

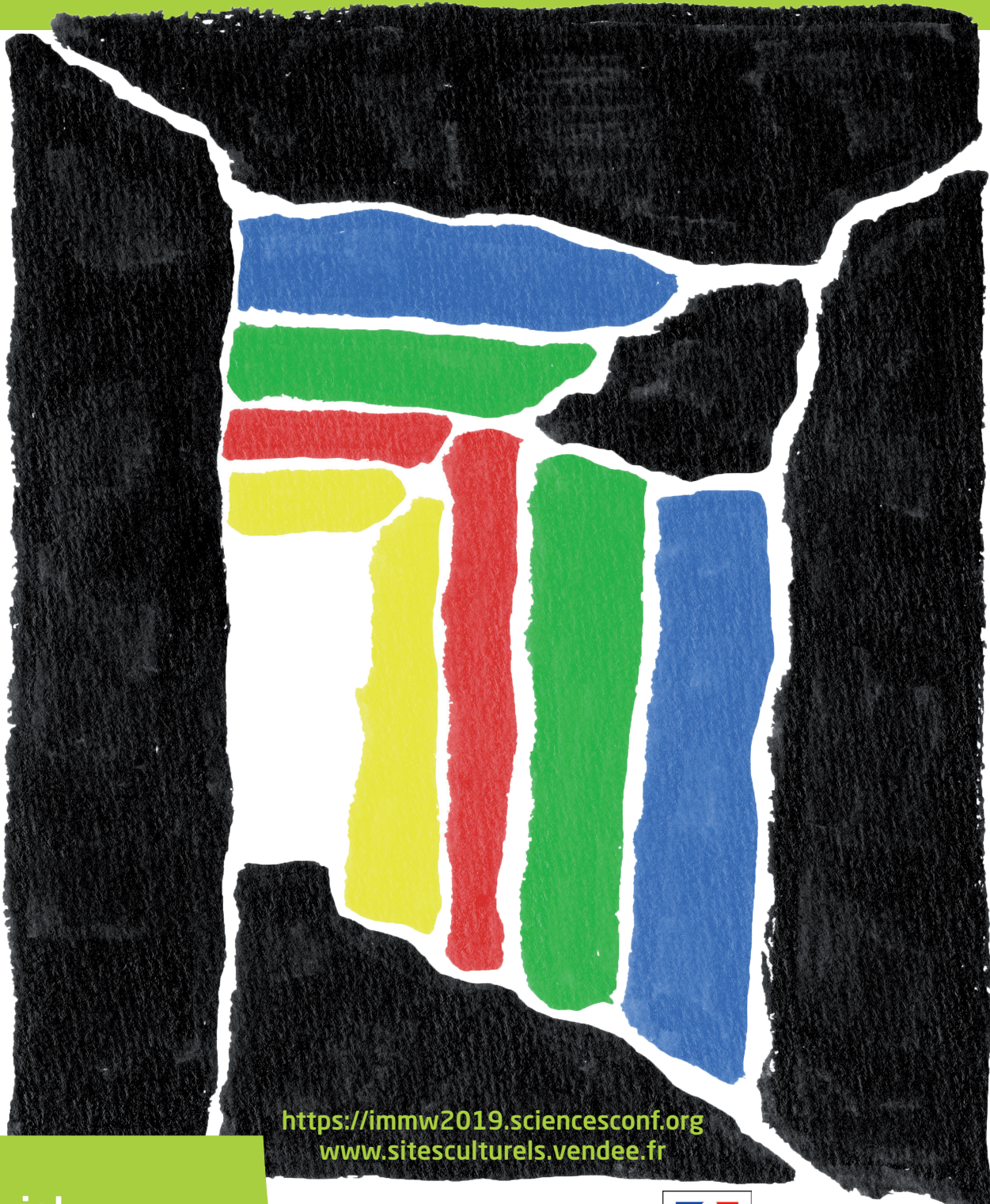


VENDÉE
LE DÉPARTEMENT

RENCONTRE INTERNATIONALE

LES MÉGALITHES DANS LE MONDE MEGALITHS OF THE WORLD

9 au 15 Septembre 2019



<https://immw2019.sciencesconf.org>
www.sitesculturels.vendee.fr

Historial
de la Vendée
Les Lucs-sur-Boulogne



Monday 9th of september 2019

8h30 - 10h15 : Reception of participants

Press Point, Official Speeches

- President of the County Council (or his representative)
- President of the Regional Council (or her representative)
- Regional Prefect (or his representative)

10h15 - 10h30 Coffee break

10h30 - 12h40 Introducing conferences

1	GUILAINE Jean	Mediterranean megalithism: a long history
2	BRADLEY Richard	Beyond comparison - the diversity of megalith building
3	GALLAY Alain	Megalithism... but again? For a theoretical approach to funerary monumentalism

12h40 - 13h40 Lunch

13h40 - 16h20 Thematic presentations

4	LAPORTE Luc	From megalithic ruins to the building site: architectural projects, symbolic or technical systems, action onto materials
5	NESPOULOUS Laurent, MACÉ François	From the Throne of Stone to Funeral Chambers: myths and megaliths in Eastern Asia (Korea and Japon)
6	STEIMER Tara	Megalithism genesis, the building of a cultural identity for a better circulation of goods
7	SCARRE Chris	Megaliths, landscapes and skylscapes: the broader perspective
8	BUENO-RAMIREZ Primitiva	Megalithic art: funeral scenarios in Neolithic Europe

16h20 - 18h Megaliths in America

General Introduction by J. Oliver and L. Laporte

9	OLIVER José	Precolombian megaliths of the caribbean: plazas and « Bateyes »
10	MOURA SALDANHA Joao Darcy	The Rise of Monumentality at the Mouth of the Amazon
11	PERLÈS Catherine, NUNEZ Lautaro	Two megalithic ceremonial centres in the Atacama Desert (Chile)

Tuesday 10 of september 2019

8h30 - 10h40 **Megaliths from Rapa Nui to Indonesia (1)**

General Introduction by N. Cauwe and T. Steimer

12	CAUWE Nicolas	Polynesian Megaliths: A Genealogical and Dynamic Architecture
13	URWIN Chris <i>et al.</i>	Traveling Stones and the Materiality of Permanence in the Papuan Gulf (Papua New Guinea) and Australia
14	SAND Christophe	Monumental architecture in a World of Oceanic « small Islands (Micro-Nesia) »

10h40 - 12h40 **Megaliths from Rapa Nui to Indonesia (2)**

15	STEIMER Tara	Rise and disappearance of Indonesian megaliths
16	BONATZ Dominik	Megaliths of Sumatra and Nias: A Life Cycle Assessment
17	JEUNESSE Christian	The social context of the megalithic practice, an ethnoarchaeological approach: what we can learn from current megalith builders of Sumba (Indonesia)?
18	ADAMS Ron, ROBIN Guillaume	Menhirs of Tana Toraja, Indonesia: A Preliminary Ethnoarchaeological Assessment

12h40 - 13h40 *Lunch*

13h40 - 16h **Megaliths from South-Eastern Asia and India (1)**

General Introduction by R.K. Mohanty and J. Müller

19	JAMIR Tiatoshi, MÜLLER Johannes	Northeast Indian Megalithic monuments and social structures
20	WUNDERLICH Maria	Setting the wider frame: A comparison of recent megalith building traditions in Sumba (Indonesia) and Nagaland (India)
21	THAKURIA Tilok	Stone Jars of Northeast Indian and Southeast Asia: Problem and Prospect

16h - 18h **Megaliths from South-Eastern Asia and India (2)**

22	MOHANTY Rabindra Kumar	Megaliths and Megalithism in India, with Special Reference to Vidarbha region of Maharashtra, India
23	RAJAN K.	Situating Megalithic Monuments in South India: Content and Context
24	ZULFIQAR ALI Kalhoro	Megaliths in Sindh, Pakistan

Wednesday 11th of september 2019

8h30 - 20h

Excursion

*Visit of megalithic sites of Bougon and his museum and tumulus C, Péré at Prissé-la-Charrière.
Visit of megalithic sites of Avrillé-Le Bernard*

Thursday 12th of september 2019

8h30 - 10h40

Megaliths from Eastern and Central Asia (1)

General Introduction by L. Nespoulous

25	NESPOULOUS Laurent	The Manifold Megalithism of East Asia
26	KIKUCHI Yoshio	Megaliths in Japanese prehistoric and protohistoric times
27	SON Joonho	Dolmens on the Korean Peninsula
28	MIYAMOTO Kazuo	Prehistoric Cairns and Dolmens in Manchuria, China

10h40 - 12h40

Megaliths from Eastern and Central Asia (2)

29	HEIN Anke	Monuments in the mountains: the megalithic graves of western China
30	MAGAIL Jérôme	Adorned megaliths and funerary complexes at the Bronze Age in Mongolia
31	KOVALEV Alexei	Megalithic traditions in early Bronze Age of Mongolian Altaï: Chemurchek (<i>Qie'muerqieke</i>) cultural phenomenon

12h40 - 13h40

Lunch

13h40 - 16h

Megaliths from Caucasus, Middle East and the Arabian peninsula (1)

General Introduction by V. Trifonov and T. Steimer

32	TRIFONOV Viktor	The Bronze Age megaliths in the Caucasus: development trajectory of the architecture and the funeral practice
33	NEKHRIZOV Georgi, ILIEV Stanislas	The megalithic and rock-cut monuments on the Balkans
34	YÜKMEN EDENS Bakiye	At the intersection of continents – megalithism in Turkey

16h - 18h

Megaliths from Caucasus, Middle East and the Arabian peninsula (2)

35	STEIMER Tara	Megaliths of the Arabian Peninsula and the Levant
36	FRASER James	Untangling megalith typologies and chronologies in the Levant
37	MUNOZ Olivia	The tower tombs of protohistoric Arabia

Friday 13th of september 2019

8h30 - 10h40 Megaliths from sub-Saharan Africa (1)

General Introduction by H. Bokoum, L. Laporte and J.-P. Cros

38	CROS Jean-Paul	Eastern Africa: 5 millenium of megalithism
39	HILDEBRAND Elisabeth	<i>Ng'amoratunga</i> pillar sites of northwest Kenya
40	PARKER-PEARSON Mike	Megaliths in Madagascar

10h40 - 12h40 Megaliths from sub-Saharan Africa (2)

41	LAPORTE Luc <i>et al.</i>	Megaliths from Senegal and Gambia in their regional context
42	EDET Abu S., SULE Abubakar	Megaliths of Nigeria: The Footprints of Ancient Civilisation
43	INSOLL Timothy	Why Megaliths in sub-Saharan Africa? Some Thoughts on Monumentality and Materiality

12h40 - 13h40 Lunch

13h40 - 16h Megaliths from Northern Africa and Western Europe (1)

General Introduction by A. Gallay et C. Scarre

44	GALLAY Alain	Central and Eastern Sahara monumentalisms and funeral rites
45	VERNET Robert	Neolithic monuments with standing stones of northwest Sahara
46	SANMARTI Joan	The megalithic necropolises of the Eastern Magrib

16h - 17h20 Megaliths from Northern Africa and Western Europe (2)

47	SCARRE Chris, LAPORTE Luc	Megaliths from North and northwest France, Britain and Ireland
48	SJÖGREN Karl-Göran, MÜLLER Johannes	Early Monumentality and Social Differentiation of the northern Funnel Beaker Societies

Saturday 14th of september 2019

8h30 - 10h30 Oldest megaliths known in the state of art

49	CLARE Lee	Gobekli Tepe World Heritage Site (WHS), Şanlıurfa: Changing Perspectives
50	BORIC Dusan	Larger than life: Monumentality of the landscape and nonhuman imagery at Lepenski Vir
51	LAPORTE Luc <i>et al.</i>	On the Atlantic shores. The origin of megaliths in Europe?

10h30 - 13h Poster Session

1	Ghesquière Emmanuel <i>et al.</i>	First monumentalities in Western Europe: the necropolis of Fleury-sur-Orne « Les Hauts de l'Orne (Normandie, France)
2	Cheronet Olivia <i>et al.</i>	aDNA and kinship in French Atlantic Façade Megalithic monuments
3	Gouezin Philippe	Dressed standing stones in the open and dressed standing stones in burial chambers. Towards a convergence of the dispositives. The example of the megaliths in the department of Morbihan, France
4	Bouchet Marie, CAYN Philippe	The megalithic monument of Uzès (Gard, sud de la France)
5	Desbrosse Vincent, WATTEZ Julia	The clay binder: a hyphen between megalithic burial architecture and non megalithic monumental architecture from case studies in the Champagne region (France)
6	MEADEN Terence	Advances in research on the Bronze-Age stone circles of Ireland and the rediscovery of a prehistoric 8-par calendar and the the tradition of shadow-casting at sunrise
7	KENNY Patricia	Secrets in the Stones: Examining the presence of stones with inclusions in the passage tombs of Atlantic Europe
8	BLANK Malou	Old bones or early graves? Megalithic burial sequences in southern Sweden based on 14C datings
9	MOTTET Manuel	A new Final Neolithic megalithic cemetery at Sion (Valais - Switzerland)
10	Riudavets Gonzales Irene, BRAVO ASENSIO Cristina	Megalithism versus Cyclopeism: the case of Prehistoric Menorca (Balearic Islands, Spain)
11	Andrade Marco Antonio <i>et al.</i>	Small is Beautiful: Early Megalithism and the First Funerary Architectures in South-Central Portugal (Southwestern Iberia)
12	BACCI Mario Ettore, ROSSI Stephano	Studies on some megalithic structures at the Elba Island (Livorno), Italy
13	Mercadante Francesca	The coastal megalith site of Pietra Tara, Monte Gallo (Palermo province), Sicily (Italy). New megalithic site in the Mediterranean
14	Delvoye Adrien <i>et al.</i>	Earthen architectures and Megalithism: the Soto monument (Sénégal)
15	VIRAG SONTAKKE	Of myriad megaliths and their typology: An enquiry into the Architectural Variations of Megaliths of Vidarbha
16	VAIDYA Shantanu	Social Organisation of the Megalithic People in Vidarbha, Maharashtra, India
17	HIMANSHU SHEKHAR	Megalithic Monuments in Jharkhand: Archaeology and Ethnography
18	BEC DRELON Noisette, JEUNESSE Christian	Megalithic's techniques at Sumba island (Indonésia): from careers to abandonment
19	KAZAKOV Vladislav <i>et al.</i>	Tamchinsky deer stone: experience of documentation of megalithic objects

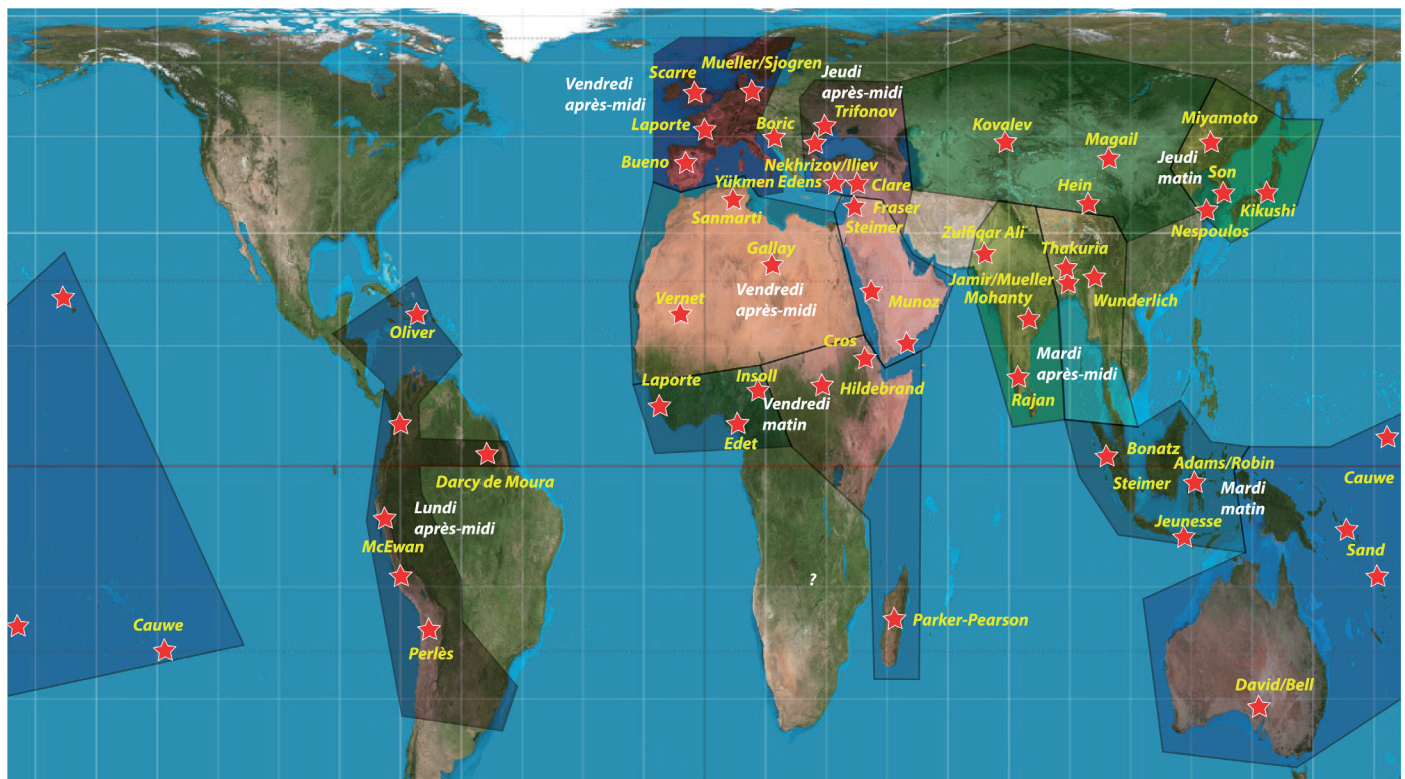
20	Da SILVA COSTA Marina	From stone to dust: granite, ceramics and megalithism in Amapá - Brazil
21	ARIASA Francisco J.	A Chronological Conjecture Concerning the Age of Pumpunku Complex based in a Theory for Transport of Plataforma Lítica (Bolivia)

13h- 14h30 *Lunch*

14h30 - 16h30 **Discussions and debate**

16h30 - 17h30 **Closing session of the meeting**

At the suggestion of the Steering Committee, a synthesis of the meeting will be offered by Luc Laporte, Director of Research at the CNRS, with contributions from the other participants.



Introducing conferences

1. Mediterranean megalithism: a long history

GUILAINE Jean - Emeritus Professor at Collège de France, «Membre de l'Institut», France

The megalithic monument types of the Mediterranean region are numerous, varied and diachronic. Their architecture gives rise to structures of very different types: passage tombs, gallery graves and related monuments, dolmens of various forms, hypogea with megalithic capstones, Andalusian and Portuguese tholos tombs, the Maltese temples, the Giants' tombs, the Balearic navetas, the tombs of the Maghreb, etc. Their purpose is generally funerary but can be also religious (Malta). Their chronology varies from case to case between Middle Neolithic and Iron Age (Maghreb). The approach to their study that is required must contextualize each of these phenomena in time, analyzing them within their particular chronological and cultural context, and must avoid combining them into a «megalithic» concept devoid of any meaning.

2. Beyond comparison - the diversity of megalith building

BRADLEY Richard - Emeritus Professor at the University of Reading, United Kingdom.

The paper concerns a field project which never went beyond the planning stage. The original object was to compare two groups of megalithic monuments which were built in adjacent areas and thought to be contemporary with one another. Its aim was to focus on their distinctive architecture and their place in the pattern of settlement.

That proved impossible as radiocarbon dating soon showed that they were constructed a millennium or more apart. As expected, one group was Neolithic, but the other dated from the Copper Age or even the Early Bronze Age. And yet there were obvious cross references between the later structures and the earlier ones. There were also contrasts. The plans of these structures were different from one another and so were the techniques of building them. One group was long lived and remained accessible for a considerable time. These monuments were sometimes reused, whilst the others were closed after a very short period of time.

There were striking differences between the human remains associated with both groups of monuments. Such structures showed different relationships with the dwellings and public buildings of the same dates. Their siting in the landscape differed too. This applied to the positions of settlements as documented by field survey, but it was also true of their use of natural features and their relationship to major rivers and the position of the sun.

Were they really part of the same phenomenon? Should the project have gone ahead once it was clear that we would not be comparing like with like? Or did this mean that megalithic architecture was so diverse that it had lost its distinctive identity? Are these problems peculiar to this particular study area in Scotland or are they shared with prehistorians working in other parts of Europe?

3. Megalithism... but again? For a theoretical approach to funerary monumentalism

GALLAY Alain - Emeritus Professor at the University of Genève, Switzerland

These theoretical issues are based on my studies of Saharan and Sahelian, as well as Ethiopian, burial features within an area ranging from Senegal to Sudan. The issue of funerary monumentalism is discussed in its broader sense by grouping together simple graves and monuments considered as being "megalithic". The theoretical framework refers to the work of Alain Testart and to the logicist approach developed by Jean-Claude Gardin. The distinction scenario-regularities-mechanisms makes it possible to structure this approach. The objective is centred on settlement history and the relationships between funerary monumentalism, populations and languages. The approach proposed here is based on ten rules.

1. A paradigmatic perspective: the "comparisons"

R1. Any reconstruction of the past has to be based on general, clearly defined concepts, which make it possible to make a political and social assessment of each society.

R2. Collecting the available local ethnographic data related to present-day peoples (test societies).

R3. Specifying the ethnographic data according to the linguistic context.

R4. A distinction is drawn between the notions of societies and of cultures. Societies derive from theoretical abstractions, i.e. from regularities, whereas cultures designate precise communities incorporated in time and space.

R5. Approaching the linguistic, social and political dynamics of the societies from a cladistic perspective (descent with modification).

2. A syntagmatic perspective: the local factual data

R6. Assessing the ethnohistorical knowledge, more particularly as regards types of slavery, a key field in the evolution of societies.

R7. Assessing the archaeological knowledge by collecting all the data yielded by the various archaeological sequences.

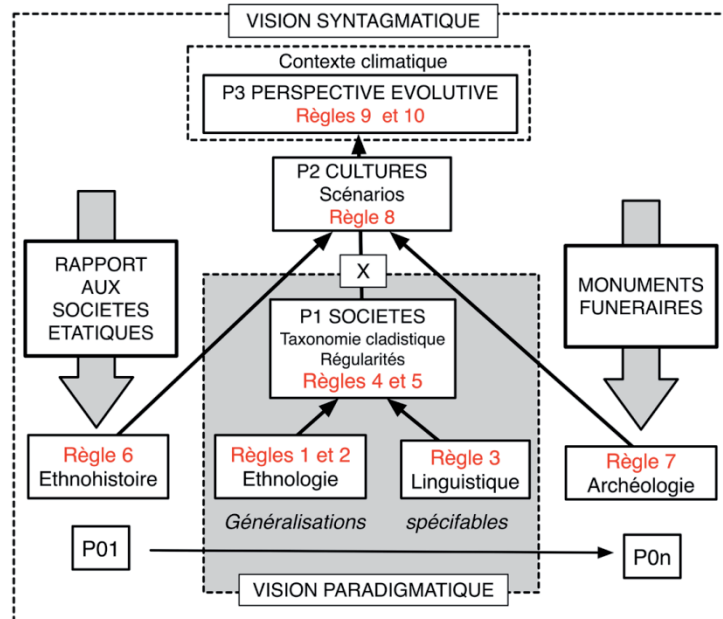
R8. Reconstructing the local scenarios for precise populations and cultures.

R9. Taking into account the local specificities from an overall evolutive perspective of a history of the societies.

R10. Confronting the scenarios with the variations of the climate context, a sensitive factor in these regions, which are periodically submitted to rainfall shortages.

From an evolutive perspective the monumentalism under study ranges between the societies of hunter-gatherers and state societies, but it is not possible to ignore the influence of these latter on the monumentalism under study.

The relationships, which can be established between linguistic families, genetic structures of the populations and monumental traditions, are emphasised.



Dolmen «angevin» from la Frébouchère (Vendée - France) (Photo credit Conservation des Musées de Vendée)

4. From Megalithic ruins to the Building site: Architectural projects, Symbolic or Technical systems, Action onto materials

LAPORTE Luc - Director of Research at CNRS - UMR 6566, France

Megaliths often appear in the landscape as very large stones simply erected pointing towards the sky, resting on the ground or carefully arranged within larger structures, but always defying weightlessness. The size or weight of the stones thus displaced strikes the imagination of our contemporaries, despite the somewhat rudimentary aspect that many, even today, implicitly attribute to such ruins. This concept of “primitivism”, born in the depths of the history of archaeological research, has long held back any truly detailed study of megalithic architectures. Over and beyond an undisputed heritage value, but too often perceived as petrified for eternity, megaliths are part of a dynamic perspective.

We will begin by clarifying how many megaliths owe much to the implementation of two distinct modes of action on matter, one consisting of shaping a raw material, the other preferring to appropriate a natural (even “supernatural”) entity. The use of very large, rough stones is most often apparent in this second category, at least insofar as it is not the result of economy of effort on the part of those who built them.

We will then illustrate the concept of the ‘architectural project’ applied to the study of megaliths. This will synthesise the notion of a conceptual project, intrinsically linked to the notion of «chaîne opératoire» dear to prehistorians, but also integrating all the actors involved in the process (such as social orders, symbolic constructs and the technical systems in which they are embedded), adopting an approach perhaps more common among historians or sociologists. The megaliths that are most prominent in the functioning of some of our contemporary societies are rarely named as such; elsewhere, too, their ostentatious character is sometimes well hidden.

Examples of archaeological studies of the megalithic building site will also be presented. That will be an opportunity to showcase new methods of study inspired by ‘buildings archaeology’, using the latest techniques of 3-dimensional digital reconstructions. It will be necessary to take into account the materials, the know-how and the stakeholders who have contributed to the realisation of such structures all composed partly of very large stones, though in different ways in each place. Shaping space, animating surfaces, constricting movement, mastering time, too, contribute to the materiality of the project.

Precisely identifying the context of each of the megaliths that were built in distinct forms and in so many places around the world, at different times, and by communities who often did not know each other, was the challenge accepted by archaeologists more than fifty years ago; often in response to diffusionist theories or to unfounded comparisons. Much remains to be done to document better the material culture or, for example, to reconstruct burial practices within funerary monuments; archaeometry today offers many opportunities for studying what these structures hold for us, and their environment. Megaliths offer indirect evidence of the ability of a group to work coordinate their work-effort, and were frequently invoked in debates about the political organization of societies present or past. On the other hand, the archaeological study of these architectures has been neglected for too long: it is that point we wish to emphasise here.

5. From the Throne of Stone to Funeral Chambers: Myths and Megaliths in Eastern Asia (Korea and Japan)

NESPOULOUS Laurent - Associate Professor at INALCO, France

MACÉ Francois - Emeritus Professor at INALCO, France

Contrary to European Megaliths, on which we know very little of the cultural context other than what is revealed by archaeological research, the Korean peninsula and the Japanese archipelago let us put some words on these otherwise quiet monuments. In Japan, particularly, the time gap between the first texts (Kojiki 712, Nihon shoki 720) and the end of the great funerary monuments of Protohistory is quite short.

Not only these texts shed some light on the construction of burial mounds of the Kofun period (middle of the 3rd century to the beginning of the 7th century), but they also, in their mythical dimension, give insights of the specific role of stone in the imaginary landscape of the elite of the time. This aspect will be the aim of the present contribution.

In the myths, *Iwa*, the rock, relate to the notion of what is unchanging, majestic, such as in *Iwa kura*, the “rock throne of the gods”, or in *Iwanaga Hime*, the “Princess wielder of immortality”.

Iwa is also found in association to death in the expression “to hide in the rock”, and relate to two different myths: the myth of the celestial cave where the sun disappears, and the myth of the land of Yomi, the land of death. Hence the interpretation consisting sometime in considering the stone corridor chambers appearing during the 5th century as a transposition of such myths. But another interpretation is also possible, grounded in both archaeological and textual documentations, and it points at the direction of the majestic and the opening to the unchanging, the immutable.

6. Megalithism genesis, the building of a cultural identity for a better circulation of goods

STEIMER Tara - Lecturer at the University of Genève, Switzerland

Megaliths are the work of communities capable of generating, managing and commercialising merchandise. Modern megalithic societies in Indonesia have played a role in international trade, by exchanging goods with the representative of state entities such as European merchants or the Indo-Buddhist kingdoms. We know, through witness accounts, that those ‘goods’ included slaves,

benzoin, patchouli, and sandalwood. For the Near and Middle-East megalithic societies of the 4th and 3rd millennium BC, several factors indicate that the pastoral economy combined with hunting and agriculture contributed to the provisioning of Mesopotamian and Egyptian state entities. Installed within marginal zones, these local societies controlled strategic and commercial crossroads by using the depth of the maritime or desert space to which they were perfectly adapted. Megalithism, in these contexts, function as a common cultural code. From a transactional point of view, adopting similar cultural codes from Nias to Sumba, from the Yemen to the Sinai, offered non-negligible advantages. Namely, by augmenting the trust capital inherent to communities adopting identical codes of conduct, the risks linked to exchanges were reduced. The construction of a common ostentatious cultural identity, such as megalithism, allowed these societies which developed essentially thanks to merchandise transactions to benefit from a clear augmentation of their financial and economic resources.

7. Megaliths, landscapes and skylscapes: the broader perspective

SCARRE Chris - Professor at Durham University, United Kingdom

Megalithic monuments have for many years drawn attention, both popular and scholarly, through their prominence and monumentality, yet they cannot be understood in isolation. They were situated within a wider landscape, one that was both natural and cultural. That wider landscape has particular relevance in terms of the settlement context within which those monuments were built. Megalithic monuments are a prominent feature of the archaeological record, but the settlements of the communities who built them are generally less prominent and less well understood. Landscapes also had particular significance as the source of the materials required for the construction of the monuments, in terms both of the megalithic blocks and other components of earth and stone. Yet beyond practical issues such as the availability of suitable building materials is the significance of place. Ethnography reminds us that many societies invest 'natural' features of land, sea and sky with cultural and cosmological meaning. Why did prehistoric societies choose to build where they did, and what significance can be accorded to those specific locations, to neighbouring landscape features, and to the movements of celestial bodies (sun, moon and stars) in that choice?



Standing Stones - Alignement du Moulin, St-Pierre-Quiberon (Morbihan - France) (photo credit J.-M. Large)

8. Megalithic art: funeral scenarios in Neolithic Europe

BUENO-RAMÍREZ Primitiva - Professor at the University of Alcalá de Henares, Spain

BALBÍN-BEHRMANN Rodrigo de - Emeritus Professor at the University of Alcalá de Henares, Spain

BARROSO-BERMEJO Rosa - Associated Professor at the University of Alcalá de Henares, Spain

The appearance of engravings in some of the European megaliths was a specific characteristic of the Atlantic façade cultural context. It was also understood as being of Breton origin. Recent discoveries contribute to reassess this hypothesis.

The study of decoration in Iberian megaliths provided evidence of reused stones. Together with the latter, new perspectives on the importance of decoration on these supports open unforeseen possibilities for direct C14 testing on organic pigments. These works highlight the relevance of the Iberian Peninsula as a focal point for the generation and/or dispersion of megalithic decorations. Said decorations would move along with the prestige goods commonly associated to megaliths (variscite, cinnabar, amber, ivory and later gold). Painted megaliths from northern and southern France, the Orkney islands, Germany or Russia display a growing variety of examples to interpret the value of symbols found on the megaliths' walls.

These ritual behaviours define funerary sceneries where the bodies of the ancestors lay. This suggests the existence of a very strict set of rules, maintenance and re-furbishing of the megalithic structures. The identification of pigments, recipes or engraving phases as well as the delimitation of anthropomorphic images and the role of mobile models (which would be used to make practice 'sketches' for larger stones) provide relevant but scarcely considered information to read the megalith's biography. New models on the relations shown by the symbols need to be verified against architectural, ritual and social data to enrich our understanding of the Death world throughout the European Neolithic.

Megaliths in America

9. Precolumbian megaliths of the caribbean: plazas and «Bateyes»

OLIVER José - Reader in Latin American Archaeology at the University College of London, United Kingdom

Cette présentation est d'abord un aperçu critique de l'état des connaissances archéologiques sur les constructions mégalithiques précolombiennes dans les îles Caraïbes. Les ouvrages mégalithiques sont limités aux îles Vierges, à Porto Rico, au sud-est d'Hispaniola et à l'île de Caicos, aux Bahamas. Il s'agit de monolithes qui délimitent des espaces civils et cérémoniels, y compris de grandes places quadrangulaires et des terrains de jeu de balle, rectangulaires et allongés, appelés « bateyes ». Batey (singulier) est un nom de langue Taïno de la famille Arawak qui désigne à la fois le jeu de balle et la balle en caoutchouc. Aujourd'hui, le terme s'étend à toute cour propre et clairement délimitée. L'apparition « soudaine » de bateyes (aux environs de 760 après JC) a été expliquée, pendant la majeure partie du XXe siècle, comme une diffusion en provenance d'Amérique centrale. Est-ce bien la réalité ? Ailleurs dans les Grandes Antilles, de telles enceintes civiles et cérémonielles (places, terrains de balle) ont été délimitées par la construction de longs talus en terre (camellones). Les deux types de sites sont des monuments (monumentum, latin: « quelque chose qui rappelle ») et sans doute monumentaux (monumentalis, Latin tardif / vieux français) dans le sens actuel d'une importance perçue (grandiose, quelle que soit leur taille) et de la taille physique / échelle (méga, grand), mais ne diffèrent que par leur mode de construction : terre vs pierre. La plus grande place d'Hispaniola (Maguana : 41,5 km²), ceinturée par un talus circulaire, délimite une aire environ 24 fois plus grande que n'importe laquelle des plus grandes cours délimitées par des mégalithes connues à Porto Rico, telles que Tibes ou Caguana. Tandis que les mégalithes de Porto Rico et des Îles Vierges délimitent des enceintes, à Hispaniola, des monolithes isolés marquent des points centraux ou clés (espagnol : hito ; latin : fictus ~ figere : 'poste fixe') situés à l'intérieur ou à proximité des places comme des bateyes. Les questions à résoudre sont de savoir pourquoi et dans quel(s) but(s) a-t-on délibérément choisi plutôt de la pierre, ou plutôt de la terre, pour délimiter de vastes enceintes civiles et cérémonielles (ayant des fonctions similaires) de la part de peuples partageant largement la même identité culturelle, sinon la même (« Tainoness »), et le même niveau d'organisation politique et religieuse ? Quelle est l'importance des mégalithes pour identifier des points de référence « centraux » (Hispaniola) par opposition à la « clôture » de places ou batey dans le paysage bâti (par exemple, Porto Rico) ? On fera valoir que l'utilisation de mégalithes pour délimiter ces zones plutôt que de « méga-constructions en terre », est intimement liée au symbolisme politico-religieux ; du fait de l'assemblage des figures gravés sur les monolithes (pétroglyphes) ; et du fait de différences dans la façon dont les êtres humains interagissent, et sont engagés, avec ces icônes ou personnages, eux-mêmes considérés comme des êtres sensibles (bien que non humains) imprégnés de vitalité (cemi). Les interprétations qui se dégagent du cas mégalithique antillais (par opposition aux méga-travaux de terrassement) sont ensuite comparées à d'autres cas sélectionnés dans le centre et le nord de l'Amérique du Sud. Cette dernière discussion vise à préciser les types d'approches analytiques et conceptuelles productives qui pourraient être déployées de manière transculturelle, afin de mieux comprendre la création et la variabilité des mégalithes dans l'histoire humaine.

10. The Rise of Monumentality at the Mouth of the Amazon

MOURA SALDANHA Joao Darcy de- Universidade de Sao Paulo, Brazil

Here I want to offer a long-term perspective of funerary structures from a specific region of the South America, the mouth of the Amazon river. The period comprises from the 3,000 BP, where the general rule seems to be the use of shallow pits with single burials accompanied by rare and scanty grave goods, until 1,500 BP, when death is associated with highly elaborated funerary urns deposited on earth, stone or wood monuments. The social and ritual dimensions of these changes will be regarded in the context of transformations and evolving of networks of relationships occurred from the beginning of the Formative Period until the contact with the Euro-

peans. It will be argued that encircling ditches, and megalithic circles containing funerary pits appear suddenly on the landscape from 1,100 BP signaling a significant change, with the initiating of a new labor investment that effectively marked cultural landscape for the future. I will argue that the people that built such funerary structures sought more elaborate forms of expression of identity and group affiliation and, for this reason, not only different types of monuments, but also stylistically hybrid ceramics, with high aesthetic appeal, start to dominate the archaeological landscape of the region.

11. Two megalithic ceremonial centres in the Atacama Desert (Chile)

PERLÈS Catherine- Emeritus Professor at University of Paris X - Nanterre, France.

NÚÑEZ Lautaro - Institute of Archaeology - Anthropology and Museum of San Pedro de Atacama, Chile

The Andes are well known for their vast ceremonial complexes dating to the Formative period. However, the two megalithic sites of Tulán-52 and Tulán-54, located in one of the most arid desert of the world, have no known equivalent. Tulán-52, dated to the late Archaic period, is a unique example in this area of a megalithic ceremonial centre erected by mobile hunter-gatherers. It can be considered as a prototype of Tulán-54, two millennia younger. Dated to the early Formative period, Tulán-54 exemplifies a local, independent development of camelid domestication horticulture. The architecture of this ceremonial centre is also exceptional, with its central semi-subterranean megalithic enclosure partitioned by radiating walls converging towards a central cell. Twenty-eight infants burials, possibly scarified and accompanied by rich deposits, were dug dig into the floor of the different cells. Above these foundation offerings, thick deposits with hearths, abundant camelid remains, lithics and ornaments accumulated until the monument was almost sealed, as was Tulán-52. Despite an important time gap between the two sites, the structural and functional analogies demonstrate they belong two a single tradition anchored in a neolithisation process more recent, but independent from the Central Andes. Despite contacts with both the Pacific coast and Amazonia, this tradition seemingly remained purely local.



San Agustín (Colombie) (photo credit C. Barbot)

Megaliths from Rapa Nui to Indonesia

12. Polynesian Megaliths: A Genealogical and Dynamic Architecture

CAUWE Nicolas - Acting Head of Department at the Royal Museums of Art and History of Brussels, Lecturer at the Catholic University of Louvain. Belgium

According to the recent studies, it appears that the megalithic architecture of Polynesia is devoted to an ancestor's cult, but forms also a series of complex centres for economic and social purposes. Nevertheless, modern excavations show too that these monuments have supported recurrent rebuilding's. On Easter Island, for example, it is established that the famous cult platforms (*ahu-moai*) had a life expectancy of two or three generations maximum. On another hand, the sites where they are erected were preserved in their sacred character for a long time. This permanence of the sacred places is indicated by regular reconstructions, but also by transfers of some elements of the former monument to the next one. The same tradition was recorded at Tahiti, thanks to the testimonies of the Islanders of the 19th century. Elsewhere, excavations show similar sequences of monuments. There is no question about a problem of durability of architectures. It seems that it was more significant to re-built than to preserve the religious architecture. Anyway, on Easter Island, the abandonment of the use of an *ahu* is organized with ceremonies: removals of some stones, deposits of dust of red scoria, plantings of trees... These regular reconstructions are clearly connected with an expression of the king's or chief's prestige, and a way to perpetuate the economic system —increase of the crafts, maintenance of the food production for the workmen... But it is also possible that the Polynesians had a perception of the succession of their megaliths as a genealogical structure, and not only for a local sequence, but as well for a whole country or between islands. At the end of the 18th century, Maori's of New Zealand had explained to Cook that the ancestor of their Marae was at Havai (Raiatea, French Polynesia) and was named Taputapuatea. Anyway, the actuality of this idea, this denotes a particular conception of the sacred architecture.

13. Traveling Stones and the Materiality of Permanence in the Papuan Gulf (Papua New Guinea) and Australia

BELL Joshua - Curator of Globalization, Acting Director of the National Anthropological Archives, Department of Anthropology, National Museum of Natural History of Washington, USA

DAVID Bruno - Professor, Monash Indigenous Studies Centre, Archaeology, Anthropology, History, Monash University, Clayton, Australia

URWIN Chris - Senior Curator of Archaeology, Museums Victoria, Melbourne, Australia

Within the watery world of the Papuan Gulf, communities traditionally organized themselves around monumental longhouses which formed the foci of ritual and political activities. Inside these structures ritual artforms made of wood, plant fibers, bone, feathers, natural pigments and barkcloth materialized an array of totemic ancestral forces understood to also reside in, and enchant the wider environment. Stone occupied an important role in this region's material culture – being both something not readily found locally (e.g., adzes were obtained through long-distance trade) and being relatively the most permanent material used. Communities' oral histories elaborate how both small and monumental stones were imbued with cosmological significance. Drawing on 19 years of ethnographic and archival research in the Papuan Gulf, in this presentation Joshua Bell charts out the different roles that stones have traditionally held. With a particular focus on the communities of the Purari Delta, Bell will show how stone played a key, but hitherto overlooked, role in the region's material and ritual complex. Bringing stones back into view not only enriches our understanding of a ritual complex that largely ceased after World War II, but also complicates received ideas about the region's cosmology and ontology.

In the second part of this presentation, Bruno David shows how a team of archaeologists, geomorphologists and associated researchers determined that large rock outcrops were carved out to create new forms of monumental architecture in northern Australia, to the south of the Papuan Gulf. Applying a range of specialist methods, they track back through time anthropically shifting shapes of monumental rock outcrops, with implications for how Indigenous communities organised and marked their worlds more than 10,000 years ago.

14. Monumental architecture in a World of Oceanic « small Islands (Micro-Nesia) »

SAND Christophe - Director of the Archaeological Institute of New-Caledonia and Pacific, France

Micronesia, encompassing most islands and archipelagos of the Northern Pacific, has a diversity and richness of monumental structures without real parallels elsewhere in Oceania. This presentation will present some of the most iconic and specific examples, scattered across a region settled from about 1500 BC onwards. The chronological approach that will be used, emphasizes that these structures were built in cultural contexts that have no evident ties between them, the emergence of monumental traditions being above all the result of internal socio-political dynamics. During the first millennium AD, the inhabitants of the large island of Babeldaob in Palau, created massive earthworks, leveling the summits of hills, terracing slopes, digging ditches sometimes over 4 meters deep, all leading to a near-total anthropogenic modification of thousands of hectares of landscape. In the Mariana Archipelago, from the same time-period on, was developed a tradition of carving large monumental columns topped by a cap, quarried exclusively with stone and shell tools. Positioned in a double alignment and reaching in some cases several meters high, these columns probably served as the bases for houses and wooden ceremonial structures. In the Caroline Islands during the second millennium AD real monumental towns were built, the emblematic example being Nan Madol, also called the "Venice of the Pacific". The site encompassed over 100

artificial platforms spread over a lagoon, with some walls 8 meters high and built through a complex placement of polygonal basaltic columns. Finally, I will discuss the late production of large stone-money discs used on the island of Yap, whose gigantic character was only facilitated by the introduction of metal by the first European explorers.

15. Rise and disappearance of Indonesian megaliths

STEIMER Tara - Lecturer at the University of Genève, Switzerland

The Indonesian megalithic phenomenon is contemporary to the great Hindu-Buddhist kingdoms of Sriwijaya, Majapahit and Malayu. It represents an exceptional cultural heritage, thanks to its reach. Indeed, monuments can be found in the forests, the mountains, the plateaus, and along the coastline. They were built by indigenous groups whose religious beliefs revolve around the cult of the ancestor and of Nature spirits. This shared religious base can be found from Bondowoso (Eastern Java) to Toba (Northern Sumatra), through Sukabumi, Kuningan, Lampung, Pasemah, Jambi and Minangkabau, to site but the most well studied regions. The resource and service networks developed by the indigenous groups with the Hindu-Buddhist kingdoms gave rise to prestige goods acquisition, leading in turn to social competition, an environment particularly favourable to the development of megalithic culture. The emergence of 'chiefs' probably preceded the apparition of megaliths, which are aimed at burying the deceased as well as honouring, commemorating and/or communicating with ancestors. These communities did not use writing; as such, these standing stones (uncarved or carved) marked the territory and served as a way to transmit the memory of Mankind from one generation to the next. In Java, Sumatra (centre and southern) and Sulawesi (centre Lore Lindu), megalithic monuments stopped being built as soon as the Hindu-Buddhist kingdoms lost their power. On the other hand, and following a similar logic, the use of megaliths developed later in the isles of Sumba, Flores, Nias, Northern Sumatra (Toba) and Center Sulawesi (Tanah Toraja) following contacts with European merchants. Despite massive conversions to Catholicism and Protestantism in these areas, the tradition remains alive to this day. These monuments bear witness to a period of exchange and trade that lead to the development of complex Indonesian societies, and this presentation will aim to shed light on the mechanisms of the emergence and disappearance of the megalithic phenomenon in this region.



Pâques Island (photo credit <http://www.weworldit.com/2017/02/19/lile-de-paques-entre-mythe-realite/>)

16. Megaliths of Sumatra and Nias: A Life Cycle Assessment

BONATZ Dominik - Professor at Freie Universität Berlin, Germany

Recent research on the megaliths of Sumatra has yielded important new insights into the diffusion of megalithic practices in the Indonesian archipelago. In various highland regions of the island, megaliths appear in the same moment when early state systems developed in the coastal areas and their hinterland. They significantly situate in those highland regions, which were of great importance for the coastal states as they provided the resources for international trade. Therefore, economic ties had a significant impact on the formation of differently structured societies. The research on the megaliths provides the key to reconstruct the dynamic development of the highland societies, shifting from hunters and gatherers to territorial settlers and confederated village communities.

In this paper, Sumatra is treated as case study for the significance of megaliths in their social context. It builds upon the rich archaeological data, which was collected during thirteen years of field research in the highlands of Sumatra. Nias, the small island west of Sumatra, which hosts an incredible number of megalithic sculptures and other stone buildings, will provide an additional piece of evidence of how megaliths came into life and how they interact with the society unless other symbols of power replace them.

A further perspective is on the meaning of the megaliths in their contemporary contexts. In the mostly Islamic but in some areas also Christian world of Sumatra and the adjacent island of Nias, the megalithic remains are differently perceived. They are partly neglected, many have been destroyed or are endangered to become destroyed, but in some regions, their tradition also has been transferred into new symbols of power and prestige such as Islamic and Christian graves. In this respect, Sumatra also provides a case study for the relevance megalithic remains and traditions play in modern societies.

17. The social context of the megalithic practice, an ethnoarchaeological approach: what we can learn from current megalith builders of Sumba (Indonesia)?

JEUNESSE Christian - Professor at the University of Strasbourg, France

The island of Sumba (Indonesia) is the last place in the world where people still use to build megalithic graves. The island shows a quite homogenous traditional material culture, but two clearly differentiated socio-political systems: on one hand segmented egalitarian, tribe-like societies, on the other stratified chiefdoms, both building megalithic tombs. It is thus an ideal spot to study the social and political backgrounds of the megalithic practice. Each of the two types of societies has its own way to deal with megaliths: small or medium-sized, poorly decorated monuments sheltering a funeral population including several generations in the egalitarian version, a larger variability of sizes and the presence of monumental, richly decorated “royal” dolmens with few deceased (often only the royal couple) in the stratified one. The study of current changes, which tend to minimize the differences between the two kinds of societies offers us, besides, the opportunity to observe how a megalithic system adapts itself to changing social and political conditions. In the third part of the conference, I’ll try to confront the “sumbanese” model(s) to the interpretations of the social context of the European Neolithic megalithic cultures that have been proposed in the main works devoted to this topic, especially those written by Colin Renfrew and Alain Gally.

18. Menhirs of Tana Toraja, Indonesia: A Preliminary Ethnoarchaeological Assessment

ADAMS Ron L. - Archaeological Investigations Northwest, Inc., USA

ROBIN Guillaume - Lecturer at University of Edinburgh, United Kingdom

Stone remains a prominent feature of the natural and cultural landscape of Tana Toraja, Indonesia, where outcropping basalt and limestone karst formations create a dramatic backdrop. In this context, the manipulation of stone is a significant aspect of ancient cultural traditions that persist to the present day. The quarrying and erection of large menhirs are part of this stone-working tradition that also includes the construction of rock-cut tombs and placement of smaller freestanding stone monuments. Menhirs are quarried, transported, and erected on the occasion of the largest type of funeral feast held in Tana Toraja, which can entail complex ritual practices, up to over a thousand guests, and the slaughter of what can be a staggering number of water buffaloes and pigs over a period lasting several days.

In this paper, we provide an overview of the practice of erecting stone menhirs in Tana Toraja and its social significance. Preliminary ethnoarchaeological documentation of Torajan menhirs provides insights into the methods, logistics, and social dynamics associated with this megalithic tradition. The quarrying and shaping of menhirs is done by specialized stone workers, while the transport and erection of the menhirs involves a larger labor force. The monumental plazas in which the menhirs are placed serve to commemorate the deceased ancestors and mark the prominence and wealth of the family groups with which they are associated. These spaces enshrined with megaliths also become venues for important components of ritual feasts. From a broader perspective, the enduring significance of these monuments is inseparable from the elaborate feasts in which they are embedded and for which they become an everlasting symbol. The link between the menhirs and the social entanglements of large feasts is consistent with megalithic practices observed elsewhere in the Indonesian archipelago, where monumental construction is often tied to elaborate ritual undertakings.



Ini Barisan Menhir Bori Kalimbuang di Toraja Utara (photo credit Rachman/detikTravel)

Megaliths from South-Eastern Asia and India

19. Northeast Indian Megalithic monuments and social structures

JAMIR Tiatoshi - Professor at Nagaland University, India

MÜLLER Johannes - Professor at Kiel University, Germany

Different megalithic landscapes of North East India offer rich sets of archaeological and ethno-archaeological information on social implications of megalith building activities in a comparative perspective. Case studies include recent megalith building traditions in Nagaland, Manipur, Meghalaya, Assam and Mizoram.

Both memorisation practices as displayed in standing stones, and ancestral practices as displayed in different burial traditions demonstrate that extensive communal and cooperative structures link different spheres of daily life. Feasting activities and the construction of megalithic monuments in the region of Northeast India represent a long-standing practice of both stratified and more egalitarian societies. An overview of the archaeological and historical background to living megalithic traditions of Northeast India is thus discussed in the present paper linking the results of different field works (including joined North East Indian/European projects) undertaken in the region.

20. Setting the wider frame:

A comparison of recent megalith building traditions in Sumba (Indonesia) and Nagaland (India)

WUNDERLICH Maria - Dr. from Kiel University, Germany

The importance of comparative strategies in archaeological research can be addressed by its possibilities to engage and contribute to current archaeological debates as its application can be used for diverse topics trying to understand past human behavior. Thus, these approaches hold a high potential especially for the study of complex phenomena, such as megalith building traditions. The topic of this talk will be focused on the potential of comparative ethnoarchaeological studies for the analysis of different forms of monumentality.

Among the few examples of recent megalith building activities are societies in Nagaland, North-East India and on the island of Sumba, Indonesia. Both case studies are diverse and variable within themselves, but also show striking parallels. The construction of megalithic monuments in Sumba is situated within contrary social and economic structures. Both communities with flat hierarchies and those with institutionalized hierarchies coexist, practicing economic strategies which are a set in strongly exclusive as well as communal frameworks. Communities with megalith building traditions in Nagaland are partly characterized by flat and permeable social hierarchies, which are at the same time strongly influenced by economic inequalities.

A comparison of both case studies shows that there are conformities with regard to the underlying social mechanisms and behavioral choices being highly influential for megalith building. This includes the importance of cooperative and collective structures, as well the application of communal strategies in Western Sumba and Nagaland. Nevertheless, the very basic character of the monuments (graves vs. commemorative standing stones) is very different, as well as the concrete importance and form of feasting activities. A structural comparison is setting a frame for a broad evaluation of similarities and dissimilarities of the mechanism influencing megalith building, thus being also a potential source of understanding for archaeological case studies.

21. Stone Jars of Northeast Indian and Southeast Asia: Problem and Prospect

THAKURIA Tilok - Assistant Professor at North-Eastern Hill University, India

One of the unique archaeological evidences in Assam is stone jars which has parallel only with the Southeast Asian countries. The jars are indeed the significant archaeological evidence to understand a past cultural behaviour that extended to in large geographical area in Asia. The paper will present work in stone jars in historical perspective and try to evaluate prospect for research on some jars based on previous works in Southeast Asia and recent work done by the present author in Assam.



Stone Jars from South-Eastern of Asia (photo credit Anu)

22. Megaliths and Megalithism in India, with Special Reference to Vidarbha region of Maharashtra, India

MOHANTY Rabi K. - Professor at Deccan College, Pune, India

There is evidence of human ritual burials of various types along with stone architecture pre-dating Early Iron Age Megalithic Monuments during Neolithic-Chalcolithic period across India around middle of third millennium BC. Megaliths and Megalithism became institutionalized and formed a prominent aspect of socio-economic-cultural expression beginning with Early Iron Age, around middle of second millennium BC. This continued till Historical Period at least in South India, where large numbers of sites are located. More than 2500 sites are known across India till recently and many areas remain unexplored. Megaliths here means burials using several types of material, a cultural expression, sometimes even without stone appendages. There are a variety of burial monuments found belonging sepulchral or non-sepulchral. They are stone circles, cairn circles, pit burials, urn and terracotta sarcophagi, anthropomorphs, menhirs, cist burials, stone alignments, dolmen and regional varieties like rock-cut burial chambers, *Topi-kal*, *Kudai-kal* and stone jars. These burials sometimes are located in several separated cemeteries, constructed either above-ground, underground or partially both within same site with distinct external and internal features, shapes, sizes and material used. They are permutations and combinations of architectural features even within a particular locality, site or within a region. Demographic profile of a site shows that it was not for all the deceased, showing again Gender and Age disparity. Sometimes burials are not noticed in a contemporary environmentally and economically differentially based society in the neighbourhood. Burials excavated often reveal remainders of several secondary partial skeletal remains. Grave goods found are of diverse nature basically belonging to daily household use, ornaments of both human and animal, craft specialization tools, implements of offence and defence, art and exotic objects. Generally megaliths do not comply in their entire architectural details, funerary content and accompanying grave goods and nature of placement of the deceased or secondary remains reflecting diverse ideas, economy and beliefs of a complex stratified society.

The spread, use and exploitation of the Iron Technology across India around 1000 BC., the socio-economic change reflected from their various craft specialization, subsistence systems, introduction of horse, exploitation of regional resources, neighbourhood relationships and organizations are reflected in their social status, burial customs, beliefs and complex socio-economic-cultural system. Probably the concept continued subsequently during historical period in a diminutive form like dedicated Hero-stones (*Virgals*). The Vidarbha region of Maharashtra (19° 26' and 21° 47' North and 75° 56' and 79° 23' East) is well known for large number of Megalithic Burial and Settlement sites. A number of excavations and intensive investigations provide encouraging prospect for methodical regional understanding.

23. Situating Megalithic Monuments in South India: Content and Context

RAJAN K. - Professor at the University of Pondicherry, India

Iron Age burial monuments, popularly known as megalithic monuments, are found in many parts of India but the largest concentration observed in south India. These sepulchral and commemorative monuments contain individual or collective, primary and secondary burials and they occur in several varieties, depending upon the landscape and resources available in their vicinity. We have a restricted understanding of the origin, growth, diffusion, authorship, chronology and material culture of these monuments due to limited explorations and excavations. One must remember that the term "Megalithic Culture" is not synonymous with the "Iron Age" and it purely connotes similarities in burial monuments. In south Indian context, the beginning or end of Iron Age/Early Historic is generally determined by the presence of a specific cultural element namely iron in the case of Iron Age and Brahmi script in the case of Early Historic. Besides the literary sources, the epigraphical data plays a decisive role in determining the beginning of Early Historic period in south India. The introduction of iron, the appearance of megalithic monuments and the availability of black-and-red ware are generally considered as the beginning of Iron Age. These cultural components have not come as a cultural package. The present evidence suggests that each cultural component has its own independent origin and emerged or evolved in south India in different times and synthesised as a homogenous cultural group in the course of time. The current consensus suggests that these monuments were built over an extremely long span of time—between 1500 BCE and 100 BCE. Only a limited number of radiocarbon dates are available directly from individual graves. Two AMS dates obtained from a grave at Porunthal, go back to 5th century BCE. These dates demonstrate the terminal point of the Iron Age and beginning of Early Historic in South India. Thus, each megalithic monument needs to be understood based on its content and context.

24. Megaliths in Sindh, Pakistan

ZULFIQAR ALI Kalhoro - Assistant Professor and Head Department of Development Studies, Pakistan

The subject of megaliths in Pakistan has not been so far probed in depth. Having spent several years in investigating Sindh's megalithic monuments, I have discovered a new, fascinating and complex subject and they apparently stretched over different periods of time. Megaliths in Pakistan have not yet received the academic attention of the anthropologist and archaeologists. Barring one or two archaeologists who briefly mentioned them in their articles, no research work has been done on the Pakistani megaliths. During my frequent excursions in Sindh province of Pakistan I discovered a large number of megaliths. During these field excursions several megalithic sites have been discovered in Khirthar, Bado, Lakhi mountain ranges and Sindh-Kohistan region of Sindh. During the frequent trips to these regions, I came across several prehistoric and Bronze Age settlement and rock art sites. Close to these sites have also been found megaliths. First the paper will describe different types of megaliths which have been found during field research. Secondly, the paper will describe distribution and location of megaliths in Sindh. Majority of the megalithic sites lie close to the

villages of Muslim castes who venerate some of these megaliths. Therefore, this paper will also discuss attitudes and folklore of local community towards megaliths.



Monuments Khasi (Northeast India and Bangladesh)

Megaliths from Eastern and Central Asia

25. The Manifold Megalithism of East Asia

NESPOULOUS Laurent - Associate Professor at INALCO, France

Megalithism, in East Asia, is a very broad spectrum phenomenon, be it from the chronological or the physical point of view. In this respect, one should rather consider the diversity of its contexts in order to grasp it properly. In China, from the Tibetan plateau to Manchuria, the edification of heavy stone built burials could appear as a relatively long recurring funeral practice, ranging from the middle of the 4th millennium BCE to the 2nd millennium BCE. However, one should not consider these practices as necessarily related to one to another. In the peninsula of Korea, although the chronological framework stretches on a smaller scale, the same could be said about the emergence of stone grave in the continuity of the Chinese Bronze Age in the Liaodong region and later funerary monuments, further south of the Peninsula, where burial is practiced under heavy slab of stone during the 1st millennium BCE, that extends even through the most western parts of Japan. As for the archipelago, it presents many cultural or funeral behaviors, ranging from Middle to Late Jōmon stone circles (3rd millennium to the end of 2nd millennium BCE) to the dolmen of Kyūshū (first half of the 1st millennium BCE) and to, much later yet starting around the middle of the 3rd to the beginning of the 7th Centuries, the new funeral culture of the Kofun period and its gigantic mounds and funeral stone chambers. All these phenomena, particularly in Japan, are not always discussed or even recognized as being part of Megalithism, but they should be part of a panorama aiming at cornering what actually makes a so-called megalith, beyond its literal, ancient meaning.

26. Megaliths in Japanese prehistoric and protohistoric times

KIKUCHI Yoshio - Professor at Fukushima University, Japan

Megaliths in the Japanese archipelago were generally short-lived and few in number, a unique feature of Japan that contrasts to those of China and the Korean Peninsula, most likely due to the frequency of mega-earthquakes.

Stone circles, exemplified by those like the ones at the Komakino Site in Aomori Prefecture, thought to be graves, were built in the Northern part of Honshu, the main Japanese island, and on the island of Hokkaido during the Late Jomon period (about 2000-1000BC). However, the stone sizes are much smaller than those at Neolithic sites such as Stonehenge in Europe. In the first half of Yayoi period (about 800-200BC), dolmen burial methods spread into Japan from the Korean Peninsula, though their range was confined to the northwest of Kyushu Island. In the Kofun period (about 200-700AD), a great many mounded tombs (Kofun) with stones in various parts were constructed throughout the Japanese archipelago, but the stone sizes (other than those used for coffins) again were generally small. A small number of passage graves (6th-7th century) featured massive stones, such as those in the Ishibutai tumulus in Nara Prefecture, some of which were thought to be about 100 tons. But the use of such huge stones declined rapidly with the beginning of the state in the latter half of the 7th century.

On the other hand, various forms of worship of huge natural stones existed in many places. There were a particularly large number of ritual sites featuring huge stones in the Kofun period, such as those found on Sacred Island of Okinoshima in Fukuoka Prefecture (a world heritage site), some of which can still be seen today. These indicate that there has been an awe and worship of huge natural stones all over the Japanese archipelago for a long time.

27. Dolmens on the Korean Peninsula

SON Joon-ho - Assistant Professor at Korea University, South Korea

Dolmen is one of the typical archaeological features in the Korean Bronze Age. Varieties of forms of dolmens are distributed, counting as many as 33,000, more than half of which, 19,000 are concentrated in the Jeon-nam prefecture. It appeared in the later part of the Early Bronze Age and became popular in the Late Bronze Age when an intensive rice agriculture introduced (BC 800-400). Except a few examples where a large-scale dolmen is located isolate, in most case they form groups with several tombs indicating that they are cemeteries for kin groups. Burial chambers are prepared both above and under ground, covered by a huge stone. In detail, they are divided into table type, go-table type, capstone type and stone-circle type. Among them, capstone type covers whole area of the Korean peninsula as a major type of dolmen in this area. Contrastingly, table type and go-table type are distributed in the north and south of the peninsula, respectively, and stone-circle type is only found in the Jeju island. Various kinds of artifacts have been found from the burial chambers such as lute shaped bronze daggers, bead ornaments, stone daggers and arrowheads, as well as red burnished pottery. These items are considered to be prestige goods, thus indicating social statuses of the deceased, and the societies that admire force of arms. Additionally, also around the burial chambers some artifacts have been found, both in whole shape and broken, presumably related to some ritual activities at or/and after the construction of the dolmens. Some of the dolmens seem to have different kinds of functions other than burials, such as alters, grave markers, signs for the area of specific groups, monument of agricultural societies. These functions should help the societies to strengthen their consolidation and cohesiveness. To summarize, dolmen is a representative archaeological feature not only in the Korean Bronze Age, but also in Korean archaeology itself, being paid attention from all over the world. Due to this significance, the Gochang, Hwasun and Ganghwa Dolmen Sites were registered as UNESCO world heritage in 2000, which motivated more conservation works on these sites.

28. Prehistoric Cairns and Dolmens in Manchuria, China

MIYAMOTO Kazuo - Professor at the Kyushu University, Japon

Stone grave structures and megaliths in Prehistoric China are distributed in Manchuria and the eastern Tibetan Plateau, as shown by the famous Model of the Crescent-Shaped Exchange Belt proposed by Tong Enzheng. However, these burial systems were introduced and developed individually between two areas during the foundation of the Northern Bronze culture.

Cairns were established independently in Manchuria during Neolithic times. One type of cairn existed in the Liaoxi district during the Hongshan culture period of the middle Neolithic, around 3500 BC, and another type of cairn existed in the Liaodong Peninsula during the Xiaozhushan Upper Layer culture period of the late Neolithic, around 2500 BC. In the case of the former, jade grave goods and the grave structure indicate a developed social stratification based on fertile agriculture. On the other hand, the latter suggests a concentrated grave distribution or lined grave distribution based on a clan system.

The burial system changed in both areas during the Bronze Age. In the Liaoxi district, stone cists or pit burials and stone chambers were used in graveyards. On the other hand, stone cists were distributed in the Liaodong district and northwestern Korean Peninsula. It is believed that stone cists under the surface gradually were constructed over the surface and stone cists stood up on the surface to become desk-type dolmens. However, the processes by which desk-type dolmens developed differed between the Liaodong Peninsula and inner Liaodong, despite being the same Liaodong district. Bigger dolmens developed from the desk-type dolmens which existed in the Liaodong Peninsula and northwestern Korean Peninsula. These dolmens were located on the top of hills or on geographical border lines as a symbol of ancestor worship among each social group. It is probable that cremated human bones were placed in the desk-type dolmens on a continual basis.



Ishibutai Kofun à Asuka, Nara Prefecture, Japon (photo credit CC BY 2.0)

29. Monuments in the mountains: the megalithic graves of western China

HEIN Anke - Associate Professor in Chinese Archaeology at the University of Oxford, United Kingdom

While the megaliths of Europe are world-famous and the dolmens of Korea, Japan, and Northeast China have received much scholarly attention, hardly anyone has ever heard of the stone-build graves of western China. Even scholars interested in the stone graves in this region tend to focus on the small stone-cist graves located underground which are common throughout much of the Chinese border region. This paper draws attention to the largely overlooked above-ground grave structures made of large stones that can be found chiefly in Southwest China.

The Southwestern megalithic graves are peculiar in many way, both within East Asia and in comparison to megalithic structures found world-wide. Other parts of East Asia (mostly Northeast China, Korea, Japan, and parts of the southeastern Chinese coast) are characterized by dolmens, but dolmens do not appear in Southwest China. Here, structures that could be described as passage graves, barrows, and structures similar to the Celtic cistvaens can be found. Cistvaen-like structures appear in various places on and along the eastern rim of the Tibetan Plateau, but the larger structures seem to be limited in distribution to the Anning River Valley and the surrounding mountains of southern Sichuan and northern Yunnan.

This paper will briefly introduce the stone-built graves of western China in general and will then focus on the only megalithic structures that can be found in the region, the megalithic graves of Southwest China. This region is extremely mountainous with lush greenery obstructing the view onto these monuments. The present paper will thus highlight the distribution of the graves in relation to their natural environment and to each other both spatially and in terms of usage patterns, thus suggesting possible connections as well as differences between them.

30. Adorned megaliths and funerary complexes at the Bronze Age in Mongolia

MAGAIL Jérôme - Museum of Prehistoric Anthropology, Monaco

Mongolia and southern Siberia are rich in funerary, ceremonial and iconographic remains of the earliest Bronze Age and Iron Age nomadic civilizations. A part of this archaeological heritage, in religious and funerary context, could be considered in the category of megaliths. Indeed, only in the Mongolian territory of 1.5 million km², about 1250 decorated stelae were registered by the Institute of History and Archeology of Ulaanbaatar. One of the steles of the site of Ulan Tolgoi reaches nearly 5m high. In the Late Bronze Age, the High Asia populations erected these granite menhirs, called «deer stones» because of their style Scytho-Siberian deer engravings. The typology of iconographies, similar on all these monuments, attests to rigorous rules applied on an area equivalent to three times France. This ornate megalithism is also associated with highly codified funeral complexes composed of individual aristocratic tombs in the form of large tumuli surrounded by hundreds of mounds each housing the deposit of a horse's head. These dry stone structures, sometimes occupying several hectares, respect the same type of arrangement hundreds of kilometers away. The Upper Tamir Valley, where the research of the Monaco-Mongolia Joint Archaeological Mission has focused, does not escape this culture. Located in the center of the country, this valley includes more than 800 tombs, 113 steles «deer stone» and a rock art site made up of more than a thousand petroglyphs. The very good preservation of the remains is linked to the uninterrupted practice of nomadism for more than 3000 years. Our communication will build on the work carried out for 13 years in the framework of archaeological cooperation between the Republic of Mongolia and the Principality of Monaco.

31. Megalithic traditions in early Bronze Age of Mongolian Altaï : Chemurchek (Qie'muerqieke) cultural phenomenon

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Not later than the 2700-2600 years BCE, in the western foothills of the Mongolian Altai (modern Xinjiang, Mongolian, Kazakhstan territories), funerary constructions begin to be erected, having no earlier analogies in the Eurasian steppes. Collective burials committed in huge stone boxes built of vertical stone slabs. Tombs were surrounded by stone and earthen cairns, overlapping each other like "onion skin". The same stone boxes with collective burials could be situated inside large rectangular stone fences. Another type of burial constructions were tombs surrounded by walls of the east-oriented corridor built of dry masonry. From the east, collective tombs in stone boxes were accompanied by ritual entrances — portals and stone anthropomorphic statue-menhirs. The statue-menhirs depicted a naked man with a crook and a weapon, with a girdle around his neck, with protruding contour of the face, with the eyes shown by protruding circles or disks. From the inside, the walls of the stone boxes were decorated with painted by red okhra geometric patterns, including rows of triangular scallops, oblique grid, concentric rhombuses, meanders.

Ritual rectangular stone fences with steles and portals from the east were discovered in the highest mountainous region of the Mongolian Altai. On the walls of these fences there are images of "deities" with parabolic bodies and antennas, but without a head. Apparently, this territory had a sacred significance. During the excavations of ritual fences, engraved anthropomorphic shale plates were found, similar to finds from the Iberian Peninsula.

In the burial structures, the most frequent finds are stone and earthen vessels. Some of the ceramics are vessels that represent the local traditions. However, the main part of the clay and stone vessels sharply differs in form and ornament from local prototypes: this ceramic/stone vessels tradition is characterized by spheroid, ellipsoid jars, and also flat bottom pots, slightly narrowing to the mouth and base. The most usual type of decoration looks like a horizontal line with triangular scallops stretched under a vessel's rim.

All of these features are presented in the context of Western European megalithic cultures (Western and Southern France, Iberian Peninsula, British Isles, Western Alps) of 4th - beginning 3rd mill. BCE. This applies to architecture, sculpture, rock arts, drawings, as well as form and ornament of vessels. In this regard, the complex of these features (“*Chemurchek cultural phenomenon*”) we attribute to the circle of megalithic traditions that have penetrated into the center of Asia as a result of the migration of some ancient Western European people (Tokharian-speaking?).



Deer Stones near Mörön, Hövsgöl Province, Mongolie (photo creditAloxe)

Megaliths from Caucasus, Middle East and the Arabian peninsula

32. The Bronze Age megaliths in the Caucasus:

development trajectory of the architecture and the funeral practice

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From the end of the IVth to the last quarter of the IInd millennium BC, the Western Caucasus was inhabited by cultures characterized by dolmens – a massive megalithic mortuary constructions. These structures are found distributed on both slopes of the Great Caucasus range and along the Black Sea coastline, from the Taman peninsula in the northwest to the Kolkhida depression in the southeast. At present, about 3,000 dolmens are documented. They are usually clustered in groups. The largest clusters consist of about 500 dolmens. The material complex and radiocarbon dates show that this type of dolmens appeared in the region as early as 3250 BC and co-existed with the Novosvobodnaya-type of the Maykop culture, located on the northern slope of the main Caucasus ridge. Stone and timber dolmen-like constructions with clay roofing related to socially unequal groups were in use for that period. The most important common feature of these dolmens is a porthole slab with relatively small (25-45 cm in diameter) entrance aperture. This entrance enabled access to the burial chamber for periodic interments, and is closed by a stone plug. Additional features for the Caucasian dolmens are early examples of regular ashlar masonry, walls, decorated with gypsum plaster coating and red pigments. The human remains found in the dolmens show their continued utilization as collective vaults for successive burials. There were several different types of burials, but in all cases, the bodies or defleshed bones of the dead were placed in the dolmen through the aperture on its stone façade. The number of burials varies from 1-2 to about 80. At an early evolutionary stage the dolmens of “novosvobodnaya” type with extremely rich grave-goods, related to the terminal period of the Maykop culture, have no signs of their continued usage as a collective crypt. Given that the full range of megaliths diversity and basic building innovations (flat stone slab foundation and inclined buttresses) were developed in the Western Caucasus, there is no strong reason to look for their origin out of it.

33. The megalithic and rock-cut monuments on the Balkans

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ILIEV Stanislav - Regional Museum of History-Haskovo

The megalithic monuments on the Balkans are attested mostly in the Southeastern parts, showing a great concentration in the Sakar, Strandzha, and Eastern Rhodopes Mountains (modern Bulgaria, Turkey and Greece). The most common members of this group are the dolmens, and the rock-cut tombs, while other types of megalithic and rock-cut monument – the chromlechs, menhirs, rock-cut graves, rock ladders or basins – are represented only with few examples. The rock-cut niches have a special place, being widely attested predominantly in the Eastern Rhodopes. The spatial distribution of the discussed types shows some regularities – while dolmens can be found in all three mountains, the rock-cut tombs and niches are generally restricted to the Eastern Rhodopes.

The megalithic monuments provoked wide discussion on their dating and function. Archaeological investigations carried out on various dolmens and rock-cut tombs provide clear data for their attribution to the Thracian culture, linking them undoubtedly to the funerary practices. Simultaneously, they contribute to clarifying the chronology of construction and use of the sites. The examined monuments produced pottery and small bronze finds – fibulae, rings, earrings and bracelets, but never weapons. Based on the date of the finds the use of the dolmens could be set within the Early Iron Age (11th – 6th c. BC). However, many of the dolmens show also materials from the Late Iron Age, speaking for their continuous use through the second half of the 1st millennium BC.

Archaeological studies are less successful concerning the other types of megalithic and rock-cut monuments. The lack of artifacts or any hints for dating of the rock-cut niches have prompted a debate on their chronological attribution or function. Observations on construction techniques and parallels are pointing again to their attribution to the Thracian culture.

34. At the intersection of continents – megalithism in Turkey

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The terms “megalith”, “megalithic” and “megalithism” are used in several different ways in Turkish archaeology. In one usage, these terms simply refer to buildings with ‘large stones’; even a brief internet search shows these terms applied to places as diverse as Neolithic Göbekli Tepe and Roman Baalbek. A more restricted usage refers to various structures of large undressed stones, with explicit reference to dolmens and menhirs. This usage reflects a French-inspired tradition of prehistoric archaeology in Turkey which began in the 1930s. The idea of a “megalithic culture” is often embedded within this usage.

The more technical usage remains ill-defined, and fails clearly to distinguish a megalithic monument from a tumulus or kurgan. Different researchers might identify the same monument as a dolmen, tumulus or kurgan. The choice of terms often reflects a difference of research agenda rather than a difference of physical structure. Turkey is commonly characterized as a geographical and cultural bridge between Europe and Asia. Turkey is also at a crossroads of archaeological research traditions oriented to western European prehistory, the classical world, and the (Turkic) steppes. The more technical concept of megalithism is linked only to the first of these traditions.

An examination of structures identified as “megalithic” in Turkey may help to disentangle these terminological ambiguities. Structures called dolmens are known primarily from three different zones around the geographical edges of Turkey, in the northeast (Kars), the south (Euphrates-Cilicia) and the northwest (Thrace). Standing stones in Turkey are most commonly reported from

Thrace, but they also occur in other parts of the country. Megalithic structures in Thrace date to the Iron Age, while in other two zones they are probably Late Chalcolithic / Early Bronze Age. The formal characteristics of dolmens typically (but not always) distinguished them from tumuli and kurgans.



Caucasus Megalith, Russia (photo credit depositphotos)

35. Megaliths of the Arabian Peninsula and the Levant

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7000 years ago, the Near East and Middle East regions witnessed the emergence of new funerary rites. After burying their dead directly in the earth, in jars, or in ossuary, a shift was made towards inhumation inside megalithic tombs. This change can be observed in the societies living in the Akkar Mountains, the Jaulan plateau, the Jordan River valley, the Jawf, the Hadramawt, and the Dhofar, to cite Lebanon, but also Syria, Jordan, Saudi Arabia, Yemen, and Oman. These monuments, called dolmens or tower-tombs, are elevated constructions comprised of a chamber delimited by more or less regular megalithic rock slabs, with a partial or complete tumulus cover.

Recent systematic prospections conducted in the region of Homs, in the Leja, the Harra, and east of Jafr renewed our perspective on the distribution of megalithic tombs in the Levant. Until the 2000s, it was thought that the megalithic necropolises were distributed alongside a narrow north-south axis, following the Rift ditch from the middle of the Dead Sea to Aleppo, alongside the Jordan, the Litani, and the Oronte rivers. Today, we know that the societies practicing megalithism occupied very different landscapes, stretched from the forests of the Syrian Jaulan to the steppe region of the Sabatayn desert in Yemen. The determining conditions for their settlement appear to be the presence of grazing land for pastoralism or ideal for olive, fig, palm trees, the presence of flint, lapis lazuli, obsidian, and salt mines, and of course the availability of rock slabs suitable to the construction of the tombs and, sometimes, houses. Other than this access to resources, megalithic societies seem to have favoured communication axes that facilitated economical exchanges with the urban populations of the shorelines or of major rivers. These megalithic groups, which remain relatively unknown to the general public, therefore played a major role in the formation of oriental societies.

36. Untangling megalith typologies and chronologies in the Levant

FRASER James - Senior Curator at Nicholson Museum, Sydney, Australia

Archaeological landscapes in the Levant (Syria, Lebanon, Jordan, Israel, Palestine and southern Turkey) contain a miscellany of off-site features that often incorporate megalithic blocks. To 19th century explorers, these features recalled megalithic monuments in Europe, and they used European terms such as cromlechs and dolmens to classify them. In so doing, early scholars embedded within the very lexicon they used the inherent assumption that megalithic monuments in Europe derived from the same cultural origins as megaliths in the Levant. This assumption cast a long shadow over the development of megalithic studies in the Levant for the next 150 years, and its principle tenets still resonate in models that envisage a “megalithic phenomenon” that spanned the Taurus mountains to the Yemeni coast in the 4th and 3rd millennia BCE.

In contrast, recent approaches have attempted to contextualize megaliths within local cultural and topographic landscapes. However, such studies have met with limited success, becoming mired in poorly defined megalith typologies that have obscured rather than clarified the boundaries between different megalithic traditions. When megalithic features are precisely defined morphologically, chronologically and regionally, then they can be placed within their true cultural contexts. Accordingly, new research has helped articulate cairn-tomb traditions in central Syria, tower tombs in the basalt Harra steppe, and a trilithon dolmen tradition in particular geological zones in the escarpment of the Jordan Rift Valley.

37. The tower tombs of protohistoric Arabia

MUNOZ Olivia - Researcher at CNRS, UMR 7041, Paris, France

Still visible by tens of thousands in the landscape today, the «tower tombs» are emblematic monuments of the protohistory of Arabia. Built of dry stone, located at high points in the landscape, they are generally grouped into necropolises that can contain up to hundreds of tombs. Considered as markers of resources and territories, they seem to mark all areas occupied by human groups.

An overview of the research carried out on these tombs will provide an insight into the different approaches envisaged for their study. The author will then present in particular the monuments known in Eastern Arabia (United Arab Emirates and Sultanate of Oman) under the name of «Hafit» tombs, which are attributed to the early Bronze Age (3100-2700 BC). The review of the diversity of architectural forms, the diversity of the furnishings and the bio-anthropological data delivered by the human remains they contain will provide elements for analyzing this funerary phenomenon in the light of the previous period. Finally, examples from two coastal sites - Shiyā and Ra's al-Jinz (Oman) - will illustrate the contribution of 3D modelling technologies to the analysis of these tombs and their management over time.



Tower tomb at Jebel Ruwaik, Yémen (photo credit T. Steimer)

Megaliths from sub-Saharan Africa

38. Eastern Africa: 5 millenium of megalithism

CROS Jean-Paul - Associated Arscan, UMR 7041, Equipe d'Ethnologie préhistorique, France

East Africa displays a great diversity in geography and climate, and in its megalithic monuments, both in their antiquity and duration and in their architectural form. In Djibouti, French teams have for several decades been highlighting a funerary monumentality that appears in the first half of the 3rd millennium BCE on the shores of the Ghoubet – crescent-shaped mounds – and in the Gobaad basin - platform cairns. Our focus, however, will be on Ethiopia and Somaliland.

In Somaliland, the excavation of a flat-topped tumulus near the Laas Geel rock paintings offered no dating evidence, but there is a great variety of monuments in this area: mounds of various types, monuments with stelae, burials «under boulders», and a more unusual type, circular monuments with rings of standing stones. These last could be the oldest, but none have been excavated so far.

In Ethiopia there are small monuments of «dolmen» type dated to the second millennium BCE at Harar in the east of the country, and more recent mounds covering multi-compartment megalithic chambers (VII/XVth century CE). In the north, the region of Axum from the end of the 1st millennium BCE is rich in cemeteries with graves marked by standing stones. Around the IVth century CE, huge monoliths associated with royal tombs were erected. Finally, in the south of the country, tens of thousands of stelae, mostly phallic but including other types, dot the slopes of the Rift. The oldest of them seem not to have been erected before the middle of the 1st millennium CE.

We will also discuss the possible causes for the early origin of funerary monumentality in certain areas, which seems to appear among populations of herders or herder/farmers of semi-nomadic status.

39. Ng'amoratunga pillar sites of northwest Kenya

HILDEBRAND Elisabeth - Associate Professor at Stony Brook University, New York, USA

In northwest Kenya, at least six megalithic, monumental sites lie near the paleoshores of Lake Turkana. Today, local Turkana herders call the sites ng'amoratunga or 'stone people', referring to a legend whereby people were turned to stone as punishment for mocking a spirit. 'Pillar sites', as they are called by archaeologists, are distinguished by columnar basalt or sandstone pieces up to 2 m in height emplaced in constructed platforms up to 30 m in diameter; some sites have additional cairns and stone circles. Recent research by the Later Prehistory of West Turkana research team has clarified the chronology and context for pillar site construction, and explored aspects of variation in architecture and contents. Pillar site construction and use ~5000-4000 years ago coincides chronologically with the advent of pastoralism in northwest Kenya, and the dramatic shrinking of Lake Turkana as the African Humid Period came to an end. This suggests that pillar sites served as fixed landmarks on a changing physical landscape, and their construction and use may have helped solidify social networks in a changing socioeconomic landscape. Human remains have been found at most of the pillar sites, and excavations at Lothagam North Pillar Site have revealed a >100 m² mortuary cavity containing an estimated minimum of 580 burials. Although most of the sites appear to have a mortuary component, inter-site comparisons show substantial variation in both architectural form and portable artifacts. This suggests that even as early pastoralists around Lake Turkana shared the idea of mortuary monuments, local groups may have developed specific forms of commemorative expression.

40. Megaliths in Madagascar

PARKER-PEARSON Mike - Professor of British Later Prehistory at University College of London, United Kingdom

Madagascar has a long and rich history of megalith-building which continues as a living tradition today. Primarily associated with funerary monuments, megalithic monuments generally comprise tombs and standing stones. Amidst Madagascar's rich cultural diversity, tombs in certain regions are constructed for collective burial whereas in others they are designed for single burial. This correlates to a large degree with different ethnicities and also with varying subsistence strategies. Collective megalithic tombs are particularly associated with rice-cultivators of the highlands, for example, whilst single tombs are more of a feature of cattle pastoralists in the south and west of Madagascar. Knowledge of megalithic origins or of long-term chronologies into the distant past are not very developed because of tombs' sacred status as abodes of the ancestors, though the tradition probably dates back over 500 years in certain parts of the island. Much more is known about the recent history and present-day practices of megalith building and use, thanks to recording of oral histories, ethnographic studies and archaeological surveys. This paper will try to summarise something of the extraordinary diversity of megalithic traditions amongst the Malagasy. It will also examine some of the reasons why megalith-building developed at particular times in particular locales and why it took the form that it did with reference to collective and singular burial.

Reference: Parker Pearson, M. and Regnier, D. 2018. Collective and single burial in Madagascar. In A. Schmitt, S. Déderix and I. Crevecoeur (eds) *Gathered in Death: archaeological and ethnological perspectives on collective burial and social organisation*. Louvain : Presses universitaires de Louvain. 41-62.



Chelba Tutitti, Ethiopia (photo credit R. Joussaume)

41. Megaliths from Senegal and Gambia in their regional context

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Senegambian megaliths (7th-15th century) are characterized by the presence of standing stones, called frontal stones, erected to the east of funerary monuments whose ruins take various forms in the landscape: for example, circles of standing stones or mounds covered by small stones. Some 17,000 monuments called 'megalithic' are spread over an area of 30,000 square kilometres; they correspond to the ruins, sometimes sealed beneath a mound, of platforms measuring 3 to 9 metres in diameter and ringed by standing stones or dry stone walls. Even today, among the Bassaris, stone platforms support a roof –symbolizing the house of the dead – and cover a burial pit widening at the base to receive the body of the deceased. Other stones were erected to the east of larger burial pits, covered by a mound, which have been compared to contemporary funerary structures of the Sereers.

The burial practices associated with these megalithic monuments are also varied: individual or multiple burials, exposure of bodies on the ground surface covered by the monumental structure, secondary deposits of human bones in various forms (including deposits of large baskets containing human remains, sometimes in primary position), and even some reference to cremations. The term 'funerary' must be nuanced in a cultural context where it often covers three stages separated in time: burial in the tomb, the "great funeral", and the "ancestralization" of the deceased. Identifying places associated with "the dead" must also be nuanced in societies where certain rites of passage are sometimes thought of as rebirths. The question of whether there are accompanying dead has also been raised. The status of the archaeological assemblages should be discussed in relation to these different parameters. Most deposits of carinated ceramics, for example - classically associated with Senegambian megalithic monuments – are now being attributed to commemorative practices.

This current state of knowledge, which has been revitalized during the last 10 years, will be discussed in the much broader context of funerary practices over two millennia in West Africa; funerary platforms lined with standing stones are attested in Liberia, Sierra Leone and Guinea; standing stones associated with other forms of mound as far away as the Niger Delta in Mali. Gradually, the megaliths of Senegal and the Gambia – classified as World Heritage through comparisons with Stonehenge – are regaining the place that they have always held on the soil of the African continent.

42. Megaliths of Nigeria: The Footprints of Ancient Civilisation

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SULE Abubakar S. - Senior Lecturer at the Ahmadu Bello University

The existence of humans in Nigeria is still one of the most important unsolved questions in Nigerian Paleolithic research. The surest way to confirm human habitation in any region of the world, at any time in prehistory, is to "find unquestionable artifacts, in unquestionable primary geological context with unquestionable absolute dates" Charles T Keally (1993). Most Nigerian civilizations have been revealed during the past fifty years of excavation but the prehistoric megaliths are rarely studied. The recent results of a trans-discipline field research conducted on ancient rock heritage in Nigeria, found strong evidence that seemed to suggest ancient people of Nigeria had puzzling megaliths that had baffled early anthropologists and historians. Some of them were documented by Charles Partridge (1903), P.A. Talbot (1926) and Philip Allison (1963), 'The Valleys of the Niger Archaeological Research' in the 1990s, and the recent field researchers from Trust for African Rock Art TARA Nairobi, The Factum Foundation for Digital Technology in Conservation, Spain and the Nigerian counterparts. Nigeria has hundreds of sacred megaliths attracting tourism. The validity of the megaliths, in terms of the dates, physical, chemical, geological and theoretical studies that might provide confirmation are yet to be conducted. In the absence of adequate information from such studies, this paper attempts a new theoretical approach; a cultural anthropological interpretation of the hard evidence, to see if that evidence gives a believable picture of the early humans and their lifeways in Nigeria, the paper attempts to discuss the megaliths existence, routes, distribution, functions in the various parts of Nigeria. Specific evidence with some selected examples will be discussed in the north east, south west, south east and specifically the Cross River monoliths.

43. Why Megaliths in sub-Saharan Africa? Some Thoughts on Monumentality and Materiality

INSOLL Timothy - Professor of Islamic Studies at the University of Exeter, United Kingdom

Stone monuments, and standing stones in particular, have been the focus of sustained scholarly attention in parts of sub-Saharan Africa. Less thought has been given to the reasons for erecting them, and especially, in comparison to other areas of the world, on concepts of stone materiality. These were potentially very varied and could include perceptions of rarity, exoticism, anomaly,

hardness, aesthetics, and representational qualities. Stone monumentality and megalith construction and use was both formed by and connected with such thinking and this will be explored through considering the recurrent linkage between standing stones and the dead, how megaliths could also connect with ancestry, and how they also functioned for the living, as well as sometimes having utilitarian roles that a ritually focused interpretation might overlook. Examples will be discussed from a range of different archaeological and ethnographic contexts reflecting their widespread distribution in Africa south of the Sahara. Future, as yet neglected areas of possible research in sub-Saharan Africa on standing stones will also be highlighted; quarrying and selection, colour, their relationship with their landscape settings. Increasingly, as research on sub-Saharan African megaliths expands and data improves, variability rather than homogeneity appears to be key in thinking about their function and meaning.



Stone circles, Wassu, Gambia (photo credit P. van der Stuijs)

Megaliths from Northern Africa and Western Europe

44. Central and Eastern Sahara monumentalisms and funeral rites

GALLAY Alain - Emeritus Professor from the University of Geneva, Switzerland

This presentation adopts the chronology of the rock art styles developed for the central Sahara, Hoggar, Tassili-n-Ajjer, Akukas and Messak. Despite its inaccuracies this sequence is the best available reference when it comes to organising the information available on the development of burial rites on a large scale, the exceptions being the eastern Sahara and the Nabta Playa region.

The analysis concentrates on the history of the peoples belonging to the two language families present – the Nilo-Saharan languages and the Afro-Asiatic languages, including the Berber branch – and their relationships with the burial rites. All the graves contain single burials.

Research started mainly in the 1950s and peaked in the 1990s-2000s. From the 2010s on field research ceased because of the lack of security in the area, but synthetic work continued.

1. *The Nabta Playa reference*: During the Early Neolithic 1 (8850-7850 BCE) the Nabta Playa sites in the Egyptian desert are a significant benchmark for assessing the history of the emergence and diffusion of cattle in the Sahara. The Final Neolithic (5550-4250 BCE) provides a distinct number of so-called “megalithic” monuments, an exceptional case in the area under study. The sequence also makes it possible to study the issue of the emergence of Nilo-Saharan languages.
2. *Pre-figurative phase of the Early Holocene (>9000-6200 BCE)*: The hunter-gatherer societies are familiar with pottery. The tombs are pit graves containing a single inhumation deposited in a crouched or flexed position (Amekni in the Hoggar Mountains, the early cemetery of Gobero in Niger). It is not possible to establish a link between these human groups and the present languages.
3. *Round Heads phase (6200-5300 BCE)*: The Round Heads phase provides subtle indications of initial stock breeding. This assemblage develops in relationship with peoples of Nilo-Saharan origin. The graves are single burials set within pits (Iwelen in Niger).
4. *Early Bovidian phase with “Negroid” Figures (5300-4000 BCE)*: Rock art diversifies with the Ozan-Ehara and Messak styles. The graves are set within pits (upper cemetery of Gobero). Distinct monuments were apparently used for exclusively ritual purposes (Messak). Animal burials likewise accompany the single burials set under small mounds (Adrar Bous). This type of monumentalism is invariably associated with Nilo-Saharan peoples.
5. *Final Bovidian phase with “Europoid” Figures (4000-2200 BCE)*: Both the Tazina style and the Iheren-Talilahi style with its variants mark the first expansion of Berber peoples to the Sahara. Various forms of burial mounds including single graves are associated with these peoples whereas pit graves and cattle burials characteristic of Nilo-Saharan peoples persist in the southern part (Chin Tafidet, Niger).
6. *Early Caballine phase (2200-1000 BCE)*: The emergence of horses and chariots amongst the Berber peoples triggered a diversification of the monuments stemming from the preceding phase whereas the Nilo-Saharan peoples of the southern part maintained their burial traditions.
7. *Final Caballine phase (1000 BCE-0)*: The emergence of the pre-state formation of the Garamantes centred on an area now known as Fazzan, in close relationship with the antique, first Punic and then Roman Mediterranean, is linked with the trans-Saharan trade of gold and slaves. The influence of the Mediterranean modifies the Berber funerary monumentalism in this area while traditional features persist.
8. *Camelline phase (0-1000 CE)*: The appearance of dromedaries is associated with the last developments of Berber monumentalism – for the first time associated with extended burials– prior to its disappearance under the impact of Islam. This period is associated with the individualisation of the Touareg people.

45. Neolithic monuments with standing stones of northwest Sahara

VERNET Robert - Associated Mauritanian Institute of Scientific Research, Paris, France

In the northwest of the Sahara, most of the countless “standing stones” - an as neutral as possible term – seem to be associated to funeral monuments. But, the described and very seldom excavated ones are so few that it is difficult to be more precise. This type of monolithic structures is present in the whole region, from Atlantic Ocean to western Algerian Sahara, and from Saharan Atlas to Mauritanian Adrar, once lithic raw material exists. The description of these buildings is inevitably brief, because diversity seems to be their main characteristic: raising stone, isolated or in a group; monolith, stuck in the ground or erected at the top of a tumulus; monument, funeral or not, only made of standing stones; engraved pillars... Their orientation is definitely meaningful, but, as long as new scientific works will not be carried out, we shall be left with disparate lists, mainly based on poorly located and without context illustrations, whereas the context – whether geographic, historical, cultural or archeological – is outstandingly varied. The chronology, starting at the Neolithic age, is not reliable. Moreover, the building of this type of monuments persists during the historic period, as the Saharan nomads sometimes go on raising stones to enhance the tombs. Beyond the above reserves, in particular about diversity and distribution, it is established that the northwest Sahara, during Neolithic and beginning of History, shows an undoubted homogeneity: a Berber world rules this boundless region, until the middle of the second millennium CE.

46. The megalithic necropolises of the Eastern Magrib

SANMARTÍ Joan - Professor Catedràtic of Archaeology at Universitat de Barcelona

From the early colonial era, the existence in the Eastern Maghreb of a very large number of funerary monuments with characteristics close to those of European dolmens –in particular because they are formed of quadrangular burial chambers covered with megalithic slabs–, has been recognized. They are extremely numerous in the Tunisian High-Tell and in the center-west of Algeria. They are usually grouped into large clusters (called «megalithic necropolises»), consisting of hundreds or even thousands of specimens.

The number and visibility of these monuments have very often caused looting. Many were excavated between the mid-nineteenth and the mid-twentieth century, according to several methodologies, often inappropriate, except in the case of Bou Nouara (Algeria), explored by Gabriel Camps. This great researcher correctly fixed the chronology of these monuments between a very advanced moment of the Bronze Age and the Iron Age, and demonstrated that they did not last under the Roman Empire.

New research developed over the last twenty years has made it possible to improve the typology of these monuments and to date a certain number of specimens in the central centuries of the first millennium. It has also provided valuable information on ritual aspects and allowed for the observation of size hierarchies and spatial patterns of distribution likely indicative of a stratified society.



Elles Megaliths, Tunisia (photo credit Pradigue)

47. Megaliths from North and Northwest France, Britain and Ireland

SCARRE Chris - Professor at Durham University, United Kingdom

LAPORTE Luc - Director of Research at CNRS - UMR 6566, France

The megalithic monuments of Britain and Ireland provide a case study in the cultural interactions between a continental mainland and an offshore archipelago. The narrow seas separating them from northern and northwestern France had a major impact on the timing and development of megalithic monuments in those islands.

Northern and eastern France saw an early development of Neolithic monumentality in the Passy-type long mounds which appeared during the second quarter of the 5th millennium BC. The Passy type mounds are non-megalithic, however, and the earliest truly megalithic monuments were built in the Atlantic zone of northwestern France in the middle centuries of the 5th millennium BC. They include both burial chambers beneath cairns or mounds and standing stones either singly or arranged in linear or curvilinear settings, such as the famous Carnac stone rows. An initial phase of simple burial chambers, either closed or accessible via a removable side slab, was followed c.4300 BC by the development of the passage tomb.

Britain and Ireland remained the preserve of Mesolithic hunter-gatherer communities until the arrival of Neolithic features (pottery, domesticates, polished stone) brought probably by Neolithic colonists c.4000 BC. The first Neolithic monuments of Britain drew culturally on their north French antecedents but did not copy them exactly; the concepts and features of megalithic monumentality introduced from the continent were transformed to create new insular traditions. Neolithic societies of western Britain and Ireland developed specific types of funerary monument (portal dolmens, court cairns) followed towards the end of the 4th millennium BC by a florescence of megalithic art in the passage tombs of the Boyne valley in Ireland.

Late 4th millennium megalithic traditions in northern France followed a very different pattern with the appearance of gallery graves (*allées sépulcrales*, *sépultures à entrée latérale*) with elongated chamber perhaps modelled on contemporary house forms. These tomb types continued to be built into the 3rd millennium BC but have no echo or parallel in Britain or Ireland, where the primary focus switched instead to stone circles and related earthen monuments such as henges. The most famous of these stone circles, although altogether exceptional in its elaboration, is Stonehenge.

48. Early Monumentality and Social Differentiation of the northern Funnel Beaker Societies

SJÖGREN Karl-Göran - Researcher at the University of Gothenburg, Sweden

MÜLLER Johannes - Professor at Kiel University, Germany

Within different projects interdisciplinary working groups have investigated the Neolithic on the Northern European Plain, in respect to a complex topic: How is the relation between monumental buildings and social structures and developments especially 3800-2800 BCE? The close interlinkage of natural and life scientists, and prehistoric archaeologists allowed a new view on triggers and consequences of Neolithic monumentality, mobility and social organisation in southern Scandinavia and northern Germany.

Within these northern Neolithic societies both collective and cooperative behavior as well as the pronunciation of individual agencies are visible. Different architecture was used for the display of different social capabilities and in this sense megalith constructions are a reflection of the need to express stability in the relation between individuals and society, humans and nature. A comparison of different megalithic landscapes from Falbygden to Holstein expresses both differences and similarities of “monumental” structures and agencies.



Tumulus of Petit-Mont, Arzon, France (photo credit P. Birocheau)

Oldest megaliths known in the state of art

49. Göbekli Tepe World Heritage Site (WHS), Şanlıurfa: Changing Perspectives

CLARE Lee - Research Lecturer at German Archaeological Institute, Germany

Göbekli Tepe (Şanlıurfa province, SE-Turkey) was initially discovered in the early 1960s, though ongoing fieldwork only commenced in the mid-1990s. Since 2009, the site has been the focus of a long-term funding project of the German Research Foundation, entitled “The Early Holocene Societies of Upper Mesopotamia and their subsistence”. Last year (2018) saw the inscription of Göbekli Tepe on the prestigious UNESCO World Heritage List, it being the eighteenth Turkish property to be inscribed.

Initial insights from Göbekli Tepe sent tremors through the academic community. Here was a site which appeared not to be an ordinary settlement with some cultic buildings, but instead a primary religious site on a mountaintop. According to studies of lithic assemblages and available radiocarbon ages, the site was occupied for a significant (~1500 year) time span from the mid-10th to the end of the 9th-millennium calBC. However, the most remarkable thing about Göbekli Tepe was not only its great antiquity but the realisation that the monumental buildings were constructed by a hunter-gatherer population, previously deemed incapable of achieving such feats. Furthermore, the site appeared to lack the fundamental prerequisites for domestic occupations. At the time, its excavator, Klaus Schmidt, proposed that the existence of such ritual sites could have encouraged, if not triggered, the domestication of wild plant and animal species in the region.

Perhaps not surprisingly, in the course of the last two and a half decades, a paradigm has unfolded around Göbekli Tepe that is especially evident in the ubiquitous references to the “world’s first temples”. Meanwhile, however, concerns raised about this interpretation and the status of Göbekli Tepe as a purely ritual site are gaining momentum, particularly in the light of more recent excavations (since 2014) and through the re-examination of earlier excavation records. This paper will provide a synthesis of current research at Göbekli Tepe, shedding light on newly emerging hypotheses around the site.

50. Larger than life: Monumentality of the landscape and nonhuman imagery at Lepenski Vir

BORIĆ Dušan - Lecturer in Archaeology at Cardiff University, United Kingdom

With the title of the first publication about Lepenski Vir in English—Europe’s First Monumental Sculpture: New Discoveries at Lepenski Vir—the excavator of the site, Srejović (1972), hinted at the importance of Lepenski Vir as the earliest place on European soil where artworks made from durable material (sandstone) might have achieved monumental significance and connotations. Surprisingly, the idea of the monumental character of the imagery of Lepenski Vir has been elaborated further neither by the excavator nor others who wrote about the site and its most recognizable features. By revisiting the evidence, this paper looks at the ecology of relations between humans and nonhumans at Lepenski Vir and other broadly contemporaneous Mesolithic and Mesolithic-Neolithic transitional sites in the Danube Gorges area stranded along the River Danube, which represents the border between present-day Serbia and Romania in this regional context. Here, the development and elaboration of relations between the specific landscape and other-than-human beings might have given rise to the tradition of sculpted artworks as well as to specific features of the built environment, such as trapezoidally-shaped limestone floors. It is argued that apart from the sandstone boulders’ likely mimetic, animating, and commemorative roles, the whole landscape along with its many inhabitants might have been understood in monumental terms underlined by their consubstantial modes of relating.

51. On the Atlantic shores. The origin of megaliths in Europe?

LAPORTE Luc - Director of Research at CNRS - UMR 6566, France

SCARRE Chris - Professor at Durham University, United Kingdom

BUENO-RAMIREZ Primitiva - Professor at the University of Alcalá de Henares, Spain

The megalithic monuments of Europe are some of the oldest in the world. Despite the wide diversity of forms throughout the continent as a whole, it is the Atlantic façade that contains almost all of those megalithic monuments that are thought to be the oldest. Defining precisely the geographical contours of what is meant by the Atlantic façade, however, requires the inclusion of some more continental areas, both in France and in the Iberian Peninsula, since the bipartition of Neolithic Europe between Bandkeramik and Mediterranean groups is now perceived as more permeable than once thought. There is also the potential contribution from Mesolithic traditions. The origin of these Atlantic megalithic monuments has been debated for many years; the question takes a different form, however, depending on whether the problem is approached from the point of view of the very first stone monuments, or from the idea of mobilizing very large stones to create architecture, or whether it is the symbolic and social changes associated with new funerary practices that are considered. The question also arises in very different terms depending on whether the focus is on Great Britain and Ireland, on western France or on the Iberian Peninsula. Although it is generally accepted that the first British and Irish megalithic monuments were derived from the monuments of northern France, the relationship between the first French and Iberian megaliths is less easy to define. The question of chronologies is here of paramount importance, although the problem of recycling with megaliths erected more than once on the same site must not be ignored. For this communication we propose to bring together three researchers who are very active in the study of megaliths for each of these regions of Europe.



Göbekli Tepe, Turkey (photo credit Teomancimit)

1. First monumentalities in Western Europe : the necropolis of Fleury-sur-Orne « Les Hauts de l'Orne (Normandie, France)

Ghesquière Emmanuel – Institut National Recherches Archéologiques Préventives, France

Chambon Philippe - Director of Research at CNRS, Muséum National d'Histoire Naturelle, France

Giazzon David - Institut National Recherches Archéologiques Préventives, France

Thévenet C. - Institut National Recherches Archéologiques Préventives, France

Thomas Aline - Muséum National d'Histoire Naturelle, France

The cemetery is located near Caen, 0.5 km from the Orne Valley and 15 km from the coast, in French Normandy. The excavation carried out in 2014 covers an area of 21 hectares, and an extension of 3.5 ha in 2016. The entire necropolis presents 36 Passy-type monuments (4700-4300 cal BC), 7 cairns of Middle Neolithic 2 (4200-3800 cal BC) and three alignments of posts. Fleury cemetery, through its size and the immensity of the monuments, can be considered the most important of this type after the eponymous site of Passy (Yonne). One of the monuments is the longest ever found in Europe: 372 m. Another noteworthy feature is the partially fossilized tumulus of a large trapezoidal monument. Three forms of «Passy»-type monuments have been identified: The smallest are surrounded by ditches or isolated circles, which diameters or lengths ranged from 3 to 12 m. Trapezoidal monuments are usually short (less than 20 m), but one is exceptionally large with 150 m in length for 60 m width to the east. The most numerous (14 monuments) are those with parallel ditches. The average length is 100 m, although the shorter measure 13 m long and the two largest are more than 300 m long. For all monuments, only 16 individual graves and 2 double graves have been discovered. Associated deposits are not common, generally arrow heads. Four tombs include richer deposits composed of several sheep, and count between 1 and 12 individuals. Fleury-sur-Orne cemetery, like those of Rots and Blainville-sur-Orne (Normandy), or those located in the Paris basin (Passy and Balloy), marks the origin of the funerary monumentalism in France, with giant tumulus and attempts to build with stones, around 4700 and 4600 B.C. Their dedication to a single individual corresponds to an episode of strong hierarchy in Neolithic societies.

2. aDNA and kinship in French Atlantic Facade Megalithic monuments

Cheronet Olivia – Postdoc, Department of Evolutionary Anthropology, Vienna, Austria

Fernandes Daniel - Postdoc, Department of Evolutionary Anthropology, Vienna, Austria

Soler Ludovic – Archéologist at Charente-Maritime County, France

Cros Jean-Paul – Researcher associated to ARSCAN, France

Large Jean-Marc – Researcher associated to UMR 6566 CReAHH, France

Scarre Chris – Professor at Durham University, United Kingdom

Joussaume Roger – Emeritus Director of Research at CNRS, France

Reich David - Professor, Department of genetics, Harvard Medical School, USA

Laporte Luc – Director of Research at CNRS, Rennes, France

Pinhasi Ron - Professor ass., Department of Evolutionary Anthropology, Vienna, Austria

Megalithic tombs are often the common burial place of numerous individuals. Their excavations have often revealed many skeletons, commonly very commingled, making the independent analyses of the individuals within challenging. However, the recent advances in ancient DNA recovery methods have allowed the analyses of individual skeletal elements, potentially shedding light on who was buried in these monuments. One important question pertaining to Megalithic tombs is why particular groups of individuals were buried together in distinct monuments. Here, we present preliminary analyses of three Neolithic Atlantic Façade, French Megalithic monuments: Bougon F0 (n=9), Champ Chalon (n=33), Xanton-Chassenay (n=22). By sequencing the genome of multiple individuals from each, it has been possible to recover some of their familial relationships. In each of these monuments, siblings and/or parents have been found, suggesting that kinship played an important role in the decision to bury individuals in the same monument. Furthermore, present analytical methods only allow the detection of close relatives, making familial ties with the other individuals a possibility. Further genomic analyses will help to put these individuals in a broader context further identifying their geographic origin.

3. Dressed standing stones in the open and dressed standing stones in burial chambers. Towards a convergence of the dispositives. The example of the megaliths in the department of Morbihan, France.

Gouezin Philippe – Researcher associated to UMR 6566 CReAHH, Rennes 1, France

The architectural conception of Megalithic monuments has usually divided them into separate types. There are the close or touching stones (e.g. sepulchres) and there are the more isolated stones such as menhirs. This resulted in separate paths of research. Only recently has the complementarity between arrangements of dressed stones in the “open air”, in the sepulchral assemblies, and in the tumuli really been proposed. When the engineering of these architectural projects connected to megalithism is analysed, points of convergence are noticeable between dispositives of dressed stones in the open air, in sepulchral spaces, and in tumuli. The intentions of the builders reflect the strong connections they saw between themselves and the world they lived in, understood and exploited,

the particular attention they gave to their dead, and certain connections with nature versus culture. The huge numbers of Megalithic monuments that exist in the Breton department of Morbihan has been an ideal population in which to study this phenomenon. The inter-related similarities are quite remarkable. They permit us to propose a transposition or inspiration (assemblies, forms and heights) between arrangements of dressed stones in the open air with those that have been worked into the walls of the sepulchral spaces.

4. The megalithic monument of Uzès (Gard, south of France)

BOUCHET Marie – Institut National de Recherches Archéologiques Préventives, France

CAYN Philippe - Institut National de Recherches Archéologiques Préventives, UMR5140, France

The discovery of the monument occurred in 2017 during an evaluation trial trenching commissioned by the State services and was carried out by INRAP (Institut National de Recherches Archéologiques Préventives), in advance of a road infrastructure project (Ott et Bouchet 2018). Less than two kilometres west of the city of Uzès, in an area now marked by a crossroads of five paths, the trench evaluation revealed the presence of a megalithic structure dating back to the end of Prehistory. Its layout appears to reveal its role as a defining landmark of the landscape, around which were articulated a Gallo-Roman traffic axis and another one, perhaps protohistoric. A building interpreted as a mausoleum with a cremation burial ground dating from the High Empire has also been identified some 50 metres to the south. During the winter of 2018-2019, the excavation carried out by Inrap allowed to explore a plot of about 1000 m² around the megalith. It revealed a vast circle of erected stones, located at the foot of a gentle slope which extends well beyond the excavation's boundaries. Fifty-five slabs, constituted mainly of shell limestone, were discovered in a circumference of 42 metres. The diameter of the assumed circle is estimated at 76 metres and could include around two hundred and eighty slabs. Most monoliths are clipped, averaging a height of around 1 metre, but some were broken on site or voluntarily lowered, and reach a height of nearly 4 metres. All of them show signs of cutting/shaping; some have carvings of small circular holes (cups, dimples) and special fittings evoking their use in other monuments, particularly funeral ones. The slabs are essentially tightly joint, a characteristic that is not common in the sparse corpus of cromlechs. There is a passage allowing access to the centre of the enclosure. In the eastern part of this entrance, a second alignment of monoliths is formed, within which a statue-menhir was discovered in a horizontal position. For the time being, the dating of the structure is placed between the late Neolithic and the Bronze Age, but a series of 14C dates planned on the rare material remains from the layout pits and installation levels will perhaps provide further details. The adjacent protohistoric and ancient structures and their development in relation to the alignment of monoliths, underline the monument's longevity and durability in the landscape. The layout of the current roads, which still respects the location of the megalith, only confirms this assumption. In the context of Occitanie and French cromlechs, rather poorly documented and dated, this major discovery will undoubtedly bring new knowledge and open new perspectives. A geophysical prospection planned on the neighbouring plot could allow further documentation of the monument, identifying the remainder of the circuit but also potential developments within its interior and possibly specifying its meaning and function.

5. The clay binder: a link between megalithic funerary architecture and monumental non-megalithic architecture based on Champagne examples (France)

DESBROSSE Vincent – Institut National Recherches Archéologiques Préventives, France

WATTEZ Julia – Institut National Recherches Archéologiques Préventives, France

The use of a clay binder has been evidenced in a few European megaliths. Examples are few, but they confirm this usage in a large area, from Denmark (Dehn, Hansen 2006: 44-46) to the Iberian Peninsula (Laporte et al. 2014: 477-478). Up to now, such instance had never been observed in the Champagne region. In 2009, the discovery of a clay binder in one building only at Pont-sur-Seine led us to investigate this question. The clay binder had been used in the foundations of the most monumental building, which was discordant: it testified of a mastered use while being apparently unique in the area. As late Neolithic building is little known, our research turned to burial architecture. Documentation on dolmens is uneven and often old, but the use of yellow clay is nevertheless confirmed in the setting up of several megaliths located within a range of fifty kilometers around Pont-sur-Seine, astride the Marne and Aube departments. As conservation issues are of major importance in this kind of use, they are probably the remainders of a much more widespread usage. Up to now, only the Pont-sur-Seine binder has been submitted to a micromorphological study, but from now on it would be relevant to consider the other examples identified. This poster will therefore attempt to discuss the reasons why such clay binder was or was not used in monuments (according to chronological criteria? Monument architecture? Foundations? State of conservation?) and to what extent these two usages ('domestic' and burial related) can be compared.

6. Advances in research on the Bronze-Age stone circles of Ireland and the rediscovery of a prehistoric 8-par calendar and the the tradition of shadow-casting at sunrise

MEADEN Terence - Professor at Oxford University, United Kingdom

Reported are studies of 26 traditional stone circles in South-West Ireland which are of the recumbent stone type whose perimeter stones number from 7 to 17 with diameters of 4 to 17 metres. The discoveries resulted from rediscovering the modus operandi of the planners in which the stone circles functioned at sunrise because of inbuilt alignments sequenced by shadow casting for the community to witness. Every circle has a broad recumbent megalith in the south-western quadrant. It is found that perimeter stones are intelligently positioned such that at sunrise on eight dates of the year—each 45 to 46 days apart starting with the winter solstice—the shadows of a range of male-symbolic stones fall upon the recumbent stone classified as female-symbolic. The shadow-casting mega-

liths of the eastern quarter are tall narrow and straight-sided. The circles occupy two classes as exemplified by Bohonagh and Drombeg. At Drombeg one tall shadow-casting stone has a carved ithyphallus. The recumbent megalith has a vulva carved on its top flat surface. Bohonagh typifies circles in which the recumbent stone waiting at the west receives sunrise shadows from an arc of stones located between north-east and south-east, so Bohonagh serves as a whole-year calendar. By contrast, Drombeg typifies circles in which the recumbent stone is in the south-west, which means the recumbent stone receives meaningful shadows only from between north-east and east, i.e. for pre-chosen dates in the summer half of the year. For such circles a second female-symbolic stone is introduced, and this is lozenge-shaped and positioned in the north-west to receive sunrise shadows from megaliths between east and south-east for the winter half of the year. These discoveries establish the basis of a long-lost Neolithic/Bronze Age calendar. Similar findings have been made at over 30 stone circles elsewhere in Ireland, Scotland and England.

7. Secrets in the Stones: Examining the presence of stones with inclusions in the passage tombs of Atlantic Europe

KENNY Patricia – Post-PhD to the Irish Research Council Government of Ireland

The passage tombs of Atlantic Europe bear testament to a society capable of amazing feats of engineering and creative expression. Constructed during the Neolithic, it seems plausible that these monuments were built using carefully chosen, socially significant stones. Analysis of the physical characteristics of these stones, such as source and colour, has proven to be a fruitful avenue of research, shedding light on the cultural reasons behind stone selection. This research project focuses upon a related, but under-researched aspect of these monuments, stones with geological inclusions. Stones with geological inclusions (SWI) can be defined as structural stones with noteworthy inclusions, such as fossils, mineral veins or rock clasts. They are often mentioned in studies of passage tombs and other megaliths; however, it remains unclear whether these stones were significant in prehistoric Europe. Research conducted by archaeologists, anthropologists and folklorists elsewhere, suggests that many societies granted unusual geological features, such as fossils, special significance. This research examines whether Neolithic people would have considered unusual geological features in their landscape to be similarly consequential. It aims to gain a better understanding of how Neolithic people perceived unusual aspects of their natural environment and incorporated those aspects into their built monuments. Drawing upon sites visited in Ireland, Scotland and North Wales over the past two years, this poster will present the preliminary results of this ongoing research project. It will outline the patterns in SWI use discovered thus far, and briefly discuss regional variations. It will introduce the reader to some of the key ethnographic evidence for SWI significance, before highlighting areas for future research, including fieldwork in Brittany. This study emphasises a phenomenon of international interest, which has the potential to shed light on an intriguing aspect of prehistoric society.

8. Old bones or early graves? Megalithic burial sequences in southern Sweden based on 14C datings

BLANK Malou - PhD Scholar, Gothenburg University, Suède

En Scandinavie, les tombes mégalithiques se divisent en trois types principaux : les dolmens, les tombes à couloir et les tombes à galeries. La chronologie conventionnelle de ces sépultures mégalithiques est basée sur la sérialisation typologique de Montelius des formes de chambre et des haches, datant de 1874. Selon cette chronologie, les premières sépultures mégalithiques sont les dolmens du Néolithique ancien (4000-3350 av. J.-C.) qui se sont développés avec des grandes galeries à l'époque du Néolithique supérieur (2350-1700), puis en petits coffres en pierre à l'Âge du bronze (1700-500 av. J.-C.). Cette typologie a été contestée à maintes reprises. Toutefois, la chronologie de Montelius est le modèle dominant utilisé par la plupart des archéologues suédois. L'objectif de cet article est d'étudier le temps d'utilisation des types classiques de sépultures mégalithiques dans le sud de la Suède, en mettant l'accent sur les tombes en galerie moins étudiées.

L'origine et l'utilisation des sépultures mégalithiques est une question complexe en raison du manque et du contexte peu sûr de matériaux datables préservés. Cependant, le nombre de dates 14C disponibles sur des restes humains a considérablement augmenté au cours de la dernière décennie, permettant des compilations de dates 14C de bonne qualité. Cette étude est basée sur 374 dates 14C d'individus uniques choisies parmi une compilation de 535 dates 14C sur des restes humains provenant de sépultures mégalithiques suédoises. En comparant les dates du 14C en fonction de la géographie et de la morphologie des tombes, les chronologies existantes des tombes mégalithiques sont évaluées et l'émergence et la propagation des tombes sont prises en compte. L'objectif est de répondre aux questions suivantes : Existe-t-il une variation distincte de la durée d'utilisation des types de sépulture et cela varie-t-il d'une région à l'autre ? Existe-t-il une tendance chronologique observée entre différents types de monuments à galeries ? La typologie conventionnelle des sépultures actuellement utilisée est-elle toujours valable ou avons-nous besoin de nouvelles façons de penser les sépultures mégalithiques ?

9. A new megalithic necropolis from late neolithic at Sion (Valais - Switzerland)

MOTTET Manuel - ARIA SA, Archaeological Investigation, Sion (Valais-Suisse)

Thirty years after the discovery of the last megalithic graves, dolmen MXII and dolmen MXIII at the Petit-Chasseur site, a new Final Neolithic megalithic monument was unearthed in the Platta town quarter of Sion. It is located about one kilometre east of the previously discovered monuments. At the same location a Hallstatt cemetery was uncovered at the Don Bosco site. Most of the burial chamber was preserved, even though the monument had been partially destroyed by the Sionne river. The rectangular cist measuring 2 m by 2.4 m was built from four large, vertically set limestone slabs (orthostats) overlaid by a massive covering slab made of granite weighing about four tonnes. As is the case for the huge dolmens of Sion (MXII, MVI et MXI) the monument had a lateral entrance

formed by a cut-out at the base of the eastern orthostats. The excavation of the burial chamber yielded 26 individuals of all ages. They were accompanied by grave goods comparable to those found in the Bell Beaker graves of the Petit-Chasseur site (dolmen MVI or dolmen MXI): tubular-shaped copper bead, pottery sherds with combed decoration, triangular flint arrowheads (with squared barbs or with tang and slant barbs), circle segments made of flint, pendant made of a bear canine tooth, pendants made of perforated shells and bone needles. These various objects make it possible to date this burial to about 2500 BC, i.e. to the beginning of the Bell Beaker period in Valais. In parallel to the monument several engraved anthropomorphic stelae were discovered. Two of these were found next to the monument, deliberately pushed into pits. Two further stelae were uncovered within the burial cist: the absence of the head indicates that they were recut to be re-used for building the internal architecture of the monument. In the immediate surroundings of the monument additional slabs, apparently non-decorated, were found collapsed next to their foundation pits. Another important element of this discovery is the presence of several horizontal slabs, mostly weighing over a tonne, some dozens of metres north-west of the dolmen within the same level. These remains are indicative of the presence of an additional completely dislocated megalithic monument nearby corresponding to a second Final Neolithic cemetery in this northern part of the city of Sion.

10. Megalithism versus Cyclopeism: the case of Prehistoric Menorca (Balearic Islands, Spain)

RIUDAVETS GONZÁLEZ Irene – Archaeologist co-director of the research projects at the Talayotic sites of Sa Cudia Cremada (Maó, Menorca) and Torralba d'en Salort (Alaior, Menorca), Spain

BRAVO ASENSIO Cristina - Archaeologist co-director of the research projects at the Talayotic sites of Sa Cudia Cremada (Maó, Menorca) and Torralba d'en Salort (Alaior, Menorca), Spain

The island of Menorca is home to a large and varied assemblage of monumental prehistoric constructions which have come down to us in an extremely great state of preservation. Spanning for roughly two millennia (2,200 BC – 1st century BC), all these structures were built by the prehistoric communities of the island, from the first settlers of the late Copper Age to the Bronze and Iron Age inhabitants, until the Roman conquest (123 – 121 BC). While most of the times all these monuments are frequently referred to as megalithic, Menorca only has very few examples of megaliths in contrast to the large number of structures which, despite the use of large stone blocks, were built using a different technique known as the cyclopean. Even though the two terms are frequently used as if they were interchangeable both in general and specifically in the case of the prehistoric monuments of Menorca, each has chronological and functional connotations which cannot be ignored so that a proper use of them is made when dealing with the structures from this island. Thus, the present work aims at elucidating the differences between megalithic and cyclopean constructions, showing the types of megalithic and cyclopean monuments which can be found on the island. As will be discussed, whereas megalithic remains are inherited from traditions found in the continent, from where the first settlers arrived, the cyclopean architecture of the Bronze and Iron Ages gave way to new and original expressions, some of which are unique in the world, as can be seen in the structures known as “navetas”, “cercles” and “taulas”.

11. Small is Beautiful: Early Megalithism and the First Funerary Architectures in South-Central Portugal (Southwestern Iberia)

ANDRADE Marco António - UNIARQ – Centre for Archaeology, University of Lisbon, Portugal

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Abstract Searching for the original megalith and its relationship with the Late Mesolithic shellmiddens of the Tagus valley, Manuel Heleno conducted excavation works during the 1930's in about 300 megalithic tombs located in the Western sector of Central Alentejo (mainly in the areas of Coruche-Montemor and Arraiolos-Mora, in the hinge region between the theoretical Mesolithic territories and the extensive megalithic group of Alentejo). The significative concentration of small simple tombs (of the so-called «proto-megalithic» type) in this area (Figure 1) led to consider until very recently (still according to Heleno's interpretations) that this would be one of the potential emergence sources of funerary Megalithism in Southwestern Iberia, stemming from the local Mesolithic communities, with a «wave of advance» from the coast to the inland – where larger monuments with a differentiated Chamber and Corridor were mostly known (thus showing an apparent linear evolution from simple to complex monuments with geographic representativeness). Recent survey and excavation works in the innermost areas of Alentejo, carried out mainly from the 1990's, had shown that the presence of these simple tombs, of small size with poorly diversified votive sets, also occurs in the hinterland, spatially coexisting with more culturally and chronologically evolved monuments. Based on recent excavations conducted in small tombs in the municipalities of Monforte, Estremoz, Redondo and Vila Viçosa (in the transition area between North and Central Alentejo; Figure 2), the authors perform an integrated analysis of votive sets, architectures and available absolute dates. Apparently, the construction and first use of these small simple tombs only takes place during a full moment of the Middle Neolithic local chrono-zone (first half of the 4th millennium BCE), coeval with the use of karstic cavities and with the construction and use of the first hypogea – being also contemporary, in a last moment (already in the second half of the 4th millennium BCE), with the first monuments with differentiated Chamber and Corridor.

12. Studies on some megalithic structures at the Elba Island (Livorno), Italy

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During the archaeological research of more than fifty years several areas of megalithic monumental emergencies have been identified on the Elba Island, especially in the area in the west of the island, with typologies similar to the insular area of Sardinia and Corsica and which would deserve a more detailed investigation, as they have never been scientifically excavated. -The complex of the Sassi Ritti (Campo nell'Elba) on a plateau in Monte Capanne district, whose toponym («standing stones») just foreshadows the presence of groups of shaped, aniconic monoliths, a group of four monoliths aligned in NS direction, about 1 m. high, and other groups of monoliths felled or partially buried in the same plateau and on its slope. This area has only been the subject of surveys since the 2000s and never by systematic excavations, and has given only a few pottery fragments perhaps referable to Final Bronze Age and some sliver of obsidian. -The site of Piana della Sughera (Campo nell'Elba) on a plateau in visual contact with Sassi Ritti, on the southern slopes of Monte Capanne, facing south of Corsica, is an area of dolmenic tombs consisting of three burials and some monolith fixtures, of which the most interesting structure has a pseudo-circular dry-stone plan of about 3 m. in diameter, at the center of which is a lithic caisson, partially closed by a flat semicircular slab, with mostly pertinent comparisons with the Corsican structures. This area has also been partially investigated since the 1970s. -Pietra Murata, in the same area, on two plateaus, three elongated granite boulders and other square boulders fixed in the ground in a circular sense have been identified. -Monte Cocchero, in the district of Lacona, in the south-central part of the island, on a hill on whose slopes extend for about 50 m., large granite monoliths fixed in a semicircular sense. The site was partially investigated in 1962 and millstones, ceramics referable to the Bronze age were found. In this area we have undertaken a survey project in collaboration with the University of Florence, Department of Architecture, Chair of Relief, and we are planning a campaign of integrated digital laser scanner survey, aerial structure from closed range motion and rendering in interactive 3D in Virtual Archeology with which it is hoped the beginning of systematic excavation campaigns in the interested areas.

13. The coastal megalith site of Pietra Tara, Monte Gallo (Palermo province), Sicily (Italy). New megalithic site in the Mediterranean

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The Pietra Tara megalith site, discovered in 2004 (F. Mercadante 2005), is situated on the coast that goes from Punta Barcarello to Malopasso, Monte Gallo, Palermo Sicily (Italy). At the moment it appears to be the only megalithic site in Sicily, built with the cyclopic technique, characterized by carbonate blocks coming from a landslide adapted to totems/menhirs, around which the village was created. Thanks to calibrated dating of some fragments of *Patella ferruginea*, preliminarily it has been possible to formulate a first chronology of the site (second half of the Second Millennium) final Bronze Age, 3183 BP cal. The wall that contains the village presents remains and adaptations walls while large areas of built, have been affected by telluric phenomena with the obvious downfall of the same. The site under investigation has revealed topographical complexity. It is divided into two zones: Low zone and High zone, separated by two pseudo-trenches. In the area of the Low Zone, the cyclopic architectures consist in the monolith/totem/menhir of Pietra Tara, situated almost at the centre of the site, the median point for all the other monoliths. The Low Zone is characterized by walls/septs, orthogonal to the coast, divided into different topographical zones: - Zone I Landing place, with small harbour; - Zone II Monolite del Corridoio; - Zone III Pietra Tara and Monolite di Sopra Tara; - Zone IV Monolite del Baluardo; - Zone V Monolite Ciaccato; - Zone VI Monolite di Tara II; - Zone VII Monolite della Mezza Luna. The High Zone, above a height of 50 metres, is the largest, and constitutes around 70% of the site, it has not yet been entirely explored, and is covered by vegetation and collapse landslides.

14. Earthen architectures and Megalithism: the Soto monument (Senegal)

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Since 2015, archaeological research carried out on the site of Soto (Kaffrine region, Senegal -L. Laporte and H. Bocoum, dir.) shed new light at funerary tumulistructures (Mbaanar) so far little studied. Among all acceptions the term Mbaanar covers, many of them are materialized in the landscape by discrete mounds of less than fifty centimeters in height. Very few examples have a frontal stone erected on their east side, as it is the case in Soto. On the eastern periphery of the tumulus, a protohistoric ground level is indicated by a crown of laterite gravel. A broad depression in its center indicates the initial location of the lyre stone. Extracted in 1964, this stone with central tenon is now exposed and integrated into the collections of the Musée du Quai Branly (Paris, France). Geophysical surveys conducted at Soto had highlighted a «clay anomaly» in the center of the monument. This one is surrounded by a discontinuous peripheral ditch and some hollow structures. Extensive excavation then made it possible to reveal the entirety of a monumental earthen architecture of about 25 m in diameter and at least 1.5 m high. This oval-shaped monument is erected at the center of a large circular pit and is surrounded by several more or less continuous peripheral ditches. The structure of the monument testifies to an elaborate architectural project and a mastery of mud construction techniques. A geoarchaeological study is actually in progress, in particular to specify construction techniques and identify possible collapsed parts of the earthen architecture. Its central part is made of a yellow earth core, probably surrounded by a palisade of about 10m in diameter which may have initially covered the funerary levels. Then, several beds of raw earth placed at the top cover the entire structure, appearing as many successive steps. On one of them, a spearhead had been planted vertically. For the first time in West Africa, this multidisciplinary work reveals a completely unsuspected monument in size and shape where many had previously seen only small sand hills. This somehow well-hidden ostentation is here associated with a more classic megalithic element, now exposed to the sight of millions of visitors.

15. Of myriad megaliths and their typology: An enquiry into the Architectural Variations of Megaliths of Vidarbha

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Vidarbha constitutes one of the important regions of Maharashtra, India. Archaeologically, Vidarbha is known for its Megalithic monuments. Megalithic sites situated in Vidarbha are geographically concentrated in Nagpur district. Megalithic inquiry in Vidarbha started as early as in 1849 and continues still present. Megalithic investigations carried out so far primarily mention the basic typology prevalent in the region as stone circles and cairn circles. However, sporadic findings of Menhirs and Dolmens were also noticed though their occurrence was very limited. Recent explorations carried out in the eastern part of Vidarbha on the banks of Wainganga river brought to light new typology of megaliths which were hitherto unknown in Vidarbha. Hundreds of megaliths were noticed in Wainganga region displaying immense typological variety such as Cists, Dolmens, Menhirs, flat slabs along with Stone circles and Cairn circles. Their construction pattern, deposit and outer architecture was different from typical megaliths reported from Nagpur district. Besides different megalithic types, unique inner architecture, arrangement of stones and funerary goods revealed complex burial practices. This unique pattern suggests that Wainganga region had a distinct megalithic tradition which was somehow different from the core region of Vidarbha. Evidence coming from recent excavations and explorations indicates that regional variation and ecological adaptations were in vogue during the megalithic period in Vidarbha. Diversity of megaliths with regard to inner architecture is invariably of great significance. The present paper documents and analyses the significant typological variations amongst megaliths of Vidarbha and associated inferences.

16. Social Organisation of the Megalithic People in Vidarbha, Maharashtra, India

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The Megalithic period in Vidarbha is contemporary to the Early Iron Age. The burials are mostly concentrated in the Wardha-Wainganga divide, i.e. present day Nagpur, Wardha, Bhandara and Chandrapur districts of Vidarbha region in eastern part of Maharashtra, India. The megaliths are numerous in number; however, the differentiation in physical types is limited. The major dominant type is the stone circle with cairn filling though other types such as menhirs, dolmen and cists are also reported. The subsistence pattern and the settlement pattern of these people had definitely led to some social and economic dynamism among the community. This is reflected in the grave goods and thereby the social persona of the dead can be deduced. In the present paper, the author has attempted to analyse the grave goods from excavated burials and their implications towards understanding social process. The analysis has given some clustering among burials from different sites, which shows that there were similar social status groups spread over the landscape even in different sites. This social organization led to the development of a complex society and also led to the formation of authority and political structures in the region.

17. Megalithic Monuments in Jharkhand: Archaeology and Ethnography

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Megalithic monuments are reported from different regions of Jharkhand state of India. They are typologically represented by Menhirs, Capstones and Dolmens. As far as megalithic archaeology is concerned, these monuments had been reported since year 1872 from different parts of the region by colonial ethnographers and anthropologists. Apart from this, just one excavation is conducted in the region by Archaeological Survey of India in year 1965 at the site of "Khunti toli" in Khunti subdivision. Since then, there are very few works that have been done in the region with an archaeological perspective. Some freelance researchers recently carried out few

researches on these monuments on archeoastronomical point of view only. Due to lack of archaeological excavations it is difficult to determine the affinity and chronology of these monuments. On the other hand, there are different ethnic communities, who still raise megalithic structures as a part of secondary funeral custom as well as landmarks of their settlements. One of these group are Mundas and their several clans. They raise dolmens and capstones in case of natural death and menhirs in case of different unnatural death. Menhirs are also raised as memorial and landmark of the settlement. They call dolmen and capstones "Saasandiri" and menhirs are called as "Biridiri" or "Bid-diri", in Mundari terminology. This paper deals with ancient megalithic monuments and their ethnographic counterparts, i.e., recent megalithic structures raised by the Munda community to understand different aspect of megalithic archaeology in the region with ethnoarchaeological perspective. Keeping this objective, an ethnoarchaeological model is been adopted to understand different aspects of megalithic archaeology in Jharkhand by drawing parallels between ancient and recent megalithic structures using ethnographic analogies; direct historical analogy and general comparative analogy. Data recovered through ethnographic surveys and archaeological explorations by the author, will be use for analysis and comparison will be done with excavated site Khunti toli. On the basis of this analysis tentative conclusion will be drawn in the present poster.

18. Megalithic's techniques at Sumba island (Indonésia): from careers to abandonment

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JEUNESSE Christian - Professor at Strasbourg University, Archimède, UMR 7044, CNRS, Ministère de la Culture, France

Different techniques of megalithic tomb construction have been observed on the island of Sumba in Indonesia where this tradition is still alive. Through several case studies, from careers to abandonment, transport and construction, we propose a synthesis of these living practices in order to feed our reflections on those of the past. It will also deal with devices related to the use and restoration of tombs, which, in addition to their technical originality, are also indicators of collective functioning and the investment of these communities in the durability of their monuments.

19. Tamchinsky deer stone: experience of documentation of megalithic objects

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The article describes methodology for documenting steles with embossed images using photogrammetry on the example of an expressive object – Tamchinsky deer stone in Transbaikalia. A complete description of the monument, its stylistic features of the images on the planes are presented. The method of semiautomatic construction of image drawings based on digital methods, traditionally used in topographic tasks, has been tested and applied. This method was presented by Monna et al. in 2018[1]. The basic principle of the approach consists of 3D-modeling of an object using SfM-photogrammetry, creating a DEM-model of the relief of planes and consistently applying the SLRM and Canny Edge Detection algorithms for image highlighting. The digital images thus obtained allow to clarify the details of the drawings and are used for the final depicting of the drawings. Due to the use of orthonormal images as the source layer, the resulting drawings are devoid of possible geometric distortions, which is difficult to achieve when using other drawing techniques. The described documentation methodology is related to highly accurate and non-invasive methods. The proposed documentation results make it possible to create accurate digital models that provide solutions for subsequent research tasks (dating, imaging technology, measuring distances, depth and shape of tool marks with which images were made, as well as for morphometric analysis, etc.). 3D models provide information for monitoring, research on degradation processes, and can be made available to the public on the Internet, printed out, or integrated into virtual 3D scenes. This work was supported by the Russian Science Foundation (project No. 18-78-10079).

20. From stone to dust: granite, ceramics and megalithism in Amapá - Brazil

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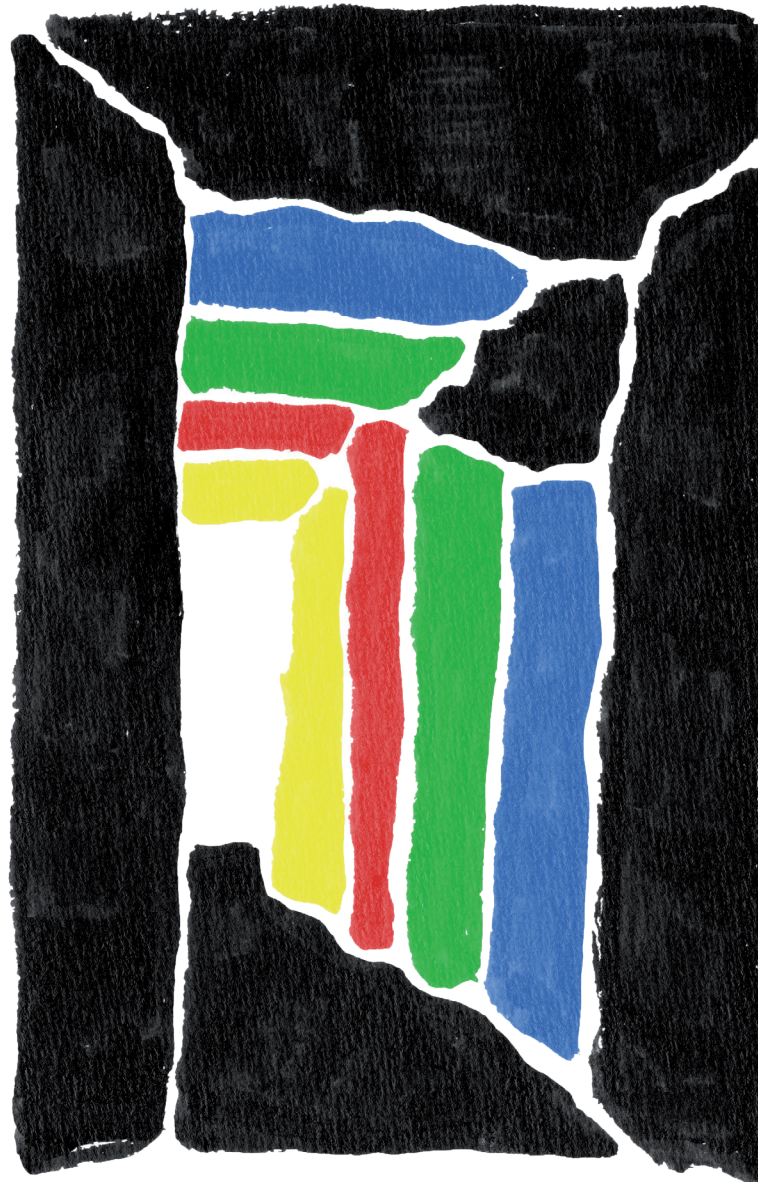
The ongoing research is oriented by the results of a archaeological experiment in ceramics. According to archaeologist Denis Williams, the introduction of processed rocks in the making of pre-colonial pieces from the Guianas would increase the level of hardness of these vessels. Based on this hypothesis, the experiment intended to manufacture ceramic plates and rollers by adding ground granite as a temper. The research results from analyses of megalithic ceramics from the archaeological site AP-CA-18 - Rego Grande, Calçoene, in Amapá State - Brazil. The analysis of ceramic sherds excavated in this site revealed the presence of ground granite in the clay of some pre-colonial ceramics. In the same context, secondary burials and a big megalithic structure with signs of astronomic uses, structure also built in granite, raise the idea of a relation network between past times human beings and this prime material. As a result of the experiment, it was observed with the use of Mohs scale that the intrusion of «ground granite» in ceramic pieces increases noticeably their hardness, thereby showing the improvement suggested by Williams. The research is built as a master's thesis project where archaeometry tests and analyses of petrographic blades from pre-colonial potsherds will be realized, thus associating modern scientific knowledge with a theory, still in its inicial phase, about a possible symbology of the diverse uses of granite

by ancient peoples from the region, where today is the state of Amapá (northern Brazil). Our goal is to comprehend the uses of the prime material in the landscape and in the past life of the inhabitants of this part of Brazilian Amazon, suggesting a relation of symmetry where practical and symbolic approaches would form a single reality for these peoples, different from the duality recurrently investigated by modern archaeology.

21. A Chronological Conjecture Concerning the Age of Pumapunku Complex based in a Theory for Transport of Plataforma Lítica (Bolivia)

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Built thousands of years ago in Bolivia, the ruins of Pumapunku have puzzled experts for decades, and since the discovery of Tiwanaku site, researchers have worked to determine the age of Pumapunku by a variety of different dating methods such as: archaeoastronomy (11,000-17,000 years old), [1], radiocarbon date (1580 BC), [2], and with more recent estimates which place Pumapunku around AD 110, [3]. Nevertheless, the exact origin and age of the site is still in dispute. On the other hand, occupying the eastern edge of the Pumapunku is what is called the Plataforma Lítica which consists of a stone terrace that is 6.75 by 38.72 metres (22.1 by 127.0 feet) in dimension and paved with multiple enormous stone blocks. The largest supermassive megalith red sandstone slab found in both the Pumapunku and Tiwanaku Site, measures 7.81 metres (25.6 feet) long, 5.17 metres (17.0 feet) wide and averages 1.07 m (3 ft 6 in). This stone slab has been estimated to weigh c.140 tonnes. A number of theories have been put forward to try to explain what methods of labor force and how this labor force transported these supermassive megaliths - which is known almost for certain were transported from quarries within the Copacabana Peninsula about 10 to 90 kilometers away from the Pumapunku and the rest of the Tiwanaku Site, [4] - and being two of the more common proposals the use of llama skin ropes and/or the use of ramps and inclined planes, [4], [5] but these theories remain today speculative. In this work, it is discussed a novel theory and method for the transport of Plataforma Lítica which - and unlike other methods proposed before, sets out the age of Pumapunku. The theory, technique and disquieting results are presented in this work.





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