, information resulting from this field research and final reports on each site has led to a deeper understanding of the ancient peoples who lived in the region extending back approximately 3,000 years.

Keywords: Petrified Forest National Park, Conservation, Public Policy and Rock Art Sites, Indigenous North American Cultures, Public/Private Sector Cooperation, Volunteerism
The incorporation of 3D terrain and object models for recording and preserving cultural heritage is a new addition to our digital archaeological tool-kits. Today, photogrammetric survey and recording techniques have the potential to transform the way we view and study the past in several important ways. However, the utility of using 3D models as a means of studying changes over time, a logical next-step in the application of this remarkable tool, remains underexplored. In southern Illinois, fragile rock art sites are among the few monuments that attest to the region’s rich cultural past. Sadly, many are rapidly deteriorating due to erosion and vandalism. The Evans Farm Track Rock, Fountain Bluff and Millstone Bluff sites, in particular, have been heavily impacted. The degree to which these sites have transformed, and the effectiveness of our 3D models to study changes that have occurred in recent decades is the topic of the current work. Here, we discuss the utility of using 3D rock art site models as way to not only preserve remnants of cultural heritage and identify artistic compositions that may have been overlooked, but also as a tool for studying impacts of factors such as erosion over the past several decades.

Keywords: USA, 3-D Modeling, site documentation
The Lower Pecos Canyonlands of southwest Texas and northern Mexico houses some of the most complex and compositionally intricate prehistoric rock art in the world. Presently, there are over 300 known rock art sites in Val Verde County Texas, with a vast majority not being revisited since they received their site designation 30 to 50 years ago. In August 2017, Shumla Archaeological Research & Education Center launched the Alexandria Project, a three-year baseline documentation initiative designed to gather an extensive dataset from all known sites. Data such as accurate site locations, high resolution panoramic images, 3D models created by Structure from Motion, and context photography will be collected in the field. New, amended, updated, and revised TexSite and Shumla Rock Art Site Forms will also be completed and submitted to our designated repository. This vast and multi-faceted data set will open areas for future research including rock art distribution and directionality patterns, motif attribute studies, landscape archaeology, and conservation assessments. It will also digitally preserve into perpetuity the full rock art assemblage for an entire archaeological region.

Keywords: rock art documentation, photogrammetry, 3D models, GigaPan, preservation, Lower Pecos, Texas
Rock art landscapes of the Canadian Maritimes

Ongoing investigation of the Algonquian rock art of the Canadian Maritimes examines a rich body of petroglyphs that has the potential to contribute to current understandings of Indigenous cultural life following European contact. Building on a program of survey and conservation initiatives undertaken during the 1970s-80s, the corpus is revisited through the lens of landscape archaeology articulating with theoretical positions emerging from the ontological turn in archaeological discourse. Comparative analysis of the technical, iconographic and narrative content of the petroglyphs is used to align the corpus with neighboring Algonquian rock art traditions, both precontact and post-contact, known from northeastern North America. Computational photography, principally Highlight Reflectance Transformation Imaging and photogrammetry, is employed to reveal new details and identify internal chronologies in the corpus, and the multivocality of the rock art is explored in collaboration with the First Nations of the region.

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Keywords: Canadian Maritimes, Maritime Algonquian, Mi’kmaq, colonialism, relational ontology
Exploring Variability within the Interior Line Petroglyph Style

Interior Line Style petroglyphs in western Wyoming (USA) have imagery characterized by large decorated body anthropomorphs that depict spirits. Major concentrations of Interior Line petroglyphs occur at sacred places used by the Eastern Shoshone tribe. Additional smaller sites are widely scattered. Within the region of the style, the range of variability in stylistic details contributes to a feeling that the style is not fully defined or that some sites have atypical versions of the style. This preliminary analysis uses statistical techniques to help define the nature of the style in what appears to be its core at two important sacred places, followed by examining the differences between the core area and outlying sites.

Fig. 1 - Interior Line Style Anthropomorph. (photo Alice M. Tratebas)
Fig. 2 - Interior Line Style Owl. (photo Alice M. Tratebas)

Keywords: North America, Interior Line Style, open air petroglyphs, statistical analyses
Elements of rock art are often more than pigment and incisions. The natural form of the rock can complete pictographic and petroglyphic shapes and seem to inform the placement of certain designs. Presenting the complex interactions of natural and human-made elements in rock art has long been a challenge for researchers. Results from the use of these techniques at rock art sites from the Americas and how the documentation techniques being developed in Europe are influencing these efforts will be presented. A comparison of the challenges found in recording Aurignacian aged etchings in Southern France to rock art sites in western North America will be examined.

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Keywords: USA, France, natural rock forms, documentation
Funerary contexts as well as imagery of death are a rich source of information for researchers. They contain data related not only to ideas about a group’s belief systems but also to their social relations, their connection to the land, and the role of the environment in culture. In rock art studies, motifs and contexts associated to the dead have often been approached in relation to ritual and religious aspects but, it seems to us, the other dimensions have not yet been sufficiently explored. For this reason, this session will aim at discussing the representations and symbolism of death in rock art in relation to topics such as gender roles, social organization, territoriality, mobility, and diet, among others.

Connotations of death in rock art can be direct, as in literal depictions of mortality, or the co-presence of skeletal remains. But can also be more nuanced, for example in nearness to burial sites, or the portrayal of characters or scenes related to the hereafter. How should we interpret these differences? And, more importantly, what do rock art sites tell us about how people perceived and coped with death and its effects?

In sum, rock art along with mortuary practices constitute an important part of the archaeological record that have often been underplayed, restricted to interpretations of ritual, but which hold a great potential for gaining access to all aspects of social organization.

We invite interdisciplinary participation of scholars interested in what rock art can help us infer about the position and impact of individuals in and beyond life and, at a more general level, the underlying institutions and principles that generate and support those roles.
‘Uvda Valley; in the southern Negev, Israel, is a hyper arid area, but highly rich with archaeological remains, including a vast farming settlement system, beginning 6000 BC. On the western side of the valley an isolated rock engraving was found, totally different than thousands of others in the Negev, more abstract, complex and artistic. An attempt to interpret it begins with separation to elements. Several different ways are possible, but one gains better support from additional materials. It is suggested that the image includes four elements. The lower seems to be a predator, with an open mouth and some spots on its body, i.e. leopard. The figures above him are interpreted as two abstract women or goddesses, one with the head up, one with the head down, while the left one carries an infant on her knees. If separation to elements and interpretation are correct, the figures may represent a cyclical perception of life and death. Although it sounds too bold, the interpretation does find support in nearby evidence, additional engravings, and art pieces from the Near East and beyond. The connection of the women/goddesses to leopards is also relevant to the theme.

Keywords: desert, Negev, Sinai, geoglyphs, mythology, Neolithic

Fig. 1 - The engraving from West Uvda Valley, a photo and tracing (without the later scratches).
One of the most captivating phenomena of north European rock art is its close relationship to contemporary burial practices. Since 1995 I have gathered more than 500 examples of ‘rock art for the dead’. About 300 of these are firmly dated through stratigraphic and archaeological contexts. Some of these rock art contexts are very famous, such as the Sagaholm barrow and Bredarör on Kivik, most of them are less so. The lion’s share of this assemblage appears to have been actively made during burial rituals, which are evident from finds of hammer stones and the pristine appearance of images and cupmarks. Cutting through different archaeological time periods and cultural contexts, rock art for the dead continued from 2800 BC until AD 800. As well as providing an overview of these important finds – not least as building blocks for rock art chronologies, this paper also includes some thoughts on prehistoric burial practice in general and the role/s that rock art may have played in these contexts over time.
Based on a comparative analysis of archaeological burial contexts and rock art in the European Upper Palaeolithic, this paper suggests two main forms of mortuary practices for that period: one aimed at the disposal and eventual disintegration of the dead, and another focused on their preservation and retention. The earlier reveals an intention to disguise social differences, the latter, on the contrary, seems to represent an effort to singularize the gender and age-group of the deceased. It appears that, following the changes in climate and settlement patterns that took place after the Gravettian and into the Magdalenian and Epigravettian, the burial forms and practices pertaining to different social groups became more homogeneous, to some extent. However, we identify some continuous trends which lead us to conclude that the Paleolithic idea of death may be perceived as a long-term phenomenon that, despite superficial transformations, maintained some basic elements at its core.

Keywords: Europe, Upper Palaeolithic, burial, mortuary practices, social differentiation
On the Marlborough Downs east of Neolithic Avebury in Wiltshire (England) are two stones upon which are carved images firmly indicative of death and yet, because orientated to the setting sun at the summer and winter solstices, possibly presenting optimism about the future for souls of the recent dead. The first stone exhibits the head of a dead animal, with gaping toothless mouth, and at its northwestern side the carving of a helmeted human head facing sunset at the summer solstice. This recalls a myth, referenced by Gordon Frazer, in which souls of the dead repose in a convenient rock while awaiting the next solstice sunset when they follow the sun into the paradisiacal land beyond the horizon. Knowing this, the author predicted that there might exist a similar carved rock facing the direction of the winter solstice sunset. Such a stone was found located nearby, again with the carved head of a dead animal and head of a noble-looking human. It is suggested that these rock carvings were created in the worldview belief that human souls are sheltered in this manner until the coming of the next solstice when they depart to the land of paradise in the west.

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Keywords: Avebury Hills, death symbolism, western paradise, summer solstice, winter solstice

Fig.1 - Avebury Hills. Death Stone sculptured in connection with the summer solstice sunset. (photo © T. Meaden)
Fig.2 - Avebury Hills. Death Stone sculptured in connection with the winter solstice sunset. (photo © T. Meaden)
Much has been written about the post-Paleolithic rock art of Valcamonica and other European sites, but the deeper meaning of the signs, their functions when they were produced and, in some cases, preserved and showed, still warrants further interpretative analysis. The analysis of the images made during different periods, especially from the Copper Age onwards, allows us to understand how the underlying ritual language has evolved and transformed in parallel with the cultural changes. A ritual language predominantly addressed to the dead, during the Copper Age, and became a commemorative, re-evocative, mythical, celebrative and reactivating language during the Iron Age. The stelae, anthropomorphic stelae and statue-stelae of the Copper Age, often concentrated in megalithic sanctuaries, are what remain of extensive ritual activities related to the cult of heroes, mythical ancestors, founding fathers of the community, the bearers of metallurgical knowledge: a permanent language that in some cases lasted many centuries. These rituals were paralleled in the engraved rocks. The images represented: scenes of combat, warriors often associated with waterfowl or migratory birds, birds, “solar boats”, hunting scenes, “shovels”, buildings, and even wagons tell us about the cult of the dead, like the figures of boats, common in Scandinavian countries, as the graphic ritual reduction of the journey to the afterlife.

Keywords: rock art, death cult, post-Paleolithic, Valcamonica, Bronze Age, Iron Age, Copper Age, stelae

Fig.1 - Naquane r. 1, Capo di Ponte, Valcamonica, Italy. (Photo A. Priuli)
Fig.2 - Naquane r. 44, Capo di Ponte, Valcamonica, Italy. (Photo A. Priuli)
This research presents a scene which is likely to be funerary in character, preserved on the lower wall of the Dadabe cave (Hararghe, Ethiopia). A painting, unique in the rock art of Ethiopia and the Horn of Africa, was identified during the 2009 mission, carried out in collaboration with the University of Florence and the Museum of Natural History of the Maremma in Grosseto. This was carried out in the context of a research program on rock art sites, evidence of prehistoric archaeology and the surviving ethnological evidence, that the University of Florence and the Museum of Grosseto have begun to implement since 2002. Dadabe Cave is an unpublished site that exhibits numerous geometric-schematic paintings.
This paper discusses several rock art panels, painted in shelters and cavities in open air in the mountain ranges of the Mediterranean Basin of the Iberian Peninsula, overall known as Levantine rock art. We focus, in particular, on scenes and compositions referring to warfare themes depicting wounded or dead figures, and even an isolated instance of a burial. The events portrayed may contain mythical or symbolic aspects, but also historical and normative subjects. We have classified the art’s contents in the following categories: 1) warrior group; 2) warring phalanx; 3) warrior dances; 4) ambush; 5) battles; 6) group execution; 7) killing; 8) dead characters. We suggest that the pictorial records of these practices and events definitely record conflicts that took place amongst Post-Palaeolithic hunter-gatherer societies.
Representations of weaponry and tools in prehistoric, protohistoric and traditional tribal communities: an approach by archaeology and anthropology

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Considering the subjective and metaphorical value of these motifs, the actions that created them, and their contexts, and also taking into account that such representations incorporate and transmit some kind of understanding about the world, this session aims to discuss the representations of weapons and certain types of tools (such as axes, sickles and a variety of guns in contemporary rock art traditions, for example) in different prehistoric, protohistoric and traditional community contexts all over the world.

This includes the research approach to the rock art, stelae and statues-menhirs, gravestones portable art, ceramics, or any other kind of surface with this type of depiction.

The main focus is to discuss the meanings of these embodied signs (status symbols, evidences of cultural contacts, ideological devices, etc.) in different areas and periods, since meanings are permeable both in time and space. This includes the methods of how these are analysed as status symbols, as evidences of cultural contacts, as ideological devices, etc.

The research in this session may centre on broader approaches based on a specific area, region or people, or focus particular case studies.
Modern rock art is produced by different tribal groups in the three mountain ranges called Khirthar, Bado, and Lakh in Sindh province of Pakistan. Rock art is also made by people inhabiting “Sindh Kohistan” region which includes the districts of Jamshoro, Thatta and Karachi (in Sindh province). The economy of the people living in these regions is based on rainfed agricultural and pastoral nomadism.

The contemporary rock art imageries include animals, hunting scenes, hand and foot prints, guns, transport motifs, both land and air transport, floral designs, bird motifs and religious buildings, i.e mosques. Interestingly, the modern rock art tradition of Northern Sindh, where the mountain range of Khirthar is located, is different from that of Southern Sindh, where the Sindh Kohistan region is situated.

A variety of weapons are represented in the rock engravings. This paper will deal with a variety of weapons that have been made by different groups. This paper will also discuss why and who makes the weapon figures. Are these made by travelers, members of settled populations or shepherds? Based on interviews that I conducted with shepherds I will share how and which tools is used to make the engravings.
It has been argued that most weapons depicted on Scandinavian rock carvings date to LBA and period V. New analysis based on modern 3D-technology indicates that this is a chimera, as spear carvings are also depicting types from EBA, e.g. spearheads of Valsömagle type of period I B. Some spear carvings have also been re-carved and updated to newer types over the decades, and carved before the carrier of the weapon was present, as has become evident from recent examinations, on some famous rock carvings in Bohuslän and Uppland. This highlights the fact that the spear was already a major weapon in the Scandinavian EBA. Previously unknown examples of the close link between the real weapons and the rock carvings with comparisons from Valcamonica are presented in this paper.

Keywords: spear, rock carving, Early Bronze Age, 3D-technology, re-carved, Bohuslän, Valcamonica

Fig. 1 - 3D-documentation of Bronze Age rock carving at Kalleby in Tanum, Bohuslän with Structure from Motion technique. (source: Swedish Rock Art Research Archives; photo: Ellen Meijer)

Fig. 2 - Rubbing of Bronze Age rock carving at Litsleby in Tanum, Bohuslän. (source: Swedish Rock Art Research Archives, rubbing: THU)
West Iberian Bronze Age weapons in carved places: some ideas for its ontology

Based on a revision of different Bronze Age places engraved with weapons (halberds, daggers, “axes”, swords, spearheads, shields, among others) in the northwest of Iberia, the heterogeneity in weapons, kinds of outcrops and the wide diachrony of these phenomena are underlined.

Assuming that the physical world of prehistoric communities was a living and socially active place; that the sites recorded and the outcrops where this occurs have not been chosen arbitrarily and that the skyscape is also significant, new interpretations about the social, economic and symbolic meanings of the weapons are put forward. In all these interpretations, we find links to identity strategies and power, but also to the invocation and celebration of the spirit world.

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Keywords: Iberian Atlantic coast, rock art, diachrony, interpretation, weapons

Fig.1 - Engraved deer and spearhead form Barreira, Valença, North of Portugal. (photo Ana M.S. Bettencourt)
The representations of weapons in rock art from the Serra da Capivara National Park - Northeast Brazil

Studies on rock art in the Serra da Capivara National Park began to be systematised in the 1970s. This was done from the perspective that they were the expression and result of thematic choices, technical achievements and daily or imaginary scenarios performed by certain social groups. They are largely representational paintings that, for the most part, form recognisable scenes that dominate in this area. In order to interpret aspects of the creator cultural groups, it is necessary to analyse these graphic records from three categories: thematic, scenographic and technical. These allow us to look for graphic profiles and identifiers, structuring elements of the graphic practice of a social group. The studies of the representations of weapons start from this perspective and can provide information on both their morpho-technical diversity and their use in representations of hunting and human confrontations. This work aims to characterise the types of weapons represented in the Serra da Capivara National Park, identifying their specific characteristics and the contexts in which they are represented.

Keywords: paintings, weapons, hunting, confrontations, Serra da Capivara, Brazil
Representations of artefacts such as spears and spearthrowers in the rock art of Northern Australia are often thought of, and interpreted, as being weapons for hunting or fighting. This paper, however, addresses the possible social, idealogical and ceremonial roles that some of these artefacts played in Aboriginal culture and how this might affect the way in which rock art images can be re-interpreted. I focus on a particularly elaborate spearthrower type depicted in the rock art of the region, the long-necked spearthrower, being a type that appears to have no functional benefit for throwing spears and is therefore argued as having purely ideological symbology.

Keywords: spears, spearthrowers, social, ideological, ceremony, Mirarr Country, Northern Australia, rock art
Rock art images of weapons and tools as evidence of a warrior aristocracy among ancient societies of the Aegean Thrace

Herodotus (V, 6) described the social status of warriors in the Thracian societies of the 5th century BC. According to him warriors were held in highest honour while the tillers of the soil were “most contemned”. This paper considers the representations of weapons and tools in a rock art complex situated on and around Mt Pagaeon in Northern Greece. It examines the overall frequency with which these motifs occur and their distribution between sites. It is also concerned with the co-occurrence of different motifs on particular panels, investigating whether the placing of images together might have been meaningful. It will be argued that the distribution of weapon and tool motifs in this art is structured and that the rock art evidence agrees with and further widens our understanding of the establishment of the warrior aristocracy that Herodotus implied.

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Keywords: Aegean Thrace, warrior aristocracy, weapons, tools, rock art, Mt Pagaeon

Fig. 1 - Mounted warrior from Mt Simvolo, Kavala, Greece. (© Stella Pilavaki)
Fig. 2 - Mounted warrior from Mt Pagaeon, Serres, Greece. (© Stella Pilavaki)
Among the post-Paleolithic graphic rock art manifestations of the Iberian Peninsula, a new artistic cycle that has been contextualized to the Iron Age period and related to the rock art of the Iron Age of other European regions stands out for its characteristics and various elements of interest. Among the most significant representations of this protohistoric art are the motifs that can be identified as armed warriors or simply the isolated weapons themselves. It is not rare to find these types of representations in the northeastern quadrant of the Iberian Peninsula, especially in the basin of the Ebro River, where some remarkable engraved sets and painted representations have been studied.

Among the different motifs studied those that stand out are the warriors in passive or fighting stances, with their defensive and offensive weapons: helmets, shields, armor-plating, swords, spears and greaves. However, the figures of isolated weapons are very common, especially spears, bows and arrows, along with some swords and shields. The parallel iconography found in a number of decorated belt brooches and weapons, together with the archaeological context provided by some warrior tombs dating from the middle of the 6th century BC, is also taken into consideration.

Keywords: rock art, Ebro Basin, warriors, weapons, Iron Age
This paper discusses a group of anthropomorphs occurring in the rock art of the Negev Desert of Israel. These figures are finely pecked and are characterized by a lunate-shaped head cover with a decorated tip and hour-glass shaped bodies. They carry daggers with lunate shaped pommel handles and sometimes show indications of a garment. These anthropomorphs are represented alongside lions and bulls, zoomorphs which are rarely depicted in the Negev, while camels and horses (domesticated and integrated into the Negev from roughly the first millennium BCE) are not found in association with these figures. Daggers with lunate-shaped pommel handles, similar to those depicted in the Negev petroglyphs where found in Mesopotamia, Southern Arabia, Sudan, levant (Israel-Lebanon) and the Nile Delta region (Egypt) most can be dated to 2500-1800 BCE.

The combined data emerging from the rock art, archaeological sites, finds, and GIS, together help to propose a date for the “Crescent Headed” anthropomorphs namely, the end of the third millennium BCE. Based on their attire, these anthropomorphs appear to represent people of eastern origin (Mesopotamia – Trans-Jordan), who may have controlled the copper trade and routes from Faynan that crossed the Negev into Egypt.

Keywords: lunate pommel, Negev, rock art
Building on a history of rainmaking relations, San shamans sought to provide a new form of magic to be offered during times of conflict – an innovative service to insure the continuation of open trade relations with their African farmer neighbours. The early nineteenth century saw a marked increase in internecine violence in the Nguni-speaking world which affected Sotho and Tswana speakers, as well as the ‘Bushmen’ of the Maloti-Drakensberg. Historical and ethnographic sources attest to close-quarter combat which was a catalyst for changes in arms and armour. We find the new martial material culture being utilised as subject matter in painted mountain rock shelters. Given that San rock art is a product of religious beliefs and not a simple reflection of daily life, it is likely that the motive for producing such images containing markers of group identity finds its root in mutually articulated cosmologies. While a history of interactions had established the San as powerful rainmakers, catering to farmers’ desires, in times of war they re-established their powerful position by conducting war-magic on behalf of their farmer clientele.

Keywords: shields, spears, rock art, San, bushman, farmers, war-magic, South Africa

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The intent of this session is to present contributions considering the use of rock art as a cultural heritage, its preservation, current legislation and different ways of transmitting the importance of this legacy to communities. This includes presenting the work of heritage education as disseminating acquired scientific knowledge, as a guide to awareness of the asset, social inclusion and historical citizenship, dealing with the understanding of concepts such as culture, memory, heritage and archeology.
Creation as Patrimonialization: Representation of Information and Memories of the Rock Art Sites of the Municipality of Camalaú in Paraíba State

The rock art of the Cariri region, Paraíba State, exhibits attributes from the two large classification units found in the Brazilian Northeast, as well as very characteristic specificity. For the current research, the objective was to understand the process of creation and the different representations of the information related to the archaeological heritage belonging to the society of the Municipality of Camalaú, located in Western Cariri. As such, the notion of the patrimonialization of the archaeological record is discussed, as a reference to the memory of this community. In this sense, the research process is to identify different memory references that permeate and build on the social memory of the community of Camalau to expand the information and its various forms of representation within its archaeological sites. The study was based on an ethnographic approach, using technical resources, field diaries, photography and recordings. It can be seen from the first analyzes of local coexistence that the representation of information as well as memory are shaped by actions, relations of proximity and distance, and in a similar way, to the formation of a cultural heritage conception that precedes a belonging relationship between the subject and the creation of cultural goods.
For more than a decade, the Instituto do Patrimônio Histórico e Artístico Nacional (IPHAN) and Fundação Museu do Homem Americano (FUMDHAM) have been developing different joint heritage preservation actions, including the preparation of archaeological rock art sites for public visitation. The Park and its surroundings have more than 1,000 archaeological sites registered with the CNSA (National Register of Archaeological Sites) of the IPHAN, of which 200 are prepared for visitation, with 16 sites prepared for visitors with reduced mobility. With the present work we present how the actions of preservation of this rock art set were programmed and executed, especially as the different infrastructure alternatives were proposed, attending to the specificities of each site, aiming, in this way, to make possible the better conditions of access and preservation of this cultural heritage.

Keywords: patrimonial preservation, rock art, Serra da Capivara National Park, tourist infrastructure

Fig.1 - Ema do Sítio do Brás archeological site. (photo Cris Buco)
Rock art in Kosovo
- New findings, new interpretations

Rock art is one of the oldest types of cultural heritage in Kosovo. However, the interest in it and its study is relatively new. The most representative sites of rock art are Vlashnje and Zatriq in southwest Kosovo. In addition, rock art symbols are also found in other localities in Cerkolez, Aqareve, Gumnishte. The greater part of Kosovo’s rock art belongs to the abstract-geometrical style, and its motifs are numerous, such as spirals, asterisks, tree like motifs, cupules, grids, triangles, the Star of David, and few of them with anthropomorphic or zoomorphic motifs. Some of the motifs are unique, and others are very similar to those found elsewhere in Europe and the world. This cultural heritage has as yet not been registered or documented, nor are adequate measures been taken to protect it. In this paper, I present some important aspects related to the style, structure and the main motives for rock art production in Kosovo, with particular emphasis on Zatriq, as well as new findings and interpretations of these symbols.

Keywords: spirals, deer, bifacial fish, asterisks, cupules, tree like motives, Zatriq, Kosovo

Fig.1 - Rock Art in Kosovo, Vlashnje. (photo Shemsi Krasniqi)
Fig.2 - Rock Art in Kosovo, Zatriq. (photo Shemsi Krasniqi)
At the end of Pleistocene, from the 15th to the 12th millennia BP, in the basin of the Ariège River, lived people Magdalenian culture, one of the last cultures of Paleolith. The majority of the caves in the Ariège Department have been explored by cavers of the Spéléo Club du Haut-Sabarthez. Several prominent French archeologists investigated these caves, including Nicole Pailhaugue (1998) and Jean Clottes (1999). The Magdalenian people painted the great works of art on the walls of caves and inside the caves they left the tools, sculptures and a lot of garbage. They hunted on the tundra for the bison, reindeer, horses, deer and antelopes in the summer. During the cold winters they went to the Pyrenees, and thus visited the Pyreneans caves at that time. The Magdalenians were going into the caves naked and barefoot; they must have felt that the caves were relatively warm. On the basis of the paintings and sculptures we can draw conclusions about the structure of the social groups and information on the subject of shamanism. We can also find the transition from shamanism to the first religion, Sun worship, and we can demonstrate the geological evidence of this transformation.

Keywords: shamanism, first religion, Sun worship, Magdalenian culture, Ariège, Niaux, Vache
Heritage education and rock art in the semi-arid region of northeast Brazil: the role of the school in the preservation and recovery of the Brazilian Cultural Heritage

This research demonstrates the potential of Patrimonial education practices with regard to rock art records in elementary school as a means of offering students other worldviews through the artwork produced by cultures of the past. Two communities in the semi-arid Northeast Brazil, that have in their various territories rock art sites, were used as the basis of our analysis. Several facets within these locations were taken into consideration to bring the knowledge gained with the archeological research along to the school community, both students and teachers. The study seeks to reflect on the different statements that commonly inhabit the knowledge of the school community, such as: What is rock art? What is the interest in studying something we don’t understand? What are the meanings within rock engravings? What is the significance for us?

Keywords: rock art and education, heritage education, cultural heritage, rock art Brazil
In considering the need to understand how archaeological rock art sites are arranged in the southern region of Cariris Velhos of the Paraíba River, this work aims to indicate the layout of the cave paintings sites in the landscape of the region. Drawing on landscape studies, it is approached as a medium and product of human action allied to the perception of the environment, a little modified over time, at the time the respective paintings were laid out on the rocky panels. This research aims to stimulate new discussion from the perspective of the archeology of Paraíba in relation to the function of the rock art site registry within the Landscape Archeology approach, taking into consideration a proposal based on quantitative and qualitative analysis of the data. The analysis of the rock art paintings was based on the theoretical references established for the study of rock art records in the Brazilian Northeast, using the technical, thematic and scenographic approach. The recurrence of these cultural elements perpetuated through time on the rock panels, aids in establishing a pattern of dispersion for these paintings in this environment.
This work showcases the results of archaeological research that has been undertaken in the Catimbau Valley, Pernambuco, Brazil since the 1980s until the present. Archaeological research demonstrates that the region has great potential, especially in relation to the rock art records. For this we will use information produced from the systematic excavations carried out so far, and from the environmental context that is of fundamental importance for the understanding of the occupation of prehistoric groups in the region, as well as results from theses and dissertations produced on this area. Based on this information, we will provide discussions that will enable the understanding of the prehistoric occupation in the region, as well as discussing the effect that discoveries have had in helping to raise the awareness of local residents and arouse concern for the preservation of archaeological sites and the environment in general.

Keywords: Brazilian rock art, cultural heritage, prehistoric occupation in the Brazilian Catimbau Valley
During the creation of the Xingó Archaeological Rescue Project, called PAX, through an agreement between the Federal University of Sergipe (UFS) and the Hydroelectric Company of São Francisco (CHESF), fifteen archaeological sites were identified and studied. The relationship between researchers and the local community was of fundamental importance due to the location of the sites, and the exchange of experiences and local knowledge in the region and also the academic practices of the researchers brought learning to both parties. As such, the researchers conducted training for the communities by disseminating information and raising awareness of the importance of the archaeological sites as relevant cultural heritage for the resident populations. The involvement of the community in the archaeological work resulted in the formation of a local team for the field and laboratory activities, thus creating positive results from that moment, with some of them continuing on with the laboratory activities. Another outcome was the public interactions obtained whilst at the Museum of Archeology of Xingó (MAX) from UFS.

Keywords: rock-art, cultural heritage, community, archaeological sites, Xingó, archaeological rescue
The objective of this work was to formulate new parameters to categorize the analysis of Tradição Agreste based on the identification of the essential elements that characterize it. Defining the parameters for this rock art tradition was carried out through the study of the rock paintings, which were analyzed from the three perspectives: thematic, technical and scenographic. Within the thematic analysis two categories were used: representational and abstract. In the technical analysis three categories were used: trace thickness, contour lines and support treatment. In the scenographic analysis the composition of the space, morphology, size, proportionality, movement, fill and color were considered. These categories allowed for categorizing the characteristic elements of this tradition at an operational level. Within the sites studied there are the common aspects of theme, scenography and technique, represented by: a) Cognitively recognizable figures; b) Anthropomorphic and zoomorphic figures represented distorted from the morphological and postural point of view; c) Abstract figures with thick traces with modal values varying from 0.70 cm to 1.90 cm, completely filled and with irregularities in the contour lines; d) Intensively painted graphic spaces exhibiting figures that appear, in a dominant way, grouped but not related to each other, characterized by individualized figures.
The authors carried out linguo-cultural and semantic analysis of the key cognitive-intensive words in the Armenian and other languages (Indo-European), as well as semantic analysis of verbalized forms of the concept “home” in related and unrelated languages. It results in distinguishing 3 layers in a common concept “home” for the lexemes under the study. The models of cosmic home (macrocosm) and earthly home (microcosm) are univocally reflected in the “image and likeness” in rock art. The characteristics of an archaic worldview impact the formation of the core of representations on the concept “home” which in the historical retrospective acquires new/additional plane of content in the semantic field under the study. The presented concept of home can play a crucial role in the fields of education, child rearing, development of culture and international relations, evoking subconsciously to the profound genetic-cultural layers of memory.

Keywords: Concept “home”, cultural-linguistic picture of the world, archaic consciousness

Fig. 1 - Mountain as model of home (a); girkhatun (b); ideographic depiction of home-mountain, Armenia (c)
Fig. 2 - Graphic depiction of triangles in the Armenian rock art (a). Relief depictions of two triangles, Armenia (b)
The author highlights a number of illustrations of old Armenian traditions of stone culture, e.g. rock art, the art of dragon-stones and cross-stones, the art of crosses and swastikas. Contrasting, analyzing, assessing and evaluating visual patterns of culture in the frameworks of invariant multi-dimensional knowledge system, makes it possible to reconstruct a unified worldview adequate to the reality, which was perceived, reflected in the collective or social consciousness of our ancestors. The revealed data is an important source for comparative historical, cultural and anthropological studies.

Keywords: stone culture, rock art, myths, mythologie, logical and figurative thinking
The value of ethnography for the interpretation of rock art has been a matter of debate for over 100 years. Ethnography is much more than the study of the present to understand the past. It is a tool to observe and analyse material culture in a living context. It allows us to observe daily interactions between humans and objects, as inert materials are transformed into active agents of social, economic and/or cultural practices. Done well, ethnographic studies can produce new understandings of rock art from the recent as well as the distant past. They can reveal the role of rock art as visual communication in a complex world of human interaction, demonstrate the archaeological invisibility of many aspects of human cultures and engender new theories for understanding territory, landscape, society, culture and rules of behaviour. Done poorly, ethnographic studies can produce suppositions that are simply waiting to be disproved, grounded in an elision of temporal and cultural distances between groups of people and denying the history and modernity of contemporary peoples.

This session reflects on the use of ethnography to advance knowledge in the study of rock art.

It addresses the question: what constitutes good ethnographic practice in rock art research in the 21st century? It builds on the ethnography symposium, convened by Mike Morwood at the first Australian Rock Art Research Association Congress, held in Darwin, Australia, in 1988. Participants in this session are invited to reflect on the capacity of ethnography to advance knowledge in the study of rock art, to consider the limitations of this form of analysis and the ethics of conducting ethnographic research with living peoples. We imagine that the session will be interdisciplinary as archaeologists, anthropologists, historians, linguists and cultural scholars can all bring valuable perspectives to the study of rock art and ethnography.
Keywords: birds, bird-forms, symbolism, ethnography, rock art

Birds and bird-forms are some of the earliest patterns in rock art. Present in portable rock art since the Upper Paleolithic, bird images are also abundantly documented everywhere in prehistoric rupestrian art in all the continents. There is also considerable ethnographic information relating to the symbolism of birds in all world cultures. This research intends to survey the representation of birds in known rock art and explore the related literature. It then attempts to identify possible iconographic patterns and relate them to various ethnographic interpretations. A particular focus is given to recurrent themes relating to birds in Eurasian arts and cultures.
Several research developments of recent years imply the possibility that knowledge about the original meaning, significance and production of rock art may be available from various parts of the world besides Australia. That ethnographically accessible interpretation of rock art is often obtainable from Australian Aboriginal elders has been well known since the 19th century. Here we present possibilities, in some cases credibly demonstrated, that such knowledge may have survived among traditional societies in various continents. Similarly, the production of traditional rock art seems to have continued until the present time in a few regions whose number seems to be growing. Another new development in the ethnography of rock art is the realisation of the possibility of access to the motivation and cognitive world of rock art producers through the presence of accompanying rock inscriptions. Where these can be deciphered and clearly relate to the rock art, they can become messages illuminating the world the rock artists existed in. Such messages have been found to be up to a few millennia old and they are as valuable to science as the accounts of living informants.

Keywords: rock art, rock inscription, ethnography, interpretation, meaning
This presentation discusses the contribution of ethnography to the study of Australian rock art. With more than 100 years of ethnographic enquiry into rock art from across the country, valuable insights into the meaning, motives, function, and symbolism of images have been identified. However, with this information comes challenges with its use (and abuse), as well as the necessity to understand the cultural contexts of interpretation and meaning-making. This chapter explores the various ways Indigenous Australians (Aboriginal peoples and Torres Strait Islanders) engage with and describe their understandings of rock art in a variety of contexts. This review also highlights the complex nature of the interpretative process and the ethnographic gaze in which it is embedded. At its core, ethnographic approaches to Australian rock art reveal the multidimensional referential qualities of images found across the landscape.
Based on my long term fieldwork research in southeast Siberia (Amur, Zabaikal, Yakutiia and Buriatiia) I will provide an ethnographic account of how so-called archaeological monuments of rock art have been serving as sentient landscape features as well as sources of ritual and cosmological inspiration for Evenki hunters and reindeer herders for a long period of time. I will show how rock art can be understood through multisensoric perceptions of environment and persistency of animistic views and indigenous ontologies that embrace vernacular notions of personhood, human/animal/land interactions. I will also overview different contested views on how rock art sites were created, modified, used and interpreted over the centuries by different social actors.

Keywords: rock art rituals, multisensoric perception, Evenki reindeer herders and hunters, history of research, Southeast Siberia
Interdisciplinary interpretations of anthropomorphic composite beings in European Upper Palaeolithic cave art: an approach

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Keywords: Upper Palaeolithic cave art, anthropomorphic composite beings, interpretations

European Upper Palaeolithic cave art is especially known for the numerous and varied depictions of animals dominated by the herbivore groups. There are also a great number of different signs, indeterminable motifs and less frequent representations of human beings.

Furthermore, there are anthropomorphic composite beings and composite beings of different animals, which are both rather rare. The anthropomorphic composite beings are often attributed to the human being group. In my opinion they should be regarded as an independent motif. Anthropomorphic composite beings are figures which have human and animal attributes.

But what is the meaning of cave art and especially of these anthropomorphic composite beings? This contribution tries to provide interdisciplinary interpretations of the meaning of these figures also with the aid of an ethnological approach.

Fig. 1 - The so-called “Dieu cornu” in Les Trois-Frères cave (France). (in: Bégouën, H. & Breuil, H., 1958, Les Cavernes du Volp: Trois-Frères - Tuc d’Audoubert à Montesquieu-Avantès, Ariège)

Fig. 2 - Representation of a Tungouse shaman published by Witsen in 1705. (in: Stolz, A., 1988, Schamanen. Ekstase und Jenseitssymbolik)
At a remote rockshelter in northwestern Arnhem Land, Australia, a rare and unusual depiction of a bicycle has intrigued researchers for some time. This painting is one of a number of contact rock art images depicted at the same site, known as Djulirri. This paper explores how combining archaeological analysis with ethnographic and historical research can lead to a more detailed and comprehensive understanding of, not only the individual motifs, but the contact history of this region in general. In this case, I critically evaluate arguments for this bicycle painting representing a particular individual in history. Edward ‘Ted’ Reichenbach, best known for breaking the riding record between Adelaide and Darwin in 1914 (a distance of over 3000 kms), travelled by bicycle through the Northern Territory over the following decade photographing people and places. His interactions with local Aboriginal community members are evidenced in the surviving photographs. Ethnographic accounts that the Djulirri painted bicycle represents Reichenbach’s visits are widespread and broadly accepted. Recent archaeological analysis and historical research throw doubt on this interpretation. This case study reveals the complexity of the relationship between archaeology, history and ethnography in the study of recent Australian rock art.

Keywords: Ethnography, Contact Archaeology, Rock Art, Arnhem Land, Historical Archaeology
Now as it always has been - Aboriginal Art on the South Coast of NSW, Australia

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Artist/Activist Clive Freeman is Traditional Owner of Wreck Bay in the Booderee National Park on the NSW South Coast. Clive is deeply connected to Yuin country, but also Eora and Wiradjuri through his family heritage. Clive's formal education in environmental sciences at the University of Wollongong informs his engagement with archaeological science and rock art research. He is a former artist-in-residence at the NSW Gallery, the former coordinator of Aboriginal Interpretation Programs at Sydney Living Museums' and is one of the founders of the ongoing ‘Country’ project on exhibition at the Venice Biennale. He sits on the Booderee National Park Board of Management. Like his family’s totem, the wonga pigeon, Clive has a distinctive voice. His varied work sets out to share Aboriginal stories of connection so that all Australians can reconnect with Aboriginal history. Following a screening of an SBS Television’s ‘Colour Theory’ documentary featuring his work, Clive will discuss a current project that aims to re-introduce Indigenous Master Carvers into the management of Sydney Basin engravings.

Keywords: documentary, Aboriginal Art, continuing cultural practice, Sydney Basin
Nawarla Gabarnmang, in the Jawoyn Lands of the Arnhem Land Plateau, is one of Australia’s richest and most well-publicised cultural sites. The site is of high cultural significance to Aboriginal and non-Aboriginal people alike as it has historical significance to both peoples; an extensive, well-dated archaeological deposit; a history of human modification; and is one of Australia’s most extensive, well-preserved rock art sites. As a background to these facets, this paper presents an overview of the shelter’s setting within the cultural and temporal landscape of the Arnhem Land Plateau. Ethnographic inquiry revealed non-physical aspects of Nawarla Gabarnmang, while an archaeological survey of the site complex in which the site lies revealed additional aspects of the significance of the place; details that could not be achieved by investigation of the Nawarla Gabarnmang shelter alone. These included additional art styles and ceremonial activities that were practiced at some time during the 50,000 years of Nawarla Gabarnmang’s occupation.

Fig. 1 - The physical setting of Nawarla Gabarnmang. (photo Robert Gunn; copyright Jawoyn Association)

Fig. 2 - Ceiling art and pillars within Nawarla Gabarnmang
Relationship on the wall

The Setor de Arqueologia of University of Minas Gerais (Brazil) conducted many studies on rock art in different regions in central and northern Minas Gerais (Central Brazil). These studies led us to realize the major significance of diachronical relations between figures on rock art panels. In its turn, the Brazilian ethnology has been arguing, based in broad and abundant ethnographic research (by authors such as Viveiros de Castro, Vilaça, Stolze, Descola, Lagrou, Van Velthem and many others), that Amerindian cosmologies do not establish hard ontological distinctions between human and non-human (animals, supernatural beings and also artifacts). Another issue, underlined by ethnographic research, is the agency of non-human actors. The anthropologists had enhanced, according to those principles, the relationship between people and animals (and other non-humans) as having the same nature as the relationship between humans. There is also, in ethnological interpretation, a large consensus around the idea that Amerindian worlds are strongly relational. In this paper I wish to explore the interpretative possibilities offered to rock art studies by the dialogue with those ethnological understandings. With that aim I will discuss some examples from northern Minas Gerais rock art.

Keywords: relations, ethnological theory, ethnological interpretation, archaeological interpretation, Central Brazil, Amerindians

Fig. 1 - Lapa do Caboclo, Peruaçu Valley, northern Minas Gerais.
Fig. 2 - Lapa dos Desenhos, Peruaçu Valley, northern Minas Gerais
Djalalkurdubi is a small mushroom shaped rock shelter at the southern end of the Djawumbu-Madjawarrnja massif in Mirarr Country, western Arnhem Land, Australia. The rock art at this site, pictographs and beeswax, is typical of western Arnhem Land and consists of recent X-Ray fish, human figures and a faded crocodile. Djalalkurdubi is one of more than 528 rock art sites recorded by the Mirarr Gunwarddebin rock art project in the Djawumbu-Madjawarrnja area, and ‘archaeologically’ did not stand out compared to the massive shelters recorded in its vicinity - some hundreds of metres long with thousands of images and painted over as many years. Yet, through our ethnographic research it has emerged that Djalalkurdubi is highly significant due to its connection to ceremonial activities and its tangible and intangible associations with key players in recent western Arnhem Land history. In this paper, we discuss how ethnographic research can help to explore people’s direct connections to place, their motivations for making rock art and the complex relationship rock art has with ceremony and knowledge.

Keywords: rock art, ethnography, Western Arnhem Land, ceremony, rock artists
At the end of the Pleistocene, from 15th to 12th millennia BP, in the basin of the Ariége River (North of the Pyrenees) lived people of Magdalenian culture, one of the last of the cultures of the Paleolithic.

The Magdalenian people created the great works of art on the walls of caves and they left tools, sculptures and a lot of bones in these caves. Several prominent French archeologists have investigated the caves of this region, including Nicole Pailhaugue (Pailhaugue, N., 1998) and Jean Clottes (Clottes, J., 1999). Based on the results of these investigations we can draw conclusions about the hunting weapons of Magdalenian culture.

Magdalenians hunted on the tundra using the javelin and an atlatl in the summer. They hunted bison, reindeer, horses, deer and antelopes. During winter they used to go to The Pyrenees to protect themselves in the caves from the frost. In the mountains Magdalenians hunted caprids using a sling with projectiles. They climbed the really difficult rocks and glaciers, better than contemporary alpinists.

**Keywords:** sling, atlatl, caprids, Magdalenian culture, Ariége, Niaux, Vache

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**Fig. 1 - Bison with Spears in the side. Grotte Niaux, Salon Noir.** (photo Editions D’Art Cdl. Toulouse)

**Fig. 2 - Black Ibex, Grotte Niaux, Salon Noir.** (photo Editions D’Art Cdl. Toulouse)
Rock art scholars in southern Africa have led the way using ethnography to understand the huge and varied artistic record painted and engraved across the subcontinent. This work has resulted in an understanding of Later Stone Age cosmology and religious beliefs which could not have been gained from other aspects of the archaeological record. Other ethnographic evidence dealing with social and political aspects of life among the San have not featured as prominently in rock art interpretation. In this paper I look to some of these facets of the San ethnographic record to understand regional differences in southern African rock art. Research has shown a unity in the religious beliefs that underlie the painted record across the sub-continent, but also distinct differences in what was painted and in the way images were made. Using the rock art of the Groot Winterhoek Mountains in the southern Cape of South Africa as a case study, I consider the San ethnographic record to understand why these differences occur and what they can tell us about regional identity.

Fig. 1 - Map showing two major rock art regions identified in the first half of the 20th century.
Fig. 2 - McAll’s Cave, Groot Winterhoek Mountains, Eastern Cape, South Africa. (photo G. Laue)
This is a short film on the rock art of Koongarra in Kakadu National Park. In 2017 we began a new rock art project in Kakadu National Park. A key aim of this project is to document the cultural significance of sites within the Nourlangie and Koongarra areas of Kakadu National Park. Working with Senior Traditional Owners and a team of experienced rangers we are combining a need to better understand the cultural and archaeological complexity of this landscape with a desire for better conservation and management outcomes for the area. This film was made as part of this new project and highlights the role that contemporary Indigenous voices play in the interpretation and ongoing care of rock art areas.
Depictions of fibre objects in the rock art of western Arnhem Land provide a unique opportunity to study an artefact type that has been largely ignored by previous archaeological studies. Ethnographic research highlights the wide-ranging significance of this artefact type in both cultural/spiritual practices and in the everyday life of the Aboriginal people of this region. With the arrival of Christian Missionaries in Arnhem Land the role of fibre objects shifted somewhat as did the gendered nature of their production. Given many fibre objects are still produced today, and the detailed ethno historic records that exist, there is the possibility to examine the changing production methods and use of this material culture over time. This is especially true when compared with the detailed rock art assemblage that provides insights into thousands of years of fibre object use. This paper draws together the threads of evidence to illustrate the significance of fibre objects in western Arnhem Land.

Fig.1 - Rock painting showing male anthropomorphs with baskets, spears and spearthrowers (Mirarr Gunwarddebing site: I3 0129)
Fig.2 - Trace of scene showing female anthropomorphs with Type 2 Rectangular Baskets and Type 11 Conical Baskets as well as long (digging) sticks (Mirarr Gunwarddebing Site: I3 0181). Tracing by author
Breaking ground: New insights into southern African Bushman ethnography and its implications for rock art research

Bushmen-authored southern African rock art has, for the last four decades, been yielding a rich crop of interpretative data thanks to the use of three sets of ethnographic archives from the nineteenth century /Xam Bushmen in the Western Cape, Qing’s (a San man of the Maluti mountains where much of the art is found) 1870’s interpretations of paintings and ethnographies of various Bushman groups in Botswana collected during the mid-twentieth century. Those working from an entirely shamanic model have, however, reached, to an extent, an impasse. Recent developments within social theory have enabled researchers to look with fresh eyes at these ethnographies, with the understanding of Bushman ontology as relational. By viewing the art as a product of an animist worldview, produced by a culture in which ritual specialists (shamans, if you will) are an integral part in the maintenance of relationships with non-human persons, and by extension, society, some of the more enigmatic features of the art may be brought to light. This paper examines cases in which this has been possible.

Keywords: Southern Africa, ethnography, rock art, relational ontology, animism

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A proposed cultural affiliation of Western and Eastern Basketmaker II petroglyphs of the San Juan River drainages in Southeastern Utah

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The cultural diagnostics within Basketmaker II petroglyphs of southeastern Utah along the San Juan river drainages, have equivalents found in katsina masks, ritual poetry and creation myths specific only to two Pueblo cultures, Keres speakers and Zuni speakers. Both are linguistic isolates. Ethnographic analogy, superimposition sequences (Harris Matrix), gestures of anthropomorphic figures of ‘dead’ or ‘spirit beings’ are keys to the cultural metaphors ascribed to Katsinas and Cloud beings. Katsinas are beneficial spirits for all Pueblo people. Ethnographic analogy distinguishes the Zuni Katsinas (ancestors) from Keresan Katsinas (Cloud Beings). Creation myths of emergence through 4 previous worlds are common to both, but only the Keresan have deities from ‘many skies’ above, shown in their petroglyph panels, while Zuni deities live in the water below the earth. Their cultural metaphor is “ladder descending children,” who will return there after death. Cultural metaphors can be identified in each panel of a large data base. These diagnostic elements found within Basketmaker II panels rule out Hopi and other tribal affiliations in this region.

Keywords: Basketmaker II, Katsinas, cloud beings, metaphors, cultural diagnostics, Keresan, Zuni

Fig.1 - Comb Wash drainage, San Juan River, Colorado, USA. Zuni iconography
Fig.2 - Montezuma Canyon, San Juan River, Colorado, USA. (White, 1939)
Blood-sweating horses - Petroglyphs in the Kyrgyz Fergana Valley in the process of transformation and interaction

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The petroglyphs representing horses located in Aravan, in the Kyrgyz Valley of Fergana, are an example of a unique palimpsest, which accumulates different content and is susceptible to numerous interpretations. Some scholars link them with the legendary, blood-sweating horses, which were claimed to have been bred in the region. The petroglyphs are assumed to have been created in the first half of the first millennium BC. The area where the petroglyphs are located (called Dul-dul at) is today a place of worship, where local rituals related to Islam are practiced. It is also the place of religious pilgrimages.

The ethnographic fieldwork, that I carried out in 2016 and 2017, showed numerous links between the images, the historical memory and practices. It appears that the petroglyphs are today an integral part of the entity including ritual practices, beliefs and other petroglyphs and other objects of worship in the region. The rock where the petroglyphs are located is personified as a place inhabited by various beings with causative powers. The rock is also transformed by petroglyphs, holes, graffiti and painting or burning candles. This paper will demonstrate how the Aravan petroglyphs are involved in a process of transforming a rock to form a relationship with it and how people interact with it.

Keywords: petroglyphs, Central Asia, Fergana Valley, holy place, interact with rock

Fig.1 - Rock with petroglyphs in Aravan, in the Kyrgyz Valley of Fergana (Dul-dul at complex). (photo © Sylwia Pietrowiak)
Fig.2 - Aravan, in the Kyrgyz Valley of Fergana. A woman in the course of performing a ritual in the Dul-dul at complex. (photo © Sylwia Pietrowiak)
This presentation provides the historical and theoretical basis for this IFRAO session on Rock Art and Ethnography. The papers in this session build on the shoulders of giants who opened up the study of rock art and ethnography at the end of the 1980s. In particular, they build on the work of contributors to the seminal publication Rock art and ethnography: proceedings of the ethnography symposium (H), Australian Rock Art Research Association Congress, Darwin 1988, which was edited by Mike Morwood and Doug Hobbs from the University of New England. This book was part of a renewed global interest in rock art studies that emerged largely due to the impetus provided by IFRAO and national rock art organisations, such as AURA. Since then, the study of rock art and ethnography has grown, with dedicated studies across the globe. By capturing these developments, geographically, temporally and thematically, the papers in this session set the groundwork and establish the challenges for future ethnographic research in rock art studies.
More than 2,000 years ago, when China began to record history in a written form, ethnography was already in existence. These records include the descriptive records of rock art, the earliest recording of ethnography and of rock art in China. Archaeological evidence found in the characters of this early writing found on surfaces other than rocks includes: oracle descriptions, seal scripts and other images that also appear in rock art, as well as evidence found on a large number of bronze, pottery and in vessel inscriptions. It appears that the same Chinese culture of calligraphy and painting, is reflected in the meaning and intent of the petroglyphs and appears to be consistent with those of the early Chinese characters. Links can also be found in the myths and folklore of the early Chinese ethnic origins, and other historical books can also be related to rock art and ancient culture. However, not all rock art can be interpreted in this way. At least a few typical petroglyph patterns are deciphered and interpreted by Chinese cultural scholars as a petroglyph symbol linked to the ancient cultural symbols of China. However, scholars who believe in the theory of cultural transmission believe that there is a possibility that these rock art images can be linked to ethnographic evidence.

Keywords: rock art, ethnography, Chinese characters, seals, symbols, China
Amazonian Indigenous groups possess diverse and complex theories about the phenomenon that non-Indigenous archaeologists define as Rock Art. However, ethnographic or archaeological literature on that subject are scarce, pointing to the invisibility of the phenomenon (Indigenous theories on Amazonian rock art) and/or a lack of interest from those disciplines in problematizing such an epistemic field in a more in-depth and respectful manner, despite its complexity and diversity of expression. Therefore, this paper constitutes a theoretical provocation regarding this silence that permeates Amazonianist rock art ethnography and archaeology. This field of investigation on Amazonia could be understood as a “gray area” where little ethnographic and ethnoarchaeological understanding is evident regarding these relationships among people, rocks, graphics and knowledge on the Amazonian biome. On the other hand, Indigenous connoisseurs never ceased thinking on that subject, inserting rock art in effective “Cultures of Respect” (Basoka Niretire Padeore) materialized in meaningful, sacred and dangerous places with “Art-Mythology” (Nimuãtirigere Masire). This research is based on an exchange of ideas between a Native Amazonian Tuyuka professor-researcher and a non-Indigenous rock art archaeologist during intercultural surveys for petroglyph sites (Utã Woritire) in the Negro River basin, Amazonas state, Brazil, between 2013 and 2017.
The aim of this session is to discuss the relationship between rock art and use of space in desert environments. Worldwide, a great internal heterogeneity regarding the distribution and availability of resources, and the conditions for the establishment of settlement and human circulation networks, among other aspects, characterise these ecosystems. Thus, we seek contributions that address rock art as an indicator to assess the mode and intensity of human occupation in arid and semi-arid regions from different continents.

We particularly welcome those presentations that emphasise the way that the intrinsic ecological variability of these ecosystems affected the modes of organisation and behaviour of the human groups under study, evaluating the differential use of space within them, as well as the articulation and hierarchy between sectors with diverse geographic and ecological characteristics through the execution of rock art motifs. Due to the increasing number of published papers that explore these issues during the last years, we consider the development of these topics essential for the archaeology of desert environments in general, and for rock art studies developed in these regions in particular.

In addition to this, we argue that the study of the material aspects acquired by visual communication in these environments allows us to deepen our knowledge about certain social aspects of the human populations that inhabited them. We refer to the following: processes linked to the dynamics of information exchange and interaction between groups; the existence of processes of social competence and the delimitation of geographical barriers; the definition of territories and the symbolic demarcation of special spaces. Nevertheless, we also offer the opportunity to present works that deal with other subjects based on the study of rock art (painted and engraved motifs and geoglyphs) in desert or semi-desert regions. Since we understand human groups may have channelled visual communication of through other material means, we also welcome those works that compare representations executed on fixed rock supports with images made on mobile items.

We are also interested in discussing explicitly the theoretical and methodological approaches used to address the issues mentioned in the different case studies.
Among others possible, these may include the contextualisation of rock art and its articulation with other lines of archaeological evidence, the analysis of stylistic variability between diverse ecological regions or the identification of patterns in the distribution of motifs across different spatial and temporal scales, digital techniques of rupestrian art documentation. In addition, we emphasise the importance of applying a comparative perspective. Without neglecting the important contextual differences in each case, we believe that the conceptual framework of some debates and the methodological strategies used for their discussion may constitute important frames of reference between arid regions of different continents.

Finally, with the set of presentations we hope that this session constitutes a space that stimulates a constructive discussion through the exchange of theoretical and methodological perspectives, conceptual tools and concrete research practices among colleagues working in desert regions from around the world.
The Atacama Desert (northern Chile) presents a large diversity of rock art expressions. Among them, the El Médano style stands out, characterised mainly by marine referents and an essentially coastal geographical distribution. In this article, the authors present internationally the recent discovery of archaeological sites where this rock art style has been recorded. One case is analysed to show the possible existence of internal style variability: on one hand, schematic and lineal representations, and on the other, naturalistic and figurative. The authors discuss their representations and motifs to reveal trends and hypotheses about ancient marine hunting practices, and also explore aspects such as animal species diversity, capture devices, laterality and disposition, number of boats involved, crews by vessel, quantity of harpoon lines employed to retain each animal, and the anatomic parts of the prey where the harpooning took place. Lastly, they compare the results with archaeological, ethnohistorical and ethnographic records. Even when their social practices were multiple and diverse in their representational sphere, the authors suggest there was an intention to over-represent the marine hunting face to the rest and to seafarers and hunters over other agents. The authors interpret it as an allegory of probable political and economic values.

Keywords: marine hunting, harpoon, Atacama Desert coast, El Médano, navigation
The Matobo hills in southwestern Zimbabwe (over more than 2000 km²) have a wide range of landscapes (narrow plains, open plains, broken hills) in a general semi-arid environment. Enrolled on the UNESCO Cultural Heritage List, they are renowned worldwide for the fineness of their rock paintings attributed to the Later Stone Age populations of foragers. Thanks to a long history of archaeological research, N. Walker identified a regional model of diachronic population dynamics during the LSA: climatic and related ecosystem changes through the Late Pleistocene and Holocene brought about radical transformations in demography, food supply, settlement patterns and social structuring. From 2017 onwards, a new international Franco-Zimbabwean project began exploring change and continuity in the Matobo foragers’ rock art through deep time (ca. 13,000 to 2,000 BP). Together with the characterisation and dating of stylistic changes, the second issue is to identify the agents involved in the dynamics of foragers’ rock art in terms of intensity (start/stop) and content (style). This paper advances the theoretical background of the project and predictive model of rock art diachronic dynamics derived from Walker’s model and based on Information Exchange Theory, subject to future tests.

Keywords: Matobo, Later Stone Age, Style, Information Exchange Theory, Zimbabwe

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Fig.1 - Semi-arid landscape of the Matobo hills. (photo C. Bourdier)
Fig.2 - Detail of the various intermingled rock art sets at Bambata cave: white elephants, red and yellow antelopes, and red humans. (photo C. Bourdier, National Monuments and Museums of Zimbabwe)
El Medano rock art style on the coast of Atacama desert in Chile: cetacean hunting or cetacean social agents?

The investigations carried out lately on the Paposo/Taltal coast (25° S, Atacama Desert), have enabled a reassessment of the traditional academic interpretation of the El Médano style pictographs of the area, which defined the representation of physical hunting of whales since 1000 to 2000 years ago. New data shows there was no whaling in the area during either historical or prehistoric times, information that adds to the recently obtained dates for pictographs of Medano style coastal modality (6492-6426 BC, C14 and Archeomagnetism). Thus, a reinterpretation of the ethnohistorical and ethnographic data in light of the new archaeological information corroborates that local human groups never hunted cetaceans; rather, they articulated their social cycles with the cyclic presence of migration cetaceans by the coast. These marine animals acting as agents that, through strandings, generated the fruition of activities and ceremonies of social convergence among the human groups.

Keywords: Atacama desert coast, pictographs, cetaceans, reinterpretation, strandings

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Fig.1 - Quebrada el Médano, Taltal, Chile. (photo José Castelleti, 2017)
Fig.2 - Quebrada el Médano, Taltal, Chile. (photo José Castelleti, 2017)
Paintings and engravings in the most arid zone of southernmost Patagonia (Argentina, South America): distribution of rock art across space

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The zone between Gallego and Chico rivers in the Pali Aike volcanic field at 52° S (Southernmost Patagonia, South America) is, ecologically, a dry steppe in contrast with the wet steppe south of Chico River. Although not fully published, this area was traditionally characterised as one of low use intensity where few known rock art sites. In the last years, several research projects have focused surveys in this area, so revealing a different picture than previously known. The authors recorded abundant paintings and engravings along with high concentrations of lithic artefacts and bones. Moreover, they reassigned dates for human occupation (previously assigned to the last 2000 years BP) to the Middle Holocene, ca. 4800 BP. The rock art, traditionally characterised by geometric abstract paintings, has revealed the existence of animal engravings and large anthropomorphic paintings, so extending the temporal range of rock art execution and pointing out supra-regional connections. The authors’ aims are twofold: to present this new rock art evidence for the area between Gallego and Chico rivers; to compare the spatial distribution and density of rock art motifs and lithic artefacts on a regional scale to assess human use of space according to different environments.

Keywords: Southernmost Patagonia, engravings, paintings, variability, use intensity

Fig. 1 - Tridigits and geometric paintings from Meseta río Robles (Ea. La Carlota), area between Gallego and Chico rivers, Pali Aike volcanic field, Santa Cruz, Argentina. (photo L. Manzi)
Fig. 2 - Figurative engravings from Meseta río Robles (Ea. La Carlota), area between Gallego and Chico rivers, Pali Aike volcanic field, Santa Cruz, Argentina. (photo L. Manzi)
The aim of this presentation is to discuss the location of rock art in a particular semi desert environment: La Rioja province (Argentina). The centre south region of the province has a variety of rock art engravings styles. The different styles correspond to two periods: the Integración Regional Period from AD 500 to AD 1000 and the Desarrollos Regionales Period from AD 1000 to AD 1450.

Although there is a great availability of rock surfaces to engrave representations, rock art occurs in certain isolated places on red sandstone outcrops and boulders. Rock art location has no direct association with water sources or settlement sites. One finds it on walls with wide visibility in open areas suitable for hunting, strategic places during the winter when guanacos descend from the mountains to the valleys.

The archaeological record (pottery and stone tools) is superficial and concentrates on sheltered areas beside the sandstone outcrops with no evident settlement structures. The author’s research focuses on understanding the distribution of the representations in the landscape in order to understand if they indicate certain paths, hunting areas, social boundaries or ritual landmarks.

Keywords: engravings, landscape, desert, La Rioja
Painting landscapes throughout time in the Andean Highlands, Arica foothills, northern Chile

The foothills of Arica show one of the largest concentrations of pre-Hispanic rock paintings in the Atacama Desert, mostly camelids and human representations. Studies carried out in this region allowed the definition of a stylistic classification for the earliest representations—the Naturalistic Tradition, chronologically ascribed to the Late Archaic and Formative periods (4000 BC to AD 500). Yet, the characterisation and distribution of late and more recent periods is missing and thus do not contribute to the evaluation of the construction of rock art landscapes through time and possible links between different localities of the region. This study compares two archaeological localities (at roughly 3100 metres above sea level) that have rock art: Pampa El Muerto and Pampa Oxaya. The authors look at the spatial distribution analysis and comparison of the representation patterns identified in the first locality. They also discuss stylistic variability at the motif and scenic composition level, as well as the site location in both localities characterised by similar geomorphology, logistic and temporary human occupation. Further to the construction of rock art landscapes, the authors evaluate the role of the paintings as an expression of visual communication in the highlands of the northern Chile.

Keywords: pre-Hispanic, paintings, distribution patterns, rock art, landscape, Northern Chile

Fig. 1 - Pampa El Muerto 8 rock shelter, precordillera de Arica, Chile. (© Guerrero Bueno)

Fig. 2 - Pampa Oxaya 7 rock shelter, precordillera de Arica, Chile. (© Guerrero Bueno)
Nowadays, Argentinean Patagonia is mostly a desert environment. Palaeoclimate records suggest that these environmental conditions have been present during the last 2500 years. Among other designs, a large quantity of hand stencils characterise the rock art of this region. This type of motif, documented in most research areas, has a wide distribution. The available information suggests that hand stencils were produced since the initial occupations of Patagonia (ca. 10 000 years BP) until contact with populations of European descent (ca. 300 years BP).

The general aim of this paper is to appraise differential spatial and temporal trends in the production of hand stencils in Argentinean Patagonia; furthermore, how these relate to different land use strategies carried out by hunter-gatherer groups. In particular, the authors consider the information on rock art from the Cardiel Lake basin and Strobel Plateau located in central-western Santa Cruz Province, Argentina. Current research suggests there was an intense and complementary occupation of these two areas during the Late Holocene (last 2500 years). The authors propose that the production of hand stencils was more important in areas used for residential purposes, like the Cardiel Lake basin, where all age groups participated in the process. The authors determine age groups through the measurement of the hand stencils.

Keywords: hunter-gatherers, hand stencils, paintings; Patagonia, Middle and Late Holocene, climatic change
An investigation of both painted and engraved rock art motifs in the northern Chihuahuan Desert provides an ideal springboard for understanding relationships between landscapes, place, people, and the negotiation of identity through time. In this paper, the author employs archaeological and anthropological approaches to rock art and focuses on somatic motifs in far west Texas.

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Keywords: west Texas, landscape, embodiment, identity, social theory
Tracking change in rock art vocabularies and styles at Marapikurrinya (Port Hedland, NW Australia)

Marapikurrinya (Port Hedland, Northwest Australia) engraving province falls within a maritime desert located on a thin fertile coast fringed by semi-arid Pilbara desert. The rock art province found here is stylistically unique and internally heterogeneous. Track motifs form a significant component within this repertoire, both human and other animal, comprising roughly 30% of all engravings.

There are discrete styles within this engraving body, arguably produced semi-continuously over the last 7000 years, from the point of sea-level stabilisation in this region. One proposal is that changes in these styles reflect and negotiate environmental, demographic and social changes. In the most recent stylistic phases, track motifs dominate and perhaps reflect change in marking strategy from localised territorial bounded art to regional social harmonisation.

This paper explores the potential functions of track motifs as a vocabulary distinct from other figurative art, using Marapikurrinya as a case study. This paper presents the relationship between these tracks and other Australian arid zone track styles to understand human use of this seasonally arid landscape.

Keywords: desert, style, settlement, function, regionalism

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This paper presents a comparative analysis between the “Archaic Pictorial Tradition” from the highlands and eastern valleys of the Sierra Madre Occidental of the State of Durango and that of the hunter-gatherer rock paintings from the desert plains and mountains of the Bolsón de Mapimí in the same state. The study provides information about the possibility of an ancient east-west route that connected two major mountain ranges of Mexico, the Sierra Madre Oriental and the Sierra Madre Occidental, during the Late Archaic Period (2000 BC to AD 600 A.D.). The main characteristics of the rock art that enabled communication among hunter-gatherer groups in this big area are probably its abstract character and structural organisation. These two properties are central to this work.
Since the early twentieth century, Pukara de Rinconada (Puna of Jujuy, Argentina) attracted the attention of several investigators interested in the archaeology of this area. The authors’ current studies started in 2004 in the southern sector of the Pozuelos basin, the surrounds of Pukara de Rinconada. These studies allowed them to analyse the transformation of sociocultural landscapes through time. In this context, the aim of this work consists in the presentation and analysis of the Pukara rock art manifestations, following the stylistic definitions proposed by the authors’ team in the area. The authors base the proposed theoretical-methodological framework on the contextual and stylistic analysis, as well as landscape archaeology.

Results indicate the existence of a very important “node” for this region. This site combines most of the styles and stylistic modalities defined for the area, depicting exclusive motifs not recorded in other sites until now. Likewise, the art presents a great diachronic complexity with multiple resignifications associated with several and diverse evidences from different chronologies. The emplacement selected for Pukara de Rinconada constitutes an inflection point in the landscape with high visual permeability and physical control of the main transit routes in this area.
Recent research carried out in basins of the Sierras Transversales ranges of the Northern Mexico Highlands reveal a quite different picture for the desert landscapes of Northern Mexico, often perceived as homogeneous territories where hunter-gatherer societies once lived in isolation. This paper aims to show how the rock art sites and open-air camps are vestiges of hunter-gatherer societies who exploited local resources—peoples linked to outsider sedentary groups. The proposal includes SEM, XRF and FTIR analyses applied to rock art pigment-samples from the rock shelter of San Jerónimo, and artefact studies from other sites. The authors expect to improve existing ideas about local adaptations, rock art styles and long-distance interactions developed by the Northern Mexico desert societies over time.

Keywords: rock art, hunter-gatherer interactions, Northern Mexico deserts, San Jerónimo, rock shelter
‘Water, water, everywhere, Nor any drop to drink’...: the predicament of coastal deserts for hunter-gatherer signalling behaviour

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Like Coleridge’s Rime of the Ancient Mariner, coastal hunter-gatherer-fisher people of Murujuga lived with the resources of a bountiful sea in an arid landscape where limits on potable water constrain human survival. In the outer islands of the Archipelago, with near continuous maritime resources and littoral zone (shellfish, fish, turtle rookeries), stone resources for stone tool manufacture and the construction of myriad stone features, the absence of reliable water except during the cyclonic summer season would have constrained permanent occupation. This must have affected the way that people signalled information about their personal and group identity. This paper considers occupation models and symbolic behaviour for Murujuga in terms of the changing access to water from deep time, through the last Ice Age and into the recent past, when the rising sea levels created this maritime desert.

Keywords: Australian hunter-gatherers, coastal deserts, arid zone, rock art, identity signalling

Fig.1 and 2 - Rosemary Island (top) on the platforms of the coast and (bottom) the inland valleys with older occupation evidence. (author Jo McDonald, Copyright CRAR+M Database)
Distribution model among the rock engravings in the Sonoran desert, region of El Arenoso, Caborca, Sonora, Mexico

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Keywords: Desert, Sonora, Trincheras Tradition, Hohokam Culture, petroglyphs, Distribution model

The Desert of Sonora is part of the ancient corridors of North America characterized by the arid ecosystems. This desert is one of the areas with the highest concentration of petroglyphs or rock art engravings in the so-called El Norte of Mexico. Within this area is placed the El Arenoso’s region that is located culturally between the prehispanic groups of the Trincheras Tradition (Sonora, Mexico) and the Hohokam Culture (Arizona, USA). The record of these manifestations presents a large number of representations with two significant variables: 1) Selection of the places, and 2) Specific typologies. These traits pose a model that could be extrapolated to another regions.
Anthropomorphic motifs in the northern Calchaquí valley, Salta, Argentina

Within the framework of social interaction, this paper reports on the analysis of a series of blocks with rock engravings next to the Calchaquí River in the province of Salta, Argentina. The context of the blocks receives particular consideration based on location and connections with archaeological sites. Inquiries make comparisons with other zones with similar rock representations, determining associations in style and place (in this case, next to rivers or surrounds with water). In Andean cosmology, ritual permeates other fields of social life—everything that constitutes Andean life is part of ritual practice. Thus, the authors do not establish a division between ritual and everyday events, but contemplate the symbolic as part of the same universe in which all spheres of social life of the Andean communities meet. In this sense, the practice of making rock art is fundamental for the communities, as it not only serves as a means of expression and communication, but also as a means of reaffirming collective memory.

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Keywords: social interaction, rock engravings, anthropomorphic motifs, Calchaquí valley, rivers

Fig. 1 - Menhir in Pozo Bravo archaeological site.
Fig. 2 - Menhir found in the same site.
The Tehuacán-Cuicatlán Biosphere reserve in México is a semi desert area where human activity adapted to the wild ecology over centuries. The cave paintings of “Cerro Dade” (Dade Hill), Tequixepec, Oaxaca, depict warrior-like anthropomorphic figures and shield-like circular shapes.

These “public space” paintings, visible to many, have some connection with others in the reserve, where the creation of “warrior” figures continues over time, but differ in style, depending on pigment tone and brush stroke. This reinforces the notion of the use of particular areas of the landscape as “public spaces”, meaning the easy access and visibility of the paintings, contrary to hidden areas where the paintings express myths.

This paper propose a stylistic taxonomy of these rock paintings, depictions that may indicate territorial marking intent on the archaeological landscape of the Tehuacán-Cuicatlán Biosphere reserve.

Keywords: rock art, warriors, México, archaeological landscape, desert landscape
Rock art, in the history of humanity, offers an ambiguous and concurrently poignant record. The first feature alludes to its semantic properties, the second, testimony as thought and sensibility that come from the depths of time. This paper examines the problem of extensional referentiality and implications of rock art signs in the author’s research area, a semi-arid Mediterranean region. First, the author reviews some dimensions of rock art and links with contemporary theories of the sign, since archaeologists make real efforts to know what it means and can provide some useful criteria for developing rock art research.

Theories of the sign evoked in this paper have a common, realistic principle: allusion constituted in relation to a possible world, to actually existent entities, as well as conceived ones like magical beings. They further assume that reality precedes the sign and is different from it, implying the this exists.

The author explores this issue in a set of rock art assemblages, examines their extensional reference from the standpoint of environmental realism, and argues that ubiquity is a quality-nucleus of rock art.

Keywords: rock art, theories of signs, allusions
We have been carrying out research to assess the scale of human mobility and ecological complementarity across southern Andean deserts and highlands during the late Holocene. This macro-region is located at the western limit of the South American Arid Diagonal and presents high topographic and ecological variations with a marked seasonality. Specifically, in this study we address rock art spatial distributions to delve into the information networks unfolded by hunter-gatherers over this landscape during the last 3000 years. We develop a GIS spatial analysis to model the connectivity between different ecological contexts based on geographical and ecological variables. The degree of connectivity will be assessed according to the seasonal availability of these environments. Our results show a major hierarchical position of the seasonal highland environments in information networks when compared to other biogeographical contexts. We suggest that one key reason for their past importance is related to their potential for population convergence, supported by crucial features: trans-Andean circulation, pastures with high summer productivity and access to primary outcrops of obsidian. On this scenario, the selection of rock art as the preferred communication device may have been useful to multiple ends: signal circulation paths, enhance information exchange and assure social interaction among generally dispersed human groups, even in the absence of face-to-face interaction.
Intertwined landscapes: the rock art of hunter-gatherer and agrarian communities in the semi-arid north of Chile

From the eleventh to sixteenth centuries, hunter-gatherer and agrarian communities coexisted in the valleys of North-Central Chile, albeit occupying different spaces: while hunter-gatherer settlements were located in arid places within the valleys, such as ravines and interfluves, agrarian communities placed theirs at the bottom of these valleys where they could carry out agricultural practices. These different groups also made different kinds of rock art: hunter-gatherers produced paintings and agrarian communities, engravings.

Considering the above, this paper compares the spatial distribution of both kinds of rock art in the semiarid region of North-Central Chile (30° S.). Results show how each rock art set related to a particular placement and audience. These differences indicate the unfolding of particular strategies of social reproduction and landscape construction conducted by hunter-gatherer and agrarian communities. Furthermore, the spatial distribution of hunter-gatherer rock paintings suggests a long tradition of reoccupation and repainting of the same places since the beginning of the Late Holocene (ca. 2500 BC) until the sixteenth century.

Keywords: Chile, desert, hunter-gatherers, agrarian communities, landscape, tradition
Looking for seasonal pastures: the Chacarilla wetland and its naturalistic llama engravings in the core of northern Chile Atacama Desert

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Chacarilla-15 (1680 metres above sea level) is a small oasis formed by phreatic water within a canyon that drains on to the Pampa del Tamarugal basin (ca. 1200 metres above sea level). This wetland was active and recurrently visited from about 4750 BP until a few decades ago, attracted by fresh water and vegetation. The site contains at least 35 panels with approximately 224 figures that extend for more than 100 metres. An archaeological deposit covered figures on lower sections of some panels. An excavation over three-metre deep yielded 31 radiocarbon dates, which reveal limited domestic activities from 4750 to 500 BP, with the more intensive occupation during the Formative period (Neolithic) between 3500 to 2000 BP. This paper proposes that Chacarilla-15 was an economic and ritual node where herders from the Loa basin, more than 80 km to the south, and agro-foresters from Pampa del Tamarugal basin congregated, as seen in rock art styles and pottery traditions. The authors explore the relationships between palaeoclimatic conditions, patterns of mobility, and the emergence of ritual and economic places shared by populations of different cultural traditions.

Keywords: llama engravings, Chacarilla wetland, northern Atacama Desert, Chile
Ecologically favoured spot or ‘sacred landscape’: human use of space investigated by rock art analysis and vegetation monitoring at the Brandberg/ Daureb, Namibia

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The broad field of landscape archaeology is the usual approach for investigating human use of space in prehistory. Patterns of resource exploitation often form the focus for deriving clues from an artefact spectrum. In contrast, social or religious landscapes are determined by investigating rock art regions. The interpretative friction between human environments as ‘resource spots’ and ‘sacred landscape’ becomes especially evident in the mountain range of the Brandberg/Daureb in Namibia. This region’s location on the fringe of the hyper-arid Namib Desert, its topography and occasional water sources and flora and fauna make it a point of particular ecological interest. A given standpoint considers the climate largely unchanged during the Holocene. Thus, monitoring vegetation via satellite imagery from the past 30 years helps explain the location of many of the rock art sites of the Brandberg/Daureb by regional seasonality. On the other hand, statistical analysis of 39,000 depictions shows that the rock art focuses social and cosmological discourses. Considering both observations reveals the massif’s role—how it shaped daily activities such as resource exploitation, social events like initiation rites, and the discourse between humans and other beings within the hunter-gatherer cosmos.

Keywords: rock art, GIS, land use, hunter-gatherers, Namibia
Symbolic responses to the Inca: inter-regional variability in rock art at the southern edge of the empire

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Keywords: Inca Empire, rock art, imperial strategies, local responses

The Inca Empire extended south along the Andes to the high-altitude deserts of the Argentine provinces of San Juan and Mendoza and central and semi-arid north regions of Chile in South America. Previous research in these four regions has tracked the presence of Inca conquest and cultural influence through ceramics and architecture, but paid less attention to rock art. The authors show maps displaying the spatial distribution of Inca sites and rock art motifs assigned to the same period. Within the four regions, Inca-period motifs are diverse and include shields, knives, and anthropomorphic designs with ponchos. The authors assess diverse criteria used to assign these motifs to the Inca period and their stylistic relationships to Inca ceramics, architecture, and ethnohistoric documents from other regions. There is a comparison of these rock art motifs and other closely associated motifs. Maps rank the regions’ spatial density of sites and motifs as general indicators of the relative intensity of the influence of the Inca Empire. The paper suggests that inter-regional differences in rock art motifs reflect internal variability in Inca conquest strategies and local responses.

Fig. 1 – Cerro Mercachas, Aconcagua Valley, Chile. (photo Andrés Troncoso)
Fig 2. – Cerro Tunduqueral, Uspallata Valley, Argentina. (photo Sol Zárate)
The promotion of rock art landscapes into the UNESCO World Heritage system brings with it unique challenges and opportunities. While often used as part of broader World Heritage cultural place nominations, we have in more recent decades seen an increase in the nomination of places where rock art is the key cultural value. In this session we aim to critically explore the relationship between rock art and the World Heritage industry. Rather than focusing on the nature of the rock art found in World Heritage areas, we aim to explore the following: (a) the ways in which governments, local communities, ranger groups, and First Nation groups are managing rock art within broader World Heritage areas, (b) how World Heritage nomination and listing have or have not shifted relationships between stakeholder groups and rock art areas or associated cultural places, (c) how the act of World Heritage nomination and/or listing may have changed the cultural values for which the property was inscribed (or other cultural values not widely acknowledged), and (d) other critical reflections on rock art and World Heritage.
The HANDPAS Project is focused on documenting and disseminating information on some of the most interesting prehistoric rock art evidence in Western Europe: Palaeolithic hand stencils. Most of those representations are located in decorated caves considered World Heritage by UNESCO.

The HANDPAS Project is designed to create a high quality documentation, graphic and theoretical corpus of data wholly available for both researchers and the general public, through a digital open-access platform. Particular features related to this heritage asset being researched (fragility and access difficulty) determined our documentation methodology. It represents a powerful tool for scholars whose research is focused on aspects related to hand stencils, so that they may work remotely, overcoming physical, conservation or administrative barriers.

This Project intends to create a multimedia platform, which allows World Heritage rock art to become more accessible and at the same time performs graphic and metric research. The user enters into a database with high quality content, launching an integrated database that enables the viewing of high resolution 3D models (in a web environment) of the decorated panels with the possibility to interact in a digital framework through different digital tools. The aim is for complete accessibility for researchers, curators, students and the general public.

Keywords: HANDPAS Project, News Technologies, Palaeolithic rock-art, Research, Dissemination, World Heritage
The Rock Carvings in Tanum, Sweden - successes and failures over a quarter of a century

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The Rock Carvings in Tanum, Sweden, were inscribed into the UNESCO World Heritage List in 1994. The application had a modern approach for its time, and Tanum municipality received the first official World Heritage Diploma. Subsequently a World Heritage Council was formed which, in record time, developed and implemented a management plan. A new visitor’s centre was built, opening in 1998. The “Rock Care- Tanum Culture Heritage Laboratory” project funded by the European Commission between 1998 and 2004 was a springboard to great advances in research. Meanwhile, the Management Council drew up a new and exceptional management plan, which has never been fully implemented. In 2007, the “Svenskt Hällristnings Forsknings Arkiv” infrastructure was established by the University of Gothenburg to strengthen rock art research and local landowners formed the public association “Hiking in World Heritage”. But despite the successes, issues appeared. The visitor centre had become a museum where research on the carvings was being pushed aside by ethnological and anthroposophical perspectives. Tanum heritage was also threatened by plans for a new highway, supported by local politicians and some of the public who increasingly questioned the concept of world heritage. This paper describes what happened next in this complex and tense development process and its path over the following decade.

Keywords: rock art, Tanum, Sweden, management plans, UNESCO World Heritage
Chaco Canyon contains the largest prehistoric architecture in the United States. It has been a UNESCO World Heritage site since 1987. Rock-art covers most of the cliff walls and boulders in the 10 miles of the canyon within the park. The rock-art was not specifically mentioned in the World Heritage nomination. As a result, among others, very little attention was given to this resource and only recently have in depth documentation and conservation projects been undertaken.

Cultural affiliation with Chaco is claimed by 26 descendant tribal groups who are consulted when any changes are considered to the Park and its management. These Native Peoples often have different, alternative, and sometimes opposing connections to Chacoan rock-art other than that of the US government. Each of the descendant groups has its own beliefs and ideas about its importance and how it should be dealt with. We will present the concepts of one member of the Hopi Tribe, which has one of the strongest connections to their traditional heritage and to Chaco Canyon.
The Shulgan-Tash (Kapova) cave is located on the territory of the Bashkortostan Republic (Russia). The cave consists of an extensive system of chambers, passageways and galleries, where over fifty paintings have been found worked in a variety of techniques. Paintings depict geometric forms and extinct species of ice-age animals, there are mammoths, horses, rhinoceroses and bison worked in a variety of red paints. In 2017 in the course of the restoration the figure of a camel was also revealed.

The current state of preservation of the paintings reflects the results of various attempts to clean off the calcite crusts and also that of the visitor impact. The site was nominated in the UNESCO Tentative List on January the 30th, 2012 and the Government of Bashkortostan is currently making every effort to ensure that access to the republic’s cultural heritage is provided in the most appropriate way. A programme of graffiti removal and the restoration of several rock art panels in peril is being implemented. Eudald Guillamet from Andorra was invited to Shulgan-Tash in 2015 to share his experience of rock art restoration. A concept for a new museum was suggested in 2014.
The impressive presence of rock art in Africa, widespread all over the continent, has, since 1982, led to a number of UNESCO WHL sites. Presently 11 African UNESCO World Heritage sites include rock art (painting and engravings), and many more are in the tentative list: no other continent shows a similar figures. Benjamin Smith recently (2013) estimated to around 50,000 the rock art sites formally recorded by universities, museums and heritage agencies, but this figure may represent as little as 10 percent of the actual number of sites.

This current research traces the main paths that have been followed in different African contexts to connect or re-connect the different rock art stakeholders, both inside and outside the continent, and the local communities. The balance is not always even, and it shows traits that require careful evaluation, in terms of cultural, political and economic backgrounds. Facts and figures (as far as available) on the impact that the UNESCO aegis has on conservation and sustainable development issues will be presented and discussed, as a stimulus to try to isolate the best practices that could help to recognize and fill the existing gaps.

Fig.1 - UNESCO Rock art sites of Africa. (author M. Gallinaro, base map source Google Earth)
Fig.2 - Rock art styles of the Tadrart Acacus Rock art sites (SW Libya). (photo M. Gallinaro; © The Italian Archaeological Mission in the Sahara)
Azerbaijan is a new nation which was established after the collapse of the Soviet Union. The Azerbaijani people are eager to present themselves to the world as a modern nation with deep rooted historical ties to the Caucasus area. Historically speaking, this area has been under several foreign influences and ruled by a number of historical empires. In their eagerness to create a nation they provide us with archaeological evidence to support their claim that the Azerbaijani have been living in the area since the dawn of humanity. They are using ancient remains, as well as rock art, to establish their claim of origin to the land. This paper will use the Foucauldian discourse approach to analyse the Wikipedia article “Gobustan National Park”. The aim of this paper is three-fold: first, to highlight tendencies towards two dominating discourses within World Heritage sites: globalism and nationalism; second, to modify the Foucauldian discourse approach within a new framework for the analysis of Wikipedia articles; and third, to encourage more qualitative analytic research of online archaeology.

Keywords: Gobustan National Park, World Heritage, Wikipedia, nationalism, rock art

Fig.1 - Gobustan National Historical Artistic Preserve, Azerbaijan. (photo Ruth Gimmerstam)
Fig.2 - Dancing Petroglyphs, Gobustan Azerbaijan. (photo Ruth Gimmerstam)
32 years has passed since the Alta Rock Art was inscribed on the UNESCO World Heritage List. At present 4 areas with rock carvings and 1 area with rock paintings form part of the listing. From about 3000 carvings known at the time of the listing, now more than 6000 figures are known, and recent discoveries expand the Alta-region rock art area. Much of the rock art in Alta is not made available to the general public. Mainly due to the location of rock art sites within the modern settlement of Alta but also for preservation reasons. The World Heritage Rock Art Centre – Alta Museum is the entrance to a system of pathways guiding the visitors through 5000 years of prehistoric rock art. The UNESCO listing of the Alta rock art and the cultural value of the rock art clearly has had impact on the cultural value of archaeological monuments and its landscape with implications for other archaeological sites. This presentation gives a general overview of the CRM (exploring issues relating to rock art research, management and conservation) at Alta from the initial discoveries in 1973.

Keywords: CRM, Alta Rock Art, UNESCO World Heritage List, Norway
Concerning Heritage: Lessons from Rock Art Management in the Maloti-Drakensberg Park World Heritage Site

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Keywords: rock art, heritage, management, marketing, communities, custodians, Lesotho South Africa

At the time of writing, 16 years have passed since the inscription of the World Heritage Site (WHS) of the uKhahlamba-Drakensberg Park (uDP), South Africa. How has its cultural heritage been managed, and what lessons can be learned in order to inform its extension into the Kingdom of Lesotho? In 2013, UNESCO approved the inclusion of Lesotho’s Sehlabathebe National Park (SNP) to create a trans-boundary World Heritage Site known as the Maloti-Drakensberg Park, Lesotho/South Africa (MDP). This contribution is a critique for those planning and implementing site management strategies at rock art World Heritage Sites. It draws specifically from experiences and outcomes on both sides of the international border (uDP and SNP). In this short essay, we touch on the underlying management frameworks and how these are affected by the relationships between cultural heritage practitioners, cultural heritage agencies and site managers. We outline the concerns of sustainability, tourism and marketing and whether these have hampered the park’s integrity. We further indicate how, perhaps, some of the pitfalls hitherto encountered may be overcome. This is especially relevant to those heritage practitioners currently engaged in the planning of the new visitor centre at the SNP.

Fig.1 - Location of the Maloti, Drakensberg Park World Heritage Site. (photo G. Laue)
Fig.2 - Game Pass rock art shelter, Kamberg, Drakensberg, South Africa. (© Rock Art Research Institute)
This panel discussion will focus on rock art management and conservation in the World Heritage listed Kakadu National Park, Northern Territory, Australia. We will explore issues relating to the history of rock art research, management and conservation in Kakadu National Park, the impact of new additions to the existing World Heritage listing, on-the-ground issues relating to our different work, and Senior Traditional Owner Jeffrey Lee’s experience fighting to protect rock art from the impact of mining in the Koongarra area. The panel members include Traditional Owners, National Park Rangers, conservation specialists and other researchers working collaboratively in this World Heritage area.

Keywords: Rock Art, Kakadu, World Heritage, conservation
In this paper we draw upon the themes of this session to critically reflect on the relationship between rock art and the World Heritage system. Using case studies from our own work in Norway and Australia we touch upon the impacts of World Heritage listing and nomination, and the shifting relationships between stakeholders within these case study areas at local, national and international levels. We also explore ideas relating to the ‘freezing’ of intangible and tangible cultural values and related impacts on local communities. Finally, outcomes for long-term rock art conservation and management are considered in light of these discussions.

Keywords: rock art, management, conservation, world heritage, critical heritage, Australia, Norway
As far back as 1980 a delegation of experts arrived in the Dampier Archipelago on the northwest coast of Australia to investigate world heritage claims. It was the rock art and associated archaeological places that people had recognised as of outstanding universal value. Unfortunately for the place, the resource industry had arrived much earlier. It was not that there is any mineral wealth in the archipelago; it was just that back in the 1960s it afforded a sheltered deep water port location. Decades on, while heritage practitioners were seeking protection and recognition of the cultural values, State Government and departmental lackeys saw the same area suitable as an industrial hub. There are many stages in the progress to UNESCO inclusion of a place, however there is the obligation to identify, protect, conserve, and present World Heritage properties. Despite Australia being one of the first countries to ratify the World Heritage Convention, the politics and economic imperative has meant decades slow headway. Even with the Aboriginal traditional owners calling for such recognition, and recent government acknowledgement of the places global cultural importance, we are no nearer to nomination than back in the late 1970s.
N. 94 “Rock drawings in Valle Camonica”: the first Italian UNESCO World Heritage site

The site no. 94 “Rock drawings in Valle Camonica”, inscribed in 1979 as the first Italian UNESCO site, was only provided with its own management plan in 2005, coordinated by the Soprintendenza per i Beni Archeologici della Lombardia (Ministero dei beni e delle Attività Culturali e del turismo-MiBACT) in close collaboration with the local authorities. In 2006, to implement the management plan, the Institutional Coordination Group (GIC) was instituted: it is a working group established with the peripheral offices of MiBACT, the Municipalities where the rock art parks are placed and the Comunità Montana della Valle Camonica (Reference Office). In 2014 the National Museum of Prehistory (MUPRE) was opened; in 2015 the OUV was connected to the archaeological contexts and to the diachronic development of the rock art phenomenon. In 2015 and 2016 the Ministero was reorganized in its central and peripheral structure and this has also had repercussions on National Parks and the Museum. The cooperation with local authorities (Regione Lombardia and Comunità Montana) continues in several areas: management, monitoring, conservation, site improvement and research to disseminate the knowledge relating to the rock art and to continue developing sustainable tourism in the valley.

Keywords: Valle Camonica, UNESCO, management, research, site improvement, conservation

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Fig. 1 - Capo di Ponte (BS). Parco Nazionale delle Incisioni Rupestri, loc. Naquane. Detail of the Great Rock or Rock 1.
Fig. 2 - Capo di Ponte (BS). MUPRE-Museo Nazionale della Preistoria della Valle Camonica. The setup of the second floor of the museum.
Why is there little to no rock art from Asia, the Pacific, Russia and North America on UNESCO’s World Heritage List and why are there are no individual rock art sites from Australia? Initially rock art was nominated and assessed in terms of sites or site complexes, mainly from Europe and Africa. Sometimes, as with Kakadu National Park in Australia, thousands of rock art sites were added to the List by virtue of them being located in national parks that gained listing as mixed natural and cultural properties. Now a rock art cultural landscape approach to nomination is becoming more common, with the Zuojiang Huashan Rock Art Cultural Landscape of southern China the newest rock art related addition to the List. However, highly significant rock art landscapes such as Indonesia’s Maros-Pangkep cave site region of Sulawesi languish on the Tentative List for years (in this case since 2009) despite now being shown to contain examples of the oldest scientifically dated hand stencils and animal depictions in the world. It is argued here that we need to come up with a new way of categorising, comparing and assessing rock art heritage that is culturally fair, balanced, relevant, timely and straightforward.

Keywords: World Heritage, Kakadu, China, Indonesia, assessment, rock art landscape.
ROCK ART IN THE ITALIAN PENINSULA AND ISLANDS: ISSUES ABOUT THE RELATION BETWEEN ENGRAVED ROCKS AND PAINTED, SYMBOLS, MOUNTAIN AREAS AND PATHS

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This session intends to resume the issues discussed during the Round Table “L’arte rupestre dell’età dei metalli nella penisola italiana: localizzazione dei siti in rapporto al territorio, simbologie e possibilità interpretative” that took place in Pisa in 2015. The addressed issues were related to the Post-Pleistocene rock art along the Apennine ridge; in recent years an increasing amount of data has been collected, characterized by a regional and peculiar iconography with some common elements: anthropomorphic figures, weapons, daggers, halberds and several other symbols, all stylised. A peculiarity of this research is the site’s locations within small shelters, inappropriate for habitation or in places suitable for supervising mountain and territory roads; this research demonstrates similarities to that carried out in the Western Mediterranean Sea. A new topic that has not been discussed during the Round Table is about the possible interpretations of some engravings as solar and stellar symbols related to the measuring of time and to economic, daily and seasonal factors.

Therefore, the proposed guidelines are:
- A brief summary of the peninsula and its regionally distinct aspect.
- Relation between sites and territory regarding natural and anthropic landscape.
- Rock art and routes: cultural trades and supervision of the territory.
- Probable meanings linked to solar and stellar cycles: symbols and interpretations.
The “Pietra delle Croci” (Stone of the Crosses) is a large isolated limestone boulder, located in an area crossed by ancient “tratturi” (pastoral routes). The first exploration was undertaken in 2012, but only in 2017 were the first drawings and laser-scanner reproductions made. The boulder is dome-shaped, sloping towards the west and largely covered with engraved figures with wide and deep grooves. The more frequently recorded symbols are crosses, simple or “potent”, that is with a crossbar at the end of each of its arms. The latter type is more numerous, probably Christian and can be placed in the modern age. However, other figures seem prehistoric, particularly the lozenge-shapes and circles with a cross engraved into them, an 8-radius wheel and a pair of horns. There are also several cup-marks, whose diameter ranges from a few centimeters to a dozen. The largest one is connected by a groove to two small cup-marks, placed a little higher. Other cups are also connected by grooves. Finally, there are some cylindrical holes, a few centimeters wide and deep. All these cavities raise many interpretative problems which will require further research.

Keywords: Pietra delle Croci, Lettopalena (Abruzzo), graphic and laser-scanner reproductions, geometric figures, cup-marks, rock art
Numerous figures are engraved on the Parete Manzi (Montelapiano), while the paintings are very few. The most recurring engraved figure is a rod with a straight or curved appendix-like form at one end, there is also a rod painted in red. A few of the rods have a curved end. Due to the fact that among the engraved figures there are at least ten fish and a probable cetacean, transfixed by many rods, we can hypothesize a scenario of fishing with harpoons, certainly in the sea in the case of the cetacean, but perhaps also in some river (for fishes). Since Montelapiano’s site is along an important axis for transhumance, is it possible that some shepherds were able to fish along the coasts of Abruzzo and Puglia or at least know of this activity? A painted figure and an engraved figure show similarities with that of the Dolmen du Berceau, at Saint-Piat. They are formed by a straight rod, ending with one or two hooks, below which a semicircle appears: maybe a rope or a ring to fasten a rope? The interpretation of Montelapiano’s figures (what objects or animals? referential or symbolic?) and the identification of their authors (local communities or mobile groups?) will still require many investigations.
The Bagno Penale cave is a partially collapsed limestone cavity, noted in archaeological literature since the early 20th century when the archaeologist Antonio Taramelli found and excavated it. A large amount of pottery fragments were found in this cave and a well-known two-handled globular bowl with a distinctive neck, decorated with incised and impressed geometric motifs, belonging to the Bonu Ighinu culture (Middle Neolithic A: 4800-4300 BC). The southern and well preserved part of the cave has some hard-to-understand prehistoric engraved and painted figures.

The Bagno Penale cave is located near the modern urban area of Cagliari, in the middle of “Gulf of the Angels”, a large bay in southern Sardinia (Italy), facing the Tyrrhenian Sea. It is positioned on the southern part of “Capo Sant’Elia” in Cagliari, a sedimentary rock promontory from the Miocene period. This promontory reveals traces of human presence since VI millennium BC, thanks to a favourable habitat for the prehistoric population, located near the sea and the big Campidano plain.

The Bagno Penale cave is an excellent case study for GIS multiple site relationship analysis, due to its location, its prehistoric rock art figures and the rich archaeological background.

Keywords: cave, rock art, Middle Neolithic, landscape, Sardinia
Since the second half of the last century, different sites have been reported in the territory of Trapani, located in shelters and caves, containing engravings and two cases paintings. The recent resumption of searches by the authors, in cooperation with the Soprintendenza of Trapani, is addressing the systematic cataloguing of sites (more or less twenty) and the drawing of the depictions of about one thousand different signs. The ongoing study is leading to new unprecedented finds, in the attempt to understand if linear engravings could not only be related to the immediate site containing them, but also to the surrounding landscape environment (i.e. access to marine resources along the coastline overlooked by the caves). The dating of such signs is still uncertain, although their traditional chronological placement in the Late Palaeolithic and Mesolithic can be accepted.

Fig. 1 - Salinella Cave, S. Vito lo Capo. (photo A. Filippi)
Fig. 2 - Nicchia Rocche Giglio, Valderice. (photo A. Filippi)
The relationship between a number of the karstic caverns in the Gargano, where prehistoric engravings and paintings have been discovered, with the territory and the anthropic landscape of the Copper and Bronze Age will be illustrated. There will be a particular focus on the Sfinalicchio “C” Shelter, the Campo and the Sorbo Valley Caves, respectively located on the eastern headland and the extreme western side of the Gargano and along the southern Pedegarganica (Gargano foothill) route.

The Sfinalicchio “C” headland located close to the middle of the Peschici-Vieste area, one of the richest flint mines, exploited between the last period of the Neolithic and the Eneolithic Ages. The Campo di Pietra Cave was a sort of junction point between the southern Pedegarganica route and the promontory on the northern coast. The Patience Cave and the Riposo Shelter are situated opposite each other on both sides of Ividoro Valley, which opens up a short distance from the Candelaro River and appears to be one of the shortest and easiest routes going from the river bank to the first rocky crags of the Gargano, where traces of people living and dwelling in the Eneolithic and Bronze age still persist.

Keywords: Gargano, shelter, cave, paintings, engravings, Copper Age, Bronze Age

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Fig.1 - Campo di Pietra Cave, Apricena (Fg), Italy. (photo A. Gravina)
Fig.2 - Campo di Pietra Cave, Apricena (Fg), Italy. (photo A. Gravina)
Some Gargano prehistoric rock art styles seem to be part of a common heritage of iconographic themes found in a number of caves and rock shelters with a large number of engravings and graffiti. The extraordinary similarities of the figurative language found in these karstic cavities, located in different areas of the promontory at remarkable distances from one another, are indicators of cultural traits shared over a large and well-defined territorial area.

Contextual links will be drawn between the Graffiti and engravings and the paintings and in particular to the “fungi-forms” and “ribbon-like forms” which will be analyzed as well as their territorial diffusion and location within the karstic structures. We will analyze the technique of their execution and the evolution of their schematic representation in the presumed chronological and cultural period from the Copper Age to the Bronze Age and their likely ideological and social significance.

Keywords: Gargano, shelter, cave, paintings, engravings, Copper Age, Bronze Age

Fig.1 - Campo di Pietra Cave, Apricena (Fg), Italy. (photo A. Gravina)
Fig.2 - Campo di Pietra Cave, Apricena (Fg), Italy. (photo A. Gravina)
Analysis of certain sites (open-air or in caves) will be made, where evidence of cults or rites (agrarian, water, geothermal manifestations) have been discovered. Votive offerings are very often found in ‘transit’ or ‘control’ sites, or upon dominant or isolated ground. Further examination will also be carried out on sites along the Italian peninsula where engravings and/or schematic paintings attributed to the end of the Neolithic and metal ages have been discovered.

Despite the overlapping of various epochs, in many of these sites, certain distinguishable symbols recur (anthropomorphs, stars, hourglass shapes, double zig-zags, etc.). These symbols are also present over vast European areas and are often components of complex rock art scenes. These manifestations are invariably found on rocky walls or small shelters with difficult access but with dominant transit routes or mountain path crossroads. Thus, the true reason for the presence of such recurring symbology could have many reasons beyond reference to cults. One could suppose that the sites were sacred places continuing on through to historical epochs, and that these symbols were, at the same time, signs of territory and control. Another problem concerns the possible representations of constellations.

Keywords: Apennines, rock art, paintings, engravings, Italy, land use, routes
The Rock Art of Corsica is little known outside of the Island. This is one of the motivations for presenting a synthesis of the principal productions of this Art. The basis of our research is a book published some years ago by Professor M.C. Weiss from the University Pascal Paoli (Corsica). Two categories of Rock Art are present: the first is the ‘Grotta Scritta’, the only evidence of painted figures and symbols which permit comparisons with the Spanish and Sardinian painted rock art. Many large blocks of rock covered in incised patterns and symbols (with differing techniques) constitute the second category of Corsican Rock Art. The greatest portion of these blocks is located in the north of the Corsica and situated in particularly places in the landscape. In regards to the interpretation of the incised symbols, the greatest challenge remains in dating them and establishing a chronology.

Fig.1 - Grotta Scritta (Olmeta-du-Cap, Haute-Corse), painted symbols. (photo N. Mattei)  
Fig.2 - Vaglia (Mansu, Haute-Corse), incised symbols. (photo F. Lorenzi)
Rock Art and Rock Complexes in Val Dèmone (Sicily): Riparo Cassataro, Rocca Pizzicata, Rocca San Marco, Altipiano dell’Argimusco and Riparo della Sperlinga

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Keywords: Argimusco plateau, Rocca Pizzicata, Riparo Cassataro, Riparo della Sperlinga, Rocca San Marco, rock art in Sicily

This work intends to present some important archaeological sites in north-eastern Sicily, formerly known as Val Dèmone. Though the rock art of western Sicily is better known, the eastern part also has sites of great interest, which are little-known or studied. As such the following sites are highlighted: a) the Riparo Cassataro, Simeto Valley, where there are cave paintings from the Neolithic period (fig. 1); b) the Rocca Pizzicata, Alcantara Valley which includes a rock complex with numerous signs of anthropic activity (carved stairs, rock-cut tomb, altars, inscriptions, etc.); c) the Rocca San Marco, Nebrodi Mountains, a prehistoric shelter from the Palaeolithic period; d) the Altipiano dell’Argimusco, on the border between Peloritani and Nebrodi Mountains, an almost unknown place with rock artifacts (tub, altar, rock-cut tomb, rocky millstone, petroglyphs, etc.) and huge rocks that are characterized by rare and beautiful anthropomorphic and zoomorphic figures; e) the Riparo della Sperlinga, Novara di Sicilia, the second shelter from the Mesolithic period discovered in Sicily, with a series of linear wall engravings whose meaning is currently unclear, but certainly associated with site attendance in prehistoric times (fig. 2). This multidisciplinary study presents and describes the archaeological, geological, ethnographic and, in some cases, astronomical features of the sites in question.

Fig. 1 - Cassataro Shelter, Centuripe, Enna. (photo Diego Barucco)
Fig. 2 - Sperlinga Shelter, Novara di Sicilia, Messina. (photo Emilio Messina)
The influence of environmental context in rock art: paintings, engravings and symbols from the Anfratto Palmerini

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Keywords: Anfratto Palmerini (Pescosansonesco), environmental context, rock art, handprints, filiform anthropomorphs

The discovery of Anfratto Palmerini in Pescosansonesco (PE) is presented for the first time to the international scientific community. This narrow uninhabitable cavity, discovered in 2016 in La Queglia Mountain 560m above sea-level, is vulva shaped and its particular position receives total illumination only on the days following the winter solstice. Inside, the remains of several red ocher paintings are preserved, often superimposed by engravings and some charcoal marks. This paper will present the research of the Anfratto’s figurative repertoire, among which are handprints in red ocher and various symbols, painted or engraved, such as floral pictograms, anthropomorphic figures and stylized female genitals. Through the analysis of the painting and engraving superimpositions, a related chronology is proposed for the artistic phases that will eventually be substantiated by the preliminary analysis results of the pigments that is still in progress. Lastly, we will try to understand how the environmental context has influenced the first artists in selecting the site, characterizing its functions and thus determining the semiotic value of Anfratto’s handprints, engravings and symbols.
The marked route: Pianaura and the rock engravings in the Mount Stivo landscape (SW Trentino region, NE Italy)

The slopes of Mount Stivo, from the Cavedine and Gresta valleys (west and south) towards lake Cei on the eastern slope, are dotted with engravings representing religious symbols, anthropomorphic figures, inscriptions, dates and tools. The engravings are similar in style, type and technique, but every site has its own peculiarity. Their locations are on slopes crossed by medieval and modern routes, which link the valley-bottoms with higher settlements. One of the most interesting routes is the cobbled path linking the village of Massone with Drena castle and the Cavedine valley, where three rock-shelters with thematically connected engraving complexes are located (Nogaiole, Sant’Antonio and Pianaura). This research aims to investigate the specific characteristics of the rock engravings (stratigraphy, typology, techniques). Contact tracing, 2D and 3D photogrammetry and frottage have been used to record the engravings, and this approach has been linked with surface, cartographic and toponomastic surveys for better comprehension of land use, exploitation of resources, religious signs and structures, history of settlements and viability. The final purpose of the study is the chronological and functional interpretation of the engravings as part of the historical-archaeological reading of the landscape in its evolution and stratification over time by the interaction of natural and man-made factors.

Keywords: rock engraving, landscape archaeology, route, path, rock shelter, billhook
Until a couple of years ago, when talking about the rock art in Calabria, the main and only reference was inevitably and exclusively the aurochs figures from the Romito shelter in Papasidero, dated to the final Epigravettian. However, recent archaeological investigations undertaken in this region, especially in its central-northern parts, have brought to light a much richer context than always supposed. These investigations, conducted by different research institutions, led to the discovery of artistic expressions that can be referred to as from both prehistory and protohistory, demonstrating a more diversified and interesting picture of the rock art phenomenon in Calabria. Finally, the present work not only describes the new discoveries, all belonging to the Holocene, but refers them to a broader and more diversified national and international context within what is termed Landscape archeology; this also points to new investigative pathways within the rock art research of the region.

Keywords: rock-art, Calabria, Italy, landscape archaeology, prehistory, protohistory

Fig. 1 - Anthropomorphic figure like “phi” painted in red, Passo del Monaco, Papasidero, CS, Italy. (photo F. Larocca)
Fig. 2 - Pietra di Santa Filomena, Decollatura, CZ, Italy. (photo D. Sigari)
Numerous sites with petroglyphs, both iconic and aniconic, have been mapped: the Diana Cave (Mulazzo, MS) in the Lunigiana area, stands out for the recent research that has revealed a pre-protohistoric iconographic complex. Many aniconic elements (cup marks) have been found along the fluvial valleys and they have been related to probable communication or transhumance routes. One such likely route, situated in the Frigidio river Valley between the coast and the Lunigiana area, consists of mountainside paths where many petroglyphs, such as cup marks, cup marks with tails-like markings and basins, have been found on panoramic boulders, some of which are situated on cliffs. They are located in a position of high visibility, therefore of control, of the underlying valley or at both road and fluvial confluences. Besides several aniconic expressions, there is also a site with prehistoric anthropomorphic figures. In Versilia, several cup marks and basins are located along mountainside paths and on boulders on the cliffs. Iconographic elements and some cross-shaped figures can be found in the high-altitude sites, remarkably the presence of footprints, a bill-hook, a forestry tool and engravings have also been found.

Keywords: Italian pre-protohistory, rock-engraving, landscape archaeology, mountain paths, footprints, bill-hook, cup-marks

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Fig. 1 Colle del Cipollaio (Stazzema, LU) masso con coppelle, vaschette e canaletta (foto S. Pucci);
Fig. 2 Valle del Giardino (Stazzema, LU) coppelle su mulattiera (foto S. Pucci)
During the study and survey of the engraved elements inside Diana Cave (Mulazzo (MS) loc. Canossa) some engraved lines were found at the base of natural openings overlooking the Magra valley. These signs, 30 to 40 cm long and reciprocally oblique, are distributed in groups of 5 to 6. One of the Authors has observed that the lines appear to be aligned with places where stone-statues have been found (Sorano, Groppoli, Gigliana, Malgrate, Filetto, Mocrone, Venelia, Treschietto). This research on the visibility of sites indicates the intention of those using the cave of controlling the territory in pre-protohistoric times. But this doesn’t exclude other possible uses related to commercial, productive or ritual activities. The authors take into consideration the above-mentioned sites in context of the published archaeological data, the mineral resources, and the geographic data (roads, trails and waterways). The lines in the Diana Cave appear to be not only physical but also ideological directrixes which continue beyond the Parma Apennines between Mount Sillara and Mount Aquila (Carrera, Tosatti 2015). For this purpose, the research is restricted to the Magra valley, from Pontremoli to the Taverone valley, up to the Parma Apennines’ ridge and the Tuscan-Aemilian Appennines.
Petroglyphs in the Frigido Valley: location, land use and control

During the surveys in the territory of Massa and on the Apuan Alps, in the Frigido Valley and along its tributaries many engraved boulders have been found at high visibility points placed along mountain paths or on ledges. These boulders, which are rich in petroglyphs (anthropomorphic figures, cup marks and carved lines) are in visual connection hinting at communication capabilities; in fact, they seem placed at regular distances from each other, according to the extension of the human visual field. The Authors suppose a system of control over the territory aimed at supervising the ancient roads that linked the Tyrrhenian coast to the Padan Plain. The area covered by this communication system was used, since the Copper Age period, by merchants or artisans interested firstly in the copper minerals and later in the iron minerals, which could be found in the chalcopyrite mines of Massa, or by groups of people moving in the territory. Therefore, this system was used in order to defend the area and the resources of its inhabitants, whose villages are supposed to be not far from the observation points, both during Prehistory and the following periods such as that of the Ligurian Apuan, because of the belligerent relationship with the Romans.

Keywords: engraved figures, petroglyphs, landscape archaeology, paths, routes, pre-protohistory Tuscany

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Fig.1 - Frigido Valley (Massa, MS), plant of the sites. (elab. Carrera, Tonarelli)
Fig.2 - Frigido Valley (Massa, MS), masso di Casette. (rilievo Carrera)
ROCK ART IN THE LANDSCAPES OF MOTION

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During the last three decades of rock art research, the contextual importance of landscape has been emphasised a number of times. It seems to be an axiom now, that rock art should not be perceived as an isolated phenomenon but rather as a spatially embedded one. It is particularly a category of place which has become an interpretational tool for many scholars, allowing for considerations on rock art “fixity”. The images, albeit often difficult to date, are “fixed in place”, therefore researchers may focus on this alleged stability and spatial relationships the rock art has with other landscape features and agents.

However, one may argue that place is not as stable and fixed as it may seem at first glance. For instance, the loci are connected with paths and roads or actually form parts of these routes. A place then may constitute only a section of countless paths used by various agents. Features such as rock art, although immobile, belong not so much to a landscape of endurance and fixed relationships, as to a landscape of motion, full of ephemeral links and relations. We argue that to appreciate rock art in its landscape means also to appreciate the magnitude of agents active within it, and the overall dynamics they create. Motion affects rock art in a number of ways, from acting human agents to acting animals and weather phenomena. Hence rock art, apparently stable, is subjected to movements of those agents. One cannot approach rock drawings other than through movement, so if one side of a coin is a landscape of endurance, then the other side could be labelled a landscape of motion.

The following papers involve the analysis of rock art considered as an element of landscape of motion. There is no geographical and chronological limit for the case studies. We hope that the broad selection of approaches (e.g. functional, symbolic, relational) as well as various rock art traditions will help to show that rock art and movement are interrelated at manifold levels and in various scales. Some of the topics to be discussed throughout the session are as follows:

A. Rock art and roads. On phenomena of producing/encountering rock art while moving from place to place (e.g. pilgrimage, military or trade expeditions, search for resources).

B. In the living landscape. On agency of landscape and rock art (e.g. animism and rock art, rock art “biographies”).


D. Movement of images. Large scale movements of motifs (distributional analyses of rock art motifs/traditions).

E. Motion in rock art. Movement as depicted in rock art.
Introduction to the session “Rock art in the landscapes of motion”: the case of Egypt’s Western Desert

Starting from their own rock art research in Egypt, the chairmen will outline the scope and foci of the session and the various contributions to it, both thematically and geographically. The core of this introductory paper will consist of three case studies of rock art from the Western Desert of Egypt. We will begin with Dakhleh Oasis – a hub in a desert, where many routes merge, and rock art from various periods forms a huge palimpsest. The next part will be devoted to a specific long-distance desert (trade) route that connects Dakhleh with the border area between modern Egypt, Sudan and Libya: the pharaonic Abu Ballas Trail, where waystations and resting places often show rock art left by travellers or watchmen. Finally, the prehistoric rock art imagery of the Wadi Sura region (Gilf Kebir, SW-Egypt) will be addressed, which exemplifies the artwork of highly mobile hunter-gatherer communities during their seasonal migrations.

Keywords: Western Desert of Egypt, Dakhleh Oasis, Abu Ballas Trail, Wadi Sura, rock art, landscape

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Fig. 1 - Hunting scene at Abu Ballas in Egypt’s Western Desert. (photo R. Kuper, Heinrich Barth Institute)
Fig. 2 - A boat and sandal drawings in Dakhleh Oasis. (photo P. Polkowski, The Petroglyph Unit of the Dakhleh Oasis Project)
The Mount of Coto de Sabroso is located at the right bank of the river Ave within the municipality of Guimarães in North western Portugal.

At the top of this mount there is an Iron Age settlement that was primarily investigated by Martins Sarmento in the 19th century (Sarmento, 1906a,b; 1933), studied and excavated during the 50s, 70s and 80s (Cardoso, M.,1930; 1950; 1958; Pinto, 1929; Hawkes, 1958; Soeiro et al, 1981) and since 1990 Sociedade Martins Sarmento has been conducting the scientific investigation regarding the conservation of the site. In 2015, the rock art engravings within the mount have been identified and further studied by one of the authors of this paper (Cardoso, D., 2015). The rock art assemblage is mainly composed of abstract and geometric motifs; however, there are several engraved outcrops that display possible late imagery.

The aim of this paper is to analyse the spatial location of the engraved outcrops of Mount of Coto de Sabroso in terms of microscale and macroscale within the Ave basin and to raise questions about the association of rock art within its landscape.

Keywords: North western Portugal, Mount of Coto de Sabroso, landscape, Rock Art, biography of a place
This paper will discuss a specific type of Inka rock art (large niches) in relation to the pilgrimage road and to a living, agentive landscape in the southern Titicaca Basin, Peru. The Inka were interested in the Lake Titicaca region for economic and ideological reasons and integrated it around A.D.1450. The main transport and pilgrimage route was the Kollasuyu road, leading from Cusco to the southeast. Stations along this road are marked by rock art: Bebedero with the common geometric seats and platforms and Kenko and Altarani with the uncommon large niches in cliff walls directed toward the lake.

Firstly, these rock art sites may have been stopping points on the state-directed pilgrimage to the Island of the Sun. Secondly, I argue that the large niches indicate a local interaction between the Inka and Lupaqa people. These niches are Andean wak’a/shrines which cut into the living substance of the stone mountain; as wak’a, they are static and movable in the sense that their essence can be reproduced somewhere else. The notion of the niches as doors into a spiritual realm might be local as residents continue to make offerings and share stories of the niches as empowered agents.
Towards a Phenomenology of Rock Images

At the centre of a phenomenological investigation of rock images are space-time relationships and the relationship between movement and locality. This includes, among others, the following aspects: a) That it has been possible to solve the paradox, i.e. to establish movement in the picture, without “erasing” it. b) That a symbolic form, not easily integrated into the nomadic way of life, was employed, in stark contrast to the handy (portable) figurines. c) That through these rock images, Upper Palaeolithic individuals produced something that branched out of the traditional mobile way of life, generating signs of “crystalized” identities, with a sense of history. The scene of the hunting lions in the Salle du Fond of the Chauvet Cave (fig. 1), for example, gives an excellent impression on how to sense movement, as it moves through the pictorial expression on static ground. At the heart of my contribution, basic principles of a Phenomenology of Rock Art are presented, and more importantly, the hypothesis that a settled way of life of agricultural societies was preceded by the locality of the rock images as a symbolic-cognitive preparation for sedentariness.

Keywords: phenomenology, historical consciousness, space-time relationships, sedentariness, symbolic form

Fig. 1 - Hunting Lions. (in Brunel et al., 2015)
The history of Ladakh before the 10th century is very fragmentary. We have close to no historical records, and little archaeological research has been carried out. Rock art forms the most abundant material at our disposal for the study of the ancient history of the region. Over the past two decades, the authors have carried out systematic surveys throughout the territory and brought together a corpus of over 360 rock art sites. This corpus opens up new perspectives for understanding Ladakh’s past, by looking at the spatial distribution of the motifs. For instance, a clear differentiation between eastern and western Ladakh can be observed through the style of the carvings. Within these two coherent regions, differences of motifs can be observed whether found along trade routes, within pastoral landscapes, at military sites, near mining centers, at river crossings, etc… These variations in styles and motifs often coincide with differences observed in surrounding archaeological evidence, such as fortifications, and make for a powerful tool to reconstruct the past occupation of the territory. We will look at these territorial variations through a rich panorama of evidence, combining rock art images and detailed maps of the region.

Keywords: Ladakh, landscape, spatial analysis, trade routes, Protohistory
The research carried out over the last four years aimed to establish strategies to showcase the rock art of the Tagus Valley, submerged by the construction of the Fratel dam in 1974. The adopted strategies to achieve this are part of an operation whereby the engravings are effectively integrated into the contemporary landscape, promoting new ways of use. In this context, a research model was developed based on the architectural project, a theoretical model, which also integrated a transdisciplinary landscape reading system, rooted in praxis, to give emphasis on specific sites and the rock art’s capacity of reflecting elements of place, revealing the long and intimate relationship of the people who inhabited it and shaped themselves in the natural environment. Our focus goes through reading the singularities of the place, reinterpreting the timeless signs of landscape construction from prehistoric man to the present time. It is between the two rock art composition periods that the exercise reflects itself in seeking to form continuous and dynamic bridges between form and space, between content and established goals.

Keywords: landscape, Tagus Valley, rock art, intervention model, rock art

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Fig.1 - Fratel dam, Tejo River. (photo M. Monteiro Benjamim)
Fig.2 - Engravings, Ocresa River. (photo M. Monteiro Benjamim)
Although often recorded in the Northwest of Portugal, footprints and shoeprints are among the least studied engraved motifs of the Bronze and the Early Iron Ages in this region. Thus, this paper aims to present the results of a study of more than three dozen loci where more than two hundred podomorphs and shoeprints were recorded. The spatial analysis of the data made it possible to verify that these motifs were often interlinked with natural paths of circulation between valleys and certain levels on the slopes of the hills, easily accessible and easy to maneuver around before the steep ridge. They also interconnect with well-irrigated, easily accessed water sites, which came from the mountain tops. On a smaller scale of analysis, it was possible to verify that outcrops with more footprints and shoeprints, being those more highly frequented, were sites where engravings were made on inclined surfaces. In spite of the many interpretations that can be made regarding these motifs, we believe that they can be related to pilgrimages from medium and low-income places, essentially carried out by children and young adults (due to the dimensions of the motifs), perhaps as rites of passage, where upward movement and celestial cults would be significant.

Keywords: footprints and shoeprints, paths, pilgrimages, movement and celestial cults, podomorphs

Fig. 1 - The engraved boulder of Penedo de São Gonçalo, Felgueiras, North Portugal. (photo José Moreira)
Since 1999, 46 cup-marked panels (28 sites) have been identified in the Lake District, Cumbria in NW England. Unlike those in neighbouring uplands, most are located close to the valley floor, and consist largely (with one exception) of simple cup-marks, with few of the elaborate motifs found elsewhere in Britain. They lie in open-air contexts, on substantial, glacially-smoothed outcrops with no archaeological associations. Most are close to the lakes which occupy long, glacial valleys, radiating from the central massif. Around these summits a ribbon of fine-grained andesitic tuff once drew the attention of Neolithic stone-workers. Intensive quarrying and tool production activities saw axe-heads ‘roughed out’ at source then moved to lower ground for ‘finishing’. Evidence indicates small settlements along the western coastal plain and in the Eden Valley to the east, and valley routes connecting these lowland sites with the central quarries appear punctuated by the cup-marked outcrops, which also occur at the junctions of natural route-ways between the valleys. This paper introduces this distinctive new rock art corpus and presents a case for a relationship between the carved panels and the movement of Neolithic people around this dramatic landscape, with reference to the axe-production processes at its heart.
Affective movements: rock paintings, soots, and the practice of marking landscapes

Tim Ingold has proposed that the world we inhabit is always in movement, engaging multiple beings, phenomena, substances, and things. This movement produces a historical meshwork or field of relations where the rhythms and characteristics of many non-human beings and substances affect human practices and therefore, our lives. Rock art, as a material phenomenon is part of this reality: rock engravings and paintings move through history affecting and being affected by these elements. Considering the above, we discuss how the practice of rock painting by hunter-gatherers in north-central Chile during the Late Holocene was affected by the movement of a particular substance: smoke and the soot adhered onto the rock surfaces, in particular within residential camps. Here, we propose that the movement of smoke near rock paintings and its solidification as soot over the images set in motion the re-painting of the images, to maintain its visibility. The re-application of paint also re-activated some places across time and history, as they were painted for hundreds of years. In order to bring about these discussions, we combine the results of regional studies of rock art, and the direct dating and microstratigraphic studies of both paintings and soot. Our research has been funded by Fondecyt Grant 1150776.

Keywords: rock art, Chile, Sooth, affects, history, relationality
The Atacama Desert in northern Chile is a vast hyperarid area containing extremely circumscribed resource locations which were substantial nodes that concentrated most human activity. Throughout this wide area, pre-Columbian people created and depicted an incredible number of large figures on the surface of the earth, known as geoglyphs, most of them significantly related to long-distance caravan trade (Fig. 1). However, within these widespread spaces, geoglyphs are heterogeneously distributed in association with critical resources, geographic features, archaeological structures and caravan routes. They also show differences in technique and form (Fig. 2). We explore these spatial, morphological and technical differences to discriminate possible synchronic and/or diachronic “travelling territories”, i.e. fixed or mobile routes symbolically and materially demarked by visual images of animals, humans and geometric signs. In other words, visual images are examined as a proxy of the intensity and redundancy in the use of particular long-distance trade circuits linking socio-ecological spaces. This paper is a result of FONDECYT project 1151046 Chile.

Keywords: Atacama Desert, geoglyphs, caravan routes, mobility, visual images
There is no rock art without movement. Present at multiple scales – from the very act of pecking, or painting, in the processes of selecting the rocks, in crossing along a site – the movements are a central element from which rock art emerge. How were these movements? What do they inform us about the societies which produced rock art? In order to answer these questions, this paper employs rhythms as an analytical category. It focuses on the rhythm of manufacture, embracing with that the gestural cadences involved in the creation of the motifs. It is argued that to engrave a line is also to dance it, to follow it in an ordered way with the body. Through repetitive acts of engraving, these movements become incorporated into the site and were danced by the following generations who visited and engraved the site again and again. As such, moving along a rock art site can be conceived as dancing the line and letting oneself go with it. To illustrate this argument, this paper shows the results of the analysis of the petroglyphs in Cuesta Pabellón, a rock art site located in the semi-arid region of Chile.

Keywords: rock art, engraving, movement in art creation, Cuesta Pabellón, Chile

Fig.1 - Central area of the semiarid region of Chile and the Limarí Valley. Fig.2 - Iconographical variability of Diaguita rock art
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Archaeological sites plotted on a map often reveal a network of human occupations that may, for example, reflect strategies of resource exploitation. Movements of people in prehistory, however, leaves little trace. The paths between the sites – the connections in the network – are elusive and often the space between the sites on the archaeological map remains empty. Today, Geo-Information-Systems (GIS) software allows for the modelling of routes over digital topography and environment. Such ‘least-cost paths’ (LCP), albeit based on the assumption that human mobility favours cost reduction, allows us to formulate new hypotheses on the relationships between human occupation, mobility and the natural or social environment. During the past forty years 840 rock art sites have been recorded in the mountain range of the Brandberg/Dâureb in Namibia. Least-cost analyses are of particular importance not only for modelling probable routes from site to site, but these LCP calculation also reveal the spatial organisation of the sites. For instance, 626 of 817 smaller sites are located in close proximity to modelled routes from outside the mountain to sites above 1500 m a.s.l. with more than 250 depictions (n = 23). These observations call for an explanation of the network of rock art sites that goes beyond the prevailing ideas about seasonal mobility strategies.

Keywords: rock art, optimal-route analysis, hunter-gatherer, Namibia

Fig. 1 - Least cost path analysis of a rock art region. Brandberg/Dâureb, Erongo Region, Namibia. (Oliver Vogels)
Fig. 2 - Seasonal mobility in the Erongo Region. Erongo Region, Namibia. (Oliver Vogels, redrawn from Richter 1991, fig. 262)
Slow motion: Transport and oxen draught in the petroglyphs of Ughtasar, southern Armenia

Motifs directly relating to motion across the landscape are rare but notable within the corpus of c. 1000 carved rocks documented by the Ughtasar Rock Art Project team. At ‘Ughtasar’ located within the caldera of a remote strato-volcano high in the Syunik Mountains of southern Armenia are petroglyphs of wheeled vehicles, draught oxen and one unique ploughing scene. Although few in number, the transport motifs are varied and intriguing, their context and locations suggesting they are not simply straightforward representations of transport reflecting everyday life in the caldera. What can these images and their landscape settings tell us about the life-ways and worldviews of those who pecked them? How might the petroglyphs relate to the excavated finds of real wagons in the rich archaeological record of wheeled vehicles and depictions of them in the southern Caucasus and beyond? May the Ughtasar transport motifs provide clues to the likely chronology of some of the rock art?

The Ughtasar Project team is exploring a range of approaches in the attempt to shed light on these questions. In this presentation petroglyphs pertaining to motion will be examined at multiple scales within their context on the rock, in the landscape and within the wider region.

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Keywords: Ughtasar, Armenia, petroglyphs, motion, landscape, transport

Fig. 1 - Rock 480 with wagon cum goat, Ughtasar (©Ughtasar Rock Art Project)
Fig. 2 - Ploughing scene (Rock 15), Ughtasar (©Ughtasar Rock Art Project)
This symposium will follow the established format of the successful previous IFRAO Congress science symposia chaired by us that focused on the scientific methodology gradually becoming available to study rock art. The following papers are based on the testable and refutable evidence and hypotheses cast in terms of cause and effect reasoning on topics concerning the science of both rock art and portable palaeoart, but the following subjects are of particular interest:

1. The current proliferation of sophisticated rock art recording methodology.
2. Results and technical aspects of new studies in direct rock art age estimation.
3. The establishment of accepted standard protocols in rock art dating work.
4. New studies of the technology of rock art production.
5. Forensic studies of sites and replication of rock art phenomena.
7. New insights into the taphonomy and the significance of quantifiable variables of rock art.
8. The discrimination between natural and anthropogenic rock markings.
9. Any other topic about rock art or portable palaeoart that addresses testable propositions about these phenomena.
The neuroscience of rock art interpretation

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Keywords: rock art, interpretation, neuroscience, pareidolia, visual system

The iconographic interpretation of rock art motifs is examined from a scientific perspective. An examination of the operation of the visual system reveals that it can only function because the process of identifying visual stimuli relies greatly on internally stored imagery and lacks an error-detecting governor to modulate the brain’s pattern-recognition engine. In the disambiguation of marks on rock surfaces, this encumbrance has led to many false interpretations, some of which are considered in this presentation. Ethnographic evidence of various types has shown that the secure identification of rock art motifs by cultural aliens is not possible. For instance, both the structure and the chemistry of the brains of literate people differ significantly from those of illiterate people. Moreover, the epistemology of rock art interpretation is challenged by the impossibility, in most cases, of testing such pronouncements that are made from authority.
Mobiliary art of Pampacolca, Peru — a palaeoart unique in the world

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Whereas most of the forms of rock art, such as cave art, cupules, geoglyphs and petroglyphs are well known throughout the world, this kind of mobiliary art is little known or studied. The typical iconographic pattern throughout the designs is very simple, yet orderly, neat and precise. This style in southern Peru, called Antimpampa, appears to have followed a strict iconographic design, though each. Each tablet was unique. The main motifs are representations depicting anthropomorphs and zoomorphs. There is a persistent pattern between the human and animal figures, generally denoting one animal for each human. Assorted abstract symbols, located around the main motifs, complete the pictorial frame. All tablets were painted using a multicolour variety of pigments, made of ochre and ground minerals mixed with an undetermined binder. Regarding the dating of this art the analysis provided the thermoluminiscence date of 2800±20 years old, of a painted tablet from Peña Blanca, and the radiocarbon date of 2490±30 years BP from the Campanáyoc earth mound. These preliminary results correspond to the Formative Period.

Keywords: painted stone tablet, iconographic design, mobiliary art, iconography, palaeoart, laja pintada, Pampacolca

Fig. 1 - Painted stone tablet from Peña Blanca, Pampacolca.
Fig. 2 - Painted stone tablet from Yato, Pampacolca
What is rock art? A proposal to look at all its components

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Even today, after decades of investigation, rock art is often presented as a manifestation related to a hodge-podge of imagined spiritual activities of peoples long gone. In particular, many have suggested that shamanism is at the root of all rock art creation. These interpretations share a belief that rock art is a unitary and unchanging phenomenon that can be “explained” irrespective of material evidence and cultural milieu.

By looking at rock art from different parts of the world and China in particular, I suggest that though this phenomenon has uniting characteristics (land and rocks as natural containers for the images, processes and materials, the role of signs as recording and communication devices), inevitably it also features cultural and historic elements and idiosyncrasies that cannot be ignored in favor of totalizing “explanations.” Once material and archaeological evidence as well as historic or ethnographic literature are taken into consideration, the panorama of meaning of global rock art becomes more complex and less likely to be narrated with the recourse to mysterious otherworldly activities.

Keywords: explanations, materiality, landscape, China
One of the most striking aspects of the Middle Stone Age (MSA) assemblage recovered from Blombos Cave (BBC) is the quality and abundance of anthropogenically modified iron-rich rocks (i.e. ochre) that occur throughout the entire sequence. Of the more than 8,000 recovered ochre pieces, many show traces of intentional use and processing, including grinding striations for pigment powder production and deliberate engravings. Here we report on the accidental recovery, and the subsequent analysis, of a bright red, iron-rich rock fragment (30 x 40 x 80 mm in size). This ochre piece was unintentionally included inside a micromorphological block sample that was collected from Still Bay levels in BBC (dated to c. 77 ka ago). Due to its size, shape and morphology, it is possible that the trapped ochre piece was modified by humans. Given its location and proximity to other previously reported engraved pieces, it could also be that this piece has striations, markings or informative engravings. To consider these possibilities, we conducted Micro-computed tomography (micro-CT) on the micromorphological block, with the trapped ochre piece in it, and compared the surface information we obtained to micro-CT scans of conventionally recovered MSA ochre pieces.
In order to better understand the relationship that the Prehistoric people had with parietal art, we need to understand which factors had an impact on the construction of the parietal arrangements, the choice of the decorated surface, and their layout. The points of view for observing the panels can also be relevant to the targeted viewer as well as other aspects relating to this art. Within the framework of the Cussac cave (Dordogne, France) research program (Dir. J. Jaubert), a database was built to record multidisciplinary criteria (geology, walls’ taphonomy, topography, surroundings of the panels, ichnology, accessibility and visibility of the rock art) of 31 decorated panels. By associating a statistical study of the database with the study of topographic documents completed on site, three groups of panels have been brought to light. Each set seems to be determined by a different set of criteria. By describing the specific features of each group, the choices made by the Prehistoric people are made clearer. In this paper, we propose to take a closer look at the method employed before presenting the results achieved.

Keywords: Cussac cave, Gravettian, parietal art, parietal structuration
Change of mindset: the need for developing scientific approaches to rock art studies

There are certain basic questions in rock art studies to be answered scientifically, such as how can we use it for understanding cognitive and cultural development, place rock art in proper chronological order, or effect its conservation and protection. After so many decades of applying the traditional archaeological approach it has helped us little in answering significant research questions. The situation is much the same in many countries. To answer these questions properly, we have to change our mindset and adopt a scientific approach. That means that our studies should be based on testable propositions. We need to understand the lithology, taphonomy, topography, and the sedimentology and palaeoclimate of the sites. We also need to be able to effectively discriminate between natural and anthropic rock markings and use modern recording methodology, apply scientific dating methods and know how to collect samples and analyse them properly. We also need to learn how to conduct rock art replication. I will discuss some of these aspects in the light of my experience while working in India and China.
Evaluating conservation practices with pXrf in Kakadu National Park, Australia

Rock art conservation practices in Australia commenced in the 1970s, with numerous trials undertaken in the newly-formed World Heritage Area of Kakadu National Park. While these studies continued into the 1980s and included extensive use of techniques such as the installation of artificial silicon driplines, monitoring and evaluation of the techniques had not been undertaken until recently. The introduction of an annual monitoring and maintenance program by the Park, as well as more detailed work through the doctoral research of Melissa Marshall at handful of sites in the area, has led to the development of a pilot program of conservation practices informed by non-invasive scientific analyses such as portable x-ray fluorescence (pXRF).

Rock art panels were analysed at eight sites, in the field, using pXRF in locations where no interventions had occurred, as well as in areas where conservation treatments were trialed, and above and below the trials. Environmental factors, landscape contexts and cultural parameters were considered when interpreting the spectra obtained. Chemical signatures relating to the interventions, and the monitoring program more broadly, have yielded lessons of benefit to Traditional Custodians, the Kakadu National Park and conservation practitioners worldwide.

Keywords: rock art conservation, conservation science, pXrf analysis, artificial silicon driplines

Fig. 1 – Melissa Marshall using the pXrf at Nanguluwurr, Kakadu National Park, Australia. (© Kadeem May)
Fig. 2 – Melissa Marshall and Kadeem May using the pXrf at Nourlange, Kakadu National Park, Australia. (© Gabrielle O’Loughlin)
Preliminary results of the OSL dating of deposits yielding early petroglyphs and Lower Palaeolithic artefacts at Daraki-Chattan Cave in central India

Efforts are being made to obtain scientific dates for the early petroglyphs found in the excavations at Daraki-Chattan Cave (DC) in the quartzite buttresses of the Indragarh Hill, India. This work is part of the project, ‘Scientific dating of the world’s earliest rock art of the world’ jointly with the Rock Art Society of India (RASI), Australian Rock Art Research Association (AURA) and the Madhya Pradesh Council of Science and Technology (MPCST), Bhopal (India). We collected twelve samples for Optically Stimulated Luminescence (OSL) Dating, ten from older alluvium sediments yielding Lower Palaeolithic artefacts. The samples were processed at the Birabal Sahani Institute of Paleosciences, Lucknow (India) to isolate quartz/feldspar grains for OSL dating. The samples collected from the sites were treated with 2N solution of HCl to remove carbonates and with H2O2 to take away organic materials. The fine grains (4-11 mm) aliquots were prepared on the Al discs after Stokes’ Law. The aliquots were investigated on TL/OSL Reader at Madhya Pradesh Council of Science and Technology (MPCST), Bhopal (India) to determine the equivalent dose from luminescence signals of the polymineral fine grains. The age estimation was made after finding the radiation dose rate from measurements of radioactive elements (K, U, Th and Rb) using a high pure Ge detector.

Keywords: OSL dating, Daraki-Chattan Cave, India, Palaeolithic, rock art
**Brazilian Mur-e? On Percussion Lithic Tools Possibly Applied in Petroglyph Production found in Rio Grande do Norte State, Northeast Brazil**

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**Keywords:** Mur-e, direct percussion, petroglyphs, Brazilian Northeast

Mur-e is an aboriginal term found in archaeological literature to designate lithic tools used in petroglyph production. Inspired by the same concept, this work presents a preliminary analysis of a sample of lithic tools bearing direct percussion facets and step flaking scars found in petroglyph sites in Rio Grande do Norte state, northeastern Brazil. Experimental replication on petroglyph production in different lithologies have shown that step flaking scars on hammerstones involved in direct percussion are the most common result considering this task. This in turn, suggests the possible application of this type of flaking as a diagnostic feature to deduce implication in petroglyph production, given the additional contextual associations with rock art sites and panels. The sample analyzed was recovered from the immediate vicinities of granite boulders and outcrops with petroglyphs that have been recently submitted to a microerosion direct dating procedure and age results spanned from 5,000 BP to 476 BP, showing multiple instances of petroglyph production in the same sites over this period. Notwithstanding, contextual information regarding material culture associated to rock art is still scarce in the corresponding archaeological record. Therefore, studies on lithic tools associated to rock art production can importantly increase our knowledge within this gap.
The rock art and the associated 71 sites located in the Jinshajiang River valley, in the north of Yunnan Province, southern China, are receiving an increasing amount of attention by scholars. The valleys, with luxuriant vegetation, were mainly formed by many multilayered carbonate rocks which were deeply cut by the rivers. White, yellow, red and black mineral pigments were used to produce the paintings on the panels in the limestone caves and shelters. The theme of the rock art includes various animals such as ‘buffaloes, cervidae, monkeys, tapir, boars’ and some geometric patterns. To determine the age of the rock art, 13 secondary carbonate layers above and 2 below the paintings were studied for their mineralogy, oxygen and carbon isotopic compositions and dated by the $^{230}$Th/$^{238}$U method. Four results with the earliest $^{230}$Th/$^{238}$U dating results, $23789\pm5033$, $20077\pm2742$, $14733\pm783$, and $14930\pm637$ yrs. BP, demonstrate that the ages of the rock paintings could be as early as the Palaeolithic age.

**Keywords:** China, Jinshajiang River valley, U/Th dating, rock art, Palaeolithic
The recent research of GIPRI (Research Group of Indigenous Rock Art) in agreement with GEGEMA (Group of Studies in Economic Geology and Applied Mineralogy) has enabled us to undertake rigorous studies of the geological rock art supports and orography of the Serranía de la Lindosa (Guaviare, eastern plains of Colombia). The results of this research will be the subject of this paper. The relationship between the geomorphology and possible site interactions since prehistory, the lithic bases chosen to make the pigments, the possible sources of raw materials for pigments and transit routes during prehistory are some of the results that will be presented. Each of these aspects are part of the considerations in trying to understand rock art in its relationship with the natural and geological environment. It is evident that those who made the rock art murals thought about their environment, and that the selection of the spaces to alter was not random or neglected; on the contrary, everything indicates that there was a clear awareness of the geological rock art support, and the implications that this had for the application of pigments.
Finger flutings – lines drawn in the soft surfaces of cave walls and ceilings – leave behind evidence of unique individuals and their engagement with cave environments. Found in over fifty caves in Europe, this paper looks at issues of embodiment (i.e. how people moved through the caves, how they use their hands, feet, bodies) in the creation of finger flutings. It also considers the role of light by asking questions of how panels were created and how individuals navigated often challenging physical environments with small lamps or torches. Sharing recent experimental work on tallow candles, lamps, and light spectra, this paper literally sheds light on the process of finger fluting and the role of cooperation among finger fluters in the Upper Paleolithic.
This session is meant to analyze in depth the issues related to the relationships among methods, techniques of analysis and goals of the archaeological research applied to the rock art studies.

The technological innovation of the last thirty years has favored the development of new methods in support of the historical and archaeological studies; the approach to these disciplines has been often changed, broadening horizons and opening new ones. Among the others fields, we may focus on innovations based on computer sciences - both hardware and software, mathematics, optics, physics, mechanics and network communication.

The need to find other research tools beyond the traditional ones is the core of many of the most recent contributions, which significantly boosted the development of new documentation methods and of archaeological data representation.

At the same time, the so-called “traditional” recording methods, to collect and analyze data on an archaeological basis, have greatly refined their strategies, confirming the centrality of their role and taking advantage of the many opportunities offered by a continuous technical and computer-based upgrade.

Once we have collected, therefore, the outcomes of such a research phase, both innovative and experimental, it is time to reopen the debate to face the core issues with a new overlook, in the light not only of the new perspectives and analytical paths, but also of the research history, which is always appropriate to consider.

Rock art studies offer us, today, the opportunity to evaluate in depth how the plurality of recording methods influenced the research goals and its results.

So, this session will gives space to communications, whether presenting the new methods development or addressing the integration, or re-reading, of the traditional ones. Similarly, it will hosts contributions related to the impact for the different research approaches produced by various recording and communication tools. A look at the future, meant as a planning able to treasure the continuous upgrade of its tools and the awareness of its own history.
Kapova cave is situated in the Southern Urals (Russia). The Upper Paleolithic wall paintings were discovered in 1959. The archaeological research was conducted by O. Bader (1960-1978) and V. Shchelinsky (1982-1991). The Southern Urals archaeological expedition of the Lomonosov Moscow State University started to work at Kapova cave in 2008.

Since the discovery of the paintings in Kapova cave there has been several attempts by archaeologists to document them (O. Bader, V. Shchelinsky), and by specialists in the natural sciences (A. Ryumin, Y. Lyakhnitsky, A. Solodeinikov). But there is still no complete catalogue with all the necessary data. One of the main problems encountered by the Southern Urals archaeological expedition of MSU during the cataloguing of the wall paintings were the problems in identifying images of poor preservation, determining boundaries for measurements and the relationship between separated painted elements.

The importance of this problem is determined by the need for clear measuring criteria for the recording of wall images. The authors offer new approaches to documenting the wall paintings of Kapova cave, based on the latest results of work in the Chamber of Signs.
Taking advantage of the new study of the Naquane Great Rock, the author compiled a self-executable portable application, the first of its kind, for cataloguing rock art engraved and painted figures. The source code is written in X-Base, ported to 32-64bit thanks to the HMG-Harbour MiniGUI Graphical User Interface. Its main features are the editing of rock and figure records, the managing of the related pictures - cropping, rotating, resizing, renaming, saving – and the automatic output in html format of the catalogue of the figures, complete with pictures, drawings and stats. Figure record definitions - such as styles, general and specific categories, chronological areas, detailed chronologies and execution techniques – are highly customizable, offering a tool adaptable to any worldwide rock art area; multi-choice fields are managed by drop-down boxes, while descriptive text-fields may contain hundreds of types each; the figure record is designed to facilitate comparisons among figures. RARO is also intended to perform specific queries over a large amount of data, making it a matter of seconds for the production of detailed catalogues limited to any chosen area: rock, chronology, typology, text-string or a combination of all of these. In a few words, a tool for editing, a tool for studying.
In the Brazilian Amazon, very few petroglyph sites (for the moment just 3 known sites) are able to be excavated and yield plausible chrono-stratigraphic archaeological data which is associated to the production and use of the type of rock art identified in that region. In one of these cases, Pedra do Sol Rockshelter, in Roraima State, the excavation process has already begun. Though still in its incipient stage, it has produced very coarse preliminary results that can now be brought to the debate, as two new dates emerged for the human occupation of the shelter, 4,500 BP and 9,400 BP. Although only disputably associated with the rock art inside the shelter, these dates provide a clue to the possible antiquity of the occupation of such shelter sites with petroglyphs in the higher and dryer lands of the Guianese Shield, Northern South America. As such, this paper intends to give a brief overview of the major problems faced by Amazonianist Rupestrian Archaeology, but with a focus on the preliminary results obtained from the first subsurface excavation project on the Pedra do Sol rockshelter and its implications for future research regarding dating and understanding some of the archaeological contexts of Amazonian Rock Art.

Keywords: Brazilian Amazonia, petroglyphs, archaeological dating, archaeological context, rock art landscape
Compositions in the figural rock art of the Daureb, Namibia

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The Cologne record of the rock paintings of the Brandberg/Daureb (Namibia) is uniquely suited for identifying and explaining patterns in rock art without having to rely on a presupposed cultural context. Our case study exploits this rich database on rock art by combining information theory and statistics with archeology. This rock art data has been recorded with a textual methodology and includes all rock paintings in an area of c. 300 km² on the Inselberg, which contains over 840 sites with more than 39000 individual figures in 4863 scenes. Individual figures are conceptualized in terms of the linguistic notion of a proposition (subject, predicate and object relation). Our formal approach provides a rigid framework for the definition of scenic coherence encompassing Gestalt and interaction. With the majority of interactions enacted by human figures, our data suggests that combination of different gender roles may produce narratives of distinctive hierarchical agency. In the long run we aim at grasping the structures of scenic narratives with the means of computer science, exploring whether algorithm based data mining enables us to identify underlying rules of scene formation. This research, details our approach of statistical pattern analysis and give examples concerning a variety of research questions, such as gender roles, similarity and relationship networks.

Keywords: Gestalt, linguistic proposition, data mining, scenic composition, forager rock art

Fig.1 - Network of hierarchical and non-hierarchical interaction between depicted figures of the forager rock art of the Daureb. (Eymard Fäder)
Fig.2 Panel with complex and multiple interactions, Daureb, Namibia. (Heinrich-Barth-Institut)
Within the scope of a targeted digital documentation of archaeological sites, characterized by Rock art representations, for the first time the methods of survey and data acquisition of three particular case studies are presented in a detailed manner: Anfratto Palmerini (Monte la Queglia, Pescara), Parete Manzi (Montelapiano, Chieti), Pietra delle Croci (Lettopalena, Chieti). The acquisition of data and their three-dimensional digital representation, developed in the context of virtual reality and augmented reality, opens up new and intriguing perspectives for research and the communication of information, assists in the conservation of evidence threatened by degradation and highlights various aspects from differing disciplinary fields otherwise difficult to compare. The geographical distances and the difficulties of access encountered by rock art research, both by professionals and non-professionals, and the fact that the current technologies used are outdated, confirms the importance of these new developments. Thus, this research feeds into the cognitive experience, oriented at the research world or towards the touristic-cultural advances and takes on dynamic and evolving aspects, the documentation can be enriched and updated in real time. Conservation, remote multidisciplinary study and museum design are the future objectives to which these new technologies in the field of Rock art are aimed.

Keywords: virtual reality, augmented reality, laser scanners, conservation and protection, tourism
In the field of computer science many attempts have been made to support rock art studies, mostly focused on the improvement of recording and documentation techniques that focus on gathering extensive amounts of data. It is now necessary to rethink data management and improve its qualitative and quantitative analysis. The aim is to create a new database where it is possible to collect and integrate both records produced with analogic and digital processes. This process has presented several issues: specific requirement and features, the necessity to link specific information, the time and resources required to implement the system. Given this, it is almost impossible to find a ready-to-use solution, thus we decided to create a dedicated database, specifically adjusted to these requirements. The nominated choice was an open-source system, intuitive to use, without the assistance of computer technicians; furthermore, this database will be linked to a GIS, which allows for maintaining the topographical relations between different types of information within the database (with the level of detail equivalent to traditional catalogues). In the presentation we will highlight the structure of the DB and will provide examples of the potentiality of this system, which maintains the information gained from decades of research integrating it into a wider and more complex system.
Spatial distribution of pigments in stratigraphy: a door to understanding the rock art practice in Cerro Casa de Piedra 7 (Santa Cruz, Argentina)

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Cerro Casa de Piedra 7, located in the Santa Cruz Province, Argentina, was repeatedly occupied since ca. 10500 years BP. It has a well preserved record that’s been the subject of several excavations over the last thirty years. Recent investigations applied vector graphics software to digitize old excavation plans in order to better understand the spatial distribution of material remains found within the site. This process transformed the assemblage of the digitized units into a single general plan of the site and the selective visualization of each type of material; enabling questions to be addressed regarding the distribution of different types of remains and the relationship between them. This permitted the identification of several distribution patterns.

This particular project focuses on the distribution of remains that came into contact with pigments (crayons, rocks, bones, leather, etc.), and their relationship with other vestiges. Given that the cave is almost completely covered with paintings, we propose that most of the pigments were involved in the production of rock art. Consequently, these materials are expected to be widely spread within the site, and a certain relationship between the pigments found in the stratigraphy and the closest rock art manifestations is likely to be found.

Keywords: Patagonia, hunter-gatherers, vector graphics, distribution, pigments, Argentina
Since the beginning of the GIPRI’s research, during the 1970s, the main concern has been the exhaustive documentation of each of the elements that constitute the rock art sites. In addition to the different symbolic motifs on the panels, it is essential to study different relevant aspects that account for the rock art and its environment. The recording of the Serrania de La Lindosa, has had the collaboration of an interdisciplinary group to cover all these relevant aspects. One dedicated to the documentation of the state of conservation of the sites and the natural environment of the area, another to photographically register the rock painting murals, another being the geological and archaeological analysis of the pigments and finally a team has been responsible to make an audiovisual record of the aforementioned recesses. The results and implications of this documentation will be the central theme of this paper, placing special emphasis on rock painting panels, which due to their size has involved their adjustment within new documentation formats. This project has been financed by the National Archaeological Research Foundation of Colombia.

Keywords: documentation, rock paintings, geology, conservation, archaeometry, recording formats, rania de la Lindosa
The Chauvet-Pont d’Arc cave (Ardèche, France), famous for its rock art, contains some Aurignacian thermal marks on the walls. The thermo-alterations include rubification (high-temperature chemical reactions revealed by limestone color changes), several flaking and soot deposits (for instance the Megaloceros gallery). The scale of the rubified areas which have been found to reach 25m² (only in the Chamber of the Bear Hollows) and the importance of flaking, has generated questions on the intensity and function of these fires. The issue was firstly examined experimentally as part of the research program CarMoThaP. The different kinds of thermal modifications were reproduced by means of localized fires, similar to the Aurignacian fires, within a limestone quarry. Based on the results of this experiment, a numerical process was constructed. OpenFOAM, an open source software, was improved to describe combustion and aeraulics. Then, the thermo-mechanical software Cast3M was used to estimate thermo-alterations induced by the simulated temperatures. It was then possible to run several numerical scenarios of fires in the 3D Chauvet-Pont d’Arc cave model. The ignition source, the power, the length of fires and the supply method are the archaeological parameters of interest that are estimated by the study, which also enable links to its compatibility with habitation and to the rock art.

Keywords: Chauvet-Pont d’Arc, decorated cave, fire, thermo-alterations, numerical simulation, Aurignacian
A semiotic hypothesis about the formal dynamics of the vulvar sign in the European Upper Paleolithic is presented. The method observes prehistoric art as a visual language applying categories of signs, without attribution of meaning, but which are linked to a temporal significance. The objective is to examine the visual production of the vulvar sign from the understanding of the life cycle of signs in semiotic terms. The importance of investigating the beginning and end of each semiotic episode is highlighted, because the representational dynamic has its own temporality that is not governed by the same criteria as human occupation, but is indicative of social changes. An episode can be limited between an inaugural event and its symbolic reproduction, but the dynamics of the signs are not exhausted in these two states, we must also consider the indicial production and the iconic reproduction in the context of a tradition. Examples of all these categories will be shown. This paper aims to provide criteria of visual semiotics to traditional archaeological arguments in the study of prehistoric art, and to reflect on the use of dating techniques as a strategy aimed at contrasting an archaeological hypothesis.

Keywords: vulvar, visual semiotics, event, symbolism, dating, Upper Paleolithic

Fig. 1 - 1 Cellier, 2 Castanet, 3 Blanchard, 4 Laussel, 5 Poisson, 6 La Ferrassie, 7 Cazelle, 8 Gargas, 9 El Castillo, 10 Tito Bustillo, 11 El Sidron, 12 Micolon, 13 Bedeilhac, 14 Pergouset, 15 Cazelle, 16 Comarque, 17 Deux-Ouvertures, 18 Chauvet, 19 Font Bargeix, 20 Guy-Martin, 21 Cheval, 22 Gouy, 23 Oelknitz. (Blanca Samaniego)

Fig. 2 - Tito Bustillo and Laussel. (Blanca Samaniego)
There are 3500 funeral hypogea that have been counted so far, called “Domus de Janas” and ascribed to the Middle Neolithic B, Late Neolithic and Copper Age (from the end of Vth to the IIIrd millennium BC), around 150 of these still have visible traces of paintings. This paper highlights the problems concerning the techniques, pigments and tools used, the figurative motifs and their typology, the techniques of documentation, their territorial diffusion and their inclusion in the chrono-cultural sequences of Sardinian Prehistory, and in the wider sphere of Mediterranean Prehistory.

Specific attention is made regarding the most recent techniques used for documenting the representations: the use of the application ‘open-source D-stretch’, with the ‘albedo’ image (the pure surface color, without any influence of projected color shades), drawn from the 3D processing of the surface’s dataset using the Photometric Stereo technique. Within this frame of reference is presented the recent research conducted on the Pubusattile IV.
In the past few decades, researchers from different disciplines (archaeology, history of art, palaeography, semiotics, and archival science) have been concerned with the determination, identification and analysis of graphic expressions dating to our era-engraved and painted imagery found in rock shelters and caves, on single rocks or clusters of rocks in the open-air, as well as on walls of churches and other buildings. These finds reveal diverse, secular or religious practices and allow us to recall aspects that are sometimes marginalized or little known by local communities.

Studies published so far are still rare and often limited to a few sites or simple themes. The aim of this session is to create a dialogue between different disciplines about documentation and inquiry methodologies, present new sites and disclose their iconographic potential, and devise approaches to the social, economic and historical contexts tied to these vestiges-sets of expressions that go beyond the surrounds of the sites, used and traversed by individuals eager to leave traces of their passage in specific places.

The session will also deal with the evolution of signs that change little in shape throughout the historical epoch, but diversify in terms of their semantic content. It will further probe the consistency and recurrence of the iconography corpus, despite cultural and contextual diversities. Finally, the gathering will contemplate heritage classification projects for these graphic expressions.
Amongst the most remarkable of the anthropomorphic representations of the Middle Ages are those depicting warriors. Engravings of mediaeval fighting men are to be found on rocks, within shelters and on the walls of churches, and many of these are located in areas with a turbulent past. Two main types of engraving have been identified, known respectively as pecking and linear style engraving. Whilst such representations are frequently simplified, they still offer sufficient elements that from these ancient figures we can glean much about the dress and armament of mediaeval warriors, as well as gaining a good deal of evidence of how they lived their lives, and from that to be able to make good estimations as to their date of creation. Battlefield scenes exist as well but are rare, what are relatively common are engravings of individual weapons such as crossbows. This particular weapon is widely found, but noticeably not upon church walls. Additionally, we have found many mediaeval engravings in the same locations as much earlier, prehistoric or protohistoric carvings. This study seeks to analyze the features studied on rocks and in the shelters of Ile de France, Alpes (Haute Maurienne) and Occitanie, and on the walls of churches in Alsace and Charente.

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Keywords: medieval warriors, weapons, crossbows, engravings, France, Alsace, Charente
The ruined medieval settlement of Morranaccio is located in a wild wooded territory along the Fiora river, at the border between the Tuscany and Lazio regions. Little is known about the origin and the life of this site apart the date of its destruction in the XIV century. A hidden circular underground granary, carved into tuff stone, has been found by the authors close to the inner side of an external stone wall. The original upper opening is completely closed by stone blocks and the current entry is through a small tunnel at the base of the well. The inner walls are covered by engravings with figurative subjects made in a naive style. There are two large engraved representations of humans, one has a face engraved in contour as a bass-relief and wearing a large necklace, while the other seems to be dressed in a long, decorated tunic. Other engravings concern a tower, a circle with a cross inside, a symbol similar to an arrowhead, a left-handed profile, several anthropomorphic naive figures and the profile of a stylized bird. One hypothesis is that the well may have been used as a prison in middle ages and the engravings might have been created by prisoners within it.
Podomorphic motifs and graffiti on open air sites at the hermitage of San Pascual (rural setting of Canastell, in Crevillent, Alicante, Spain)

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Herein we present a set of inscriptions and graffiti on open air rock art sites, among them a series of podomorphic motifs, located in the rural setting of Canastell, within the boundaries of the city of Crevillent, (south Alicante, Spain). All the engravings are in the surroundings of the hermitage of San Pascual. We propose that most of these motifs are from a similar time period and they are related to popular religiosity. In the last decades, these types of illustrative features have generated a growing interest among researchers, although very few of these elements have so far been documented in the Mediterranean area and therefore knowledge of them is still scarce.

Keywords: podomorphs, graffiti on standing rock, popular religiosity, Alicante, Spain

Fig. 1 - Podomorphs 5 and 6. Rural setting of El Canastell, in the surroundings of the hermitage of San Pascual, Crevillent, Alicante, Spain. (photo Molina, Belmonte y Satorre, 2017)  
Fig. 2 - Podomorph 1. Rural setting of El Canastell, in the surroundings of the hermitage of San Pascual, Crevillent, Alicante, Spain. (photo Molina, Belmonte y Satorre, 2017)
In Val Ferrand (Isère), at an altitude of 2169 m, on the glacially polished surface of calcschist strata, we found engravings covering an area 8.5m in length. It soon became apparent that the site was not merely pastoral but moreover related to a critical period of the regional Protestantism. The engravings were photographed and a reference grid used to note their location on the rock surface. They consist of names, either as initials or written in full, often preceded by a W (for vivat), sometimes boxed or inscribed in a heart, and frequently associated with a date. Many engravings have a religious connotation, displaying crosses, christograms, Sacred Heart figures, and sketches of temples. Names which could be identified, by screening and crosschecking genealogical databases of the surrounding villages, turn out to be those of craftsmen and pastors. All of them had emigrated before or after the Revocation of the Edicts of Nantes. This site, which is several hours away from the nearest village, is regarded as a place where victimized Protestants could discreetly meet together. Archaeological excavation of the base of the slab will no doubt contribute further to the research.

Keywords: graffiti, rock engraving, protestantism, emigration, religious buildings, pastoralism
Rupestrian representations from historical times: continuities and ruptures in southwest Chubut, Argentinean Patagonia

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Casa de Piedra de Roselló (CP) is located in a ravine in southwest Chubut (Argentinean Patagonia) in an ecotonal area of steppe and forest. CP consists of a main cave (CP1) and two shelters (CP2 and CP3) located at a higher level, all of which contain numerous rupestrian motifs executed by hunter-gatherer groups that inhabited the region. This research area, through different sources of information (excavation, historical documents, travelers’ stories), provides evidence of the impact of European-Indigenous contact manifested in the changes in life styles, subsistence, habitational structures, etc. However, there is a continuous tradition of occupation of the same spaces, which seems to transcend the cultural frontiers. This is reflected, for example, in the occupation of CP1 from 9000 cal yr BP to the present.

The aim of this essay is to discuss the role of historical rupestrian expressions as a line of inquiry for: addressing intergroup relationships after contact and new ways of occupying and appropriating space; evaluating the continuity, rupture or neutrality of this (icono)graphic repertoire towards preexisting motifs; and integrating results of the above with local history and evidence of pre- and post-contact sites.

Keywords: Argentinean Patagonia, historical rupestrian expressions, European-Indigenous contact, use of space, historical periods

Fig.1 - Casa de Piedra 1 (CP1), SW Chubut, Argentina. General view of panel 3 containing historical motifs. Top: original image. Bottom: modified image with Image-J Dstretch LAB (Harman 2015). (photo Florencia Ronco)
Rock, water and trees constitute three elements which fix and participate of the sacredness of a place. The expression of devotion is often manifest through the marking of rock and tree trunks (dendroglyphs) on or around important or modest sanctuaries. Rupestrian images allow the messages to persist for a long time whilst markings on trees disappear more quickly. Moreover, do these marks express the same content regardless of the surface used or are they complementary? Are there differences influenced by their distance from the sanctuary and/or the volume of site visit frequentation? Even today the worship of Marie-Madeleine in Provence attracts a considerable number of believers. Young people call upon her protection in the area of nuptials and fertility whereas it is a requirement for the ‘Compagnons du Devoir’ to visit their patron saint during their Tour de France (work related method of gaining experience). In association with the volume of visits to Saint Maximin’s basilica and the route that goes up through the forest to the supposed cave that sheltered the saint, numerous wall, rock and tree markings can be found. This analysis focuses on the dendroglyphs, the simplification of messages and the implicit reduction of their presence to only include certain routes and spaces selected for their “loving metaphor”.

Keywords: engravings, dendroglyphs, sanctuary, Magdalenian worship, Sainte-Baume, modern and contemporary period
Over 90 sites with more than 10,000 pre-Hispanic rock art motifs have been documented on the Strobel Lake Plateau, located in the central-western Santa Cruz Province (Argentinean Patagonia) (Figure 1). As a consequence, a population convergence of diverse hunter-gatherer groups has been proposed for this area during the last 2,500 years. Investigations in the region have also revealed a profound change in human strategies since the first contact with populations of European origin around 400 years ago. Later on, at the beginning of the 20th century this plateau began to be re-occupied by populations of European origin. During this period the plateau had a marginal role in processes that occurred at larger spatial scales.

This paper seeks to study the rock art of the Strobel Lake Plateau that was produced in the first half of the 20th century in the context of the new occupations dedicated to sheep farming. The same techniques and, in some cases, the same locations were chosen as those of motifs from previous periods. However, important changes concerning the type of motifs depicted and a more restricted distribution are evident. Thus, both the continuities and discontinuities in relation to the rock art of older periods are explored in order to better understand the changing logics of communication through rock art in Southern Patagonia.
Until 2005 only one site with rock engravings was known in the narrow valley connecting the Garfagnana region to the Apennine passes, it is called “Il Balzo delle Cialde” and its age is unknown. Since then, the area, dominated by Mount Limano (1231m. above the sea level), has been extensively investigated, documented and studied by the Gruppo Terre Alte – Scientific Committee of the Club Alpino Italiano, that has discovered six more sites featuring engravings from a variety of time periods. The study of these engravings (circles, cup-marks, six-petal rosettes, anthropomorphic figures, geometric signs with net-like design, sun symbols, letters and dates) along with the photo documentation and relevant surveys has taken many years of work to complete. Recently, researches have been studying Mount Prato Fiorito (1297m. above sea level), whose south-western side features imposing rock crags; right on top of the woods, where the rocks start, fifteen vertical rocks have been spotted, which mainly feature threadlike designs. This introductory study, outlined here for the first time, suggests a historic date for the signs, which may belong to the pastoral world, as livestock farming has been the major activity of the investigated area for hundreds of years.
For more than half a century, Ethiopian rock art has only been perceived as pastoral due to the fact that so many rock art sites depict cattle and herders in their panels. The new Washa Michael rock art site in the north central part of the country exhibits completely different themes than pastoral rock art. It reveals depictions of hunting by both humans and animals; Possible conflict between groups; as well as the emergence of Christian church paintings in later periods. The continuous use of the panels up until the current traditional Ethiopian Orthodox church painting highlights the site’s importance. This discovery tells us that the rock art from the central highlands is actually different from lowland pastoral rock art. The placement of the art inside a modified cave, which was later converted into an Ethiopian Orthodox Church, implies the importance of the location of the site itself. The animals depicted in the panels are now extinct in the northern part of Ethiopia. We are able to understand a lot from this single cave about the inhabitants’ beliefs as well as human and animal interactions within their environment.

Keywords: Ethiopia, rock art, engravings, hunting, Orthodox Christianity, Washa Michael site

Fig.1 - Engraving on the left side of the wall of Washa Michael church at Wadla Woreda of North Wollo Zone- Ethiopia. (© Tadele Solomon)
Fig.2 - Traditional Ethiopian Orthodox Church painting in the Washa Michael church at Wadla Woreda of North Wollo Zone- Ethiopia. (© Tadele Solomon)
This research concerns sanctuaries in the Marche region in which evidence of protohistoric site use and historical cults has been found. The study has involved the cataloguing of various sites, analyzing archaeological data, rock carvings and ethno-anthropological stories. Among the investigated sites are Monte Trella, Monte Tolagna, Monte Prefoglio.

Keywords: ethno-anthropology, cave sanctuaries, pilgrimages to rock art sites
Historical rock engravings have often been the subject of sensationalistic interpretations. Some researchers have associated engraved crosses as the process of “re-sacralization” based on a model of interpretation from the 1980’s. This interpretation, without scientific foundation, has become established as it fulfilled an explanatory “need” that reflected the clash between paganism and Christianity cover the centuries. However, this vision cannot be adopted for every historical site with a cross or Christian symbol.

Monticolo di Darfo (Valle Camonica) is a good example of one such site. The research is inspired by a notarial act in which there is a legal dispute between two local communities: the study has reconstructed the motivation and the dating for some of the engraved signs on the rocks. Thanks to a notarial document (dated 1462) many of the “signs” have been identified. These are crosses, boundary signs, letters of the alphabet that record (through engraving) the civil agreements for the division of the territory between two communities. The discovery of the document gave voice and understanding of the signs within a civil sphere and an interpretation based on the objective analysis of documents and site work. The same site also has Christian engravings such as, ostensors, coffins, tombstones and religious crosses.
The study of medieval graffiti is trying to create its own path and recognition in the academic world, it still seems quite difficult to conceive of a graffito as a historical document capable of holding information about its author and associated social group. This research aims to put forward a multidisciplinary approach to the study of the various facets to reveal all the possible interactions between use of sacred images, graffiti and medieval society. To support this approach the case study of Bergamo in the late Middle Ages presents a large production of graffiti engraved on XIII and XIV centuries frescoes: different types - iconic or alphabetic - different categories - devotional, funerary and memorial - and differing chronologies; it is possible to find graffiti throughout the medieval city. The disciplines used to study the meaning of graffiti are firstly paleography, the only one that analyses this form of evidence since the 1950’s (Guarducci’s masterpiece dedicated to wall G inscriptions in Saint Peter’s grave in Rome) as well as visual and cultural anthropology, church history and liturgy, semiotic, iconography and iconology and social history. There is an important connection between the role and use of religious images and the custom of engraving them with prayers, requests and other iconic signs.

Keywords: sacred images, image history, medieval graffiti, devotional practices, Middle Ages, Bergamo

Fig. 1 - St.Agostino church. St.Anthony Abbot and St.Catherine, graffiti.  
Fig. 2 - St.Francesco church. Virgin Mary, graffiti.
Graffiti of Boats from the Hellenistic and Early Roman Periods in the Judean Foothills, Israel

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In the Judean Foothills, a hilly area stretching eastward for 30-40 km from the Mediterranean, there are thousands of artificial cavities and chambers hewn out of the chalk bedrock. Throughout history, these caves served the local residents in various ways: agricultural installations, quarries, water cisterns, underground stables, columbaria and storage facilities for agricultural products. Many of them were hewn out during the Hellenistic and Roman periods. Most of the underground facilities in the area of our study were joined by narrow tunnels only accessible by crawling on all fours and incorporated into hiding systems under residents’ homes in the Jewish villages that existed in the region until the Bar Kokhba Revolt (132-136 CE). This paper focuses on the graffiti of boats, incised on doorposts or lintels of underground chambers, incorporated into these underground complexes from the Hellenistic and Early Roman periods. Pictorial graffiti are especially interesting because of their informal, private and often unplanned character. Graffiti mirrors the inner feelings and emotions of people, being free from the imperatives of organized codes of art. Therefore, they may reveal to some degree their creators’ cognitive world. We will discuss the purpose of the underground chambers and complexes; we will also try to date the graffiti and consider their symbolic significance.

Keywords: graffiti, boats, Hellenistic period, Roman period, Judean foothills, Israel

Fig.1 - Photo of maritime scene graffiti, incised on wall of underground chamber B, in hiding complex at Horvat Ribbo. (photo E. Klein, © Zissu and Klein)
Fig.2 - Drawing of maritime scene graffiti, incised on wall of underground chamber B, in hiding complex at Horvat Ribbo. (tracing E. Klein, © Zissu and Klein)
Some of us may remember the song, “Sex & Drugs & Rock & Roll”, a single by Ian Dury released by Stiff Records on 26 August 1977. Sex, our existence depends on it. Drugs are medicines, but are they also a means to fathom our existence? Music, it may not have been rock and roll, but they liked it! This session explores these necessities in rock art.

Sex: sexual scenes, ithphalic images, phalluses and vulvas, single or in groups, in all areas of the world and between any culture and chronology

Drugs: the use, evidence or other kind of connection between hallucinogenic substances and the production of rock-art with or without shamanistic performance. We are particularly interested with studies related with what plants were used and how

Rock and roll: papers on musical representation, musical instruments, dances and related studies
How can we study rock art so that we can understand the symbolic relations present in these expressions? That question guided an interdisciplinary investigation in the Serra da Capivara National Park. Research focused on an area in the Vale da Serra Branca that has 200 archaeological sites with painted rock art. Studies concentrated on human figures with open arms. Scrutiny of the gestures and of these figures’ relations with others identified two foci: natural-subsistence and symbolic imagery. Analysis of these issues shows that “dance” was a predominant theme in the painted corpus from 10,800 to 6,060 before present. Comparisons with indigenous culture, through bibliographical sources, and other sets of art suggested some analogies. These allowed the author to identify symbolic relations in themes such as sex, hunting, fighting, celebrations, as well as in other symbiotic compositions. For example, a “front and profile” composition, representation of a couple (man and woman), unites two universes and defines a visual identity for this valley. This paper presents a précis of these results, mainly highlighting the pictorial thematic diversity, evinced through quantitative variables.
Depiction of human sexuality in Australian rock art confirms the importance and fascination of this area of human activity through time. Few images in the earliest Australian art corpus have a sexual emphasis. On the other hand, there are many in later styles attributed to the last few thousand years. The most common depictions include exaggerated genital organs, both male and female. Many regions of the country also have copulation scenes. Some images are in secluded or confined sites, but many occur in open, very public locations, obviously places that family groups usually occupied.

Keywords: petroglyphs, paintings, sex, vulva, phallus, rock art

Fig.1 - Ithyphallic figure, Mitchell River, Kimberley, Australia. (photo © Mike Donaldson)
Fig.2 - Stylised female figure with 'corpulent vulva', Arnhem Land, Australia. (photo © Mike Donaldson)
Based on research presented in Rogers’s Petroglyphs, Pictographs, and Projections: Native American Rock Art in the Contemporary Cultural Landscape (University of Utah Press, 2018), this paper explores the sexualized figure “Kokopelli the hump-backed flute player”. Kokopelli adorns merchandise and tourist venues across the western U.S. (and beyond). It is a hybridized cultural figure rooted in Hohokam and ancestral Puebloan imagery, Hopi katsina stories, and contemporary primitivist and masculinist anxieties. This paper explores the figure’s status as the icon of the Southwest in the context of both Hopi culture and contemporary Western discourses ranging from postcards to novels. There is an appropriation of traditional notions of fertility associated with flute players and the Hopi katsina Kookopòló, altered to resonate with contemporary fantasies of masculine virility and promiscuity, cueing the image of the rock star. Kokopelli’s visual “castration” reveal anxieties over masculinity, although the origins of Kokopelli imagery question such claims.

Keywords: Kokopelli, flute player, phallus, masculinity, Hopi

Fig.1 - Phallic fluteplayer petroglyphs in Chaco Canyon, New Mexico (photo Kelley Hays-Gilpin)
Fig.2 - “World’s Largest Kokopelli”. Outside Starbucks coffee shop, Camp Verde, Arizona. (photo Lance Diskan, printed with permission)
Music and dance in the rock art from Kazakhstan and Kyrgyzstan

Research documented music and dance engravings at a few rock art sites in south-eastern Kazakhstan and in Kyrgyzstan, mostly in Saimaluu-Tash, in Kulzhabasy and in Tamgaly. Dancers often worship sunheads, but there are also some isolated human forms in the act of dancing. In Kazakhstan, a couple of panels depict people or shamans with musical instruments, although there were no dancers engraved on these panels. This paper will address a repertory of all these depictions, give them a chronological attribution, and analyse the relation between panels showing dance and music, and panels with sunheads, parturients, erotic depictions, or animals. Furthermore, the gender of the dancers will be analysed in order to understand the role of men and women in the Bronze Age and in Early Iron Age societies.

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Keywords: Kazakhstan, Kyrgyzstan, sunhead, Bronze Age, Iron Age, dance, musical instruments

Fig.1 - Tamgaly, Kazakhstan. (photo Luc Hermann)
Fig.2 - Kulzhabasy, Kazakhstan. (photo Luc Hermann)
Studies documented roughly 60 erotic scenes from the Bronze Age at 17 rock art sites in Kyrgyzstan and in south-eastern Kazakhstan, mainly in Saimaluu-Tash and Tamgaly. Besides intercourse between men and women, these scenes depict threesomes and copulations with and between animals. There are also ithyphallic worshippers and parturients, often attributed to a fertility cult, in this repertory. Analysis focused on the context of these scenes, the proximity between panels depicting sexual intercourse of human forms, panels with sunheads, and in some cases panels with worshippers or ploughs. These aspects are apparent in Saimaluu-Tash and in Tamgaly, but less so at other sites. Erotic engravings may not be primary relevant to a fertility cult. These depictions may well refer to a phallic or virility cult.

Keywords: Kazakhstan, Kyrgyzstan, Saimaluu-Tash, Tamgaly, sexuality, fertility cult, sunhead, Bronze Age

Fig.1 - Saimalu-Tash, Kyrgyzstan. (photo Luc Hermann)
Fig.2 - Saimalu-Tash, Kyrgyzstan. (photo Luc Hermann)
Same gender sex in the rock paintings of the Parque Nacional Serra da Capivara, Piauí, Brazil

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Keywords: same gender sex

Rock paintings of Serra da Capivara National Park depict human forms engaged in same gender sex. This national park in the state of Piauí, Brazil has many scenes that include hunting, gathering, daily chores and sexual activity. This paper aims to show that ancestral groups that occupied lands in what is now Brazil, especially those in the northeast of the country, also represented same gender sex on the rock surfaces of some archaeological sites. Perhaps this was not an issue for those who first created those motifs that persisted on the rocks until now.
SHARED TRADITIONS AND CULTURAL DIVERSITY IN THE PREHISTORIC MEDITERRANEAN ROCK ART

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From the Paleolithic to Late Prehistory, the Mediterranean region represented a complex interconnected space for interactions and long-distance movement of people and products, in which a great deal of different minor, and yet still important rock art traditions, developed. These sites, often far apart from each other, have received less international attention than the most famous Spanish Levant, the French/Italian Mount Bego, or the Valcamonica area in the Alps.

This session aims at bringing together rock art specialists from all these various Mediterranean countries, providing the opportunity to highlight affinities and diversities in the archaeological and landscape context of their prehistoric caves, rock shelters, open-air outcrops and monuments.

Discussions will focus on the diverse trends reflected in the distribution, style and chronology of rock art traditions across the whole Mediterranean, and on multidisciplinary approaches in their recording and interpretation.

Papers focusing on regional overviews or on recent fieldwork are welcome, especially new contributions on the presence of prehistoric rock art in the Central and Eastern Mediterranean, North Africa, and on the islands.
This paper presents the initial results of new research, currently in progress, on the caves of Palermo, already famous for the presence of rock art. Within the project for updating the associated data and for the implementation of processes, a form has been created in order to construct a database and to facilitate inspections which are being carried out in the area and in particular where there is a presence of rock art. There are approximately 30 caves, most of which have been recorded by Giovanni Mannino in the past decades and are no longer being monitored. It is thanks to his research that northwestern Sicily today represents one of the richest areas for prehistoric rock art in the Mediterranean. In this area there is a strong prevalence of engraving superimpositions over paintings, and in particular the linear style, which constitutes the majority of the cases.

Dating is one of the challenges for this particular field of research, both with regard to the engravings and the paintings. For this reason, we are seeking collaborations from national and foreign institutions to carry out analyses and investigations with the hope of being able to fill, even partially, this gap.

Keywords: Sicily, anthropomorphic, linear and zoomorphic engravings, anthropomorphic and abstract paintings

Fig. 1 - Addaura Cave, Palermo, Italy. (photo Giuseppina Battaglia)
Fig. 2 - Za’ Minica Shelter, Torretta, Palermo, Italy. (photo Giuseppina Battaglia)
This paper focuses on the revision and restudy of the rock art shelter of Doña Clotilde, one of the most important schematic and sub-naturalistic rock art sites in the north-eastern area of the Iberian Peninsula (Aragón, Spain). The analysis, carried out by using new techniques of documentation, points to several decorative phases, according to the use of different pigment colours, themes, styles and spacial distribution on the panel. The focus lies in various important aspects: a domestic scene; a group of stylised archers distributed around a tree; as well as some anchor-like figures that exhibit perfect parallels in various other rock art sites in Spain and also in some of the Mediterranean sites, such as Porto Badisco. This new approach to the Doña Clotilde shelter allows us to discard the traditional attributions of some motifs to the so-called Levantine rock-art, and to propose a diachronic decoration development from the Neolithic period to more recent phases.

Keywords: schematic rock-art, sub-naturalistic, anchor-like sign, style, terminology, Albarracín mountain-range
"Jebel Negueb" and "Douken Jefara": two sites with Tazina style rock engravings from central-southern Tunisia (Gafsa region)

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Keywords: Tunisia, Gafsa, engravings, Neolithic, Tazina

The mountain range of Metlaoui, which is orientated east-west and which extends from central-southern Tunisia to Négrine in Algeria, has, within its Alima-Negueb-Bliji region, an interesting set of Neolithic pastoral engravings of a rich and diverse Tazina style. This current research highlights the characteristics of these engravings and puts forward some reflections regarding their themes and proposes a chronology.

Fig.1 - Douken Jefara. (photo Jaâfar Ben Nasr, 2009)
Fig.2 - Jebel Negueb. (photo Jaâfar Ben Nasr, 2015)
More than 120 caves and rockshelters with schematic rock paintings are known in southern France and in the western Alps. They are part of a larger ideological phenomenon identified from the Iberian Peninsula to the Italian piedmont and attributed to the Neolithic. They are consequently indications of shared ideas across the Mediterranean area. Little attention has been paid to these graphic remains and the role they may have in our understanding of Neolithic societies. This paper will focus on the cultural interactions and regional variability perceptible through this graphic phenomenon while also addressing the issue of the nature of schematism.

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Keywords: schematism, rock art, Neolithic, Southern France, Alps
Mediterranean Iberia preserves three different postpalaeolithic rock art traditions, with intense debates on the definition, sequence, timing, geographic distribution and potential relationships among them. Machroschematic art is one of these traditions, and it is the focus of this research. Defined as an independent art style in the 1980’s, parallels in Cardial ware date it to the early Neolithic. But the definition and spatial distribution is still debated. While originally limited to the Alicante region, later reanalysis of rock art sites beyond these lands suggest a wider distribution along the Mediterranean side of Iberia. Nevertheless, the finds outside the former territory are referred to in the literature as Ancient Schematic art, to preserve the specificities of Machroschematic art. But are these local peculiarities significant enough to differentiate two separate bodies of rock art? Can quantitative analysis have an input within this discussion? Systematic classification and quantification of the finds published to date will be highlighted to contribute analytical data to this ongoing debate.

Keywords: machroschematic art, Mediterranean Iberia, early Neolithic, quantitative analysis
The theme of the sea in the French Paleolithic rock art

Leroi-Gourhan defined European cave art taking into account the statistical predominance of peculiar taxa such as the bison or the horse, often painted in association. He also classified some taxa as rare themes, such as those of fishes or sea mammals. It cannot be denied that it is generally true that sea creatures were rarely depicted, but some new discoveries demonstrate that the classic defining frame could be different when people were familiar with the sea. What was important in choosing a different bestiary? Were the beliefs then also different? Should we read such choices as anecdotic? We will try to answer these questions using the example of the Cosquer cave.

Keywords: paleolithic cave art, sea mammals, fishes, Cosquer cave

Figs. 1 and 2 - Cosquer cave, France, engravings of seals. (photo J. Clottes; drawing V. Feruglio)
In the archaeological context of prehistoric Sardinia, rock art in caves is still insufficiently analysed. The reasons may be for local cultural factors, divergent scientific interests, or mostly because of the well documented presence of a great number of painted and engraved artificial rock-cut tombs (‘Domus de Janas’).

Often used by cave dwellers as living shelters in their entrances where sunlight filters, there are also particular deep and dark parts far underground where interest was shown by ritual performance, object deposition, and burial. Here engraved and painted rock art panels represent part of a set of visually expressive material features of symbolic and ritual significance, enacted by intentionally marking and modifying a cave’s natural environment. In the present research several case studies consider the long-term dynamics of the landscape in which they are located: they are all connected to the presence of long-past running waters, prominent places overlooking valleys, and locally well-known rock outcrops.

Different specific activities over time (Middle Neolithic to Bronze Age) and space were found in association with rock art, showing how the animal, anthropomorphic, and geometric depictions found in Sardinian prehistoric caves can contribute to enrich and diversify the prehistoric rock art of the Mediterranean basin.
Late Neolithic Sardinia is characterised by complex rock-cut tombs locally known as “Domus de Janas” (houses of the fairies”). These underground funerary structures are usually composed of several chambers and are decorated with carvings and paintings which make them resemble architectural interiors of houses. Other motifs, such as abstract zigzags or cattle bucraia, are more intriguing. Based on a review of these monuments and on a recent field project, this paper will present observations on the possible role of the art in death ritual, on the landscape setting of the tombs and their conceptual connections with actual “houses” from the world of the living.

Keywords: Neolithic, Sardinia, rock-cut tombs, Bucraia, house, paintings

Fig. 1 - Santu Pedru tomb 1, Alghero. (photo Guillaume Robin)
Fig. 2 - Mesu 'e Montes tomb 2, Ossi. (photo Guillaume Robin)
When discussing Algerian rock art there are two main regions that emerge. To the north there are the Atlas ranges and to the south the central massifs. But each region has its own peculiarities. This research highlights a recurring theme for the first region (Saharan atlas): the ram with a globe, otherwise considered as the scarified animal, in its relationship with humans. This represents elements of domestication as well as zoolatry as a religion in the Atlas range during the Neolithic period. The second focus concerns the Tazina rock art style found in the eponym site Ain Tazina, in the El-Bayadath region (Saharan atlas).
The rock art in the plain of Philippi has been systematically studied for over a decade. Sites such as ‘Prophet Helias’, the sites around Mt. Pangaion and those along the gorge of the Agitis river valley have not only had a marked influence on rock art research in northern Greece but also provided additional information on the cultural traditions of the early metallurgical societies in the region. In addition, the recently discovered rock art sites on the eastern slopes of the Rhodope Mountains in the region of Evros, have contributed to a comprehensive view of the rock art phenomenon in Aegean Thrace. Themes, techniques and regional identities are being discussed in the current paper within a specific cultural and contextual framework.

Keywords: North Greece, open air outcrops, marble, schist, warrior scenes, female-figures

Fig. 1 - Grammeni Petra, north Evros, Greece. (photo G. Iliadis, 2013)
Fig. 2 - Rock 3, panel 3 Site of ‘Prophet Helias’, Philippi, Greece. (photo G. Iliadis, 2011)

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Some more Ice Age rock art at Aswan, Egypt

In Aswan city, in Upper Egypt, the Egyptian Archaeological Mission has discovered many archeological sites during survey work in this area. Within these archeological sites a large numbers of rock art from different periods has been unearthed. The most important of these are assemblages of rock art panels found in 14 new sites, which date back to the Late Paleolithic period. These 14 sites feature several panels with images of bovid, fish, and other motifs executed in a naturalistic ‘Franco-Cantabrian, Lascaux-like’ style. This paper will present these late Paleolithic rock art sites, showing the location and style, as well as highlighting the similarities with Ice Age rock art in Europe.

Keywords: Late Paleolithic, rock art, Egypt, Aswan, Wadi Subeira
In the Finalese, the Bormida Valleys, and at Mount Beigua (Savona) several engraved rocks, anthropomorphs, and cup marks associated with incineration and massive altar tombs dating to the Bronze and Iron Age, are present. In the Valbormidese they may be evidence of the presence of areas of worship. In the Beigua Mountain, part of the Beigua Geopark, UNESCO site, rock art focuses on pastoral and high-altitude sites with iconographic features, such as deep grooves (the so called ‘affilatoi’ or sharpening grooves), schematic and cruciform signs showing interesting analogies with the alpine and north-Mediterranean rock art contexts, such as in Portugal or Spain. The location of these rocks is similar to the Valbormidian ones, with a strong prevalence of signs along the ancient paths or close to springs or streams. The presence of these deep grooves, predominant in the areas of Alpicella, Val di Vara and Valle Stura, raises some questions that will be part of this research, in which their connections with the North-Mediterranean world, their possible function, and use will be highlighted.

Keywords: engraved rocks, anthropomorphs, cup marks, deep grooves (‘affilatoi’), Savona
It is generally thought that “rock art” is an expression of man’s culture and creativity, while some cruciform motifs are expressions of Christianization of previous pagan signs, the latter ones were legitimized through the new faith. We would like to highlight the wide range of engraved signs which are not “rock art”, such as those produced for other utilitarian purposes, including engravings at land borders, those indicating places of meeting, environmental representations, ludic engravings, traces of quarry activities or those related to pasture. Even though clearly conceived with other activities in mind, they are often interpreted as rock art. Documentary sources and antique records allowed us to identify these “misleading engraved signs” in the territories of Central Liguria and Ponente Ligure, with special attention to those areas where “rock art” is present.
This paper offers an overview of the distinct regional tradition of monumental rock art that developed in the late Neolithic Temple Culture of Malta (c. 3400-2500 BC). A variety of art forms, including rock art (with carvings and paintings of a symbolically rich repertoire of abstract and naturalistic motifs), was installed both in above-ground megalithic ‘temple’ buildings and in underground ‘hypogea’ comprising natural and artificial caves. In this paper, I wish to acknowledge the power of this visually expressive rock art, but also to contextualize it in terms of human experiences of complex sensory environments within monuments, that appear to have been increasingly controlled over time — ultimately to the point of iconoclastic destruction in the successive Tarxien Cemetery phase (c. 2400-1500 BC).
The presence of statue-stele, decorated menhirs and engraved boulders, connected to the Atlantic megalithic tradition, encompass, from at least the 4th-3rd millennia BCE, extensive territories within Europe, Asia and the Mediterranean. Elements of comparison can be drawn from the similarities in the execution, form and chronology of these monoliths.

The papers in this session focus on: the research on the primary and secondary contexts of the finds; the methods of production of these monuments and how they have been decorated (by etching, engraving or painting); the proposed dating of their manufacture and/or later re-carving; the iconographic features (weapons, clothing items, ornaments, animals, etc.) and their proposed interpretations and functions.

The duration of this phenomenon, in several regions, lasted for longer, encompassing periods leading up to, and including, historical times. Some of the research presented may also focus on the areas where this tradition has spanned for a longer period of time and will analyze this continuity. Within this continuity evident changes in the execution, techniques and context may be highlighted and changes of an iconographic and/or ideological nature identified.
Many of the findings in Castelletto Ticino, and in particular the excavation of the structure in Acacie street, allow us to draw a first hypothesis on the evolution of the use of stele in Golasecca Culture. The morphology of the artefacts, the presence in some cases of engraved figures or epigraphs, and their presence in enclosed and datable secondary contexts allows for the analysis of the chronology and the use of stele in the proto-urban center of Castelletto Ticino-Golasecca-Sesto Calende. Additionally, the author proposes a detailed list of figurative engravings on movable stone artefacts from the Novara, Varese, Verbano-Cusio-Ossola and Valsesia areas, which will enable the consideration of a broader geographical horizon in western Golasecca culture.

Keywords: Golasecca Culture, Castelletto Ticino, stele, chronology
The lives of stelae and statue-menhirs in Bronze Age and Iron Age Iberia

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Keywords: statue-menhirs, Bronze Age, Iron Age, Iberia, stelae

The biographical approach has great potential for addressing the social and historical dimension of prehistoric stone monuments. This paper will present results of recent multidisciplinary research on the ‘biographies’ of stelae and statue-menhirs in Iberia. Focus will be placed on the chaîne opératoire involved in their production, as well as on the various natural and anthropogenic post-depositional processes that have contributed to their present state. The results of this research are shedding light on the roles of craftspeople and long-distance connections in the making of Bronze Age stelae and statue-menhir traditions in Iberia, as well as on the significance of place and the role of stone monuments in attracting human activity across millennia.
Pioneering excavations at the survey-generated Ossimo Anvòia site between 1988–2004 have provided substantial information for an understanding of Copper Age Central Alpine ceremonial sites in their context. New results from laboratory work (as of 2018), together with an improved knowledge of the regional and Circum-Alpine cultural background, allow for behavioural and ideological inferences and contribute to situate such a site in its social and physical setting. In Val Camonica as elsewhere, statue-menhirs represented real or remembered persons with their associated “biographies”. At Anvòia they demonstrably co-acted with landscape features, non-engraved monoliths, small artefacts and ecofacts (e.g. image-making tools and pigments, pottery, evocative natural stones), and human skeletal “relics”. This archaeological context suggests a pervasive sense of place and an ideology of descent and memory, and by emphasizing the whole site as the significant unit it refutes the usual emphasis on image-bearing monoliths alone: a more balanced approach to the roles of statue-menhirs can thus emerge.

In this paper, in addition to an overview of the site, its imagery, and criteria for interpretation, several newly restored monoliths are presented. Reused statue-menhir fragments recovered from recent pastoral structures in satellite areas further attest to Anvòia’s 5000-year-long “life” as a special site.

Keywords: Statue-menhirs, Ossimo Anvòia, Copper Age, ‘Val Camonica’
The new National Museum of Prehistory in Capo di Ponte (BS) displays many engraved boulders found in Valcamonica in the last 30 years. The analysis of this new iconographic evidence resulted in supplementary results; however, the research also confirmed the overall picture of the chronology (Copper Age until the early Bronze Age), the succession of styles (style III A1, A2 and A3) and relationships between the symbolic groups (sun, weapons, ornaments, and fringed cloaks) as outlined in our previous research.

With regard to the Valtellina monuments, in the last 10 years new fragments have been brought to light; the local heritage has thus been enhanced in addition to expanding the iconographic repertoire. The comparison with the figures from Valcamonica, in particular those considered female, has revealed iconographic and chronologic differences. The characteristics of the Valtellina stele can be considered as a form of expression stressing particular aspects of cultural identity within the same language and ideological system.

Over the last years, the interpretational research of these monuments has been expanded, especially regarding the analysis of animal figures and their arrangement on the engraved surfaces, identifying dominant social groups within the local social structure in relation to the sites in question.
Daunis revelations, in the statue-stelae and in the pottery of ancient Daunia (Apulia, Italy)

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Daunis, an Italic population which lived in the north of Apulia during the first millennium BC, had an important cultural expression between the eighth and the fourth century, when they produced two very significant forms of art: pottery and statue-stelae. Pottery has very typical shapes which are mainly decorated with geometric figures and only seldom with descriptive scenes. On the other hand, statue-stelae are mainly covered with narrations, have geometric decorations similar to those of pottery and represent entities connected to the sacerdotal and martial world. In the 1990s I conducted a study on the interpretation of stelae which demonstrated that they are linked both to the sacramental use of the opium poppy, hypersensory states and therapeutic practices, and to hunting, war and myth. In this report I propose further connections both to the sacred sphere and to the art that is linked to modified states of consciousness, and also to heroes and deities form other cultural and geographical contexts, especially from the Aegean world.

Keywords: statue-stelae, Daunia, pottery geometric figures, hypersensory, therapeutic, opium poppy, Aegean

Fig.1 - Museum of Manfredonia, Foggia, Italy. Daunia female statue-stele. (photo L. Leone)
Fig.2 - Museum of Manfredonia, Foggia, Italy. Detail of a female statue-stele, with engraved schematic opium poppies. (photo L. Leone)
There are about 60 menhirs in central Germany which are little known. Five menhirs in southern Saxony-Anhalt exhibit pictograms such as bows, axes, cross-ribbed belts and sandal soles. Remarkably, these iconographic motifs have parallels in the statue-stelae of the Yamnaya Culture which are distributed from the eastern Balkans to the Ukrainian steppes. It is thus possible to date the statue-stelae in Saxony-Anhalt to the early 3rd millennium BC and to relate them to the Corded Ware Culture spreading from east to west. According to genetic analyses the bearers of the Corded Ware Culture are related to the population of Yamnaya Culture and thus immigrated. Other finds, e.g. hammer-headed pins made of bone, also came from the east. In this context the stone chamber from Göhlitzsch with its ornamented interior, showing among other things a reflex bow and a quiver, is important. They have extremely close parallels in representations in Klady in the northern Caucasus. Together with the new custom to erect burial mounds for single individuals, this shows influences coming from the eastern steppes and a new ideology focusing on the warrior. After their death, some of these warriors were then worshipped as heroes by erecting stone-stelae in a ritual landscape.

Keywords: Corded Ware Culture, Yamnaya Culture, central Germany, Iconography, warrior
The anthropomorphic monoliths of Pietra Tara (Capo Gallo - Palermo - Sicily - Italy).

New iconographic characteristics of the Mother Goddess, halfway through the II Millennium in the Mediterranean

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The present research highlights the construction context of the site at Megaliti di Pietra Tara site, the methods used for the installation of anthropomorphic monoliths, including a proposal for their construction and their iconographic and ideological interpretations.

The megaliths site of Pietra Tara, is located in Monte Gallo (Palermo) opposite the island of Ustica 40 km away. It appears to be the first megalithic site found in Italy that used a cyclopean building technique, with a primary date of (3183 cal BP), 1300-700 BC. On the northern side, near the coast, some large carbonate landslide blocks were erected, like totems/menhirs, and enclosed by the cyclopean walls of the room/hut structures. The site analysis demonstrates its proto-urbanistic complexity with its division into two zones: low and high zone, separated by two pseudo-trenches. All the room/huts were associated with the “anthropomorphic” monoliths. The “anthropomorphic” monoliths so far detected number about a dozen, are boulder forms of uniform dimensions 2.00 x 1.20m, placed in the cyclopean walls, or above them at the corners of the huts, whose shape is always similar to a triangular polygon with the tip pointing upwards and at the base a small hypogeal cavity. Among these stands the so-called Mother Goddess of the Zone of Tara II anthropomorphic monolith.

Keywords: Anthropomorphic monoliths, Pietra Tara site, Mother Goddess, Mediterranean, Sicily

Fig.1 - Pietra Tara, Capo Gallo, PA. Zone VI - Tara II. The anthropomorphic monolith of the Mother Goddess. (photo © F. Mercadante)
Fig.2 - Pietra Tara, Capo Gallo, PA. Zone IV - Baluardo. The cyclopean walls of the rooms/hut structures. (photo © F. Mercadante)
Take a bow: an overview of representations of archers, bows and arrows on Stelae from the 4th to the 2nd Millenium BC

From the Late Neolithic, in rock-art and funerary contexts, male identity starts to be associated with the idea of the warrior. Stelae from the Occidental Alpine area and the Mediterranean begin to bear engravings of weapons, including the less common theme of bow and arrow. These latter two have been recorded as far north as Guernsey and can appear as part of a panoply, or as if they were being held. In some cases, the figure of the archer is central, appearing either on his own, as on the Longroiva Stelae in Portugal, or in combination with a separate engraving of a bow and arrow, as observed on the stelae uncovered in Laces, Val Venosta (Italy).

Arrowheads have been found associated with burials, both deliberate or accidental. Some of these suggest that quivers were used to store the arrows. By comparing the engravings to the funerary data, we will attempt to draw a line between the functional and symbolic values of the bow and arrow and will try to establish if the figure of the archer and the weapons related to it reflect a specific set of skills or class in the warrior world.

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Keywords: archer, bow, arrow, stelae, Copper Age, Italy, Iberia

Fig.1 - Detailed view of the Dehus dolmen, Guernsey, British Isles. (Author © B. Moore)
Fig.2 - Tracing showing the engraving of an archer on the front of the statue-stelae from Laces, Val Venosta, Italy. (Author © E.A. Fossati, A. Pedrotti)
Statue-stelae in Sardinia at the dawn of the nuraghi. New data gathered from the audit of material and from field surveys

This contribution aims to provide a general overview of the Sardinian statue-stele with particular regard to the Sarcidano region. It also aims to present new data. The analysis of iconography and the interpretation of symbols engraved on the statue-stele are integrated with the study of primary and secondary contexts. Of special interest are the phenomena of reutilization and change in function of statue-stelae from the period between the Copper and the Bronze Age until the beginning of the Nuragic period, involving both funeral contexts, such as the tomb of Murissiddi in Isili and that of Aiodda in Nurallao, and subsequent habitative contexts, such as the Orrubiu Nuraghe in Laconi and the Terra Arrubia Nuraghe in Senis. These phenomena are not limited to the mere reusage of statue-stelae as building material, as is often the case: in many instances, the symbolic significance remains intact or is reinterpreted, and is used for the Cult of the Dead or for marking strongholds at strategic points across the territory. This significance continues until the beginning of the Iron Age and forms an ineluctable premise for the development of large statuary, as can be seen in the extraordinary finds of Mont’e Prama.

Keywords: statue menhir, Sardegna, upside down, double dagger, symbols, reuse, nuragic age
This land is my land. Stone maps, Archeology and Geography in the alpine territory

This research involves the analysis of the “Caven 3” stele, known as the “Mother Goddess”, identifying its fascinating design within the territory of Teglio, in Valtellina. This mysterious Copper Age stele, found in 1940, is preserved in the “Antiquarium tellinum” at the Palazzo Besta State Museum. Traditionally it would represent the cult of the “Mother Goddess”, or symbols of solar worship. Different disciplines can contribute to the interpretation of the engraved signs: with a technical-scientific approach the figure of “Caven 3” can be read as a representation of the territory of Teglio and its natural boundaries through codified symbols, responding to conventional rules, some of which still used in cartography (as Y for the term on the border). The same symbols are found in Valcamonica, arranged according to the characteristics of the various places (Cevo, Bagnolo). These could be the first representations of the delimitation of a territory belonging to an entire community.

Keywords: Caven 3, Mother Goddess, Teglio, border, maps, comparative reading

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Fig. 1 - Stele of Caven 3, Antiquarium Tellinum, Teglio, Italy. (photo courtesy CCSP Archive, under concessione of Mibact, Polo Museale della Lombardia)
Fig. 2 - Stele of Caven 3, Antiquarium Tellinum, Teglio, Italy. (graphic elaboration S. Onetti, 2018)
Do the stelae discovered in the Stolovatetz locality, town of Razlog, Bulgaria belong to an ancient Thracian origin?

The discovery of these monuments near the town of Razlog (Bulgaria) more than 60 years ago continues to be the subject of controversy in the scientific community. Four of the stelae were discovered accidentally in 1953. Unfortunately, only two of them were preserved. Archaeological excavations were carried in 1973 at the site of the earlier discovery where three more steles with fragments of figure decoration were found. The white marble which served as stele material was extracted from a local quarry. The spiral elements depicted in the front surface of the steles is their common feature. On the front surface of the largest stelae are depicted spirals in three rows, separated by a zigzag line, and a figural scene consisting of a solar boat, a snake with two heads and an ithyphalic figure standing beside it. A large number of scholars interpret these findings in the context of the Thracian tradition, influenced by the Mycenaean culture. It is a disturbing fact that, even after the publication of the results of the research from the site, an important fact is obviously missed; the steles are secondarily reused as building material in a building dating from the 4th to 3rd century BC.

Keywords: stele, spirals, sanctuary, prehistory, Razlog, Bulgaria

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Fig. 1 - Restoration of the stele with the ithyphalic man, Razlog, Bulgaria. (photo Ivo Filipov)
Fig. 2 - Restoration of the stele with the spiral element, Razlog, Bulgaria. (photo Ivo Filipov)
New anthropomorphic stelae from Trontano/Causasca in Ossola (Northwestern Italy)

Recently in Val Vigezzo, a lateral valley of Ossola, in Northwestern Italy, close to the cottages of Trontano/Causasca, some stelae have been identified. Although no carved representations are now visible (we’ll make some more exhaustive analysis after the spring of 2018), their shapes are similar to the ones in Aosta/Saint-Martin-de-Corléans and Sion/Petit-Chasseur and Vestignè/Tina. Ossola is the closest valley to Valais, so we may recognize another site similar to the former ones. Unfortunately, they were displaced and relocated near some cottages in early 20th century during the construction of a railway and now any other ancient structures are now no longer visible. Some in-depth investigations are projected for the spring-summer of 2018.

Keywords: stelae, Copper Age, Alps, Ossola

Fig. 1-2 - Trontano/Causasca, Val Vigezzo, Ossola, Italy. The two Copper age stelae in their actual relocation. (photo A.E. Fossati)
Since the 1990s, several sites with anthropomorphic representations have been found in the upper Ebro valley. They share a particular formal canon and can be dated to around the beginnings of the Bronze Age, in the late third millennium cal BC. In this paper we analyze the use, in them, of certain ideographic resources understood as a leitmotiv of a primitive form of social portrait. We also compare these elements with similar ones observed further north, already in the Atlantic valleys of the Cantabrian Region. Finally, we reflect on how a similar set of significant elements is expressed with differentiated graphic solutions, in what seem to be alternative cultural contexts that we define as styles. Could we be observing a Mediterranean mode of representation versus another Atlantic one but within a similar social complexity?

Keywords: stylistic groups, anthropomorphic, Iberian Peninsula, Bronze Age, dagger, semiotics

Fig.1 - Statue-stele of Salcedo, Cantabria, Spain. Stylistic Group of Monte Hijedo.
Fig.2 - Anthropomorphic stele of Tabuyo del Monte, León, Spain.
The corpus of the steles of Aosta Valley consist of 46 items of which until now only a portion have been published. According to the classification of Franco Mezzena, who had initially studied them, the anthropomorphic steles have two different styles: archaic and evolved.

This reproposed iconographic reading is more robustly conceived, with the inclusion of an additional category, defined as ‘transitional’, for the peculiar stylistic and technical typology found on two steles.

The archaic anthropomorphic steles were usually created on coarse grained schistose rocks, which were difficult to work with, of large dimensions, worked on two sides, and have a reduced ornamentation traced out by a shallow incision. The ‘evolved’ steles are monofacial, on fine grained rocks which were easier to work with; the drawing was carried out in minute detail, ranging from rich detail to light relief, whose effects contrast the shiny surface with opacity.

An exact identification of the technical differentiations is indispensable to provide clarity to the methodology and consequently the results as well. On this basis this critical inquiry will be able to verify the specificities of processes, as well as the possibility of individualising a chronology for the creation of the sculptures.

Keywords: anthropomorphic stele, technical differentiation, process of working, stylistic typology
SPECIAL SESSION

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Urgent facts. A huge dam was being built here. There are several sites with many rocks and countless engravings. The rare figures could all vanish underwater within days.

A tough twelve-month struggle ensues. In 1995, a new Socialist government suspends the dam construction. In 1996, the government creates the “Parque Arqueológico do Vale do Côa”. Two years later, the area becomes part of UNESCO’s World Heritage List.

All this does not reverse Portugal’s dam-building frenzy, which has a long history. In the 1970s, the Tagus River Fratel dam floods a forty-kilometre-long area. It inundates hundreds of rocks with over six-thousand engravings. In the 1980s, the Pocinho dam on the Douro condemns an unknown number of engraved rocks to the same fate. From 2000 to present, dams like the Alqueva, Sabor and Tua continue the frenzy.

This paper summarises the matter and puts forward future options.
Schematic art and pottery decoration: the role of imagery in community social practices during recent prehistory on the northern plateau of the Iberian Peninsula

This paper reports on a project researching schematic art iconography and pottery decoration. The material is from the 4th to 2nd millennium BC on the northern plateau of the Iberian Peninsula. Today, this lies in the Meseta, Spain, and Trás-os-Montes, Portugal. Archaeological evidence helps show rock art sites and pottery have parallel developments. These relate to social changes and are elements of active material culture. They are motors of change of the ideological-cultural systems.

The author proposes an exercise that assumes such designs constitute a code. These acted as an active element in identity consolidation. Even so, that depended on when the community (political instances) allowed it.

The study focuses on motifs containing or accompanying human figures. It is possible to analyse these as “texts” that communicate or convey a meaning. It is a consequence of an orderly interaction of elements. Such components can bear meaning (signs) in different social instances of the community.

Thus, this paper explores the organic and spatial relation of the figures to each other. It traverses what goes on between them and the representation space. It is quite different from the starting point.

Keywords: anthropomorphic representations, schematic art pottery decoration, Iberian Peninsula, recent prehistory

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Research on the rock art sites in 12 towns and villages near Chifeng was conducted over the past 15 years and over 10,000 rock paintings and engravings were discovered. This paper focuses on the distribution and the shape of non-outlined human face motifs. By using the microerosion dating method and experiments on the samples with favourable dating conditions, and making comparisons with unearthed relics, the author’s data analysis on the age of the motifs indicates that the non-outlined human face images in Xiao Fengshan belong to the Neolithic age. This research represents a fundamental basis for future research on rock art dating in other areas.

Keywords: Hongshan, rock art, human face image, dating, sites
A prehistoric hunting scene in Alta Lunigiana

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Keywords: rock art, hunting scene, bear, Alta Lunigiana, Italy

A calcareous rock surface has a hunting scene with an animal that appears to be a bear. It brings to mind Mount Orsaro, which means ‘Mountain of the Bears’. The engraved scene indicates the hunter used a trapezoidal axe to kill the bear. There is an acute-angle dagger with a thick handle behind the bear’s head. This suggests someone will use the dagger to skin the animal.

The artist used direct percussion to engrave the weapons and bas-relief for the bear’s head. Precise lines delineate the edge of the axe. Some segments, made by a blunt instrument, are parallel to those lines. This is most noticeable in the handle. The artist did this on purpose to give body to the object. In contrast, the thinner dagger has a finer finish. Both dagger and axe were objects of prestige. Yet, differing techniques suggest that society viewed the dagger with higher esteem.

The dagger has a similar shape to the Allensbach-Strandbad flint dagger, which dates from 3000 BC to 2800 BC. There is a question on comparisons with Remedello daggers.

Fig. 1 and 2 - Buttress of Mount Orsaro, Lunigiana, Italy. (photo and copyright Angelina Magnotta)
This research is the culmination of an analysis of the rock art of the Alcantara Valley. The Alcantara River, which forms the natural boundary between the provinces of Messina and Catania, has experienced a long history of frequentation across the millennia, in particular during the periods of prehistory and protohistory. Small groups of tombs dug into the rock, of the artificial Grotticella type, and numerous millstones are scattered throughout the valley. The chronology of such evidence is still uncertain since the graves were probably emptied in ancient times. The necropolises of Monte Olgari, Balsamà and Passo Moio were created in Medieval times, but it cannot be excluded that they may have been some original elements of these already present in prehistory. Rocca Pizzicata is rich in evidence of past human activities. The sandstone rocks, over the millennia, have been subjected to substantial weathering, especially from wind and water, which have shaped the forms which are present, some of them having human forms as well as some unusual animals shapes. The entire rock area has different levels, connected by passages that often have steps or footholds carved into the rock.
There are many complex scenes in the rock depictions of Northern Europe and Siberia. These include images of people and deer. Some scenes look like rituals (Alta, Glosa, Suruhtakh-Khaya). This study analyses them in the context of the deer cult. The cult formed in deer hunter societies and continued into later times. Research noted some subjects of rock depictions of Northern Europe and Siberia. It compared these with actions of the Siberian Evenki Shinkgelavun rite. The ceremony aimed to guarantee hunting success and deer reproduction. This ritual includes the shaman’s hike to the Ancestral Goddess (giant deer female). The shaman then received deer and delivered them to the hunter’s holding. After that, the shaman disguised hunters, who danced and imitated deer. They made brushwood figures of mating and doe in labour. Then hunters stalked, killed and dismembered a deer, and shared the meat among the fellows. The hide was hung out as a sacrifice.

Main elements of the rite: imitating deer, making deer simulacra, stalking, killing and dismemberment, joint eating, and preservation of the remains for further regeneration. The rock art reflects these actions.

**Keywords:** Siberian Evenki Shinkgelavun rite, shaman, deer, rock art

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**Fig. 1 - Evenki drawing. XX cen.**
Shaman’s hike to the World’s Hostess: 1- Bugady-Eninteen with her husband; 2 - shaman with lasso; 3 - the fence with the deer - the ownership of Bugady Eninteen; 3 - the deer, which represent ancestral spirits Bugady (Анисимов. 1958).

**Fig. 2 - Murieha rock painting (Spane).**
The disguised man catching a deer, hunters and dancing people (Utrilla, 2005).
There be people in them there hills

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Keywords: Dampier Archipelago, human representation, sacred, secular

The Dampier Archipelago lies on the north-west coast of Australia. It has a phenomenal array of petroglyphs. Estimates place these at over a million petroglyphs. Anthropomorphic images make up some 25% of the repertoire. Zoomorphic depictions have a similar percentage. The sheer diversity of human-like images spans many tens of millennia. These provide an insight into rock art production and human expression. Various themes are evident in the stylistic arrangement. Here we see hunting and ceremony scenes, as well as ritual and mythology. We also see what could be the earliest depictions of the human face. Some forms of anthropomorphic portrayal are unique to the archipelago. Others have stylistic comparisons across vast tracts of the Australian continent. In other motifs we see parallels with historic and current cultural practises. These show ritual continuity over some 5000 years. The richness in artistry is a hallmark of the Dampier Archipelago petroglyphs.
Max Raphael in the work Prehistoric Cave Paintings (1945) warned that in this art there were no isolated figures, on the contrary, a lot of compositions. Which implies the rock art murals have to be thought of as thematic and conceptual assemblies. This suggests units of meaning, which in general would be linked in form and content. One of the moments in which it is possible to notice what is mentioned more clearly, is in the scenes or thematic groups. The central issue that will address this paper are the scenes in the pictorial sets of Cerro Tolima, Cerro Pinturas and El Guayabero, located in the Serranía de la Lindosa (Guaviare, Eastern plains of Colombia). Recent research has allowed us to study the formal and thematic recurrences present in the pictorial elaborations of this area of the country. The exhaustive documentation of each one of the murals allows to affirm that there are scenes in those murals. In some cases, these are representations that remember dance, in others, daily life, in particular, the attainment of food (fishing and hunting). This first approach will expose the different inferences to which it has been possible to arrive, without forgetting that the scenes object of this work are part of a broader set of rock art forms.

Keywords: East Colombian, Rock paintings, scenes, everyday world, form and content

Fig.1 - Scenes of rock paintings in Serrania La Lindosa, Colombia. (photo Gipri)
Fig.2 - Scenes of rock paintings in Serrania La Lindosa, Colombia. (photo Gipri)
Asia has great promise for understanding early cognitive development of hominins. Even so, this potential remained almost unexplored in India. There was knowledge of some engraved ostrich shells. New discoveries of ‘portable art’, hominin fossils and Palaeolithic artefacts change this.

The finds are two bird figurines on stone, two pendants and a painted pebble chopper. Investigations recovered the painted pebble chopper along with Acheulian artefacts at Ghumarwin. The site lies on an ancient terrace called Sir Khad, a tributary of the river Satluj in Himachal Pradesh. This terrace also yielded an “embryo-shaped” stone pendant with two threading “eye holes”.

A bone pendant and a tiny bird figurine on a chert flake came from the central Narmada valley in Madhya Pradesh. In association were other finds. These were a hominin humerus, two sacra (one male, the other, female) and Middle Palaeolithic stone and bone tools. They date to the later Middle Pleistocene Surajkund Formation some 70,000 years ago. Another tiny bird figurine on a thin basaltic crust was in situ at the hominin locality of Hathnora. This is in the Baneta Formation dated to around 40,000 years ago.

The finds are a first of the kind found in Pleistocene human bio-cultural contexts. They are significant to our understanding of early hominin cognitive development. Evolution of three-dimensional Palaeolithic art becomes clearer. Here we see the “explosive” beginning of graphic art in India.

Keywords: Pleistocene, portable art, hominins, Narmada, Satluj, India
Northern cultures celebrated summer and winter solstices. Did Cro-Magnon people also do so? This research examines what one sees when watching the sun rising or setting. The author illustrates a plot of the sun traversing the horizon. It moves to a southern-most point (the winter solstice) and back. The result is an X-shaped sign linked to horse and lion figures in caves and Swabian ivory sculptures. X is a general sign for solstice and renewal of life. The lower part (\(^\wedge\)) that resembles an arrow also has connections with the horse. Here the horse equates to the sun, which returns after the winter solstice. Another illustration shows two horses moving in opposite directions. There are depictions of this symbol for the renewing sun in cave art: Chauvet, Pech-Merle, Font-de-Gaume... At Lascaux the sun-horse falls and turns. At Pair-non-Pair, the horse, lit by midwinter sun, only turns its head. The decorated rock shelters of Roc-aux-Sorcières, Cap-Blanc and Chaire-à-Calvin show three examples of sun-horses. All face south, but are only sunlit during winter. The ibex is another symbol of midwinter, which is when these animals rut.

Fig. 1 - Watching the horizon on sunrise
Fig. 2 - Two horses facing each other, with X-signs, from the deep end of the cave of Niaux. (after photo by J. Clottes)

Keywords: solstice, sun-symbol, X-sign, horse
John Clegg always approached rock art in fresh, unconventional ways, to the delight of all those with an open mind and eagerness not to be limited by received methods. This workshop celebrates John as one of the ‘giants’ on whose shoulders many others have learnt to stand. The papers in this session display some of the diverse views that can be had from that vantage point, and in many ways reflect his delight in the aesthetics of humanly made markings on rock.

A personal account of my first encounter with John Clegg’s scholarship, how he combined hardnosed methods for questioning all assumptions with innovative approaches to rock art sites. Brief summaries of presentations and how they relate to John’s work.  

Keywords: Method, rock art, science

Australian rock art research has progressed through a number of ontological phases. The earliest days of settler encounter/arrival/invasion realised the widespread presence of rock art across the continent. The first etic observations of this unfamiliar body of imagery saw first the beginning of extensive recording exercises of both Aboriginal art and mythology. Last century archaeologists and anthropologists began to document the variability in a long-term cultural practice. The 1960’s flood of (mostly) Cambridge-trained archaeologists to Australia included John Clegg. Clegg was one of the key practitioners in the seventies and eighties (with Lesley Maynard, Michael Morwood and Andree Rosenfeld) when, for the first time, Australian universities offered specialised units in rock art studies within archaeology degrees. Australian rock art research began to flourish as a sub-discipline of archaeology, with approaches focused on regional and landscape studies. Interest shifted from the concept of ‘art as an object’ to a focus on rock art as an intentional creation of humans in the past. The particular way of producing rock art, its ‘style’ was viewed as a means of communication. Rock art was seen as a way of encoding a range of social, economic and ritual information. Conceived in this way, the form and structure of assemblages could thus be seen to express group interaction or differentiation, social boundaries or social organisation. And the way that we “see” rock art was key to the influence that John Clegg had in his formative role in the development of rock art research in Australia. This paper discusses the ontological innovations in Clegg’s early work and the way that these have affected archaeological approaches to Australian rock art research in the last three decades.  

Keywords: John Clegg, rock art, motifs, archaeological approaches, Sturt’s Meadows
‘Take a closer look: learning from the detail’
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In recording Aboriginal rock art throughout Australia, it was found that some aspects of the art, particularly in relation to the re-working of an image, could not be readily described with current terminology. In an effort to overcome this deficiency, avenues of Fine Art theory and semantics were explored. While exact equivalents could not be found, a number of concepts were considered useful as a basis for use in rock art. This paper then introduces the concepts of amendment and alteration (from pentimenti) and the subtleties of the Morellian Method.

A new framework for identifying contact rock art
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Traditionally, the identification of contact rock art has depended on the recognition of introduced subject matter, such as guns, animals or ships. Authorship of this art has been attributed to the people for whom the depicted objects were new or remarkable. While this approach does work for some places, the focus on motif alone directs attention from other aspects of style that can provide important social information. Based on a case study in the Mid North of South Australia, this study presents a new analytical framework for analyzing style in rock art and using stylistic characteristics to identify authorship. The framework can be customised to different sites and/or regions to provide more nuanced understandings of specific contact trajectories. The results of this study suggest that innovation in contact rock art initially occurs in a single aspect of style, either motif, technique, or medium, and that a sequencing of innovations may be able to provide a temporal succession for contact motifs. The wider value of this framework is that it provides a basis for developing regional or site-specific models of style that may help researchers to obtain greater insight into the authorship of contact rock art in different parts of the world.

Buried beneath Baiame: Spatial modelling of geochemical data from the Baiame Cave, Australia
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This paper presents reconstructions of pigment motifs based on their chemical characteristics, outlining the potential of these methods for rock art research and conservation/management applications in a case study from the well known Baiame Cave site, located in the Hunter Valley, NSW, Australia. It draws on a triptych of influences from John Clegg’s work in the Sydney Basin: 1) the development of novel rock art recording methodologies; 2) the exploration and use of multivariate statistical data treatments; and 3) a contemplation of the evidence present in Sydney Basin rock art in respect of the antiquity of Aboriginal cosmology.

Keywords: Spatial modelling, pigment geochemistry, Sydney Basin rock art, Baiame, pXRF, conservation and management implications
The complex of rock engravings at Sturt's Meadows in western New South Wales was a major focus for John Clegg's work over a number of years. The rock art at the site has been attributed to the Panaramitee tradition, a corpus of engravings found across Australia and first described in detail by Lesley Maynard, whose work John promoted and also extended in his own research. This paper presents the results of statistical analyses of the rock art at Sturt's Meadows using methods that were championed by John. The results not only confirm John's findings about the various sub-sites at Sturt's Meadows, but also fit well with the tenets of the Discontinuous Dreaming Network Model, which holds that the similarities between engraving sites across vast distances of Australia reflect the widespread links forged by Dreaming tracks and suggested by the trade and other social networks that sometimes spanned the continent.

**Keywords:** Sturt's Meadows, Panaramitee, correspondence analysis, cluster analysis, Dreaming tracks, Australia

In this highly visual presentation recent archaeological and ethnographic field research at petroglyph sites in various localities in Queensland and New South Wales, Australia is summarised. Case Studies include Gallery Rock in Wollemi National Park (NSW), Jibbon in Royal National Park (NSW), Chalawong (Queensland), the Burnett River rock engravings (Queensland) and Chillagoe sites (Queensland). In all areas local Aboriginal custodians are concerned about the management and future of their petroglyph rock art sites and want to work closely with archaeologists and other academics to better protect them. It is concluded that no matter the age of the imagery, and the cultural disruptions of over 200 years of European colonisation, the sites and designs remain an important and dynamic part of living Aboriginal culture.

**Keywords:** Petroglyphs, Wollemi, Jibbon, Chalawong, Burnett River, rock art management, Australia

One of us (Chippindale), lucky to have known John Clegg in person, has warm memories of Sydney sandstone rocks, with his sharp eyes and his mind ready to explore and imagine, rather than repeat standard guesses. An obvious guess was to identify subject: “This is a picture of a kangaroo.” “No,” said, John. “We don’t know that. We guess it is but we should call it a ‘!kangaroo’, the ! indicating that it looks like a kangaroo but may not actually represent one.” Move to Valcamonica: quite small surfaces packed with many small figures, close together, surrounded by cool woods and meadows; contrast Sydney surfaces, very large with a few giant images separated well apart, under southern heat, enclosed by ferocious spiny scrub. We could ask the equivalent Alpine question: are “!deer” actually images of deer or something else? Are these “!dogs” dogs? Since Valcamonica surfaces are crowded, we instead ask a variant Clegg-y question: what mean these close groupings of figures? Are they just chance? Are they “!scenes”? Is something else going on? What? We offer what may be a first attempt at a systematics of how rock-art figures are placed on a surface in relation one to another.

**Keywords:** Composition, Scene, Valcamonica, Rock-engraving
When John Clegg was at a Rock-art Site, he was part of that site. Standing on a carved site next to a road north of Sydney, he elevated us to another dimension. He affected that site. So, do we all and it alters us. John even changed and added language to it. We can know some of how we disturb the site, but it is not so easy to understand how it influences us? How and why do we judge and rate/rank it? Which rock-art is better, most significant? Must we consider descendent communities? Which needs more protection? How has it affected our lives? How has our relationships to rock-art prevented our acceptance as serious researchers? Most of all, what obligations, if any, do we owe to rock-art? A discussion will be presented related to these issues and the reliability of any decisions made. Why do we feel these considerations are important?

Keywords: John Clegg, rock-art history, recording, interpretation, appreciation, judgement

I discuss some of the approaches to theory and methodology that John brought to rock art research, as represented in his published articles and field work practices, and recount the anecdote of an inspired exploration with John of a one-image site on the shores of the Berowra River.

Keywords: Method, rock art, hermeneutics, science, landscape aesthetics
The existence of Cave Art, for the first time recognized in 1879 with the discovery of the Altamira cave paintings in Cantabrian Spain, was only admitted by the scientific establishment in 1902.

Since then there have been numerous discoveries. We now know nearly 400 sites with wall art all over Europe, from the south of Spain to the Urals in Russia. Some are famous the world over, like Lascaux, Chauvet, Altamira or Niaux.

The main characteristics of that art are its longevity (at least 25,000 years) and its overall unity during that long period. All over Europe and at all times animals are dominant, mostly those belonging to large species; there are few humans and a great number of geometric signs whose meaning and symbolism still escape us. The techniques employed are varied: paintings (mostly red and black), engravings, sculpture. The places chosen are also diverse: the caves are better known because the conditions were optimal for the preservation of the art, but far more paintings and engravings were made outside, either in the shelters where people used to dwell (beautiful carvings at Roc-aux-Sorciers) or at the foot of cliffs or again on rocks in the open as at Foz Côa in Portugal.

Many ceremonies took place on those sites. The works of art testify not only to the artistic abilities of our remote ancestors but also to their ways of considering the world. The most important and interesting question about European cave art is thus “Why?” For example, why did they go into the deep caves —where they did not live— to make the art? Why did they draw mostly animals and so few humans? Why make those images in the first place and what role might they have had?
THE ORIGINS : FRAGMENTS OF THE HUNT

Film by Mikko Ijäs, Ph.D Doctor of Arts, Aalto University, Finland
Associate of Human Evolutionary Biology at Harvard University, Cambridge, USA
Affiliate of the Department of Geosciences and Geography, University of Helsinki, Finland
Member of the Zen Peacemakers International

The Origins presents a new argument that human imagination and art was evolved due to ancient art of persistence hunting (running and tracking down animals). The film is loosely based on the research by Harvard scholar and media artist Mikko Ijäs. His research deals with the early connection between persistence hunting, trance rituals, and visual arts among the early hunter-gatherer societies.

The principal cinematography of this film was executed among the Ju/'hoansi at the Nyae Nyae Conservancy in the Kalahari desert in Namibia and among the Ráramuri of the Mexican Sierra Madre. The Ju/'hoansi are still trying to maintain their ancient hunting and gathering traditions in the rapidly changing environment of the Kalahari. They still hunt with their traditional ways and forage wild foods from the bush, but they’ve recently began to supplement their diet with other products such as maize flour, tea and sugar. They have also recently acquired some sheep and chickens, but having cattle is still restricted on the Nyae Nyae Conservancy.

The movie tells about the origins of human culture and the struggles of the last indigenous people in the Kalahari and in the Mexican Sierra Madre with minimal explanatory notes telling the story.

The movie features rock-art from various locations including Brandberg, Erongo, Wüstenquell and Twyfelfontein in Namibia, some glimpses of rock paintings and engravings in Oregon in USA, painted engravings of Alta Museum in Norway, few shots in Dordogne area in France, and one panel in Central Finland known as the Saraakallio.

The music for the film was composed by Maija Kaunismaa and it was performed together in collaboration with Vox Aurea youth choir from Jyväskylä, Finland, saxophonist Jukka Perko, singer and igil player Imre Peemot and Rabbe Sandström.

Written, directed, filmed and edited by Mikko Ijäs
Composed by Maija Kaunismaa
Produced by Maija Kaunismaa and Mikko Ijäs
Music performed by Vox Aurea choir with Imre Peemot, Jukka Perko and Rabbe Sandström.
Music produced by Aki Sihvonen and Maija Kaunismaa.
Full HD, 16:9, 5.1 Stereo,
Running time: 58:38 min

General info:
www.theOrigins-Movie.com
www.facebook.com/OriginsMovie/
PLACES OF PEACE AND POWER

The sacred site: Stonehenge - Machu Picchu - The Pyramids - Jerusalem - Banaras - Mt. Fuji - Mecca

Slideshow by Martin Gray, Independent researcher, National Geographic photographer

For scholars of rock art it is critical to recognize that the sites where rock art is found are more significant than the pictographs and petroglyphs at them. The etchings and paintings left by humans should be understood to function as geographic markers of particular places. The places are preeminent while the traces of human activity left at them are of secondary relevance. Following this line of reasoning, the essential question is: Why were certain places chosen by humans - from deep antiquity to historical times - for a variety of shamanic and religious uses? How do we explain their undeniable spiritual magnetism?

During the past thirty-five years, traveling as a National Geographic photographer and cultural anthropologist in more than 150 countries, I conducted studies of 1000 sacred places and recognized that altogether they represent a world spanning phenomena of immense artistic, shamanic, environmental and spiritual importance. While my research, writings and photographs are offered on my Places of Peace and Power web site (sacredsites.com), the slide shows I give function as Group Shamanic Events. The beautiful photographs become windows onto the sacred places, they transmit the ‘visual homeopathic essence’ of the sites, and they inspire transformational experiences for viewers.

https://sacredsites.com/

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